DAVID Y. IGE GOVERNOR STATE OF HAWAII

JOSH GREEN LT. GOVERNOR STATE OF HAWAII





NOV - 8 2020

WILLIAM J. AILA, JR CHAIRMAN HAWAIIAN HOMES COMMISSION

TYLER I. GOMES
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879 HONOLULU, HAWAII 96805

October 21, 2020

Honorable Keith Kawaoka, Acting Director State of Hawai'i Department of Health Office of Environmental Quality Control 235 South Beretania Street, Room 702 Honolulu, Hawai'i 96813

Dear Mr. Kawaoka:

Subject:

Proposed Pu'unani Homestead Subdivision;

Waikapū, Maui, Hawai'i

Publication of the Final Environmental Assessment and Finding of

No Significant Impact

The State of Hawai'i, Department of Hawaiian Home Lands (DHHL) hereby submits the Final Environmental Assessment and Finding of No Significant Impact (FEA-FONSI) for the Proposed Pu'unani Homestead Subdivision project for publication in the next available edition of the Environmental Notice. The proposed project involves Tax Map Keys (2)3-5-002:002(por.) and (2)3-5-001:064(por.) in Waikapū, Wailuku District, on the island of Maui.

In addition to this letter, we have also submitted the electronic version of the Office of Environmental Quality Control Publication Form and a searchable PDF-formatted copy of the FEA-FONSI through the online submission platform.

If you have any questions, please contact Stewart Matsunaga, Acting Administrator, Land Development Division at (808) 620-9283 or via email at stewart.t.matsunaga@hawaii.gov.

Aloha,

William J. Ailā Jr., Chairman Hawaiian Homes Commission

CC: Randy Awo, Commissioner, HHC
Maui District Office
Planning Office
Darren Okimoto, DDC LLC
Bryan Esmeralda, Munekiyo Hiraga

From: webmaster@hawaii.gov

To: <u>HI Office of Environmental Quality Control</u>

Subject: New online submission for The Environmental Notice

Date: Thursday, October 29, 2020 9:21:45 AM

Action Name

Proposed Pu'unani Homestead Subdivision

Type of Document/Determination

Final environmental assessment and finding of no significant impact (FEA-FONSI)

HRS §343-5(a) Trigger(s)

• (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

Wailuku. Maui

Tax Map Key(s) (TMK(s))

(2)3-5-002:002(por.) and (2)3-5-001:064(por.)

Action type

Agency

Other required permits and approvals

National Pollutant Discharge Elimination System Permit; Community Noise Permit (as applicable); Subdivision; Work on State Highway Permit; Construction Permits

Proposing/determining agency

State of Hawai'i, Department of Hawaiian Home Lands

Agency contact name

Stewart Matsunaga

Agency contact email (for info about the action)

stewart.t.matsunaga@hawaii.gov

Agency contact phone

(808) 620-9500

Agency address

91-5420 Kapolei Parkway Kapolei, Hawai'i 96707 United States Map It

Was this submittal prepared by a consultant?

Yes

Consultant

Munekiyo Hiraga

Consultant contact name

Bryan Esmeralda

Consultant contact email

planning@munekiyohiraga.com

Consultant contact phone

(808) 983-1233

Consultant address

305 High Street, Suite 104 Wailuku, Hawai'i 96793 United States Map It

Action summary

The Department of Hawaiian Home Lands intends to develop a new residential subdivision for its beneficiaries on a 47.4-acre portion of land owned by the DHHL, identified by TMK (2)3-5-002:002, in Waikapu, Maui, mauka of Honoapi'ilani Highway. A new sewerline to serve the subdivision will also be constructed, which will cross the highway from Parcel 2 and run along a portion of TMK (2)3-5-001:064. The project will feature a max of 161 single-family lots (137 turn-key homes and 24 vacant lots). Each of the lots will be approximately 7,500 square feet in area. Each of the lots will be improved with graded pads and stubbed utility connections. Related improvements to also be developed include internal roadways and sidewalks, a drainage detention basin, utility connections, and roadway frontage improvements along the highway including a road widening lot for turning lanes, a median refuge lane, a bike lane, as well as for site distance requirements.

Reasons supporting determination

See Chapter VIII of the Final Environmental Assessment

Attached documents (signed agency letter & EA/EIS)

- Puunani Homestead Subdivision Nov-2020 Final-EA-Volume-II-of-II.pdf
- Puunani Homestead Subdivision Nov-2020 Final-EA-Volume-I-of-II.pdf
- Puunani Homestead Subdivision FONSI Letter-from-DHHL-2020-10.21.PDF

Shapefile

• The location map for this Final EA is the same as the location map for the associated Draft EA.

Action location map

• Pu'unani Homestead Subdivision TMKs.shape.zip

Authorized individual

Bryan Esmeralda

Authorization

• The above named authorized individual hereby certifies that he/she has the authority to make this submission.

VOLUME I OF II

Final Environmental Assessment

PU'UNANI HOMESTEAD SUBDIVISION

(TMK NOs. (2)3-5-002:002(por.) and (2)3-5-001:064 (por.))

Prepared for:

State of Hawai'i, Department of Hawaiian Home Lands

Approving Agency:
Hawaiian Homes Commission

November 2020

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VOLUME I OF II

Final Environmental Assessment

PU'UNANI HOMESTEAD SUBDIVISION

(TMK NOs. (2)3-5-002:002(por.) and (2)3-5-001:064 (por.))

Prepared for:

State of Hawai'i, Department of Hawaiian Home Lands

Approving Agency:

Hawaiian Homes Commission

November 2020

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November 18, 2005

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October 18, 2017

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Plan

Executive Summary

Project Name:	Puʻunani Homestead Subdivision
Type of Document:	Final Environmental Assessment
Legal Authority:	Chapter 343, Hawai'i Revised Statutes Title 11, Chapter 200.1, Hawai'i Administrative Rules
Determination:	Finding of No Significant Impact (FONSI)
Applicable Environmental Assessment review "Trigger":	Use of State Lands; Use of State Funds
Location:	Maui Island Wailuku TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.)
Landowner:	State of Hawai'i, Department of Hawaiian Home Lands
	Kehalani Agricultural Investors LLC
Applicant:	State of Hawai'i Department of Hawaiian Home Lands Contact: Stewart Matsunaga, Acting Administrator, Land Development Division 91-5420 Kapolei Parkway Kapolei, Hawai'i 96707 Phone No.: (808)620-9500
Approving Agency:	State of Hawai'i Department of Hawaiian Home Lands Hawaiian Homes Commission Contact: William Ailā, Jr., Chairman 91-5420 Kapolei Parkway Kapolei, Hawai'i 96707 Phone No.: (808)620-9500
Consultant:	Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawai'i 96793 Contact: Bryan K. Esmeralda, AICP, Senior Associate Phone No.: (808)983-1233

Project Summary:

The State of Hawai'i, Department of Hawaiian Home Lands (DHHL) is proposing to develop a new residential subdivision for its beneficiaries on an approximately 47.4-acre portion of land identified by Tax Map Key (TMK) No. (2)3-5-002:002 (Parcel 2) and owned by the DHHL in Waikapū, Maui, Hawai'i. The project site is located mauka of Honoapi'ilani Highway, to the north and adjacent to the existing Waiolani Mauka subdivision. In addition, the work within the portion of TMK No. (2)3-5-001:064 (Parcel 64) will be limited to only sewerline improvements. The sewerline will cross Honoapi'ilani Highway from Parcel 2 and run along a portion of Parcel 64 to a connection point on Wai'ale Road.

The proposed subdivision will be comprised of a maximum of 161 residential lots (137 turn-key single-family homes and 24 vacant improved single-family lots). Each of the 161 lots will be approximately 7,500 square feet in area, with a minimum lot area of 6,000 square feet. The turn-key homes component of the project will feature six (6) different model types, while the vacant lots will be lessee-built. As part of the project, the vacant lots will be improved with graded pads and utility connections stubbed to each lot. Related improvements to be developed with the project include internal roadways and sidewalks, a drainage detention basin, utility connections, as well as roadway frontage improvements along Honoapi'ilani Highway. Roadway improvements along Honoapi'ilani Highway include a road widening lot up to 25 feet wide for the provision of turning lanes, a median refuge lane, and a bike lane, as well as for site distance requirements. In addition, a landscaped lot between the Honoapi'ilani Highway right-of-way and the houselots will be provided along the sloped frontage of the subdivision. Further, existing monkeypod trees within the Honoapi'ilani Highway right-of-way will need to be removed and replaced with new healthy trees within the shoulder of the proposed road widening lot for sight distance requirements to provide safe access to the DHHL residential subdivision.

The proposed subdivision will be accessed via two (2) entrances from Honoapi'ilani Highway. One (1) full-movement "T" intersection will be in line with the existing Kokololio Street right-of-way, which forms the northern boundary of the existing Waikapū Gardens subdivision located makai of Honoapi'ilani Highway, while the other will be a right-turn in and right-turn out only entrance located approximately 1,500 feet to the north.

The 47.4-acre subdivision site has been designated for "Agricultural" use by the State Land Use Commission, Maui

County Zoning, and the Wailuku-Kahului Community Plan, with a portion of the site also being designated "SF, Single-Family" within the Wailuku-Kahului Community Plan. The Hawaiian Homes Commission Act (HHCA), codified within the constitution of the State of Hawaii, vests onto the DHHL the authority to use its lands at its discretion. Specifically, HHCA Section 204 states, "all available lands shall immediately assume the status of Hawaiian home lands and be under the control of the department to be used and disposed of in accordance with the provisions of this Act'. As the DHHL owns the project site, the above-noted provision grants the DHHL the authority to proceed with the project without the lands being fully entitled for residential use. In addition, through the provisions of the above-noted Act, DHHL intends to exempt the project from certain County code and rule requirements in order to develop the project. The area of the proposed sewerline installation is designated for "Urban" use by the State Land Use "Agriculture" by the Wailuku-Kahului Commission. Community Plan, and "Agriculture" by Maui County Zoning.

As previously mentioned, the proposed subdivision is being developed by the DHHL on lands owned by the State while the sewerline will be developed within an existing sewer easement on privately owned lands. In addition, improvements are proposed to Honoapi'ilani Highway, a State-owned right-of-way. The proposed project will also utilize State as well as private funds. The use of State lands and State funds trigger compliance with the environmental review requirements of Hawai'i Revised Statutes (HRS), Chapter 343 and Hawai'i Administrative Rules (HAR), Chapter 11-200.1. Accordingly, this Final Environmental Assessment (EA) has been prepared to evaluate the technical characteristics and potential environmental impacts of the proposed project, as well as to advance findings and mitigative measures relative to the project. The Hawaiian Homes Commission will serve as the approving agency for the EA.

List of Acronyms

AIS Archaeological Inventory Survey

ALISH Agricultural Lands of Importance to the State of Hawai'i

AMP Archaeological Monitoring Plan

AMSL Above Mean Sea Level

ASTM American Society for Testing and Materials

BMPs Best Management Practices cfs Cubic feet per second CIA Cultural Impact Assessment CO₂ EQ carbon dioxide equivalent

DEM Department of Environmental Management
DHHL Department of Hawaiian Home Lands

DOE Department of Education
DOH Department of Health

DOT Department of Transportation

DPR Department of Parks and Recreation
DSA Development Services Administration

DWS Department of Water Supply
EA Environmental Assessment
EPA Environmental Protection Agency
ESA Environmental Site Assessment

FDH fiber distribution hub

FEMA Federal Emergency Management Agency

FIRM Flood Insurance Rate Map
FONSI Finding of No Significant Impact

GHG Greenhouse Gases

GIS Geographic Information System

GPD Gallons per Day

HAR Hawai'i Administrative Rules
HHC Hawaiian Homes Commission
HHCA Hawaiian Homes Commission Act

HRS Hawai'i Revised Statutes

IaAIao Silty ClayIcBIao ClayIbBIao Silty ClaykWhKilowatt hour

KWWRF Kahului Wastewater Reclamation Facility

LUC Land Use Commission LCAs Land Commission Awards

LOS Level of Service LSB Land Study Bureau

MCCC Maui Community Correctional Center

MG Million Gallon

MGD million gallons per day
MIP Maui Island Plan
mph Miles per Hour
msl Mean Sea Level

NPDES National Pollutant Discharge Elimination System

Preliminary Engineering Report Scientific Consultant Services, Inc. PER SCS SHPD State Historic Preservation Division Sandwich Isles Communications SIC

sq. ft. Square Feet

Traffic Impact Analysis Report Tax Map Key TIAR

TMK United States US

Wastewater Reclamation Division **WWRD USFWS** U.S. Fish and Wildlife Service

PROJECT OVERVIEW

I. PROJECT OVERVIEW

A. PROPERTY BACKGROUND, EXISTING USE AND LAND OWNERSHIP

The State of Hawai'i, Department of Hawaiian Home Lands (DHHL) is proposing to develop a new residential subdivision ("proposed subdivision") on an approximately 47.4-acre portion of land identified by Tax Map Key (TMK) No. (2)3-5-002:002 (Parcel 2), and owned by the DHHL, in Waikapū, Maui, Hawai'i. In addition, there will be limited sewerline installation work within an existing sewer easement on a portion of TMK No. (2)3-5-001:064 (Parcel 64), owned by Kehalani Agricultural Investors LLC, that will be undertaken as part of the proposed project. These two (2) actions will be referred to herein as the "project", and collectively, the affected portions of Parcel 2 and Parcel 64 will be referred to as the "project site". See **Figure 1**.

A portion of Parcel 2 is currently used for cattle grazing and is otherwise vacant and undeveloped. Parcel 2 is located mauka of Honoapi'ilani Highway to the east and adjacent to the existing Waiolani Mauka subdivision to the south. Parcel 64 is also currently vacant and undeveloped and is located makai of Honoapi'ilani Highway. See **Figure 2**.

The 47.4-acre portion of Parcel 2 to be developed as the proposed subdivision is Lot 1 of the "Pu'unani Ag Subdivision" application which is currently being processed by the County of Maui, Department of Public Works as Development Services Administration (DSA) Subdivision No. 3.2405. The remainder of Parcel 2 is not owned by the DHHL and, as such, will not be developed as part of the proposed project.

The 47.4-acre subdivision site has been designated for "Agricultural" use by the State Land Use Commission (LUC), Maui County Zoning, and the Wailuku-Kahului Community Plan, with a portion of the site also being designated "SF, Single-Family" within the Wailuku-Kahului Community Plan. The site of the proposed sewerline installation is designated for "Urban" use by the State Land Use Commission, "Agriculture" by the Wailuku-Kahului Community Plan, and "Agriculture" by Maui County Zoning. The Hawaiian Homes Commision Act (HHCA), codified within the constitution of the State of Hawai'i, vests onto the DHHL the authority to use its lands at its discretion. As the DHHL owns the proposed subdivision site, the HHCA grants the DHHL the authority to proceed with the development of the proposed subdivision without the lands being fully entitled for residential use. In addition, through the provisions of the above-noted Act, DHHL intends to exempt the project from certain County code and rule requirements in order to develop the project. It is further noted that Parcel 64 is entitled for the proposed Wailuku Apartment Rental Housing Project, by others.

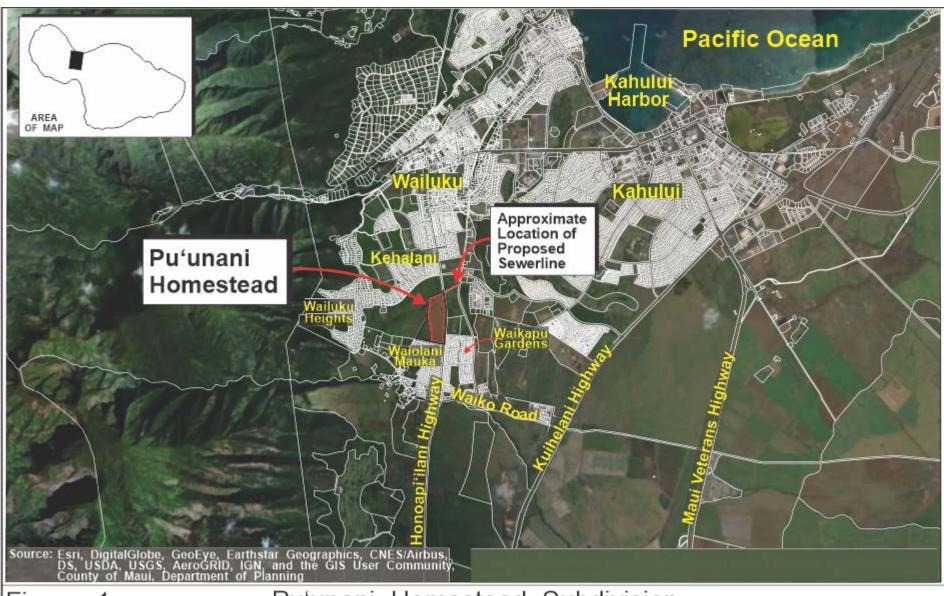


Figure 1

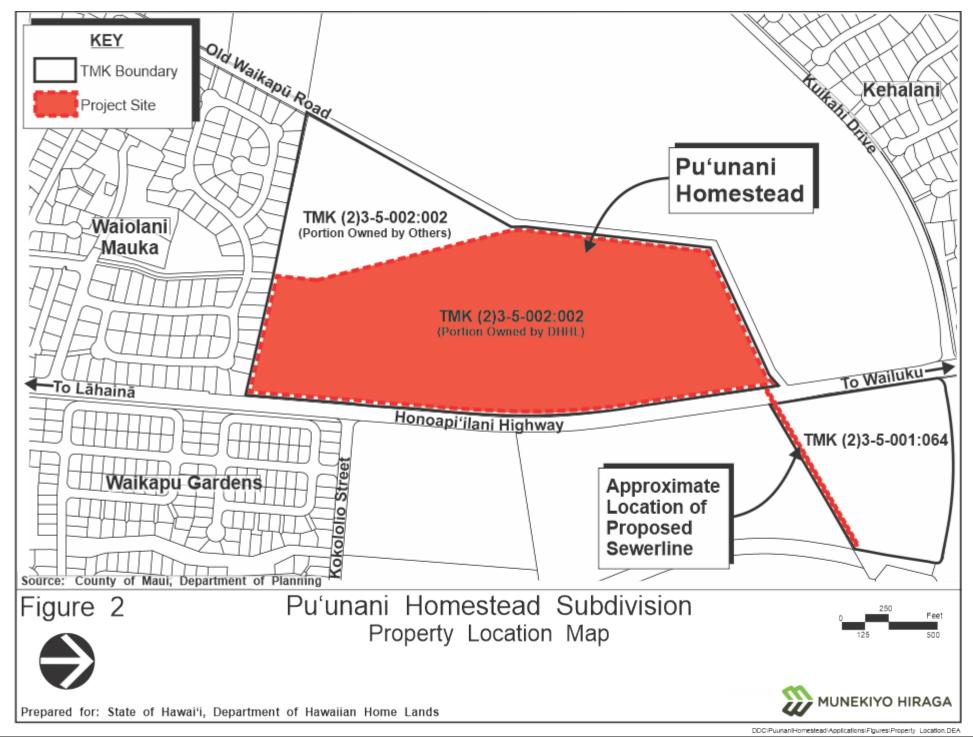


Pu'unani Homestead Subdivision Regional Location Map





Prepared for: State of Hawai'i, Department of Hawaiian Home Lands



As background¹, under previous ownership, the proposed subdivision site was included as part of a Petition for District Boundary Amendment filed with the State LUC (Docket No. A06-766) for the reclassification of approximately 210 acres from the State "Agricultural" District to the State "Rural" and "Urban" Districts for a previously proposed and separate residential development. ² However, in January 2017, the LUC acknowledged the Petitioners' request to withdraw the Petition as the previously proposed project would not be pursued. The Environmental Impact Statement Preparation Notice for the previously proposed project was also withdrawn from the Hawai'i Revised Statutes (HRS) Chapter 343 environmental review process. It is noted that the currently proposed DHHL project is a distinct and separate project from the above-noted former development proposal by others.

It is noted that although the proposed subdivision by DHHL is being referred to as the "Pu'unani Homestead Subdivision", the DHHL recognizes the importance of place names. As such, the DHHL will be working with the residents of the subdivision, once occupied, to select a place-appropriate name for the development that honors its location in Waikapū.

B. PROJECT NEED

The mission of the DHHL is to effectively manage the Hawaiian Home Lands trust and to develop and deliver land to Native Hawaiians. The HHCA, codified within the constitution of the State of Hawai'i, states as its purpose:

- (a) The Congress of the United States and the State of Hawaii declare that the policy of this Act is to enable native Hawaiians to return to their lands in order to fully support self-sufficiency for native Hawaiians and the self-determination of native Hawaiians in the administration of this Act, and the preservation of the values, traditions, and culture of native Hawaiians.
- (b) The principal purposes of this Act include but are not limited to:
 - (1) Establishing a permanent land base for the benefit and use of native Hawaiians, upon which they may live, farm, ranch, and otherwise engage in commercial or industrial or any other activities as authorized in this Act;

In its early consultation comment letter dated August 28, 2019, the State LUC requested that the following history of the site of the proposed subdivision be disclosed in the Pu'unani Homestead Subdivision Draft Environmental Assessment.

The separate and former residential development by others initially proposed 214 half-acre rural lots, 6 one-acre rural lots, approximately 90 single-family residential lots of 4,000 square feet each, approximately 240 multi-family units, and a 14.6-acre park that would serve as a retention basin.

- (2) Placing native Hawaiians on the lands set aside under this Act in a prompt and efficient manner and assuring long-term tenancy to beneficiaries of this Act and their successors;
- (3) Preventing alienation of the fee title to the lands set aside under this Act so that these lands will always be held in trust for continued use by native Hawaiians in perpetuity;

Similarly, the DHHL General Plan, adopted in 2002, lists as goals under the Residential Uses objective:

- Substantially increase the number of residential homesteads awarded each year.
- Provide a mix of housing opportunities that reflect the needs and desires of native Hawaiian beneficiaries.
- Provide residential homesteads, financing, and other housing opportunities, especially to those most in need.

DHHL beneficiary demand for homesteading opportunities is very high; DHHL maintains a waitlist comprised of several thousand beneficiary applicants awaiting an opportunity to be awarded a homestead lease. The current Maui Residential Waiting List stands at approximately 3,819, while the Waiohuli Undivided Interest List is at approximately 272 beneficiaries awaiting a residential homestead on Maui. The proposed project aims to award leases and provide homesteading opportunities to beneficiaries, thereby, fulfilling the above stated purposes of the HHCA and DHHL General Plan. DHHL noted that Pu'unani Homestead lease offerings will be made first to Waiohuli Undivided Interest lessees in their original selection order based on the Hawaiian Homes Commission (HHC) relocation approval, dated March 2010. Should turn-key lots or vacant lots remain after the offer and qualifications process for Undivided Interest lessees, then the Maui Islandwide Residential List will be offered the remaining lots in rank order.

Further, based on a 2003 survey and 2014 "Central Maui" study conducted for DHHL by SMS Research & Marketing Services, Inc., Central Maui was identified as the preferred residential homestead area. More than two-thirds (68%) of the residential applicants identified a turn-key house as their first choice in property type preference and nine percent (9%) of the applicants identified a vacant improved lot, which were the two (2) highest housing preferences. Eighty-four percent (84%) of the applicants desired three (3) or more bedrooms. The proposed project responds to this demand.

C. PROPOSED ACTION

The proposed subdivision will be comprised of a maximum of 161 residential lots for DHHL beneficiaries (137 turn-key single-family homes and 24 vacant improved single-family lots). Each of the 161 lots will be approximately 7,500 square feet in area, with a minimum lot area of 6,000 square feet. The turn-key homes component of the project will feature

six (6) different model types, that will provide 3 or 4 bedrooms and 2 to 3 baths and will range in living area from approximately 1,088 square feet (sq. ft.) to 1,674 sq. ft., while the vacant lots will be lessee-built. See **Appendix "A"**. The provision of vacant lots allows beneficiaries the flexibility to build a home not offered as part of the house-lot packages and within a beneficiary's budget. As part of the project, the vacant lots will be improved with graded pads and utility connections stubbed to each lot. No ohana or accessory dwelling units will be permitted on any of the 161 lots.

Related improvements to be developed with the project include internal roadways, curb, gutter and sidewalks, a drainage detention basin, grading, water, sewer, drainage, utility connections, walls, fences, landscaping improvements, as well as roadway frontage improvements along Honoapi'ilani Highway. The new internal streets will have 44- or 60-foot wide rights-of-way and are expected to conform to current Maui County subdivision standards in all but two respects: 1) internal sidewalks within the subdivision will be provided on one side of the street; and 2) electrical power and telephone lines will be installed overhead. See **Figure 3**. Roadway improvements on Honoapi'ilani Highway include a road widening lot up to 25 feet wide for the provision of turning lanes, a median refuge lane, and a bike lane, as well as for site distance requirements. In addition, a landscaped lot between the Honoapi'ilani Highway right-of-way and the houselots will be provided along the sloped frontage of the subdivision and will be maintained by DHHL. See **Figure 4**. Also, an offsite sewerline to provide service to the proposed project will cross Honoapi'ilani Highway from the northeast corner of the site and run along a portion of TMK No. (2)3-5-001:064 to a connection point on Wai'ale Road. Refer to **Figure 3**.

The proposed subdivision will be accessed via two (2) entrances from Honoapi'ilani Highway. One (1) will be a full-movement "T" intersection in line with existing Kokololio Street right-of-way, which forms the northern boundary of the existing Waikapū Gardens subdivision located makai of Honoapi'ilani Highway, while the other will be a right-turn in and right-turn out only access point located approximately 1,500 feet to the north. A median refuge lane at the Honoapi'ilani Highway/south project access is proposed to allow eastbound left-turn vehicles to turn onto Honoapi'ilani Highway with a two-stage approach. Refer to **Figure 3**. Streetlights will also be added at both subdivision entrances. Improvements to the existing Kokololio Street are not proposed as part of the project.

Further, existing monkeypod trees within the Honoapi'ilani Highway right-of-way will need to be removed and replaced with new trees within the shoulder of the right-of-way. There are a total of 34 monkeypod trees that were designated as "exceptional trees" by the County of Maui in December 2018 and which front the property along Honoapi'ilani Highway. The DHHL proposes a minimum 1:1 replacement of these existing 34 trees with new healthy trees within the landscaped lot as part of the proposed project. Refer to **Figure 4**. It is further noted that through consultation with the State of Hawai'i, Department of Transportation (DOT), monkeypod trees are not the preferred tree for use along rights-

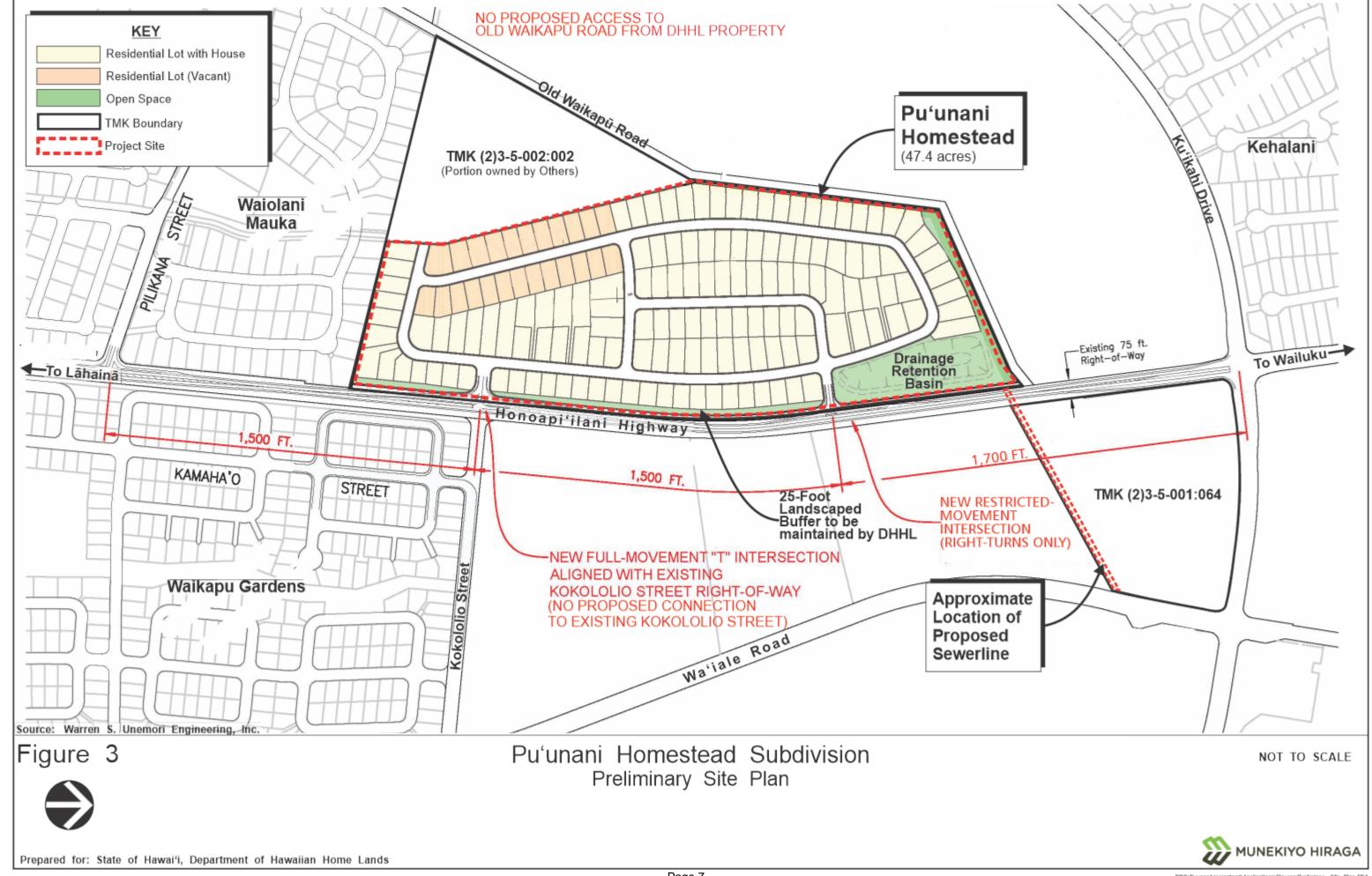




Figure 4

Pu'unani Homestead Subdivision Conceptual Landscape Plan

NOT TO SCALE







of-way as their roots have a tendency to undermine pavement and damage curbs and gutters. The DHHL and its landscape architect will continue to work with the appropriate agencies, including the County of Maui, Department of Parks and Recreation (DPR) and the DOT, along with the County of Maui's Arborist Committee, and Maui County Council, to obtain the necessary approvals for DHHL's proposed tree removal and replacement. DHHL will identify a suitable replacement tree option. The trees will be spaced to provide access to the DHHL residential subdivision, as well as comply with applicable federal policies for roadway safety and efficiency. At its meeting on February 12, 2020, the Arborist Committee voted to recommend that the Maui County Council remove the exceptional trees designation for those trees along Honoapi'ilani Highway fronting the proposed subdivision. The matter was referred to the County Council for final action. At its meeting of July 9, 2020, the Council's Healthy Families and Communities Committee voted to recommend that the 34 trees be de-listed as exceptional trees. At its meeting of August 18, 2020, the Council adopted the ordinance amending the Maui County Code to delist the 34 monkeypod trees as exceptional trees on second and final reading.

D. LAND USE REGULATORY CONSIDERATIONS

The 47.4-acre subdivision site has been designated for "Agricultural" use by the State Land Use Commission, Maui County Zoning, and Wailuku-Kahului Community Plan, with a portion of the site also being designated "SF, Single-Family" by the Wailuku-Kahului Community Plan. The site of the proposed sewerline installation is designated for "Urban" use by the State Land Use Commission, "Agriculture" by the Wailuku-Kahului Community Plan, and "Agriculture" by Maui County Zoning.

As previously stated, the 47.4-acre portion of Parcel 2 on which the proposed project will be implemented is under the jurisdiction of the DHHL. The mission of the DHHL is to effectively manage the Hawaiian Home Lands trust and to develop and deliver land to native Hawaiians. The HHCA vests onto the DHHL, the authority to use its lands at its discretion. Specifically, HHCA Section 204 states, "all available lands shall immediately assume the status of Hawaiian home lands and be under the control of the department to be used and disposed of in accordance with the provisions of this Act".

As such, the DHHL has implemented its own planning system consisting of a General Plan, Island Plans, community-specific Regional Plans, project-specific Program Plans, and Special Area Plans. The DHHL Maui Island Plan (MIP), adopted in 2004, serves as a comprehensive resource for planning and managing the Maui island lands and establishes land use designations to encourage orderly social, physical, and economic development. Because the lands on which the proposed subdivision will be developed have recently been acquired by the DHHL, they are not yet designated for a specific use within the DHHL MIP. However, because the DHHL has vested authority for the use of their lands, the DHHL is able to proceed with the project without the lands being fully entitled for residential use. Acquiring these lands is consistent with a residential goal of the DHHL MIP to secure

additional lands in Central Maui to meet the beneficiary demand for residential homesteads.

E. <u>CHAPTER 343, HAWAI'I REVISED STATUTES, ENVIRONMENTAL</u> ASSESSMENT

As previously mentioned, the 47.4-acre portion of Parcel 2 is owned by the DHHL. In addition, improvements are proposed to Honoapi'ilani Highway, a State-owned right-of-way. The proposed project will also utilize State and private funds. The use of State lands and State funds trigger compliance with the environmental review requirements of HRS, Chapter 343. As such, this Environmental Assessment (EA) has been prepared pursuant to Chapter 343, HRS and Chapter 200.1 of Title 11, Hawai'i Administrative Rules (HAR). Accordingly, this document addresses the technical characteristics and potential environmental impacts of the proposed project, as well as advances findings and mitigative measures relative to the project.

The HHC will serve as the approving agency for the EA.

F. <u>ESTIMATED CONSTRUCTION SCHEDULE AND COSTS</u>

Based on the DHHL's current design, permitting, and development schedule, site work and home construction is targeted to begin following receipt of all applicable permit approvals. The 24 vacant improved lots will be lessee-built and subject to each lessee's timeline. The estimated direct project construction cost is \$72.3 million for lot development, installation of infrastructure, and construction of turn-key homes.

DESCRIPTION OF THE EXISTING CONDITIONS, POTENTIAL IMPACTS AND MITIGATION MEASURES



II. DESCRIPTION OF THE EXISTING CONDITIONS, POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL SETTING

1. Surrounding Land Use

a. Existing Conditions

The project site, comprised of the approximately 47.4 acres of the proposed homestead subdivision as well as the area for the proposed sewerline, is located in northern Waikapū. The subdivision site is located mauka of Honoapi'ilani Highway, which borders the site to the east, and makai of the Old Waikapū Road, which borders the site to the northwest. Directly to the south and adjacent to the property is the existing Waiolani Mauka subdivision. Waikapu Gardens is located southeast of the site, across Honoapi'ilani Highway. Vacant agricultural lands are located immediately to the north and west of the property, with the Kehalani Project District located beyond to the north across Ku'ikahi Drive. The site of the proposed sewerline is within a vacant parcel located just makai of Honoapi'ilani Highway to the northeast. Refer to Figure 2. Although this site is currently vacant, it is entitled for the development of the Wailuku Apartment Rental Housing Project. Various other residential developments and a handful of small locally owned businesses comprise the general land use fabric of this area of Waikapū. Refer to Figure 1.

b. <u>Potential Impacts and Mitigation Measures</u>

The proposed project is located adjacent to existing infrastructure and in an appropriate location adjacent to urbanized areas of Wailuku. The proposed project is compatible with the surrounding existing uses of the area. In the context of surrounding land uses, the proposed project is not anticipated to have a significant adverse effect on the surrounding landscape. The proposed project will provide much needed homesteading opportunities for Department of Hawaiian Home Lands' (DHHL) beneficiaries through the provision of 161 lots available for lease.

2. Climate

a. <u>Existing Conditions</u>

Maui's climate is relatively consistent throughout the year. The island's climate varies as the terrain changes. Characteristic of Maui's climate, the

proposed project site experiences mild and uniform temperatures yearround, moderate humidity and consistent trade winds.

Average temperatures at the general project area (based on temperatures recorded at Kahului Airport) range from the low 60s to high 80s (Fahrenheit). August is historically the warmest month, while February is the coolest. Annual precipitation rainfall average is approximately 20 inches per year (Maui County Data Book, 2018). Winds blow predominantly out of the north-northeasterly direction.

b. Potential Impacts and Mitigation Measures

The proposed action will occur on parcels formerly used for agricultural cultivation which are now mostly vacant aside from cattle grazing on the proposed 47.4-acre subdivision site, and will be located in the midst of other similar residential developments. The proposed project is not anticipated to have an adverse effect on climate.

3. <u>Topography and Soil Conditions</u>

a. <u>Existing Conditions</u>

Elevations across the 47.4-acre proposed subdivision site range from approximately 380 feet to 450 feet above mean sea level (AMSL). The existing terrain slopes steadily downward from west to east across the site at a slope of approximately 7 to 8 percent. See **Appendix "L"**, Preliminary Engineering Report.

Underlying the project site and surrounding area are soils belonging to the Pulehu-Ewa-Jaucus association. According to the <u>Soil Survey of the Islands of Kaua'i, O'ahu, Maui, Moloka'i, and Lāna'i, State of Hawai'i, prepared by the United States Department of Agriculture Soil Conservation Service, these soils are characterized as having a slight to moderate erosion hazard (Foote et al, 1972). See **Figure 5**.</u>

The project area is located on soils identified as Iao Silty Clay (IaA), Iao Clay (IcB) and Iao Cobbly Silty Clay (IbB). These soils are reported to produce a low to medium amount of runoff and represent a slight to moderate erosion hazard. See **Figure 6**.

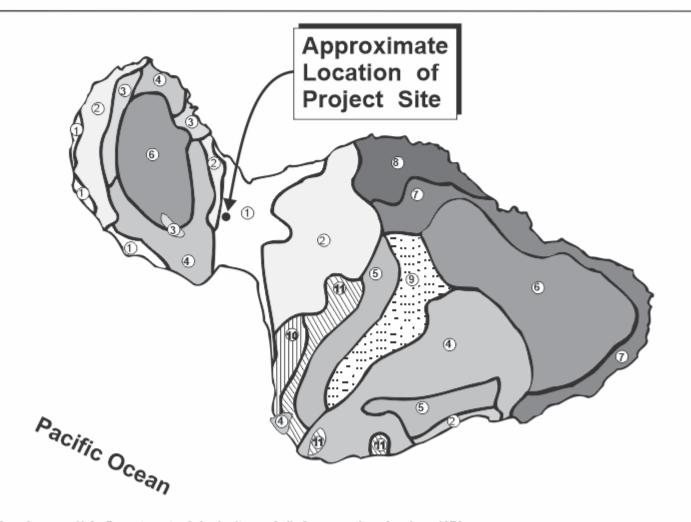
b. <u>Potential Impacts and Mitigation Measures</u>

The 47.4-acre subdivision project site was previously used for agriculture, and is currently used for cattle grazing and is otherwise vacant and

LEGEND

- Pulehu-Ewa-Jaucas association
- Waiakoa-Keahua-Molokai association
- Honolua-Olelo association
- Rock land-Rough mountainous land association
- (5) Puu Pa-Kula-Pane association
- Hydrandepts-Tropaquods association

- 7 Hana-Makaalae-Kailua association
- 8 Pauwela-Haiku association
- Laumaia-Kaipoipoi-Olinda association
- Keawakapu-Makena association
- Kamaole-Oanapuka association



Map Source: U.S. Department of Agriculture, Soil Conservation Service, 1972

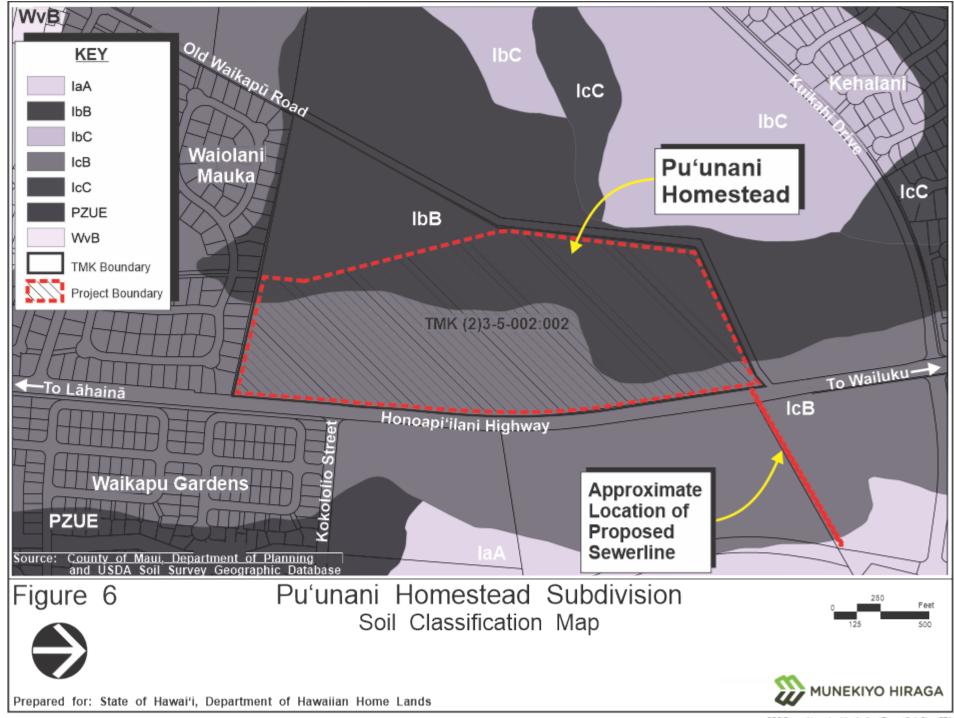
Figure 5 Pu'unani Homestead Subdivision Soil Association Map

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Prepared for: State of Hawai'i, Department of Hawaiian Home Lands





undeveloped. The project grading concept considers the balancing of cut and fill quantities to reduce the import and/or export of earthwork material and to ensure that the building height standards can be met. Best Management Practices (BMPs) will be implemented during construction to minimize impacts from soil erosion resulting from wind and water (e.g., dust and silt fencing, watering for dust control, etc.). An application for a National Pollutant Discharge Elimination System (NPDES) permit will be submitted to the State Department of Health (DOH) for review and approval prior to the start of construction of the proposed subdivision. Grading permits will also be applied for the proposed subdivision and sewerline. The underlying soils do not pose limitations with respect to project constructability. The proposed project is not anticipated to have an adverse effect on topography and soils. Refer to **Appendix "L"**.

4. <u>Agricultural Productivity Considerations</u>

a. **Existing Conditions**

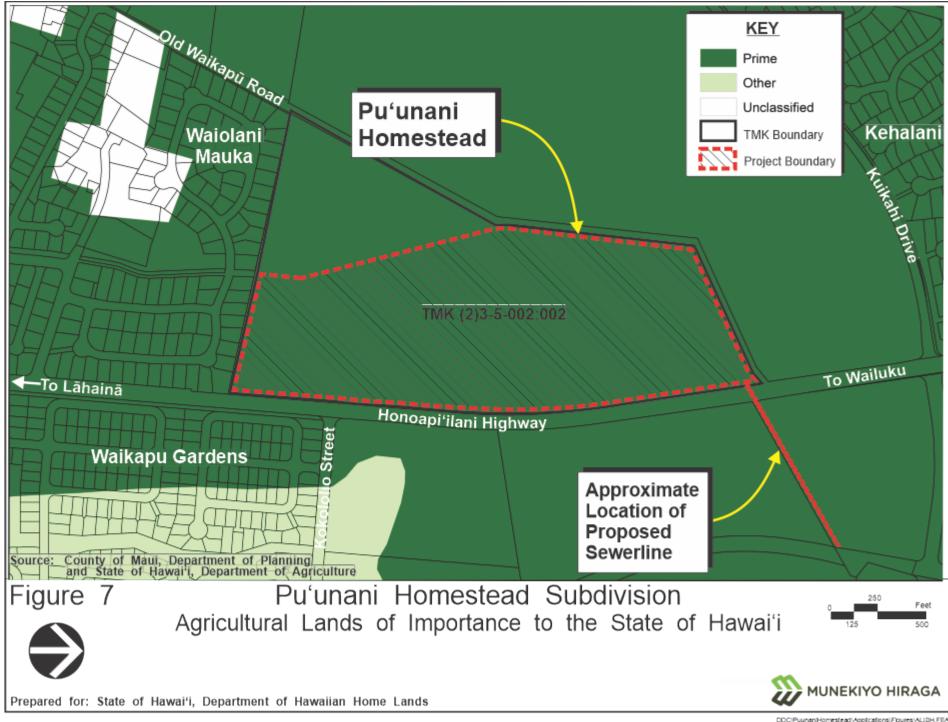
In 1977, the State Department of Agriculture developed a classification system to identify Agricultural Lands of Importance to the State of Hawai'i (ALISH). The classification system is based primarily, but not exclusively, on the soil classification of the land. The three (3) categories are "Prime", "Unique" and "Other Important" agricultural lands, with all remaining lands identified as "Unclassified".

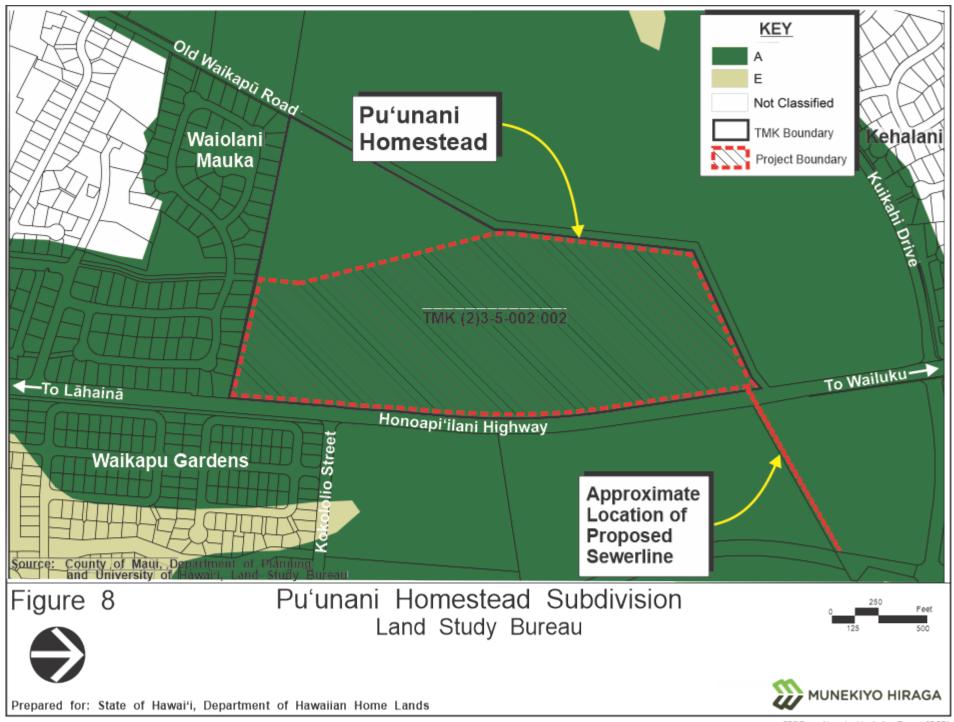
"Prime" agricultural lands have soil quality, growing season, and moisture supply needed to produce sustained high yield crops economically. "Unique" agricultural lands possess a combination of soil quality, growing season, and moisture supply to produce sustained high yields of specific crop. "Other" important agricultural lands are lands that have not been rated "Prime" or "Unique" agricultural lands that are also of statewide or local importance for agricultural use.

As previously stated, the project site is located in an area of Waikapū that was formerly utilized for agricultural purposes for multiple decades. As such, the project site is located within the ALISH's "Prime" land area. See **Figure 7**.

Separately, the University of Hawai'i, Land Study Bureau (LSB) developed the Overall Productivity Rating, which classified soils according to five (5) productivity levels, with "A" representing the class of highest productivity soils and "E" representing the lowest.

The project site has been classified "A" by the LSB. See **Figure 8**.





b. <u>Potential Impacts and Mitigation Measures</u>

The proposed project will utilize the property for needed residential homesteads for DHHL beneficiaries. The proposed subdivision is considered an infill development, as the property is located adjacent to existing urbanized areas with other similar residential subdivisions, and nearby infrastructure systems, while the proposed offsite sewerline will occur on a currently undeveloped parcel. The proposed actions will occur on properties that although are currently agriculturally unproductive, aside from grazing, which has occurred at the site for over 20 years, were once in active agricultural production. As the lands are not currently actively cultivated, there are no anticipated adverse impacts to agriculturally productive lands as a result of the proposed action. Further, on the island of Maui, approximately 70,714 acres of the total land area of the island are within the ALISH "Prime" designation. As such, the use of 47.4 acres, or approximately 0.07 percent, of the "Prime" designated 70,714 acres on Maui for much needed residential housing in an existing urbanized area with other similar residential subdivisions is not considered a substantial adverse impact in the context of the overall "Prime" designated lands on Maui.

5. Flood, Tsunami, and Sea Level Rise

a. Existing Conditions

The Flood Insurance Rate Map (FIRM), Geographic Information System (GIS) layer provided by the United States (U.S.) Federal Emergency Management Agency (FEMA) indicates the project site is situated in Flood Zone X, outside both the floodplain and tsunami zone. Flood Zone X (unshaded) represents areas outside of the 0.2 percent annual chance flood plain and there are no restrictions upon development within this zone.

The project site does not experience any significant local flooding problems due to its location in Waikapū's gently sloping mauka to makai topography.

A 3.2-foot rise in sea level is projected for the Hawaiian Islands by the midto-latter half of the 21st century based on the findings of the Hawaii Sea Level Rise Vulnerability and Adaptation Report that was prepared in 2017 by the Hawaii Climate Change Mitigation and Adaptation Commission (Hawaii Climate Change Mitigation and Adaptation Commission, 2017). It is noted that the project site is located inland and outside of the projected 3.2-foot sea level rise exposure area.

b. <u>Potential Impacts and Mitigation Measures</u>

The development of the proposed project will comply with County of Maui's drainage standards and will utilize stormwater runoff BMPs during construction. The proposed drainage detention basin, whose capacity will be at least 4.2 acre-feet, will mitigate expected increases in peak post-construction stormwater flows by limiting the downstream release of stormwater to a flow rate which does not exceed pre-development levels. This is in compliance with Maui County drainage standards. As such, there are no significant adverse impacts to drainage conditions and flooding anticipated as a result of the proposed project. Accordingly, significant adverse impacts associated with floods, tsunamis, and sea level rise are not anticipated.

6. Streams and Wetlands

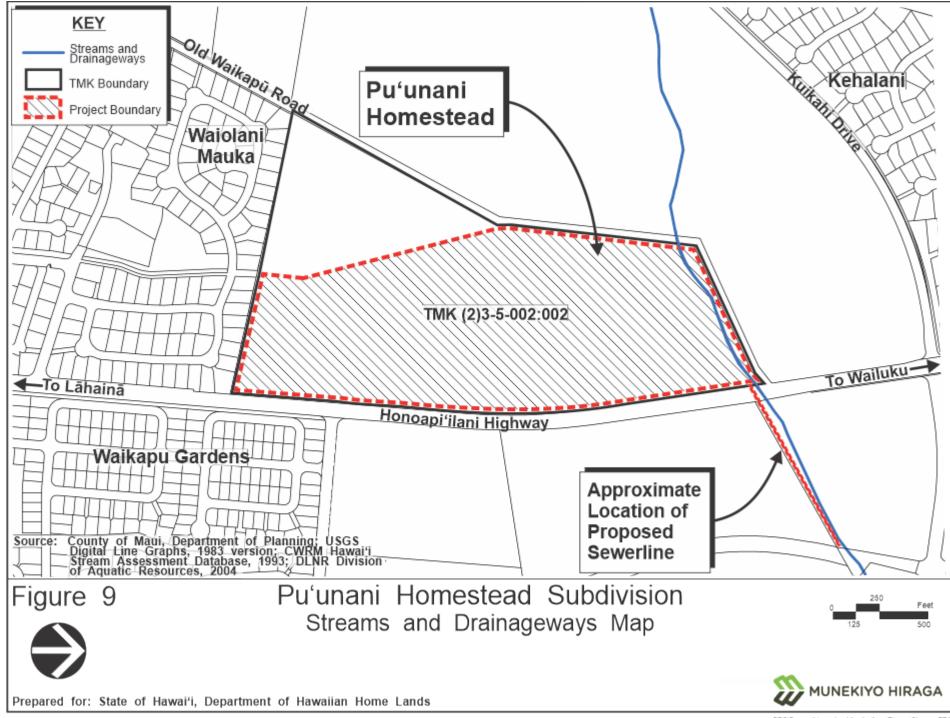
a. <u>Existing Conditions</u>

A natural, typically dry drainageway (gully) that originates in the West Maui Mountains traverses through the northernmost portion of Parcel 2, and also through Parcel 64. See **Figure 9**. The drainageway ultimately empties into a dry overflow basin in the Wai'ale Reservoir.

The Waikapū Stream is located approximately 3,000 feet to the south of the project site. Waikapū Stream is a perennial stream which originates in the upper reaches of Waikapū Valley, ultimately discharging into Keālia Pond in the Māʻalaea flats. There are no known wetlands or other water bodies on or in the vicinity of the project site.

b. <u>Potential Impacts and Mitigation Measures</u>

The project site is located in the midst of residential developments in Waikapū. Appropriate BMPs will be used during construction and applicable drainage detention and water quality measures provided for the long-term habitation of the site. DHHL will make every effort to ensure that the project, including the proposed sewerline, will not have a direct impact upon the natural drainageway, Waikapū Stream, or any other waterbody in the region.



7. Flora and Fauna

a. Existing Conditions

A flora and fauna survey and assessment of the 47.4-acre project site was conducted in June 2019 by Robert W. Hobdy, Environmental Consultant. The objectives of the survey were to document what plant and animal species occur on the property; document the status and abundance of each species; determine the presence of any native flora and fauna, particularly any that are federally listed as threatened or endangered, and if such occur, identify what features of the habitat may be essential for these species; and to determine if the project area contains any special habitats, which if lost or altered might result in a significant negative impact on the flora and fauna in the vicinity of the project. See **Appendix "B"**.

In terms of flora, the project site is dominated by one (1) non-native grass species, the hardy Guinea grass (Megathyrsus maximus) which was found throughout all parts of the area. Four (4) other species were common, the koa haole (Leucaena leucocephala), sourgrass (Digitaria insularis), balloon plant (Asclepias physocarpa) and glycine (Neonotonia wightii). A total of 65 plant species were recorded as part of the survey. Sixty-two (62) of these were not native to Hawai'i and are considered to be pasture grasses or agricultural weeds. Two (2) species were Polynesian plants brought to Hawai'i centuries ago. These were the kukui (Aleurites molucccana) and the niu or coconut (Cocos nucifera), both of which had been recently planted. The only native species recorded was the 'uhaloa (Waltheria indica) which is common throughout drier habitats in Hawai'i and is also native to many other Pacific islands as well. No endangered or threatened plant species were found and none of the species observed on the property are candidates for such status. The disturbed environment was not found to include any special habitats of plant species or ecosystems. Refer to Appendix "B".

Six (6) non-native species of mammals were seen during three (3) separate site visits. These species included cattle (Bos Taurus), pigs (Sus scrofa), dogs (Canis familiaris), horses (Equus caballus), mongoose (Herpestes auropunctatus) and axis deer (Axis axis). While not seen as part of the survey, the report noted the possible occurrence of mice (Mus domesticus), rats (Rattus spp.), and domestic cats (Felis catus). A special effort was made to observe the endangered 'ōpe'ape'a or Hawaiian hoary bat by conducting an evening survey with the use of a bat detecting device. No evidence of the 'ōpe'ape'a was observed or heard. The report noted birdlife was modest in both species diversity and in total numbers. A total of ten

(10) non-native species were observed during three (3) site visits. Four (4) species were common, the zebra dove (Geopelia striata), spotted dove (Streptopelia chinensis), common myna (Acridotheres tristis) and black francolin (Francolinus francolinus). Five (5) other species were uncommon, and one (1) was rare. No native birds were seen. Insects were reported as modest in numbers. A total of twelve (12) species were observed during three (3) site visits. Three (3) species were common throughout the project area, the monarch butterfly (Danaus plexippus), the globe skimmer dragonfly (Pantala flavescens) and dung fly (Musca sorbens). Another three (3) species were uncommon, the house fly (Musca domestica), the sleepy orange butterfly (Eurema niccipe) and the pinao or green darner dragonfly (Anax junius). Six (6) other insect species were rare. The two (2) dragonfly species, the pinao and the globe skimmer, are indigenous Hawaiian species that are native to Hawaiii, but which also occur naturally in other parts of the world. Refer to Appendix "B".

In addition, a Biological Resources Survey was prepared in 2017 for the proposed Wailuku Apartment Rental Housing Project, which is planned to be developed on Tax Map Key (2)3-5-001:064 (Parcel 64), and is the property on which the proposed sewerline for the Pu'unani Homestead Subdivision project will also be constructed. Similar to the 47.4-acre site, Parcel 64 was also noted to be dominated by non-native flora species including Guinea grass and glycine. A total of 65 plant species were recorded, including four (4) common native plants, the 'uhaloa, kou (Cordia subcodata), (Cyperus polystachyos) no common name, and koala kua hulu (Merremia aegyptia). No endangered or threatened plant species were found and none of the species observed at the site are candidates for such status. Similarly, the wildlife within Parcel 64 was also characterized as nearly all non-native species except for two (2) indigenous dragonflies, the green darner (Anax junius), and the globe skimmer, which are commonly found. See **Appendix** "C".

As noted previously, there are 34 existing monkeypod trees within the Honoapi'ilani Highway right-of-way that are proposed to be removed and replaced with new healthy trees within the shoulder of the proposed road widening lot to provide safe access to the DHHL residential subdivision. The existing trees appear to be in poor condition. However, they were designated as "exceptional trees" by the County of Maui in December 2018. At its meeting on February 12, 2020, the Maui County Arborist Committee voted to recommend removal of the exceptional trees designation for those trees along Honoapi'ilani Highway fronting the proposed subdivision to allow the project to be able to provide access points that comply with applicable federal policies for roadway safety and efficiency. The matter

was referred to the County Council for final action. At its meeting of July 9, 2020, the Council's Healthy Families and Communities Committee voted to recommend that the 34 trees be de-listed as exceptional trees. At its meeting of August 18, 2020, the Council adopted the ordinance amending the Maui County Code to delist the 34 monkeypod trees as exceptional trees on second and final reading. DHHL will continue to work with the State of Hawaii, Department of Transportation (DOT), on DOT's maintenance of the trees.

b. <u>Potential Impacts and Mitigation Measures</u>

As discussed above, the flora and fauna present at the two (2) properties are largely represented by non-native species. Just one (1) native plant species and two (2) indigenous dragonflies were identified at the site of the proposed subdivision, while four (4) common native plants and the same two (2) indigenous dragonflies were observed at the property on which the proposed sewerline will be constructed. Both reports noted that these species are common in Hawaiii and native in other parts of the world. The flora and fauna report for the proposed Pu'unani Homestead Subdivision project concluded that the development of the project is not expected to result in any significant negative impacts on native plant communities in this area of Maui. The report also noted that no endangered or threatened animal species were found on the property as part of the survey, nor were any animal species candidates for such status. The report further concluded that the development of the project is not expected to result in a significant negative impact on native fauna or habitats in this area of Maui. Refer to Appendix "B". Similarly, flora and fauna on Parcel 64 is also characterized as being mostly non-native, except for four (4) common native plants and two (2) indigenous dragonflies which are also commonly found. As such, the report noted that development of the proposed Wailuku Apartment Rental Housing is also not anticipated to result in significant impacts on native flora or fauna. Refer to **Appendix "C"**. The addition of the proposed sewerline to the property is not anticipated to change this finding.

While the 'ōpe'ape'a was not detected at either project site, the flora and fauna reports noted that the bats are highly mobile and appear to migrate around in response to flushes in insect activity, wherever it may occur. As such, there is a likelihood that these bats may utilize the habitat on the subject properties at some time during the year. The reports recommended that should these bats be present, the U.S. Fish and Wildlife Service (USFWS) be consulted on how to proceed so that these bats are not harmed or killed. Refer to **Appendix "B"** and **Appendix "C"**.

Furthermore, while not seen at the site, there are two (2) native seabirds, the endangered Hawaiian petrel (Pterodroma sanwichensis) and the threatened Newell's shearwater (Puffinus newelli), that fly over lowlands during the evenings on their way to their burrows high in the mountains and then fly out to the ocean early in the morning during the summer and fall months. These seabirds, and especially their young fledglings, are attracted to bright lights and can be disoriented and crash. They are then vulnerable to injury, vehicle strikes or predators. The flora and fauna reports recommended that any significant outdoor lighting be shielded to direct the light downward. Refer to **Appendix "B"** and **Appendix "C"**.

With implementation of the above-noted recommended mitigation measures, the development of the proposed project is not anticipated to result in a significant negative impact on native fauna or habitats in this part of Maui.

Furthermore, during the early consultation period for the Draft Environmental Assessment (EA), the USFWS, in their letter dated August 30, 2019, noted that the nēnē (Hawaiian goose) can be predominantly found on Maui among other islands, and that the ae'o (Hawaiian stilt) can be found wherever ephemeral or persistent standing water may occur, such as the proposed detention basin. In light of this, the USFWS provided conservation measures aimed at minimizing risks to these species. As stated in the response letter dated May 18, 2020 to the USFWS, these conservation measures have been forwarded to the DHHL and the project design team for consideration for incorporation into the proposed project. Both the USFWS comment letter and response letter can be found in Chapter IX.

Due to the road widening required of Honoapi'ilani Highway, the DHHL proposes the removal of monkeypod trees currently located within the Honoapi'ilani Highway right-of-way. The trees are proposed to be removed from their existing location and replaced with new healthy trees due to the existing trees' poor condition, as well as for sight distance requirements. Refer to **Figure 4**. It is further noted that through consultation with the State of Hawai'i, DOT, monkeypod trees are not the preferred tree for use along rights-of-way as their roots have a tendency to undermine pavement and damage curbs and gutters. The DHHL and its landscape architect will continue to work with the appropriate agencies, including the County of Maui, Department of Parks and Recreation (DPR) and the DOT, along with the County of Maui's Arborist Committee and Maui County Council, to obtain the necessary approvals for DHHL's proposed 1:1 tree replacement to provide safe access to the DHHL residential subdivision. DHHL will

identify a suitable replacement tree option and will coordinate with the Arborist Committee and the DOT.

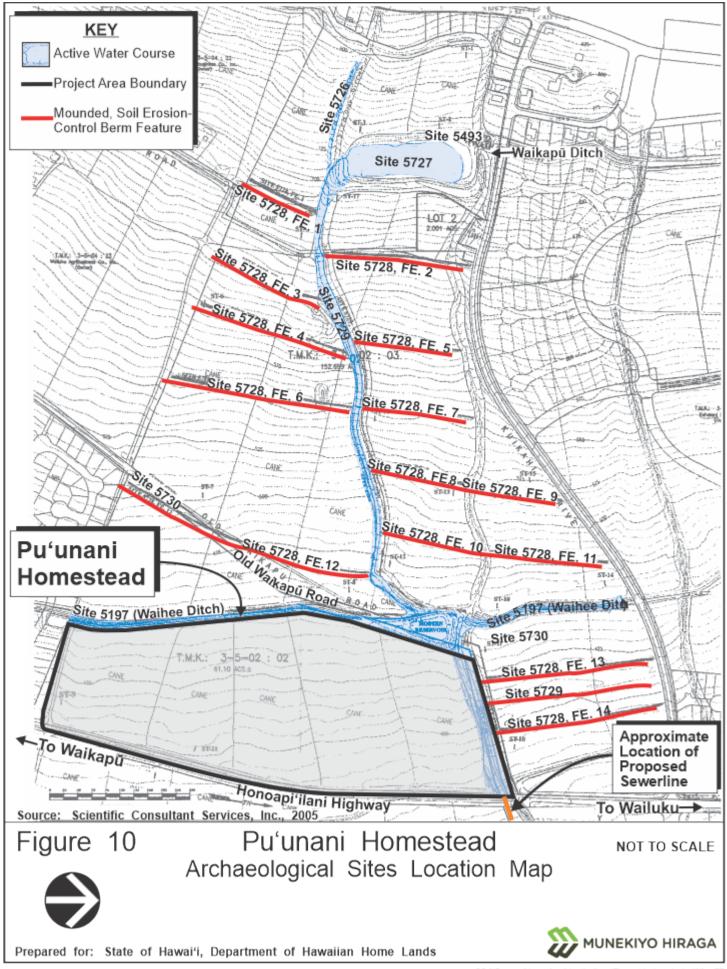
8. <u>Archaeological Resources</u>

a. <u>Existing Conditions</u>

A previous Archaeological Inventory Survey (AIS) was conducted in 2005 for two (2) parcels totaling 215.8 acres (TMK Nos. (2)3-5-002:002 and 003), which included the 47.4-acre project site. The AIS was conducted by Scientific Consultant Services, Inc. (SCS) and was comprosed of historic background settlement pattern research, a complete pedestrian survey of the survey area, and subsurface testing via backhoe and reporting. The State Historic Preservation Division (SHPD) accepted the AIS by letter dated November 18, 2005. See **Appendix "D"** and **Appendix "D-1"**.

The fieldwork involved the execution of a complete pedestrian survey of the subject area, as well as lands beyond for the purpose of site inventory and limited subsurface testing to evaluate the significance of any subsurface deposits. Laboratory work consisted of analysis of any subsurface deposits found and literature research review involved a review of all previous archaeological work conducted in the surrounding area.

During the field inspection, seven (7) historical sites related to the former use of the area for sugar cane cultivation were identified. The sites were determined significant under Criterion "D" as having the potential to yield information important to understanding the history of the region and were determined to be adequately documented by SHPD. Refer to Appendix "D-1". The sites included Waihee Ditch (State Site 50-50-04-5197), Waikapū Ditch (State Site 50-50-04-5493), an unnamed lesser ditch (State Site 50-50-04-5729), another unnamed lesser ditch (State Site 50-50-04-5726), a larger unnamed reservoir (State Site 50-50-04-5727), a series of 14 sugar canefield erosion-control soil berms (State Site 50-50-04-5728), and Old Waikapū Road (State Site 50-50-04-5730). All seven (7) sites are located outside of the project area. See Figure 10. These sites revealed a network of irrigation systems in the form of ditches and a reservoir, erosion-control berms, and a historic dirt road and are part of the turn-ofthe century sugar industry in Hawai'i. No burial features or human remains were identified during the pedestrian surveys or subsurface testing.



As recommended by the Cultural Impact Assessment (CIA) prepared for the project, an archaeological field inspection was conducted on August 24, 2020, consisting of a pedestrian walk-through of the site to determine if Pōhākoʻi the legendary grinding stone, was present at the site of the proposed subdivision. No discoveries were made. See **Appendix "D-2"**.

In addition, an Archaeological Assessment (AA) was prepared for the Wailuku Apartment Rental Housing Project in May 2017 (revised February 2018). See **Appendix "E"**. The investigation was conducted to determine the presence, absence, extent, and significance of surface historic properties (if present) and the potential for buried cultural remains. The assessment was comprised of a 100 percent pedestrian survey with mechanical test excavations. No historic properties were identified during the subsurface investigations. The assessment noted that these negative results may be due to the compounded disturbances across the parcel. The assessment summarized that the overall development plan for the parcel will have no effect on significant historic properties. However, the assessment noted that given that the subject parcel is in close proximity to known, unmarked traditional sand burials (east of the Wailuku Apartment Rental Housing project area), the proposed mitigation would comprise of data recovery in the form of archaeological monitoring. As such, the assessment noted that prior to the commencement of construction activities, an archaeological monitoring plan would be prepared and submitted to SHPD for review and approval. Refer to Appendix "E". Following publication of the Draft EA for the Wailuku Apartment Rental Housing Project, the SHPD accepted the AA and recommended archaeological monitoring. See Appendix "E-1".

b. <u>Potential Impacts and Mitigation Measures</u>

The previous AIS for the 47.4-acre site involved evaluation, documentation, and recordation and when necessary, limited subsurface investigation of recorded sites. Laboratory analysis was also performed, where necessary.

As noted previously, the AIS was accepted by SHPD by letter dated November 18, 2005. In their acceptance letter, SHPD concluded that no further archaeological mitigation is necessary. Refer to **Appendix "D-1"**. The project archaeologists, SCS, submitted a Section 6E, HRS form to SHPD on April 5, 2019 to reconfirm SHPD's acceptance of the previous AIS and that no further action is necessary. A copy of the Section 6E, HRS form is attached as **Appendix "F"**.

The AA for Parcel 64 was comprised of a pedestrian survey with mechanical test excavations. It was also noted that the archaeological assessment for Parcel 64 was accepted by SHPD with a recommendation for archaeological monitoring. Refer to **Appendix "E-1"**. The Applicant will coordinate with the developer of the Wailuku Apartment Rental Housing Project to ensure archaeological monitoring of the site for the proposed sewerline construction will be conducted in accordance with the accepted archaeological monitoring plan.

It is further noted that the DHHL, by letter dated March 27, 2020, requested the SHPD's reconfirmation of the previous determinations made on the AIS and AA, and that no further work was required for Parcel 2, and monitoring would be required for the limited work within Parcel 64. The SHPD provided their concurrence via return signature on the March 27, 2020 letter. See **Appendix "G"**. Although the SHPD has concurred that no further work is necessary in accordance with the findings of the previously accepted AIS, the DHHL has elected to conduct archaeological monitoring during all ground disturbance activities at the site of the proposed subdivision. As such, an Archaeological Monitoring Plan (AMP) will be prepared and the contractor, once selected, will be required to follow the provisions of the AMP.

It is further noted that although Pōhāko'i may have been relocated given the extensive agricultural clearing and landscape modifications that previously occurred in the area, future efforts to locate this important stone will be undertaken during the archaeological monitoring of the project area during future ground-altering activities.

9. <u>Cultural Resources</u>

a. <u>Existing Conditions</u>

A CIA report was prepared by Scientific Consultant Services, Inc. (SCS) in order to identify the possibility of ongoing cultural activities and resources within the project area or its vicinity, and then assessing the potential for impacts on these cultural resources. The report contains archival and documentary research involving both published and unpublished sources, including legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps; land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; and previous archaeological reports, as well as information gathered from organizations and individuals having knowledge of the project area, its cultural resources, and its practices and beliefs through

written responses to requests for information, as well as through voluntary interviews conducted. See **Appendix "H"**.

According to the CIA report, the project site is located within the Central Maui isthmus, between Wailuku and Māʻalaea. Traditionally, lands within Hawaiʻi were divided into *moku* (districts), which were then subdivided into *ahupuaʻa*, which were land divisions governed by chiefs that customarily ran from the ocean inland into the mountains. Extended household groups living within the *ahupuaʻa* were, therefore, able to harvest from both the land and the sea. *Ahupuaʻa* were further divided into *'iliʿāina* and then *moʻo ʻāina*. The project site is located within the *moku* of Wailuku, and *ahupuaʻa* of Waikapū. The *ahupuaʻa* of Waikapū was one (1) of four (4) in Wailuku, which were collectively known as "Nā Wai 'Ehā", or "the four waters", which refers to the valleys and streams in each of these *ahupuaʻa*. The Waikapū *ahupuaʻa* was once rich in taro farming with water being diverted from the stream into loʻi kalo. Refer to **Appendix "H"**.

During the mid-1800s, extreme modification to traditional land tenure occurred throughout all of the Hawaiian islands. The transition from traditional Hawaiian communal land use to private ownership and division was commonly referred to as the *Māhele* (Division). The *Māhele* of 1848 set the stage for vast changes to land holdings within the islands as it introduced the western concept of land ownership to the islands. The *Māhele* divided lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were made available and private ownership was instituted, the *makaʿainana* (commoners) were able to claim the plots on which they had been cultivating and living. The Wailuku District was declared Crown Land and numerous LCAs were awarded for Waikapū *ahupuaʿa* which reflect continued loʻi cultivation, kula lands, and house sites. Refer to **Appendix** "H".

As the sugar industry developed in the mid-1800s, sugar cane took over the traditional taro lands. Land use in the Waikapū *ahupuaʻa* in the mid-19th and early 20th century was largely devoted to the sugar industry. During the 1860s, the sugar business grew, with plantations and mills operating at Wailuku, Waiheʻe, Waikapū, and Haʻikū. Refer to **Appendix "H"**.

Wahi pana can be defined as celebrated or noted places or locations. There are several legends associated with the meaning of the name Waikapū. According to several accounts, the name Waikapū (Water of the

Conch) refers to an ancient cave in the area where a famous conch shell (pū) was hidden until it was stolen by Puapua-lenalena (a supernatural dog). Other accounts tell of the area known as Nā Wai 'Ehā, which is renowned for the battles fought there. The name Waikapū (the water where the conch was blown) referred to a conch shell that was blown to announce the commencement of a battle. In another account, Waikapū (Forbidden Water) refers to the time Kamehameha I beached his canoes at Kalepolepo and placed a *kapu* (taboo, restriction) on the nearest stream. In addition, although it has been said that Waikapū Valley contained "many temples and sites", most of their locations were not recorded. Refer to **Appendix** "H".

The consultation process for preparation of the CIA report was conducted via telephone, email, U.S. Postal Service, and in-person interviews when possible. Initial letters of inquiry were mailed between July 30, 2019 and March 31, 2020 to 25 individuals to obtain information pertaining to cultural resources and traditional cultural practices conducted within the project area or within Waikapū Ahupua'a. Follow-up letters of inquiry were also emailed and sent via U.S. Postal Service between August 30, 2019 and December 12, 2019. In addition, a CIA Notice was also published in the September 2019 issue of *Ka Wai Ola*, the newsletter of the Office of Hawaiian Affairs (OHA) requesting information.

No responses were received as a result of the posting in the OHA newsletter. In addition, 12 responses to the request for information were received via email, and two (2) telephone interviews were conducted. A summary of the interviews is included in the CIA prepared for the project. See **Appendix "H"**. The responses and interviews allow for an assessment of the potential effects on cultural resources in the project area, and recommendations for mitigation of these effects.

The report noted that the findings of the current CIA did not identify "valued cultural and natural resources" specifically within the project area for the Pu'unani Homestead Subdivision project. However, the CIA did note that there are ongoing traditional cultural practices, consisting primarily of taro cultivation, within the Waikapū Ahupua'a on lands near the site of the proposed subdivision which may be impacted by the proposed development. In addition, the consultation process identified a unique cultural property, the grinding stone known as Pōhāko'i, which may be in close proximity to the northwestern boundary of the proposed subdivision, however, the CIA noted that the exact location of Pōhāko'i is unknown and it is not known if Pōhāko'i remains in situ or if it has been previously relocated. Refer to **Appendix "H"**.

The CIA also noted that findings of previous archaeological studies conducted in the vicinity and the traditional and historic background research indicate Waikapū Ahupua'a was not only an area rich with traditional and customary practices during the pre-Contact and early-Historic Periods, it was renowned for its extensive lo'i fields. One (1) traditional practitioner and lineal descendant is currently living within the Waikapū Ahupua'a on land near the proposed subdivision area and actively cultivates wet land taro on their property. The CIA noted that water is integral for any agricultural pursuit and is a necessary resource for the traditional practice of wet land taro. As such, there is the potential for the proposed Pu'unani Homestead Subdivision project to impact the Wailuku/Waikapū aquifer systems and surface water systems known as Nā Wai 'Ehā. Refer to **Appendix "H"**.

Because the proposed sewerline that will service the proposed subdivision will be developed on the property for the Wailuku Apartment Rental Housing Project, the CIA for the proposed Pu'unani Homestead Subdivision project also references the findings from the CIA report prepared for the Wailuku Apartment Rental Housing Project. The CIA did not identify traditional cultural practices currently conducted in or near the Wailuku Affordable Housing project area and no concerns were expressed regarding impacts to traditional cultural practices or the gathering of cultural resources. Refer to **Appendix "H"**.

b. <u>Potential Impacts and Mitigation Measures</u>

The CIA noted that based on historical research and responses received during the consultation process, it is reasonable to conclude that there is evidence of cultural practices related to Hawaiian rights related to agricultural pursuits, access to resources (i.e., water), and possibly other customary activities presently occurring in the vicinity of the proposed project area, but not specifically within the proposed project area. As such, ground altering activities associated with the proposed Pu'unani Homestead Subdivision project has the potential to impact currently conducted, traditional native Hawaiian activities. This determination has been substantiated by the cultural-historical background, the summarized results of prior archaeological studies in the project area, and in the neighboring areas, and primarily in the concerns expressed by the cultural informants during the consultation process of the CIA. Refer to **Appendix** "H".

In light of the above, the CIA provided the following recommendations:

As the location of the legendary grinding stone (Pōhākoʻi) is currently unknown, it is recommended that an archaeological field inspection be conducted by a qualified archaeologist prior to the commencement of any construction related ground altering activities in an effort to locate this cultural feature.

The CIA also noted that given the project site's proximity to sand dunes, which are known to contain pre-Contact burials, there is the potential for human burials to be present. As such, archaeological monitoring is recommended during all contstruction-related ground-altering activities. Refer to **Appendix "H"**.

As previously noted, although the SHPD has concurred that no further work is necessary in accordance with the findings of the previously accepted AIS, the DHHL has elected to conduct archaeological monitoring during all ground disturbance activities at the site of the proposed subdivision. As such, an AMP will be prepared and the contractor once selected will be required to follow the provisions of the AMP.

Also as previously discussed, an archaeological field inspection was conducted on August 24, 2020, consisting of a pedestrian walk-through of the site to determine if Pōhākoʻi was present at the site of the proposed subdivision. No discoveries were made. Refer to **Appendix "D-2"**. As mentioned previously, although Pōhākoʻi may have been relocated given the extensive agricultural clearing and landscape modifications that previously occurred in the area, future efforts to determine if the important stone is located in the project boundaries will be undertaken during the archaeological monitoring during future ground-altering activities.

10. Air Quality

a. Existing Conditions

There are no point sources of airborne emissions in the immediate vicinity of the project site. Although minimal, airborne pollutants are largely attributable to vehicular traffic on the surrounding roadways. Windblown dust from surrounding fallow agricultural lands is another source of indirect emissions in the region. These sources, however, are intermittent and prevailing winds quickly disperse the particulates generated by these temporary sources. Overall, the air quality in the region is considered good.

b. <u>Potential Impacts and Mitigation Measures</u>

In the short term, construction-related activities for the proposed project will be the primary source of airborne pollutants affecting the surrounding area. Site work involving clearing, grubbing, and grading operations will generate fugitive dust. Appropriate BMPs, such as periodic watering of exposed surfaces, installation of dust screens, and regular maintenance of construction equipment will be utilized to minimize air quality impacts associated with project construction.

The proposed project is not an action which will generate adverse long-term air quality impacts. In the long term, the proposed project will provide homesteading opportunities for DHHL beneficiaries. The proposed residential lots are not anticipated to have an adverse effect upon air quality.

11. <u>Greenhouse Gas Considerations</u>

a. **Existing Conditions**

Greenhouse gases (GHG) (carbon dioxide, methane, nitrous oxide and fluorinated gases) trap heat in the earth's atmosphere. In the context of climate and ocean warming, increases in levels of atmospheric GHG have been attributed to human activity (IPCC, 2017). Within the State of Hawai'i, the energy sector (including fossil fuel burning to produce electricity, transportation, waste incineration, and natural gas systems) is identified as the source of 89.7 percent of GHG emissions (Hawai'i Department of Health, 2019). Other sources of GHG emissions include industrial facilities, agriculture and forestry, and waste treatment such as landfills, composting, and wastewater treatment.

The Federal Greenhouse Gas Reporting Program (40 CFR Part 98) requires mandatory reporting of GHG emissions from sources that emit 25,000 metric tons or more of carbon dioxide equivalent (CO₂ EQ) per year in the United States. Categories of use which are generally associated with this level of reporting include power plants, petroleum and natural gas systems, refineries, and other heavy manufacturing processes. On Maui, the facilities operating at or above the 25,000 metric ton level include Hawaiian Electric Company's Kahului Power Plant, Maalaea Power Plant, and the Central Maui Landfill (United States Environmental Protection Agency (U.S. EPA) 2017).

b. <u>Potential Impacts and Mitigation Measures</u>

The proposed action involves the construction of 161 residential lots (137 turn-key single-family homes and 24 vacant improved single-family lots). In the context of the GHG Reporting Program (25,000 metric tons of CO₂ EQ), the relative effects of GHG emissions (CO₂ EQ) from the project are not considered significant.

The average energy use per household in Maui County³ is 581 kilowatt hours (kWh) per month (Hawai'i Energy, 2017). This corresponds roughly to production of 4.9 metric tons CO_2 EQ per year (U.S. EPA, 2018). As such, the GHG emissions associated with the proposed development of 161 single-family residences is anticipated to be on the order of 788.9 metric tons CO_2 EQ per year.

The proposed action will involve short-term consumption of fuel for construction equipment, vehicles, and machinery during the construction period. This usage is not anticipated to be substantial or excessive within the context of the action's benefits over the lifetime of the project. After the project is completed, use of the proposed facilities may result in increased motor vehicle traffic in the project area. Statewide, vehicle-related fuel consumption for commercial, industrial, and residential sectors is a less significant contributor to total GHG emissions than emissions attributable to electricity consumption (Hawai'i Department of Health, 2019), and this contribution is anticipated to continue to decrease due to ongoing reduction in vehicle emission standards as well as increased utilization of hybrid and electric vehicles.

The proposed action will employ energy saving measures such as installation of solar water heating systems, which would be considered mitigating factors in reducing GHG emissions. Furthermore, the State of Hawai'i has set a renewable energy portfolio standard of 100 percent (100%) by the year 2045 (Section 269-92, HRS) to minimize dependence on fossil fuel combustion, and has declared a policy to reduce GHG emissions to 1990 levels by the year 2020 (Act 234, Session Laws of Hawai'i, 2007). The State is on track to meet these goals (Hawai'i Department of Health, 2019; Hawai'i PUC, 2018), which will result in a

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³ Honolulu = 561 kWh/month; Hawaiʻi = 505 kWh/month. These are county-wide averages. If the proposed residences incorporate solar photovoltaic energy generation or other sustainable elements which would reduce energy consumption below average levels, this can be addressed as a mitigating factor.

reduction of GHG impact of the proposed action along with reductions of GHG emissions statewide.

The proposed action is not anticipated to create significant direct and indirect foreseeable GHG emissions. This action does not fall within the threshold of mandatory GHG reporting.

12. Noise Quality

a. **Existing Conditions**

There are no fixed noise generators in the vicinity of the project site. Noise generated in the area is primarily attributed to vehicular traffic along the surrounding roadways, including Honoapi'ilani Highway which lies directly to the east of the site of the proposed subdivision. Overall, the noise level in the region is fairly low.

b. Potential Impacts and Mitigation Measures

Ambient noise conditions may be temporarily affected by construction activities. Heavy construction machinery, such as backhoes, dump trucks, front-end loaders, and material-transport vehicles are anticipated to be the dominant noise-generating sources during the construction period of the proposed project.

In order to mitigate noise impacts, construction activities are anticipated to be limited to daylight work hours. Project-related noise will be minimized through use of applicable BMPs, such as regular maintenance of construction equipment and use of properly muffled equipment. In the long term, the proposed project is not anticipated to have adverse noise quality impacts.

13. <u>Hazardous Materials</u>

a. <u>Existing Conditions</u>

The project site is former agricultural lands. Agricultural production has since ceased on the property, and the site is used as intermittent grazing. Due to its former agricultural use, there may be the potential for residual hazardous materials, such as pesticides. As such, a Phase I Environmental Site Assessment (ESA) was conducted for the site of the proposed subdivision by Bureau Veritas North America, Inc. in 2018. The ESA reported that the subject property was developed as agricultural land from at least 1950 until circa 2009, when the property was used as pasture land.

The ESA also reported that the adjoining properties were also developed as agricultural land from at least 1950 until sometime prior to 2009. The north and west adjoining properties have been in use as pasture land since 2009. See **Appendix "I"**.

b. Potential Impacts and Proposed Mitigation Measures

The ESA was conducted to determine if the site of the proposed subdivision may have residual hazardous materials resulting from the past site activities, in particular agricultural cultivation. Refer to **Appendix "I"**.

Site reconnaissance and records review for the subject property and the surrounding area was conducted and revealed no evidence of recognized environmental conditions, as defined by American Society for Testing and Materials (ASTM), in connection with the property. The ESA noted that agricultural chemicals were not detected at or above regulatory levels. Refer to **Appendix "I"**.

While fertilizers, herbicides, and pesticides may be used to help establish new plantings, the intent is to limit their use to the extent practicable.

Based on the findings of the ESA, there are no hazardous or regulated substances on the project site and, as such, no adverse impacts are anticipated.

14. Scenic and Open Space Resources

a. <u>Existing Conditions</u>

The West Maui Mountains to the west, Haleakalā to the east and Kahului Bay and the Pacific Ocean to the northeast define the scenic resources in Central Maui.

The project site is surrounded by fallow former agricultural lands and residential developments similar in scale to the proposed project.

b. <u>Potential Impacts and Mitigation Measures</u>

The proposed dwelling designs are consistent with other similar residential developments in the vicinity of the proposed project and will generally conform to the Maui County Zoning Code for single-family structures. The subdivision lots will be improved to include graded pads and utilities stubbed to each lot. It is noted that electrical utility lines will be overhead and not placed underground. In addition, a landscaped buffer will be developed at the roadway frontage along Honoapi'ilani Highway, providing

an open space setback from the roadway to the house lots. It is not anticipated that the project will have an adverse impact on scenic and open space resources.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Land Use and Community Character

a. Existing Conditions

From a regional perspective the project site is located immediately south of the urbanized area of Wailuku Town and immediately north of Waikapū Town. Wailuku Town serves as the commercial and governmental center of the region. The project site is surrounded by fallow former agricultural lands, and other residential developments of the same nature as the proposed project.

b. <u>Potential Impacts and Proposed Mitigation Measures</u>

The project is compatible with the adjacent residential uses and community character. As such, the proposed project is in consonance with the current land use and community character of the area.

2. **Population**

a. Existing Conditions

The population of the island of Maui has exhibited relatively strong growth over the past decade. According to the U.S. Census, the resident population of the island in 2010 was 144,444, an increase of 22.8 percent from the 2000 population of 117,644 (2000 and 2010 Census). The population of Maui County is projected to increase to 189,947 by the year 2030 (Maui County Data Book, 2018).

The project area is located in the Central Maui region of the island. Since 2000, the resident population in the Wailuku-Kahului region has increased by 31.2 percent from 41,503 to approximately 54,433 in 2010 (2000 and 2010 Census). The Wailuku-Kahului region is also expected to grow to 64,853 by 2030 (County of Maui, 2012).

b. <u>Potential Impacts and Proposed Mitigation Measures</u>

The proposed project involves developing needed new residences for DHHL beneficiaries in the growing Central Maui region. In the context of the County of Maui's population projections through the year 2030, the

proposed project is not anticipated to significantly alter population trends. The proposed project is not anticipated to result in adverse impacts on the region's or island's population parameters. It is noted that known housing development proposals by others within the Central Maui region will contribute to meeting the island's housing needs. Collectively, all projects, whether they be in Central Maui, South Maui, or West Maui, are considered complementary to addressing Maui's housing shortage. Although the proposed project will benefit Native Hawaiian beneficiaries of the DHHL specifically, the DHHL believes that all providers of new housing share the common goal of improving life quality on Maui.

3. <u>Economy</u>

a. **Existing Conditions**

The economy of Maui is heavily dependent upon the visitor industry. Many of the hotel and resort amenities are in South Maui and West Maui, with non-resort, smaller hotels located in Central Maui.

The economy of the Wailuku region is anchored by government services, with County and State agency offices occupying the civic center portion of town, near the High Street-Main Street intersection. With access to government offices, professional services such as engineering, architectural, and accounting offices are located nearby. Waikapū, while mainly residential in nature, also features a number of small businesses and the Maui Tropical Plantation.

Hawai'i's economy through 2019 was strong, with record-setting visitor arrivals and low unemployment. However, the COVID-19 pandemic will have far reaching impacts on the economy on Maui, in Hawai'i, and across the nation and world. Stay-at-home regulations and travel quarantines aimed to curb the spread of COVID-19 virus in Hawai'i have caused many businesses to shut down or drastically reduce operations. Unemployment claims have soared. By the end of May 2020, unemployment in the State reached 23.4 percent, compared to just 2.7 percent in February 2020 (Department of Labor and Industrial Relations, 2020).

b. <u>Potential Impacts and Mitigation Measures</u>

An Economic and Fiscal Impacts Report was prepared for the project by John Child & Company. See **Appendix "J"**. According to the report, the proposed project will have positive economic and fiscal impacts to the State of Hawai'i and County of Maui during and after construction.

The following analyses were provided as part of the Economic and Fiscal Impacts Report.

i. <u>Projected Direct, Indirect and Induced Expenditures from Land</u> <u>Development and Building Construction</u>

The proposed project will provide 161 residential lots with 137 turn-key single-family residences. The remainder of the lots will be lessee-built. According to the report, the direct and indirect and induced expenditures total \$147,120,000 over the anticipated construction period of five (5) years.

ii. Projected New Jobs and Employment Income

As reported by John Child & Company, 634 jobs, including full-time and part-time wage and salary jobs, would be created during the construction period. These jobs are projected to result in additional employment income of approximately \$45.5 million. This represents a positive impact on the construction-related job market given the current unemployment rates resulting from the COVID-19 pandemic.

iii. Fiscal Impacts to the State of Hawaii

According to John Child & Company's report, the fiscal impacts to the State of Hawai'i include revenue from taxes and impact fees (i.e., Department of Education (DOE) school impact fees) and costs associated with additional services, if any, to be provided.

The report further noted that the proposed project will result in increased general excise and income tax revenues to the State of Hawai'i. Based on the anticipated land and building construction expenditures, State tax revenues are projected to increase by approximately \$8.93 million as a result of the proposed new construction. It was also noted that the State would receive revenue from the DOE school impact fees, which are payable at the time of building permits for the homes. Based on the foregoing, the DOE may receive school impact fees totaling approximately \$870,000. In total, the proposed project is anticipated to generate an additional \$9.8 million in tax revenues and impact fees for the State of Hawai'i.

iv. Fiscal Impacts to the County of Maui

According to John Child & Company's report, the fiscal impacts to the County of Maui include revenue from impact fees (i.e. water and wastewater impact fees) and the additional property taxes the property will generate and the cost, if any, to provide any additional services.

The report stated that the County of Maui would receive revenue from wastewater assessment and water system development fees. According to the report, the assessment and development fees are anticipated to total approximately \$2.25 million.

The Hawaiian Homes Commission Act (HHCA) provides a seven-year property tax exemption to DHHL lessees. As such, the report noted that the project will generate additional property tax revenues in the eighth year after each home is constructed. After construction of all homes, the tax assessed value per property is projected based on the average home sale price of approximately \$359,000, less homeowner exemption of \$200,000. Without including any other exemptions, the net taxable value would average at approximately \$159,000. The report noted that the net taxable value multiplied by the current \$1,000 for the 161 homes could result in increased property tax revenues of approximately \$74,000 annually.

The report noted that the development is projected to generate an additional \$2.33 million in tax revenues and impact fees for the County.

As noted above, the proposed project will generate both short-term and long-term benefits to the economy, including to both the State and County governments. Refer to **Appendix "J"**.

4. Housing

a. Existing Conditions

The mission of the DHHL is to effectively manage the Hawaiian Home Lands trust and to develop and deliver land to Native Hawaiians. The HHCA, codified within the constitution of the State of Hawai'i, states as its purpose:

- (a) The Congress of the United States and the State of Hawaii declare that the policy of this Act is to enable native Hawaiians to return to their lands in order to fully support self-sufficiency for native Hawaiians and the self-determination of native Hawaiians in the administration of this Act, and the preservation of the values, traditions, and culture of native Hawaiians.
- (b) The principal purposes of this Act include but are not limited to:
 - (1) Establishing a permanent land base for the benefit and use of native Hawaiians, upon which they may live, farm, ranch, and otherwise engage in commercial or industrial or any other activities as authorized in this Act:
 - (2) Placing native Hawaiians on the lands set aside under this Act in a prompt and efficient manner and assuring long-term tenancy to beneficiaries of this Act and their successors;
 - (3) Preventing alienation of the fee title to the lands set aside under this Act so that these lands will always be held in trust for continued use by native Hawaiians in perpetuity;

Similarly, the DHHL General Plan, adopted in 2002, lists as goals under the Residential Uses objective:

- Substantially increase the number of residential homesteads awarded each year.
- Provide a mix of housing opportunities that reflect the needs and desires of native Hawaiian beneficiaries.
- Provide residential homesteads, financing, and other housing opportunities, especially to those most in need.

b. Potential Impacts

The proposed project will provide a maximum of 161 residential lots in Waikapū for DHHL beneficiaries. DHHL currently has a waitlist of approximately 3,819 applicants on the Maui Residential Waiting List and 272 on the Waiohuli Undivided Interest List. In this regard, the proposed project is in support of the stated purposes of the HHCA, as well as goals outlined in the DHHL General Plan. As previously discussed, it is noted that known housing development proposals by others within the Central Maui

region will contribute to meeting the island's housing needs. Collectively, all projects, whether they be in Central Maui, South Maui, or West Maui, are considered complementary to addressing Maui's housing shortage. Although the proposed project will benefit Native Hawaiian beneficiaries of the DHHL specifically, the DHHL believes that all providers of new housing share the common goal of improving life quality on Maui.

C. PUBLIC SERVICES

1. Solid Waste Collection and Disposal

a. **Existing Conditions**

Single-family residential solid waste collection service in Waikapū is provided by the County of Maui on a weekly basis. Residential solid waste collected by County crews are disposed of at the County's Central Maui Landfill located 4.0 miles southeast of the Kahului Airport. In addition to County-collected refuse, the Central Maui Landfill accepts commercial waste from private collection companies. A privately operated greenwaste recycling facility, Maui Earth Compost Company, is situated at Pulehu Road and Hansen Road, while Eko Compost is operated at the Central Maui Landfill. According to the County of Maui, the Central Maui Landfill has adequate capacity to accommodate residential and commercial waste needs through the year 2026. The County's Department of Environmental Management is currently planning to implement a processing facilities project adjacent to the landfill, which would further extend the projected capacity by an estimated 16 years. The remaining capacity estimate is based on future disposal volumes that assume significant population growth.

b. <u>Potential Impacts and Mitigation Measures</u>

Construction-related waste will be properly disposed of in accordance with policy and practices established by the Solid Waste Division to ensure that there are no adverse impacts to the County's Central Maui Landfill.

Upon completion, it is anticipated that the subdivision will be served by the County's refuse collection service. As the subdivision will be located in an area currently serviced by the County, there are no adverse impacts anticipated to the County's collection system or disposal capacities attributed to the proposed project.

2. Police, Fire, and Medical Facilities

a. Existing Conditions

Police protection for the Wailuku-Kahului region is provided by the Maui Police Department located at the Wailuku Station headquartered on Mahalani Street, approximately two (2) miles northeast of the project site. The Maui Police Department provides investigative services, uniform patrol services, technical support, and traffic services as stated in its mission to protect the residents of Maui County.

Fire prevention, protection, rescue, and emergency services for the Wailuku-Kahului region are provided by the Maui County Department of Fire and Public Safety. The department has two (2) stations to service the Wailuku-Kahului region, both in proximity of the project site. The Wailuku station is located in Wailuku town approximately 1.5 miles northeast of the project site and the Kahului station is located on Dairy Road in Kahului approximately three (3) miles southeast of the project site.

Maui Memorial Medical Center is managed by Kaiser Permanente and is the only major medical facility on the island. Acute, general, and emergency care services are provided by the 214-bed Maui Memorial Medical Center facility located on Mahalani Street, Wailuku, about two (2) miles east of the subject property.

In addition, Kaiser, Maui Medical Group, Maui Medical Clinic, and Liberty Dialysis Clinic provide health care for the island of Maui. These facilities are located in Wailuku and Kahului. Dental and other medical offices are also located within the Wailuku-Kahului region to serve its residents and visitors.

b. Potential Impacts and Mitigation Measures

The proposed project involves the proposed development of a new residential subdivision in Waikapū as well as new sewerline to service the proposed subdivision. The proposed project is located within service areas for existing police, fire, and medical facilities and is not anticipated to adversely impact these services.

3. Educational Facilities

a. <u>Existing Conditions</u>

The State DOE operates several schools in the Wailuku-Kahului region. Public school facilities within the Wailuku-Kahului District area include: two (2) high schools, Henry Perrine Baldwin High and Maui High (grades 9 to 12); two (2) intermediate schools, lao Intermediate and Maui Waena Intermediate School (grades 6 to 8); and six (6) elementary schools (Grades K to 5), Wailuku Elementary, Waihe'e Elementary, Pōmaika'i Elementary, Kahului Elementary, Lihikai Elementary, and Pu'u Kukui Elementary School.

The area is also served by several privately operated schools providing education for elementary, intermediate, and high school students. Privately operated schools serving the Wailuku-Kahului region include St. Anthony School (grades K to 12), Kaahumanu Hou Christian School (grades K to 12), Emmanuel Lutheran School (K to 6), and Maui Adventist School (grades 1 to 8).

The DOE's 2019 to 2020 school enrollment for their Central Maui schools are presented in **Table 1**.

Table 1. 2019 to 2020 DOE School Enrollment

School	Enrollment
Baldwin High School	1,304
Iao Intermediate School	1,004
Kahului Elementary School	933
Lihikai Elementary School	846
Maui High School	2,082
Maui Waena Intermediate School	1,162
Pōmaikai Elementary School	613
Pu'u Kukui Elementary School	762
Waihe'e Elementary School	581
Wailuku Elementary School	638
Source: Department of Education, 2019.	•

Additionally, the University of Hawai'i Maui College is a four-year college located on Ka'ahumanu Avenue in Kahului.

b. Potential Impacts and Mitigation Measures

The proposed project entails the development of a new 161-lot residential subdivision in Waikapū. Ohana, or accessory dwelling, units will not be permitted on the 161 lots. The State law on school impact fees, Chapter

302-A, Hawai'i Revised Statutes (HRS), requires the payment of a school impact fee for a new residential development within an identified School Impact Fee District. The project will comply with the requirement for school impact fees. As part of the development of the project, the State of Hawai'i, would receive revenue from the DOE school impact fees estimated at approximately \$870,000.00. The proposed Pu'unani Homestead Subdivision is within the Central Maui School Impact District. Impact Districts are designated areas of high growth that will require new schools, or the expansion of existing schools, to accommodate increases in new families and school enrollments. As such, the impact fees paid will be allocated to school improvement projects within this district as determined by the DOE. Per these DOE requirements, it is assumed that impacts on school facilities will be mitigated with payment of the impact fees.

4. Recreational Facilities

a. **Existing Conditions**

Within the Wailuku-Kahului Community Plan Region, there are many recreational activities, including shoreline and boating activities at the Kahului Harbor and adjoining beach parks, and organized recreational activities provided/offered at County Parks. Within close proximity of the project site is Waikapū Park and Community Center. In Wailuku town are Wells Park, the Wailuku Elementary School Park, the 'Īao Valley State Park the Kehalani Mauka Park, the Velma McWayne Santos Community Center, Papohaku Park, War Memorial Athletic complex, Wailuku Little League baseball fields, the 65-acre Maui Regional Park, Maui Lani Parkway Park, Sakamoto Swimming Pool, and Keōpūolani Regional Park.

In addition, there are several golf courses in the Wailuku-Kahului region. These include the Kahili and Kamehameha Golf Courses, The Dunes at Maui Lani Golf Course, and the Maui County-owned Waiehu Golf Course.

b. <u>Potential Impacts and Mitigation Measures</u>

The proposed project entails the development of a new residential subdivision in Waikapū. As previously discussed, most residents are anticipated to relocate from other areas on Maui. As such, adverse impacts to recreational resources are not anticipated.

It is noted that residential subdivisions in the County of Maui are required to dedicate land for park/playground purposes, improvements to a park in the same community plan area, or payment of an in lieu fee to the County. While the DHHL recognizes the importance of recreational facilities within

neighborhoods, an analysis was undertaken to determine if a park could be reasonably accommodated within the proposed subdivision. However, the inclusion of a park would result in the loss of developable homestead lots available for DHHL beneficiaries. As the waiting lists for DHHL homestead lots are in currently the thousands, the DHHL determined that the inclusion of a park is not feasible as the mission and purpose of both the HHCA and DHHL is to provide as many homestead opportunities to beneficiaries as possible. In light of this, as the DHHL has the authority to use its lands at its discretion for providing residences of its beneficiaries, the DHHL will be exempting the project from this requirement.

D. <u>INFRASTRUCTURE</u>

1. Roadways

a. **Existing Conditions**

A Traffic Impact Analysis Report (TIAR) was prepared by Austin, Tsutsumi & Associates, Inc. for the proposed project in January 2020 and updated in August 2020 to evaluate potential traffic impacts resulting from the proposed project. See **Appendix "K"**. The project area is served by an existing roadway network which includes arterial, collector, and local roads. Access to the project site is provided by Honoapi'ilani Highway.

Major roadways in the vicinity of the project site include:

i. Honoapi'ilani Highway

Honoapi'ilani Highway is a north-south, two-lane, two-way undivided State-owned arterial highway with posted speed limits ranging between 30 miles per hour (mph) and 45 mph. Honoapi'ilani Highway begins as the continuation of South High Street near Kahookele Street and continues southward through Waikapū, Mā'alaea, and wraps around the pali to West Maui. Right-turn channelization is provided at all of its major intersections within the study area. There are paved roadway shoulders but no existing curbs, gutters, or sidewalks along the project frontage area.

ii. Ku'ikahi Drive

Kuʻikahi Drive is an east-west, two-lane, two-way undivided collector roadway with posted speed limits ranging between 25 and 30 mph. Kuʻikahi Drive begins approximately 1.2 miles west of Honoapiʻilani Highway within the Wailuku Heights subdivision and

extends eastward past Honoapi'ilani Highway, terminating where it becomes Maui Lani Parkway.

iii. Wai'ale Road

Wai'iale Road is a north-south, two-way, two-lane, undivided collector roadway. To the north, Wai'ale Road serves as the southern connection to Lower Main Street and extends past the Maui Community Correctional Center (MCCC), Kehalani Village Center and various residential subdivisions, eventually terminating at a T-intersection with East Waikō Road. Wai'ale Road has a posted speed limit of 20 mph from Lower Main Street and transitions to 25 mph from Waiinu Road to Maui Lani Parkway/Ku'ikahi Drive and increases again to 30 mph from Maui Lani Parkway/Ku'ikahi Drive to its southern terminus at Waikō Road.

iv. East Waikō Road

East Waikō Road is an east-west, two-way, two-lane, undivided collector roadway with a posted speed limit of 20 mph in the project study area. East Waikō Road extends westward from Kuihelani Highway to Honoapi'ilani Highway where it continues as West Waikō Road within the Waikapū residential neighborhood.

The TIAR included a Level of Service (LOS) analysis for various intersections surrounding the project area. LOS is a qualitative measure used to describe the conditions of traffic flow at intersections, with values ranging from free-flow conditions (LOS A) to congested conditions (LOS F). Based on traffic count data gathered, the TIAR states that the morning peak traffic hour is between 7:00 a.m. and 8:00 a.m., while the evening peak hour is between 4:00 p.m. and 5:00 p.m. **Table 2** below lists the existing LOS for the study intersections.

Table 2. Existing Base Year Level of Service for Study Intersections

	Existing Conditions		
	AM	PM	
Intersection	LOS	LOS	
1: Wai'ale Road and Kaohu Sreet/Oluloa Drive			
NB LT/TH	F	Е	
NB RT	Α	Α	
EB LT	В	В	
EB TH/RT	В	В	
WB LT/TH/RT	В	В	

	Existing Conditions		
	AM	PM	
Interportion		1	
Intersection	LOS F*	LOS	
SB LT/TH/RT	<u> </u>	F*	
Overall	F	F	
2: Waiʻale Road and Waiinu Rd	1	•	
WB LT	F*	F*	
WB RT	С	В	
SB LT	В	В	
Overall	-	-	
3: Wai'ale Road and Olomea Street/Waimaluhia Lane			
NB LT	Α	В	
EB LT/TH	F*	F*	
EB RT	В	C	
WB LT/TH/RT	E	Ē	
SBLT	В	A	
Overall	-	-	
	-	-	
4: Wai'ale Road and Kaupo Street	^		
NB LT	A	A	
EB LT	F*	F	
EB RT	В	С	
Overall	-	-	
5: Wai'ale Road and Ku'ikahi Drive/Maui Lani Parkway			
NB LT	В	С	
NB TH/RT	С	С	
EB LT	В	В	
EB TH/RT	В	В	
WBLT	C	В	
WB TH	C	C	
	C	В	
WB RT SB LT			
	В	С	
SB TH/RT	С	С	
Overall	С	С	
6: Kamehameha Avenue and Maui Lani Parkway			
NB LT	С	С	
NB TH/RT	Е	D	
NB LT/TH/RT	-	-	
EB LT/TH/RT	F	F*	
WB LT/TH/RT	Е	F*	
SB LT	С	С	
SB TH/RT	F	F*	
SB LT/TH/RT	-	_	
Overall	Е	F	
7: Waiʻale Road and Kokololio Street			
NB LT	Α	Α	
	B	B	
EB LT		=	
EB RT	A	Α	
Overall Overall	-	-	
8: Wai'ale Road and Haawi Street	1 .	T	
NB LT	A	A	
EB LT/RT	В	В	
Overall	-	-	
9: Wai'ale Road and Nokekula Loop			
NB LT	А	Α	
EB LT/RT	В	В	
Overall	-	-	
10: Wai'ale Road and Ohana Hana Loop			
NB LT	А	А	
EB LT/RT	В	В	
LD LI/IXI	1 0	ر ا	

	Existing Con	ditions
	AM	PM
Intersection	LOS	LOS
Overall	-	-
11: East Waiko Road and Wai'ale Road		
EB LT	А	Α
SB LT/RT	С	В
Overall	-	-
12: Honoapiʻilani Highway and West Waiko Road/E	ast Waiko Road	
NB LT	A	Α
NB TH/RT	В	В
EB LT/TH	С	С
EB RT	С	С
WB LT/TH/RT	С	С
SB LT	A	Α
SB TH	A	Α
SB RT	A	A
Overall	В	В
13: Honoapi'ilani Highway and Pilikana Street		
NB LT	A	A
NB TH	A	A
EB LT	C	В
EB RT	В	В
SB TH	В	В
SB RT	A	A
Overall	В	A
14: Honoapi'ilani Highway and Ku'ikahi Drive NB LT	В	Гр
NB TH	<u>В</u> С	B C
NB RT	A	A
EBLT	C	C
EB TH	C	C
EB RT	C	C
WBLT	C	C
WB TH	C	C
WB RT	В	В
SB LT	В	В
SB TH	С	С
SB RT	В	В
Overall	С	С
15: Honoapiʻilani Highway and Kehalani Parkway	T-	
NB LT	В	В
NB TH	C	В
NB RT	A	A
EBLT	С	С
EB TH	С	С
EB RT	В	С
WB LT	C	С
WB TH WB RT	C	C
SB LT	C	В
SB TH	C	C
SB RT	A	A
Overall	C	C
16: Kuʻikahi Drive and Kehalani Village Center Drive		
NB LT/TH		_
NB RT	-	-
EBLT	A	Α
WB LT	-	-

	Existing Conditions			
	AM	PM		
Intersection	LOS	LOS		
SB LT	D	Е		
SB LT/TH	-	-		
SB RT	В	В		
Overall	-	-		
17: Honoapi'ilani Highway/Honoapi'ilani Highway and Sou	th Project Acc	ess		
NB LT	-	-		
EB LT	-	-		
EB RT	-	-		
Overall	-	-		
18: Honoapi'ilani Highway/Honoapi'ilani Highway and North Project Access				
EB RT	-	-		
Overall	-	-		
* Denotes overcapacity condition, V/C ≥ 1 Source: Austin, Tsutsumi & Associates, Inc., 2020.				

The TIAR evaluated traffic conditions at the following intersections:

(1) Wa'iale Road and Kaohu Street/Oluloa Drive

Between 7:30 a.m. and 7:50 a.m., southbound traffic was observed to queue back to near Wells Street. More critically, northbound traffic was observed to slowly progress through the intersection, spilling back at varying lengths, causing congestion that stretched back toward Kuʻikahi Drive. Northbound and southbound approaches along Waʻiale Road operate at over-capacity conditions of LOS F during the morning peak hour, and LOS E and LOS F during the evening peak hour for northbound left-turn/through movements and southbound approach, respectively.

(2) Wa'iale Road and Waiinu Road

As noted above, northbound congestion from the Wa'iale Road and Kaohu Street/Oluloa Drive intersection can spill back into this intersection during the morning peak hour. Northbound congestion is further impacted at this intersection due to a heavy northbound right-turn movement as turning vehicles slow in anticipation of the turn. Some northbound vehicles also stop within the through lane to allow southbound left-turn and westbound left-turn vehicles to turn off or onto Wa'iale Road. During the evening peak hour traffic along Wa'iale Road generally moves smoothly, but was still observed to queue along the westbound leg of Waiinu Road attributed to the gaps in northbound and southbound traffic along Wa'iale Road and the ability of vehicles to be able to turn onto Wa'iale Road.

(3) Wa'iale Road and Olomea Street

During the morning and evening peak hours, the eastbound left-turn/through movement operates at LOS F and at over-capacity. During the morning peak hour, due to northbound congestion along Wa'iale Road, some northbound vehicles were observed to stop within the through lane to allow eastbound left-turn vehicles to turn onto Wa'iale Road.

This 4-legged intersection is unconventional in that the east-leg of the intersection consists of two (2) full movement driveways separated by a utility pole. The northernmost east-leg driveway appears to be within the Maui Memorial Park property, providing access at its southwest corner of the site. The southernmost eastleg driveway services the MCCC as its sole access to Wai'ale Road. Existing vehicles currently utilize both driveways, with traffic primarily generated by the MCCC. Ideally, it would be best to remove the southernmost east-leg driveway to MCCC and have MCCC work with Maui Memorial Park to allow a shared easement access to the northernmost east-leg driveway that services Maui Memorial Park, thereby consolidating multiple turning movements at two (2) closely spaced driveways. This better lines up with the Olomea Street leg of the intersection and would remove the southbound left-turn that can queue up in the northbound left-turn lane to access MCCC using the southernmost east-leg.

(4) Wa'iale Road and Kaupo Street

Eastbound left-turn movements operate at LOS F during the morning peak hour, and LOS F and at over-capacity during the evening peak hour. Similar to the Wa'iale Road and Olomea Street intersection, observations indicated that some northbound vehicles along Wa'iale Road stopped within the through lane to allow east-bound left-turn vehicles to turn onto Wa'iale Road.

(5) Wa'iale Road and Ku'ikahi Drive/Maui Lani Parkway

All movements at this intersection operate at LOS C or better during the morning and evening peak hours. However, for a 20 to 30 minute period during the morning peak hour, vehicles were observed to queue beyond the length of the eastbound left-turn storage lane to the Kehalani Village Center, or sometimes as far back as Honoapi'ilani Highway due to existing northbound queues that spill back from Wa'iale Road into this intersection.

(6) Kamehameha Avenue and Maui Lani Parkway

The eastbound approach and southbound through/right-turn movements operate at LOS F during the morning peak hour, while the eastbound approach, westbound approach, and southbound through/right-turn movements operate at LOS F and at overcapacity during the evening peak hour due to high volumes of traffic between the Waikapū-Wailuku-Kahului regions.

(7) <u>Wai'ale Road and Kokololio Street/Haawi Street/Nokekula</u> <u>Loop/Ohana Hana Loop</u>

These are unsignalized intersections serving the Waikapū Gardens Phase I and Phase II developments. All movements at these intersections operate at LOS B or better with no significant delays.

(8) Wai'ale Road and Waiko Road

This is an unsignalized T-intersection with shared lanes on all approaches and at the southbound approach stop-controlled. All movements at this intersection operate at LOS D or better with no significant delays.

(9) Honoapi'ilani Highway and Waiko Road

This signalized intersection has exclusive left-turn lanes on the northbound and southbound approaches, and exclusive right-turn lanes on the eastbound an southbound approaches. All movements at this intersection operate at LOS C or better with no significant delays or queuing.

(10) Honoapi'ilani Highway/Pilikana Street

This signalized intersection has an exclusive left-turn lane on the northbound approach and a channelized right-turn lane on the southbound approach. All movements at this intersection operate at LOS D or better for both peak hours.

(11) Honoapi'ilani Highway and Ku'ikahi Drive

This is a signalized intersection with exclusive left-turn and right-turn lanes on all approaches. The channelized northbound right-turn movement also includes an exclusive eastbound acceleration lane. All movements at this intersection operate at LOS D or better for both peak hours.

(12) Honoapi'ilani Highway/Kehalani Parkway

All movements operate at LOS D or better during the morning and evening peak hours. For a portion of the morning peak hour, the eastbound left-turn movement operates with queues that extend to or beyond the existing left-turn storage lane, which can be attributed to school traffic from Pu'u Kukui Elementary School. In addition, northbound traffic queues along Honoapi'ilani Highway back to Kehalani Parkway were observed to primarily stem from a police officer directing traffic at Aupuni Street to service Wailuku Elementary School. The TIAR notes that if Aupuni Street were left uncontrolled, the heavy morning congestion along Honoapi'ilani Highway would likely just continue unimpeded and shift to the Main Street/High Street intersection, continuing to spill back to Kehalani Parkway.

(13) Ku'ikahi Drive and Kehalani Village Center Access

This is an unsignalized T-intersection with exclusing left-turn lanes in the eastbound and southbound directions. All movements at this intersection operate at LOS D or better for both peak hours with the exception of the southbound left-turn movement which operates at LOS E during the evening peak hour.

The TIAR utilized year 2024 as the anticipated build-out completion base year for the project. Projections for this year were based upon traffic counts, the Maui Regional Travel Demand Model growth for forecast years of 2024 and 2035, and projected traffic attributed to planned nearby developments. The resulting growth rate was approximately 1.9 percent per year. By year 2024, there are a number of known planned and proposed developments that are anticipated to add trips to the roadway network. The TIAR also took into account planned roadway projects anticipated to be completed by the base year. Although there are a number of known planned projects, only the Maui Lani Parkway and Kamehameha Avenue intersection roundabout project is anticipated to be completed by 2024, and was included in the analysis.

In consideration of the above information for base year 2024, the TIAR stated that LOS for turning movements at various intersections throughout the study area roadway network are anticipated to worsen from existing conditions. Refer to **Appendix** "**K**".

b. <u>Potential Impacts and Proposed Mitigation Measures</u>

The proposed subdivision will have two (2) access points off Honoapi'ilani Highway. The southern main access will be a full-movement "T" intersection and the northern access will be limited to right turn in, right turn out movements only.

Using the <u>Trip Generation Manual</u>, 10th <u>Edition</u> published by the Institute of Transportation Engineers, the TIAR projected vehicular trips anticipated to be generated by the build-out of the proposed project. The project is anticipated to generate 119 total vehicular trips during the morning peak hour and 161 total vehicular trips during the evening peak hour. Refer to **Appendix "K"**.

In terms of trip distribution, these added trips were distributed based on percentages derived from existing turning movement volumes entering and exiting mauka subdivisions at the Honoapi'ilani Highway and Pilikana Street and Honoapi'ilani Highway and Waiko Road intersections. Since these subdivisions are occupied and in close proximity to the proposed project, trips were distributed similar to trip patterns observed from these two (2) subdivisions. Beyond the project intersections, trips were assigned based upon existing travel patterns in the remaining study area. A portion of trips were distributed to the nearby Pu'u Kukui Elementary School and 'Tao Intermediate School based on student enrollment and population information. Turning movements were based on anticipated destinations either to commercial/business areas or back home to primary residence. The traffic generated by the project was added to the forecast base year 2024 traffic volumes within the vicinity of the project to constitute the traffic volumes for the future year 2024 traffic conditions.

The TIAR noted that upon completion of the project, all study intersections are forecasted to operate at LOS similar to base year 2024 conditions.

In addition, pedestrian and bike connectivity will be maintained along the shoulder of Honoapi'ilani Highway. Highway crossings will continue to be permitted at the existing traffic signals at Pilikana Street and Ku'ikahi Drive intersections, with no crosswalk proposed at either proposed subdivision access intersection.

Table 3 below lists the LOS for the study intersections at base year conditions and following completion of the project.

Table 3. 2024 Level of Service for Study Intersections Following Completion of Project

Completion			Future V	2024
		Sase Year 2024 Future Year 2 Conditions Condition		
			Conditions	
	AM	PM	AM	PM
Intersection	LOS	LOS	LOS	LOS
1: Wai'ale Road and Kaohu Street/Oluloa	Drive			
NB LT/TH	F*	F*	F*	F*
NB RT	Α	Α	Α	Α
EB LT	В	В	В	В
EB TH/RT	В	C	В	C
WB LT/TH/RT	В	В	В	В
SB LT/TH/RT	F*	F*	F*	F*
Overall	F	F	F	F
2: Waiʻale Road and Waiinu Road				
	F*	□*		□*
WB LT	-	F*	F*	F*
WB RT	С	C	C	C
SB LT	В	В	В	В
Overall	-	-	-	-
3: Wai'ale Road and Olomea Street/Waima	aluhia Lan	e		
NB LT	В	В	В	В
EB LT/TH	F*	F*	F*	F*
EB RT	С	F	С	F
WB LT/TH/RT	F	F	F	F
SBLT	В	В	В	В
Overall	-	-	-	-
4: Wai'ale Road and Kaupo Street				
NB LT	Α	В	Α	В
EB LT	F*	F*	F*	F*
				-
EB RT	С	С	С	С
Overall	L	-	-	-
5: Wai'ale Road and Ku'ikahi Drive/Maui L	T	_		
NB LT	С	D	С	D
NB TH/RT	С	E	D	E
EB LT	D	Е	D	F
EB TH/RT	С	D	С	D
WB LT	D	D	D	D
WB TH	D	E	Е	F
WB RT	D	D	D	D
SB LT	С	D	С	Е
SB TH/RT	D	E	D	E
Overall	D	E	D	E
6: Kamehameha Avenue and Maui Lani Pa	_	_		_
NB LT				
NB TH/RT	-	-	-	-
	-	- D	-	- D
NB LT/TH/RT	С	В	С	В
EB LT/TH/RT	С	С	C	С
WB LT/TH/RT	В	С	В	С
SB LT	-	-	-	-
SB TH/RT	-	-	-	-
SB LT/TH/RT	С	D	С	E
Overall	С	С	С	С
7: Wai'ale Road and Kokololio Street				
NB LT	٨	٨	٨	٨
	A	A	A	A
EB LT	С	С	C	C
EB RT	В	В	В	В
Overall	-	-	-	-
8: Wai'ale Road and Haawi Street				
NB LT	Α	Α	Α	Α
EB LT/RT	С	С	С	С
·				

	Base Year 2024 Conditions		Future Year 2024 Conditions	
Intersection	AM LOS	PM LOS	AM LOS	PM LOS
Overall	-	-	-	-
9: Wai'ale Road and Nokekula Loop				
NB LT	Α	Α	Α	Α
EB LT/RT	В	В	В	В
Overall	-	-	-	-
10: Wai'ale Road and Ohana Hana Loop				
NB LT	Α	Α	Α	Α
EB LT/RT	В	В	В	В
Overall	-	-	-	-
11: E Waiko Rd & Waiale Rd				
EB LT	Α	Α	Α	Α
SB LT/RT	F	E	F	E
Overall	-	-	-	-
12: Honoapi'ilani Highway and West Wai	ko Road/Ea		-	_
NB LT	A	A	A	A
NB TH/RT	В	С	В	С
EB LT/TH	C	D	C	D
EB RT	С	D	С	D
WB LT/TH/RT	D	D	D	D
SB LT	В	C	В	С
SB TH	В	В	В	В
SB RT	Α	Α	Α	Α
13: Honoapi'ilani Highway and Pilikana S NB LT		Λ.	В	۸
	В	A	В	A
NB TH EB LT	A D	A C	A D	A C
EB RT	С	C	С	C
SB TH	В	В	В	В
SB RT	A	A	A	A
Overall	B	A	В	B
14: Honoapiʻilani Highway and Kuʻikahi I			В	
NB LT	С	С	С	С
NB TH	D	D	D	D
NB RT	A	A	A	A
EB LT	D	D	D	D
EB TH	D	D	D	D
EB RT	D	D	D	D
WB LT	D	D	D	Е
WB TH	С	С	С	С
WB RT	С	С	С	С
SB LT	D	D	D	D
SB TH	С	С	С	С
SB RT	В	В	В	В
Overall	С	D	D	D
15: Honoapi'ilani Highway and Kehalani	Parkway			
NB LT	С	В	D	В
NB TH	D	С	D	С
NB RT	A	Α	A	Α
EB LT	E	С	E	С
EB TH	С	С	C	С
EB RT	С	С	С	С
WB LT	D	С	D	С
WB TH	D	D	D	D
WB RT	D	C	D	С
SB LT	C	В	C	В
SB TH	D	C	D	C
SB RT	Α	Α	Α	Α

	Base Year 2024 Conditions		Future Year 2024 Conditions	
	AM	PM	AM	PM
Intersection	LOS	LOS	LOS	LOS
Overall	D	С	D	С
16: Ku'ikahi Drive and Kehalani Village Ce	nter Dr			
NB LT/TH	F	F	F	F
NB RT	С	В	C	В
EB LT	Α	В	Α	В
WB LT	Α	Α	Α	Α
SB LT	-	-	-	-
SB LT/TH	F	F*	F	F*
SB RT	В	С	В	С
Overall	-	-	-	-
17: Honoapi'ilani Highway/Honoapi'ilani Highway and South Project Access				ss
NB LT	-	-	В	В
EB LT	-	-	E	E
EB RT	-	-	C	С
Overall	-	-	-	-
18: Honoapi'ilani Highway/Honoapi'ilani Highway and North Project Access				
EB RT	-	-	С	С
Overall	-	-	-	-
* Denotes overcapacity condition, V/C ≥ 1				
Source: Austin, Tsutsumi & Associates, Inc., 2020.				

The new right-turn in, right-turn out northern access for the proposed subdivision is anticipated to operate at LOS C for both the morning and evening peak hours. The south access is anticipated to operate acceptably at LOS D or better for the morning and evening peak hours as well, with the exception of the eastbound left-turn movement, which will operate at LOS E during the morning peak hours. All movements are anticipated to operate adequately below capacity. As such, the TIAR noted that a traffic signal is not warranted. Based on the findings of the TIAR, a median refuge lane is recommended to help reduce eastbound left-turn vehicle delays by allowing vehicles to turn onto Honoapi'ilani Highway with a two-stage approach; first into the refuge lane, then merging onto Honoapi'ilani Highway. Refer to **Appendix "K"**. In addition, the proposed road widenting lot and landscaped lot will improve sight distance requirements and safety for vehicles entering and exiting the proposed subdivision. It is noted that the TIAR was reviewed by the State DOT during the Draft EA review period. As noted in their comment letter dated June 16, 2020, the DOT does not anticipate an impact to the State highway system with the implementation of the above- noted mitigation measures. The State DOT comment letter can be found in Chapter X of this EA document.

2. Water

a. Existing Conditions

A Preliminary Engineering Report (PER) was prepared by Warren S. Unemori Engineering, Inc. for the proposed project. Refer to **Appendix** "L". According to the PER, the proposed Pu'unani Homestead Subdivision is located within the Maui County Department of Water Supply's (DWS) Central Maui water system. Water for the proposed subdivision will be supplied from the DWS' existing distribution system in Waikapū, which uses a groundwater well as its source and distributes water from an existing 1.5 million gallon (MG) capacity storage tank located along Ku'ikahi Drive at an elevation of approximately 670 feet above mean sea level (msl).

b. Potential Impacts and Mitigation Measures

Average daily water consumption by the maximum 161 single-family homes that will comprise the proposed subdivision is projected to be approximately 96,600 gallons per day (gpd). Irrigation demand for DHHL-maintained landscaped areas is estimated at 2,890 gpd. Total potable water demand for the project is projected to be 99,490 gpd. Refer to **Appendix "L"**.

According to the PER, no water source improvements are proposed with the project and the subdivision will be processed under the water source provisions for affordable housing projects present in the Department of Water Supply's Water Service Rules (Maui County Administrative Rules, Section 16-201-03(g)(1)) and Maui County Code, Section 14.12.030.F.

An 8-inch water main is proposed to be extended into the subdivision from the DWS' existing 12-inch distribution main along Old Waikapū Road. A network of 8-inch distribution mains will be installed within the subdivision and outfitted with service laterals and fire hydrants for water service and fire protection to each of the individual houselots in accordance with DWS standards. Refer to **Appendix "L"**.

According to the PER, the storage capacity needed for the subdivision pursuant to DWS standards is 149,235 gallons. DHHL is currently working with the DWS to determine the payment of fees or storage capacity improvements that will be needed to address the storage requirements for the project.

The proposed project will be assessed the water system development fee by the DWS. According to the Economic and Fiscal Impacts Report, this fee is anticipated to amount to approximately \$1,972,000. Refer to **Appendix "J".**

3. Wastewater

a. **Existing Conditions**

The parcel on which the proposed subdivision will be developed has no sewer service currently available. The Waikapū area, however, is served by the County of Maui's sewer system, which collects wastewater and conveys it to the Kahului Wastewater Reclamation Facility (KWWRF) for treatment and disposal.

The 12- and 18-inch diameter County-owned gravity sewer main located near Wai'ale Road is the closest existing sewerline to the project site. The sewerline collects wastewater from the Waikapū and Kehalani residential areas and conveys it toward Lower Main Street on its way to the KWWRF. Refer to **Appendix "L"**.

b. <u>Potential Impacts and Mitigation Measures</u>

The subdivision is expected to generate 56,350 gallons of wastewater per day. Refer to **Appendix "L"**.

According to the PER, a branching network of new gravity sewer pipes will be installed within the internal streets of the project to collect wastewater from the houselots and convey it toward the low end of the subdivision near the northeast corner along Honoapi'ilani Highway. A new 8-inch diameter, 1,700 ft. long gravity sewer main will convey the subdivision's wastewater northward along Honoapi'ilani Highway from there, then eastward under the roadway and across TMK (2)3-5-001:064 to a connection point at Wai'ale Road where the County's sewer system has sufficient capacity to accept the wastewater generated by the project. Refer to **Appendix "L"**.

The PER notes that a County of Maui sewerline project by others is currently underway to relieve a known capacity bottleneck on Lower Main Street, downstream of the project site. The sewerline project's November 2021 scheduled completion date is compatible with planned occupancy of the proposed project.

According to the PER, average daily wastewater flows received at the County's KWWRF currently measure approximately 5.6 million gallons per day (MGD) or roughly 71 percent of the plant's 7.9 MGD capacity. KWWRF's remaining treatment capacity is ample to accommodate the 0.06

MGD of wastewater estimated for the proposed project at build-out. The PER further concludes that a plant capacity upgrade is not necessary to fully occupy the proposed subdivision. Refer to **Appendix "L"**.

The proposed project will be assessed the assessment fee for facility expansion of the KWWRF, as required by Chapter 14.35 of the Maui County Code. According to the Economic and Fiscal Impacts Report prepared for the project, the wastewater assessment fee is estimated at approximately \$282,000. Refer to **Appendix "J"**. Coordination with the Department of Environmental Management (DEM), Wastewater Reclamation Division (WWRD) will be carried out during the subdivision and building permit application process to ensure wastewater capacity and that the proposed project will not adversely affect the County of Maui's wastewater collection, transmission, and treatment infrastructure.

4. <u>Drainage System</u>

a. Existing Conditions

The existing terrain at the site of the proposed subdivision slopes steadily downward across the site from west to east at a grade of 7 to 8 percent. Elevation ranges from 380 feet AMSL at the site's northeast corner to 450 feet AMSL at the southwestern side of the site. An existing drainageway (gully) runs along the site's northern border, and an irrigation ditch with maintenance access road bounds its western side.

Surface runoff generated by the undeveloped 47.4-acre project site sheet flows eastward toward Honoapi'ilani Highway, where it concentrates along the road shoulder and flows northward along the highway into the existing drainageway (gully). The runoff then passes through a drainage culvert under Honoapi'ilani Highway on its way to the Wai'ale irrigation reservoir where it is impounded. The 10-year, 1-hour peak flow rate generated by the project site in its current, undeveloped state is estimated to be 41 cubic feet per second (cfs). Refer to **Appendix "L"**.

b. Potential Impacts and Mitigation Measures

According to the PER, the proposed subdivision is expected to produce a peak runoff volume of 109 cfs from a 10-year, 1-hour storm once it has been fully developed. This represents a potential net increase of approximately 68 cfs attributable to development of the project. Refer to **Appendix "L"**.

Surface runoff generated by the roads and homes within the subdivision will be directed to drain inlets located along the internal streets. The collected runoff will then be conveyed by underground drainage pipes to a stormwater detention basin located at the northeast corner of the subdivision, which in turn, will discharge into the existing drainageway (gully) on the north side of the project site. This detention basin, whose capacity will be at least 4.2 acre-feet, will fully mitigate the expected increase in peak flow by limiting the downstream release of stormwater to a flow rate which does not exceed pre-development levels in compliance with Maui County storm drainage standards. Refer to **Appendix "L"**.

In addition, Maui County requires the implementation of water quality control measures to reduce water pollution from stormwater runoff. The PER notes that a "detention based" treatment approach will be employed to mitigate stormwater-related water pollution associated with the developed site. This will involve providing additional storage volume in the detention basin to facilitate sediment removal in addition to peak flow mitigation. According to the PER, the proposed stormwater detention basin will fully mitigate the increase in peak flow attributable to development while simultaneously providing water pollution control. According to the PER, once the detention basin is in place, the hydrologic impact on downstream properties resulting from the proposed development of Pu'unani Subdivision will be fully mitigated. Refer to **Appendix "L"**.

5. <u>Electric, Telephone, and Cable</u>

a. Existing Conditions

There are existing overhead electrical, telephone, and cable transmission lines provided by Hawaiian Electric Company, Ltd (Maui Electric), Hawaiian Telcom, and Spectrum Cable, respectively, along Honoapi'ilani Highway which are adjacent to the project site. In addition, Sandwich Isles Communications (SIC), which provides telephone and internet service to other existing DHHL projects, has an underground fiber optic trunk line located along Honoapi'ilani Highway. Refer to **Appendix "L"**.

b. Potential Impacts and Mitigation Measures

Maui Electric, Hawaiian Telcom, and Spectrum Cable (formerly Oceanic Time Warner) will be able to provide electrical, telephone, and cable television services, respectively, for the proposed project. The proposed electrical, telephone, and cable TV distribution systems to the project site will be serviced from the existing facilities along Honoapi'ilani Highway. The lines will be extended from along Honoapi'ilani Highway to provide

services to each houselot. Within the project, overhead utility lines will provide electrical, telephone, and cable television services.

According to the PER, the proposed project is estimated to add approximately 805 kW of load to Maui Electric's infrastructure. Maui Electric will install an overhead power distribution system along the proposed subdivision's streets that will include poles, anchors, lines, polemounted transformers, and street lights. Hawaiian Telcom is the closest service provider in the area capable of providing regulated telephone and internet service to the project. However, its existing telephone plant servicing the area is not sufficient to service the project, therefore, a fiber distribution hub (FDH) and fiber optic equipment would need to be installed to provide the needed telecommunication services. The FDH equipment would function as a hub for the distribution of all Hawaiian Telcom telecommunication services within the project. According to the PER, Spectrum, the regulated cable provider on Maui, who is also capable of providing telephone and internet services, will need to extend their overhead facilities across Honoapi'ilani Highway to service the project. Spectrum will install the needed cables and power supply equipment and the DHHL will be responsible for providing any other improvements required for system installation, such as riser ducts, boxes, power supply pad(s), easements and maintenance vehicle access. As SIC has an underground fiber optic trunk line along Honoapi'ilani Highway, they will be offered the opportunity to provide telephone and internet service to the project on a competitive basis with Hawaiian Telcom and Spectrum. SIC would need to design and construct an underground distribution system extending from its trunk line at its expense, and individual customers would be responsible for their monthly service fees. Refer to **Appendix "L"**.

Coordination with the above-mentioned utility service providers will continue to ensure that systems planning and design can be programmed consistent with the project development schedule.

E. <u>CUMULATIVE AND SECONDARY IMPACTS</u>

Pursuant to the Hawai'i Administrative Rules, Chapter 200, Section 11-200.1-2, entitled Environmental Impact Statement Rules, a cumulative impact means:

...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumuative impacts can result from individually minor but collectively significant actions taking place over a period of time.

"Secondary impacts" or "indirect impacts" are defined as:

...effects that are caused by the action or are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems including ecosystems.

Cumulative and secondary impacts can be viewed as actions of others that are taken because of the presence of the project. Secondary impacts from highway projects, for example, can occur because they can induce development by removing one (1) of the impediments to growth.

The project is proposed to be implemented in an area developed with residential subdivisions of a similar nature. The proposed project is not a phase of a larger action, nor does it represent a committment to such actions. Given the surrounding residential developments, significant environmental impacts are not anticipated as a result of the project. Although the proposed project requires the provision of basic infrastructure such as water and wastewater service, these requirements are not considered significant as the project will be developed within the existing service limits for these services. Further, the TIAR prepared for the project concludes that LOS at nearby intersections will operate at LOS similar to those for the base year analysis, and that the subdivision does not warrant a traffic signal at its proposed intersection with Honoapi'ilani Highway. Roadway improvements will be implemented to handle the ingress and egress for the project. As such, no cumulative impacts are anticipated as a result of the project.

Secondary impacts are those which have the potential to occur late in time or farther in distance, but are still reasonably foreseeable. They can be viewed as actions of others that are taken because of the presence of a project. The proposed project involves the development of a maximum of 161 new residential lots in Waikapū. However, as previously discussed, the lots are being provided for DHHL beneficiaries, who are anticipated to be mostly Maui residents relocating from other areas. As such, secondary impacts related to population increase in the region are not anticipated. The proposed project will be located in the midst of other similar residential subdivision developments. As previously discussed, it is noted that known housing development proposals by others within the Central Maui region will contribute to meeting the island's housing needs. Collectively, all projects, whether they be in Central Maui, South Maui, or West Maui, are considered complementary to addressing Maui's housing shortage. proposed project will benefit native Hawaiian beneficiaries of the DHHL specifically, the DHHL believes that all providers of new housing share the common goal of improving life quality on Maui. It is noted that other planned developments in the region are anticipated to contribute to traffic conditions by the time of expected buildout of the project. However, according to the TIAR, upon completion of the project, all study intersections are forecasted to operate at LOS similar to the base year 2024 conditions. In addition, the proposed project itself does not warrant any traffic improvements such as provision of a new traffic signal. Recommendations in the TIAR for roadway improvements with the development of the project included the provision of a median refuge lane to allow eastbound left-turn vehicles to turn onto Honoapi'ilani Highway with a two-stage storage approach. Refer to **Appendix "K"**. As such, given the surrounding development, significant environmental impacts are not anticipated as a result of the project. Therefore, with the proposed mitigation measures, the project is not anticipated to result in significant adverse secondary impacts.

RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS



III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

This section discusses the relationship between the proposed action and State and County land use plans, policies, and controls for the Central Maui region.

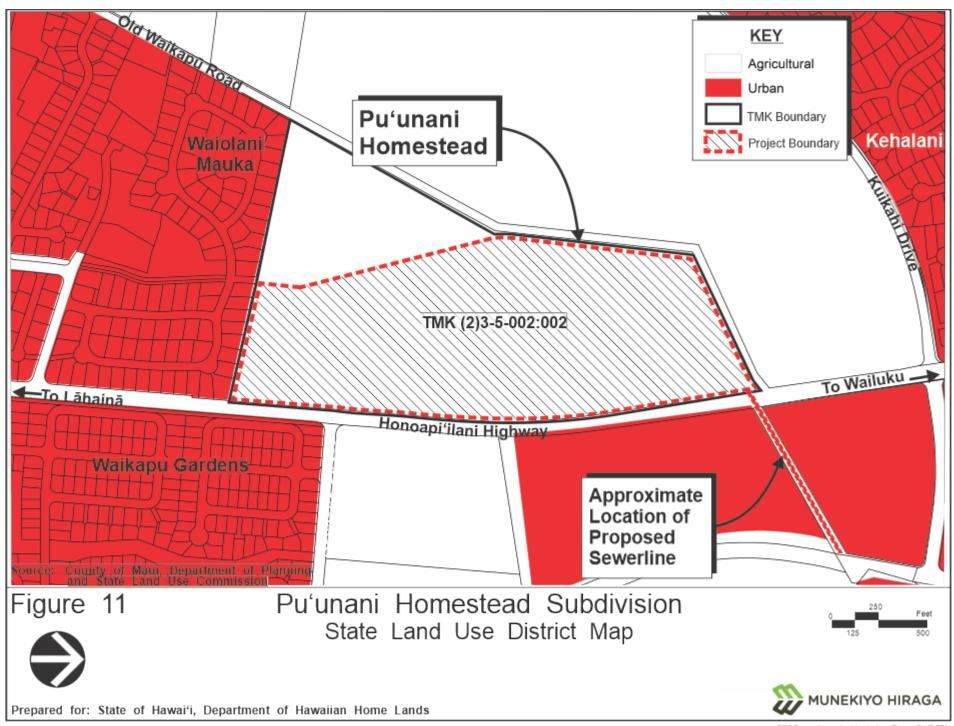
A. STATE LAND USE DISTRICTS

Pursuant to Chapter 205, Hawai'i Revised Statutes (HRS), all lands in the State have been placed into one (1) of four (4) major land use districts by the State Land Use Commission. These land use districts are designated "Urban", "Rural", "Agricultural", and "Conservation". The 47.4-acre project site is located within the "Agricultural" district. See Figure 11. However, the lands on which the proposed project will be developed are under the jurisdiction of the Department of Hawaiian Home Lands (DHHL). Section B below, pertaining to the DHHL planning system, discusses DHHL's development authority over their lands as established by the Hawaiian Homes Commission Act (HHCA). The HHCA codified within the constitution of the State of Hawai'i, vests onto DHHL the authority to use its lands at its discretion. Specifically, HHCA Section 204, states that "all available lands shall immediately assume the status of Hawaiian home lands and be under the control of the department to be used and disposed of in accordance with the provisions of this Act". The above-noted provision grants DHHL the authority to proceed with the project without the lands being fully entitled for residential use. It is also noted that the site of the proposed sewerline installation is designated for "Urban" use by the State Land Use Commission. Refer to Figure 11.

B. <u>DEPARTMENT OF HAWAIIAN HOME LANDS PLANNING SYSTEM</u>

The mission of the DHHL is to effectively manage the Hawaiian home lands trust and to develop and deliver land to Native Hawaiians. The HHCA, codified within the constitution of the State of Hawai'i, vests onto the DHHL the authority to use its lands at its discretion. Specifically, HHCA Section 204 states, "all available lands shall immediately assume the status of hawaiian home lands and be under the control of the department to be used and disposed of in accordance with the provisions of this Act".

As such, the DHHL has implemented its own planning system consisting of a general plan, island plans, community-specific regional plans, project-specific program plans, and special area plans to guide its development of its lands. Below is a discussion of the project's consistency with the DHHL planning system.



1. General Plan

The DHHL General Plan was adopted by the Hawaiian Homes Commission (HHC) in February 2002. It outlines the DHHL's goals and objectives for land use planning, residential uses, agricultural and pastoral uses, water resources, land and resource management, economic development, and building healthy communities. The proposed project is in consonance with the following goals and objectives of the DHHL General Plan.

LAND USE PLANNING

Goals

- Utilize Hawaiian Home Land for uses moat appropriate to meet the needs and desires of the beneficiary population.
- Encourage a balanced pattern of growth into urban and rural growth centers.
- Develop livable, sustainable communities that provide space for or access to the amenities that serve the daily needs of its residents.

Objectives

- Direct urban growth to priority development areas based on infrastructure availability, feasible site conditions, beneficiary preferences, and job opportunities.
- Consider opportunities to acquire or exchange lands best suited for purposes of the Hawaiian Homes Commission Act.

<u>Discussion and Response</u>: The proposed project involves developing needed additional residences in a developed area of Central Maui for Native Hawaiian beneficiaries.

RESIDENTIAL USES

Goals

- Substantially increase the number of residential homesteads awarded each year.
- Provide a mix of housing opportunities that reflect the needs and desires of native Hawaiian beneficiaries.
- Provide residential homesteads, financing, and other housing opportunities, especially to those most in need.

Objectives

- Provide a variety of residential types to meet the needs of beneficiaries in terms of construction procedures (owner-builder, turnkey, self-help), types of housing units (single-family, multifamily, kupuna housing, rental etc.) and financing.
- Ensure the availability of housing with a range of types and affordability to accommodate persons and families of all income levels and in locations that are convenient to employment and quality public and private facilities.

<u>Discussion and Response</u>: The proposed project increases the residential unit availability on Maui Island for Native Hawaiian beneficiaries, in an area close to employment centers, medical facilities, and commercial centers.

2. <u>Maui Island Plan</u>

The DHHL Maui Island Plan (MIP) was adopted in 2004 and serves as a comprehensive resource for planning and managing the Maui Island lands and establishes land use designations to encourage orderly social, physical, and economic development. Because the lands on which the proposed subdivision will be developed were recently acquired by the DHHL, they are not yet designated by the MIP for a specific use. Acquiring these lands is consistent with a residential goal of the DHHL MIP to secure additional lands in Central Maui to meet the beneficiary demand for residential homesteads.

The MIP discusses the General Plan's goals of increasing the delivery of residential homesteads to beneficiaries each year. The proposed project is in support of these goals. The MIP also provides data from a beneficiary survey conducted in 2003 to assess the preferences of DHHL beneficiaries on Maui. The results of the survey show that most beneficiaries prefer an award of improved land with a turnkey single-family house on it. In addition, almost 900 beneficiaries indicated a preference of the Wailuku area in terms of award location. The proposed project is in line with beneficiary preferences as discussed in the MIP.

C. HAWAI'I STATE PLAN

Chapter 226, HRS, also known as the Hawai'i State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. The Plan consists of three (3) parts. Part I includes the Overall Theme, Goals, Objectives, and Policies; Part II includes Planning, Coordination, and Implementation; and Part III establishes Priority Guidelines. Part II of the State Plan covers its administrative structure and implementation process. An analysis of the

project's applicability to Part I and Part III of the Hawai'i State Plan is provided in **Appendix** "M".

The overall theme of the Hawai'i State Plan is governed by the following general principles.

- 1. Individual and family self-sufficiency
- 2. Social and economic mobility
- 3. Community or social well-being

In consonance with the foregoing principles, the Hawai'i State Plan identifies three (3) clarifying goals:

- 1. A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i's present and future generations.
- 2. A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- 3. Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life.

This section of the environmental assessment examines the applicability of the proposed action as it relates to the objectives, policies, and priority guidelines of the Hawai'i State Plan, as set forth in HRS Sections 226-5 through 226-27.

A summary of the project's relationship to the Hawai'i State Plan, as detailed in **Appendix** "**M**" is provided below. The methodology for the analysis involves examining the project's applicability to the Hawai'i State Plan's goals, objectives, and policies. "Applicability" refers to a project's need, purpose and effects, and how these advance or promote a particular set of goals, objectives and priority guidelines. In assessing the relationship between a proposed action and the Hawai'i State Plan, an action may be categorized in one of the following groups:

1. <u>Directly applicable</u>: the action and its potential effects directly advances or promotes the objective, policy or priority guideline.

Example: A county project to develop a new water source and related transmission facilities would be directly applicable to the objectives and policies for Facility Systems-Water (HRS 226-16) which states" (5) Support water supply services to areas experiencing critical water problems.

2. <u>Indirectly applicable</u>: the action and its potential effects indirectly supports or advances the objective, policy or priority guideline.

Example: The county water source project cited above supports other related objectives and policies for the economy (HRS 226-6, General), which, by example, states: (9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives. In this case, the principle purpose of the project was not to create new construction activities, but nonetheless, supports this policy by creating temporary construction activity during the implementation of the project. In this instance, the proposed action may be deemed to be indirectly applicable to the objective and policy of the Hawai'i State Plan.

3. **Not applicable**: the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Hawai'i State Plan.

Example: That same county water source improvement project referenced above, may not have direct or indirect linkage to objectives and policies for the economy-Federal Expenditures (HRS 226-9) which states: (1) Encourage the sustained flow of federal expenditures in Hawaii that generates long-term government civilian employment. From the standpoint of the agency proposing the water system improvement, and assuming no Federal Funding for the project, there is an unlikely intent that the proposed water source project would be connected to or reliant upon the foregoing policy. Hence, from the standpoint judiciously applied policy analysis, the proposed action would be considered not applicable to the policy.

In general, a proposed action's applicability to the objectives, policies and priority guidelines of the Hawai'i State Plan is judged on the basis of the action's direct or indirect relationship to the respective objectives, policies and priority directions. It is recognized that the categorization of "applicability" is subject to interpretation and should be appropriately considered in the context of local and regional conditions.

The assessment presented below summarizes the objective(s) for each policy/planning category of the Hawai'i State Plan, followed by a response which consolidates the assessments provided in **Appendix "M"**. The responses examines whether the proposed action is directly applicable, indirectly applicable or not applicable to the respective Hawai'i State Plan objectives, policies and priority guidelines.

HRS 226-5 Objective and policies for population

The Hawaii State Plan's objective for population is to guide population growth to be consistent with the achievement of physical, economic, and social objectives of HRS 226.

Response: The proposed project indirectly supports the objectives and policies for population as it will be implemented in a developed area in Central Maui,

in close proximity to existing government, business, and commercial destinations at Wailuku and Kahului, thus providing employment opportunities for residents of the project.

HRS 226-6 Objectives and policies for the economy--in general

In summary, planning for the State's economy in general shall be directed to increased and diversified employment, income and job choice opportunities, and a growing and diversified economic base.

Response:

The proposed action indirectly supports the general objectives and policies for the economy by supporting design and construction activity which contributes to increased employment opportunities, job choices, and living standards. Businesses positively affected by the project are those which support design and construction such as architects and engineers, material suppliers, equipment rental companies, and landscape companies.

HRS 226-7 Objectives and Policies for the economy—agriculture

The objectives for agriculture seek to sustain the viability of sugar and pineapple industries, ensure growth and development of diversified agriculture, and ensure that the agriculture industry continues as an essential component of the State's well-being.

Response:

The proposed action does not directly or indirectly affect the objectives for agriculture. As previously discussed, the proposed project will be developed on lands designated for agriculture use. Although designated for agriculture, the lands have not been in cultivation for over a decade, aside from intermittent cattle grazing. In the context of the amount of viable agriculture lands on the island of Maui, implementation of the proposed action is not considered to adversely affect agricultural productivity on Maui. In addition, it is noted that the proposed action will be located adjacent to existing, similarly scaled residential subdivisions.

HRS 226-8 Objective and policies for the economy—visitor industry

The visitor industry objective recognizes that the visitor industry constitutes a major component of Hawaii's steady economic growth.

Response:

The proposed action is not directly or indirectly applicable to the objective and policies for the visitor industry. The proposed action has no implications for enhancement or growth of the visitor industry.

HRS 226-9 Objective and policies for the economy—federal expenditures

This objective seeks a stable federal investment base as an integral component of Hawaii's economy.

Response:

The proposed action is not reliant on federal funding, and does not directly or indirectly advance the objective and policies for strengthening or increasing federal expenditures for the betterment of Hawai'i's economy.

HRS 226-10 Objective and policies for the economy—potential growth and innovative activities

The objective for potential growth and innovative activities is directed towards the development and expansion of the economy to increase and diversify Hawaii's economic base.

Response:

As a residential project, the proposed action does not directly or indirectly affect the development and expansion of innovative activities to increase and diversify Hawai'i's economic base.

HRS 226-10.5 Objectives and policies for the economy—information industry

The objective for the information industry recognizes that broadband and wireless communication capability and infrastructure are foundations for an innovative economy which will position Hawaii as a leader in this field in the Pacific region.

Response:

The proposed action does not directly or indirectly affect Hawai'i's capacity to be a leader in the broadband and wireless communications industries, nor does it affect these innovative industries in advancing Hawai'i's economic position in the Pacific.

HRS 226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources

The objectives for land-based, shoreline, and marine resources seeks the prudent use of land-based, shoreline, and marine resources, and the effective protection of Hawaii's unique and fragile environmental resources.

Response:

The proposed project will utilize Best Management Practices (BMPs) to ensure that natural resources such as the coastal environment is not impacted by construction activities. The use of BMPs also ensures compatibility between land-based and water-based functions, resources, and ecological systems. The biological resources study conducted as part of the environmental review process represents an effort to protect any rare and endangered plant_and animal species, and their habitats native to Hawai'i that may be present in the vicinity of the proposed action.

HRS 226-12 Objective and policies for the physical environment- scenic, natural beauty, and historic resources

With regard to scenic, natural beauty and historic resources, it is the State's objective to enhance scenic assets, natural beauty and multi-cultural/historical resources.

Response:

The project has been carefully designed taking into consideration building profiles and massing so as to not adversely impact scenic views and vistas. The proposed turn-key homes will be similar in scale and size to existing residential developments nearby and will be built in accordance with established subdivision standards. In addition, a landscaped buffer will be developed at the roadway frontage along Honoapi'ilani Highway, providing a landscaped, open space setback from the roadway to the house lots. Archaeological investigations and coordination for the proposed action are aimed at ensuring the preservation of historic resources which may be impacted by the project. Landscaping proposed in connection with the project is intended to enhance the project's visual relationship with its immediate surrounding environs.

HRS 226-13 Objectives and policies for the physical environment--land, air, and water quality

The objectives for land, air, and water quality is directed at the maintenance and pursuit of improved quality of Hawaii's land, air and water resources, and greater public awareness and appreciation of Hawaii's environmental resources.

Response:

The proposed project will be implemented in a developed area in Central Maui, in proximity to existing infrastructure and services. Improved land, air, and water quality are directly and indirectly advanced by the proposed action. Construction BMPs will be used to manage and control erosion control during grading operations to minimize downstream water quality impacts. Work on the project is not anticipated to be affected by natural hazards, and industry standard design and construction practices have been and will be employed for the project.

HRS 226-14 Objective and policies for facility systems—in general

Having water, transportation, waste disposal, and energy and telecommunications systems that support Statewide social, economic, and physical objectives is the focus of this planning category.

Response:

The proposed action is indirectly applicable to the general objective and policies for facility systems. By addressing automobile movement concerns that are anticipated to result from implementation of the proposed project,

the proposed action reflects a coordinated effort to implement capital improvement priorities for the island's residents.

HRS 226-15 Objectives and policies for facility systems--solid and liquid wastes

The objectives for solid and liquid waste addresses the maintenance of basic public health and sanitation standards relating to the treatment and disposal of solid and liquid wastes, and the provision of adequate sewerage facilities in keeping with housing, employment, mobility and related needs.

Response:

The proposed project indirectly supports the objectives and goals for solid and liquid waste facility systems as it will connect to the County wastewater system. Coordination will be undertaken with the County Department of Environmental Management (DEM) to determine if certain improvements to the County's wastewater system will be required to service the project aside from the new sewerline that is proposed as part of the overall project. Furthermore, construction waste will be disposed at the County's Central Maui Landfill or appropriate construction recycling centers. In addition, once built and occupied, the project is anticipated to be served by the County's refuse collection service.

HRS 226-16 Objective and policies for facility systems—water

The objective for water is to adequately accommodate domestic, agricultural, commercial, industrial, recreational and related needs within resource capabilities.

Response:

The project directly supports the objective and polices for water facility systems enhancement as it is located in an area that is serviced by existing County water infrastructure. Coordination will be undertaken with the County Department of Water Supply (DWS) to determine if certain improvements to the County's water system will be required to service the project.

HRS 226-17 Objectives and policies for facility systems—transportation

An integrated multi-modal transportation system that meets statewide needs and promotes the efficient, economic, safe and convenient movement of people and goods, and which will accommodate planned growth is the objective for facility systems—transportation.

Responses: The proposed project indirectly supports the objectives and policies of transportation facility systems as it is located along an existing public bus route. In addition, the proposed highway improvements maintain an existing bike route and reflects a coordinated effort to implement capital improvement priorities for the island's residents.

HRS 226-18 Objectives and policies for facility systems—energy

The objective for energy is multi-pronged, seeking dependable, efficient, and economic statewide energy systems; increased energy security and self-sufficiency; greater diversification of energy generation; reduction, avoidance or sequestration of greenhouse gas emissions, and prioritizing utility customers from a social and financial interest standpoint.

Response:

In addition to solar water heating systems, individual homeowners will be able to install solar PV systems on their homes if desired, thus indirectly supporting the objectives and policies for energy facility systems by advancing measures to lessen dependence on fossil fuel based energy.

HRS 226-18.5 Objectives and policies for facility systems—telecommunications

A dependable, efficient and economical statewide telecommunications system along with adequate, reasonably priced, and dependable telecommunications services to accommodate demand are the objectives for telecommunications.

Response:

The proposed action does not directly or indirectly affect telecommunications systems dependability, efficiency, and cost parameters. In particular, the project does not promote research and development of telecommunications systems and resources and does not advance efficient management and use of existing telecommunications systems and services.

HRS 226-19 Objectives and policies for socio-cultural advancement--housing

The objectives for housing encompass greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary and livable homes; the orderly development of residential areas sensitive to community needs and other land uses; and the development and provision of affordable rental housing.

Response:

The proposed project is directly applicable to the objectives and policies related to housing as it provides needed additional homestead opportunities for DHHL beneficiaries in an area that is close to the government, business, and commercial centers of Wailuku and Kahului. In addition, the project will be implemented in a developed area in Central Maui with other similar residential subdivisions, in proximity to existing infrastructure and services.

HRS 226-20 Objectives and policies for socio-cultural advancement—health

Fulfillment of basic individual health needs, maintenance of sanitary and environmentally healthful community conditions; and elimination of health

disparities by identifying and addressing the social determinants of health are the objectives for health.

Response:

The proposed action does not directly or indirectly affect the objectives and policies for health. The proposed action does not affect individual health needs, sanitation and health conditions, and health disparities.

HRS 226-21 Objective and policies for socio-cultural advancement—education

The provision of a variety of educational opportunities that enable individuals to fulfill their needs, responsibilities and aspirations is the objective for education.

Response:

Through the payment of impact fees, the proposed project indirectly supports the objectives and policies for education by supporting the provision of adequate and accessible educational services and facilities in Central Maui.

HRS 226-22 Objective and policies for socio-cultural advancement--social services

The objective for social services is improved public and private social services and activities that enables individuals, families and groups to become more self-reliant and confident to improve their well-being.

Response:

The objective and policies for improving public and private social services are indirectly supported by the proposed action through the provision of affordable homesteading opportunities to beneficiaries of the State DHHL.

HRS 226-23 Objective and policies for socio-cultural advancement—leisure

The objective for leisure is the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.

Response:

As a residential project, the proposed action does not directly or indirectly advance the objective and policies for leisure.

HRS 226-24 Objective and policies for socio-cultural advancement--individual rights and personal well-being

The individual rights and personal well-being objective seeks to increase opportunities and protection of individual rights to enable achievement of socio-economic needs and aspirations.

Response:

The proposed residential project does not directly or indirectly affect the objective and policies related to individual rights and personal well-being.

HRS 226-25 Objective and policies for socio-cultural advancement--culture

Enhancement of cultural identities, traditions, values, customs, and arts of Hawaii's people reflects the objective for culture.

Response:

A Cultural Impact Assessment (CIA) was prepared for the proposed project as part of the environmental review process. The CIA fosters increased knowledge of Native Hawaiian cultural practices, as well as the history of the project area. In this context, the proposed action advances the objective and policies related to culture.

HRS 226-26 Objectives and policies for socio-cultural advancement--public safety

The objectives for public safety seek to provide assurance of public safety and adequate protection of life and property for all people; optimum organizational readiness and capability in emergency management during civil disruptions, wars, natural disasters, and other major disturbance; and promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.

Response:

The proposed action does not directly or indirectly affect the objectives and policies for public safety. In particular, the project does not address protection of life and property parameters, organizational readiness and capacity, and community responsibility for peoples' welfare and safety.

HRS 226-27 Objectives and policies for socio-cultural advancement--government

The objective for government encompasses efficient, effective and responsive government services and fiscal integrity, and responsibility, and efficiency in state and county governments.

Response:

The proposed action has indirect applicability to the objectives and policies for government. In particular, the project will comply with regulatory requirements which advance transparency in the flow of project-related information to the public. Such requirements include the Chapter 343, HRS environmental review process.

Priority Guidelines

"Priority guidelines" means those guidelines which shall take precedence when addressing areas of statewide concern. This section addresses applicability criteria to the priority guidelines set forth in HRS 226-103.

Priority guidelines of the Hawai'i State Plan covers the economy, population growth and land resources, crime and criminal justice, affordable housing, quality education,

sustainability, and climate change adaptation. Applicability assessment for each of the foregoing issue areas are presented below:

1. <u>Economic Priority Guidelines</u>

Response:

The proposed action indirectly supports the economic priority guidelines by supporting construction activity which contributes to increased employment opportunities, job choices, and living standards. In addition, solar water heating systems will be installed, and homeowners will be able to install solar PV systems in their individual homes, if desired, thereby advancing measures to lessen dependence on fossil fuel based energy.

2. <u>Population Growth and Land Resources Priority Guidelines</u>

Response:

The proposed project supports population growth and land resources priority guidelines as it repurposes agricultural land while providing additional homestead opportunities for DHHL beneficiaries in an area that is close to the government, business, and commercial centers of Wailuku and Kahului. In addition, the project will be implemented in a developed area in Central Maui, in proximity to existing infrastructure and services.

3. Crime and Criminal Justice Priority Guidelines

Response:

The proposed action does not directly or indirectly affect the priority guidelines for crime and criminal justice.

4. Affordable Housing Priority Guidelines

Response:

The proposed project directly affects the priority guidelines for affordable housing as it repurposes agricultural land while providing additional homestead opportunities for DHHL beneficiaries in an area that is close to the government, business, and commercial centers of Wailuku and Kahului.

5. Quality Education Priority Guidelines

Response:

The proposed action does not directly or indirectly affect the priority guidelines for education.

6. Sustainability Priority Guidelines

Response: The proposed action indirectly affects the priority guidelines for

sustainability by providing much needed affordable homestead for

DHHL beneficiaries.

7. <u>Climate Change Adaptation Priority Guidelines</u>

Response: The proposed project indirectly supports the climate change priority

guidelines as it will be implemented in an area that is outside of natural landscape features such as flood zones, the tsunami evacuation zone, as well as the projected sea level rise hazard area

in order to avoid impacts related to climate change.

D. STATE FUNCTIONAL PLANS

A key element of the Statewide Planning System is the Functional Plans which set forth the policies, statewide guidelines, and priorities within a specific field of activity. There are 13 Functional Plans which have been developed by the state agency primarily responsible for a given functional area. Together with the County General Plans, the State Functional Plans establish more specific strategies for implementation. In particular, State Functional Plans provide for the following:

- Identify major Statewide priority concerns
- Define current strategies for each functional area
- Identify major relationships among functional areas
- Provide direction and strategies for departmental policies, programs, and priorities
- Provide a guide for the allocation of resources
- Coordinate State and County roles and responsibilities in the implementation of the Hawai'i State Plan

Table 4 provides an assessment of the relationship between the proposed action and each of the 13 Functional Plans.

Table 4. Relation Between the Proposed Pu'unani Subdivision Project and the State Functional Plans

No.	State Functional Plan	State Coordinating Agency	Purpose	Analysis
1	Agriculture Functional Plan (1991)	Department of Agriculture	Continued viability of agriculture throughout the State	Although the proposed project involves repurposing lands designated for agricultural use, the lands have not been in active agricultural production for some time apart from intermittent grazing. As such, the proposed action is not anticipated to contravene the objectives and policies of this functional plan.
2	Conservation Lands State Functional Plan (1991)	Department of Land and Natural Resources	Addresses issues of population and economic growth and its strain on current natural resources; broadening public use of natural resources while protecting lands and shorelines from overuse; additionally, promotes the aquaculture industry	The proposed project will not utilize any State Conservation lands. Similarly, the project is located inland, and not near the coastline. Best Management Practices (BMPs) will be implemented to minimize adverse impacts to downstream properties and the shoreline. The proposed action is not anticipated to contravene the objectives and policies of this functional plan.
3	Education State Functional Plan (1989)	Department of Education	Improvements to Hawaii's educational curriculum, quality of educational staff, and access to adequate facilities	The project will comply with the requirement for school impact fees as the educational contribution to the Department of Education. As such, the proposed action is not anticipated to contravene the objectives and policies of this functional plan.
4	Employment State Functional Plan (1990)	Department of Labor and Industrial Relations	Improve the qualifications, productivity, and effectiveness of the State's workforce through better education and training of workers as well as efficient planning of economic development, employment opportunities, and training activities	The proposed action will result in the creation of construction jobs throughout the development period. This will provide local residents with opportunities to successfully compete in the workforce. The proposed action is not anticipated to contravene the objectives and policies of this functional plan.
5	Energy State Functional Plan (1991)	Department of Business, Economic Development and Tourism	Lessen the reliance on petroleum and other fossil fuels in favor of alternative sources of energy so as to keep up with the State's increasing energy demands while also becoming a more sustainable island state; achieving dependable, efficient, and economical statewide energy systems	Each turn-key home will have a solar water heating system. In addition, individual homeowners may install photovoltaic panels on their homes if they so choose. The proposed action is not anticipated to contravene the objectives and policies of this functional plan

Table 4. Relation Between the Proposed Pu'unani Subdivision Project and the State Functional Plans

No.	State Functional Plan	State Coordinating Agency	Purpose	Analysis
6	Health State Functional Plan (1989)	Department of Health	Improve health care system by providing for those who don't have access to private health care providers; increasing preventative health measures; addressing 'quality of care' elements in private and public sectors to cut increasing costs	The proposed action is not anticipated to contravene the objectives and policies of this functional plan.
7	Higher Education Functional Plan (1984)	University of Hawaii	Prepare Hawaii's citizens for the demands of an increasingly complex world through providing technical and intellectual tools	The proposed action is not anticipated to contravene the objectives and policies of this functional plan.
8	Historic Preservation State Functional Plan (1991)	Department of Land and Natural Resources	Preservation of historic properties, records, artifacts and oral histories; provide public with information/education on the ethnic and cultural heritages and history of Hawai'i	An Archaeological Inventory Survey (AIS) has been conducted for the 47.4-acre subdivision site. In its acceptance letter of the AIS, the SHPD concurred that no further mitigation was necessary. However, the DHHL will conduct archaeological monitoring for the site of the proposed subdivision during all ground disturbance activities. In addition, an Archaeological Assessment (AA) was completed for the parcel on which the proposed sewerline will be located in relation to the Wailuku Apartment Rental Housing Project. In its acceptance letter, the SHPD concurred that archaeological monitoring must be undertaken. A Cultural Impact Assessment (CIA) was prepared for the Proposed Pu'unani Homestead Subdivision project and noted that based on historical research and consultation, there is evidence of cultural practices related to Hawaiian rights related to agricultural pursuits, access to resources, and other customary activities are presently occurring in the vicinity of the proposed project, but not specifically within the project area. In addition, a legendary grinding stone (Pōhākoʻi) is believed to be located in the vicinity of the site of the proposed subdivision. The CIA also noted that given the project site's proximity to sand dunes, there is a potential for human burials to be present. As such, the CIA provided recommendations that an archaeological field inspection be conducted by a qualified archaeologist prior to the commencement of any construction related ground altering

Table 4. Relation Between the Proposed Pu'unani Subdivision Project and the State Functional Plans

No.	State Functional Plan	State Coordinating Agency	Purpose	Analysis
				activities in an effort to locate Pōhākoʻi and that archaeological monitoring be undertaken during construction-related ground-altering activities. An archaeological field inspection was conducted in August 2020. No discoveries were made as Pōhākoʻi may have been relocated given the extensive agricultural clearing and landscape modifications that previously occurred in the area. Nonetheless, future`e efforts to locate this important stone will occur during the archaeological monitoring of the project area during future ground-altering activities. The proposed action is in consonance with this functional plan.
9	Housing State Functional Plan (1989)	Hawaii Housing Finance and Development Corporation	Provide affordable rental and for-sale housing; increase homeownership and amount of rental housing units; acquiring public and privately-owned lands for future residential development; maintain a statewide housing data system	The proposed project provides additional residential homestead opportunities for DHHL beneficiaries in an area that is close to the government, business, and commercial centers of Wailuku and Kahului. In addition, the project will be implemented in a developed area in Central Maui, in proximity to existing infrastructure and services. The proposed action is in consonance with this functional plan.
10	Human Services State Functional Plan (1989)	Department of Human Services	Refining support systems for families and individuals by improving elderly care, increasing preventative measures to combat child/spousal abuse and neglect; providing means for 'self-sufficiency'	The proposed action is not anticipated to contravene the objectives and policies of this functional plan.
11	Recreation State Functional Plan (1991)	Department of Land and Natural Resources	Manage the use of recreational resources via addressing issues: (1) ocean and shoreline recreation, (2) mauka, urban, and other recreation opportunities, (3) public access to shoreline and upland recreation areas, (4) resource conservation and management, (5) management of recreation programs/facilities/areas, and (6) wetlands protection and management	The proposed action is not anticipated to contravene the objectives and policies of this functional plan.

Table 4. Relation Between the Proposed Pu'unani Subdivision Project and the State Functional Plans

No.	State Functional Plan	State Coordinating Agency	Purpose	Analysis
12	Tourism State Functional Plan (1991)	Department of Business, Economic Development and Tourism	Balance tourism/economic growth with environmental and community concerns; development that is cognizant of the limited land and water resources of the islands; maintaining friendly relations between tourists and community members; development of a productive workforce and enhancement of career and employment opportunities in the visitor industry	The proposed action is not anticipated to contravene the objectives and policies of this functional plan.
13	Transportation State Functional Plan (1991)	Department of Transportation	Development of a safer, more efficient transportation system that also is consistent with planned physical and economic growth of the state; construction of facility and infrastructure improvements; develop a transportation system balanced with new alternatives; pursue land use initiatives which help reduce travel demand	The proposed project will be implemented in proximity to existing State and County roadway facilities. A Traffic Impact Analysis Report (TIAR) has been prepared to assess the projected increase in traffic on these roadways, and determined that although a traffic signal is not warranted by the project, a median refuge lane along Honoapi'ilani Highway should be provided to allow eastbound left-turn vehicles to turn onto Honoapi'ilani Highway in a two-stage approach. The proposed action is in consonance with this functional plan.

E. GENERAL PLAN OF THE COUNTY OF MAUI

As indicated by the Maui County Charter, the purpose of the general plan shall be to:

... indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns and characteristics of future developments. The general plan shall identify objectives to be achieved, and priorities, policies, and implementing actions to be pursued with respect to population density, land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development.

Chapter 2.80B of the Maui County Code, relating to the General Plan and Community Plans, implements the foregoing Charter provision through enabling legislation which calls for a Countywide Policy Plan and a Maui Island Plan.

1. <u>Countywide Policy Plan</u>

The Countywide Policy Plan was adopted in March 2010 and is a comprehensive policy document for the islands of Maui County to the year 2030. The plan replaces the General Plan of the County of Maui 1990 Update and provides the policy framework for the development of the Maui Island Plan as well as for updating the nine (9) detailed Community Plans. The Countywide Policy Plan provides broad goals, objectives, policies and implementing actions that portray the desired direction of the County's future. Goals are intended to describe a desirable condition of the County by the year 2030 and are intentionally general. Objectives tend to be more specific and may be regarded as milestones to achieve the larger goals. Policies are not intended as regulations, but instead provide a general quideline for County decision makers, departments, and collaborating organizations toward the attainment of goals and objectives. Implementing actions are specific tasks, procedures, programs, or techniques that carry out policy. Discussion of the proposed project's applicability to the relevant goals, objectives, policies, and implementing actions of the Countywide Policy Plan is provided in Appendix "M-1".

As with the Hawai'i State Plan, the methodology for assessing a project's relationship to the Countywide Policy Plan involves examining the project's applicability to the Plan's goals, objectives, and policies. "Applicability" refers to a project's need, purpose and effects, and how they advance or promote a particular set of goals, objectives and policies. In assessing the relationship between a

proposed action and the Countywide Policy Plan, an action may be categorized in one of the following groups:

1. <u>Directly applicable</u>: the action and its potential effects directly advances, promotes or affects the relevant goal, objective, or policy.

Example: Using the same example as that provided for the Hawai'i State Plan, that of a County project to develop a new water source and related transmission facilities, such an action would be directly applicable to improving physical infrastructure. The relevant objective states: "Improve water systems to assure access to sustainable, clean, reliable, and affordable sources of water" (Objective I.1). A policy within this objective category states: "Ensure that adequate supplies of water are available prior to approval of subdivision or construction documents" (Policy I.1.a).

In this instance, the proposed action is considered to be directly applicable to the cited objective and policy.

2. <u>Indirectly applicable</u>: the action and its potential effects indirectly supports, advances or affects the objective, policy or priority guideline.

Example: The county water source project cited above supports the objective to: *Improve land use management and implement a directed-growth strategy* (Objective J.1). A related policy encompassed by this objective states: "Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources" (Policy J.1.h). In this case, the principle purpose of the project is not to create source specifically intended to improve land use management. Nonetheless, the proposed action indirectly supports the Countywide Policy Plan's directives relating to appropriate locations for new development.

3. **Not applicable:** the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Countywide Policy Plan.

Example: The county water source improvement project referenced above, may not have direct or indirect linkage to Objective D.1, which states: "In cooperation with the Federal and State governments and nonprofit agencies, broaden access to social and healthcare services and expand options to improve the overall wellness of the people of Maui County". Hence, from a policy analysis and linkage standpoint, the proposed action would be considered not applicable to this set of objectives and policies.

It is recognized that policy analysis is subject to interpretation and is best considered in the context of the proposed action's local and regional conditions.

The assessment presented below restates the goal for each policy/planning category followed by a response which consolidates and summarizes the assessments provided in **Appendix "M-1"**. The responses examine whether the proposed action is directly applicable, indirectly applicable or not applicable to the respective Countywide Policy Plan objectives, policies and implementing actions.

PROTECT THE NATURAL ENVIRONMENT

Goal:

Maui County's natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.

Response:

This project directly improves the opportunity for future beneficiaries of the DHHL to experience, live, and thrive in the natural beauty of our island home. This land will be cared for in years to come while also providing much needed housing opportunities. The project has been carefully designed taking into consideration building profiles and massing. The proposed dwellings will be similar in scale and size to existing residential developments nearby and will be built in accordance with established subdivision standards. In addition a landscaped buffer will be developed at the roadway frontage along Honoapi'ilani Highway, providing a landscaped, open space setback from the roadway to the house lots.

The proposed project will utilize BMPs to ensure that natural resources such as the coastal environment is not impacted by construction activities. The use of BMPs also ensures compatibility between land-based and water-based functions, resources, and ecological systems. The biological resources study conducted as part of the environmental review process represents an effort to protect any rare and endangered plant and animal species, and their habitats that may be present in the vicinity of the proposed action.

The proposed project directly meets the objective of improving the stewardship of the natural environment. The project will employ BMPs to prevent impacts from construction, including temporary erosion control,

stormwater management and dust control. In addition, the EA thoroughly evaluated the proposed action's potential impacts on the environment, and where applicable, advances mitigative measures aimed at reducing impacts.

The proposed project does not have direct or indirect relationships to the objective of educating residents and visitors about responsible stewardship practices and the interconnectedness of the natural environment and people. However, this objective is an integral value to Native Hawaiians who are beneficiaries of this project.

PRESERVE LOCAL CULTURES AND TRADITIONS

Goal:

Maui County will foster a spirit of pono and protect, perpetuate, and reinvigorate its residents' multi-cultural values and traditions to ensure that current and future generations will enjoy the benefits of their rich island heritage.

Response:

The proposed project will directly benefit Native Hawaiian people for generations and ensure the perpetuation of Hawaiian culture. This development is an appropriate development of lands for Native Hawaiians. A CIA was prepared for the proposed project as part of the environmental review process. The CIA fosters increased knowledge of Native Hawaiian cultural practices, as well as the history of the project area. As such, the CIA provided recommendations that an archaeological field inspection be conducted by a qualified archaeologist prior to the commencement of any construction related ground altering activities in an effort to locate Pōhāko'i a legendary grinding stone and that archaeological monitoring be conducted during all construction-related ground-altering activities. An archaeological field inspection was conducted in August 2020. No discoveries were made. Nonetheless, future efforts to locate this important stone will occur during the archaeological monitoring of the project area during future ground altering activities. In this context, the proposed action advances the objective and policies related to preserving local cultures and traditions.

The project supports the objective and policy related to acknowledging the relationship between the natural environment and cultural resources found in the project vicinity through the preparation of the CIA.

The proposed project does not have direct or indirect relationships to the objective of preserving the arts, culture, and history of Maui County for present and future generations. This is a residential project for Native Hawaiians that will help meet the housing need in Maui.

Archaeological investigations and coordination for the proposed action are aimed at ensuring the preservation of historic resources which may be impacted by the project. An AIS was conducted for the 47.4-acre subdivision site. In its acceptance letter of the AIS, the SHPD concurred that no further mitigation was necessary. Nonetheless, the DHHL has elected to undertake archaeological monitoring at the site of the proposed subdivision. In addition, an AA was completed for the parcel on which the proposed sewerline will be located in relation to the Wailuku Apartment Rental Housing Project. In its acceptance letter, the SHPD concurred that archaeological monitoring must be undertaken. Should any archaeological resources be discovered during ground altering activities, work shall cease in the immediate area of the find and mitigation coordination will be undertaken with the SHPD.

IMPROVE EDUCATION

Goal:

Residents will have access to lifelong formal and informal educational options enabling them to realize their ambitions.

Response:

Indirectly, this project meets the goal of giving residents access to lifelong formal and informal educational options. This is an affordable homestead development project which will provide homes for a number of families, putting them and their children closer to schools, allowing for easier access to education.

Through the payment of impact fees to the Department of Education, the proposed project indirectly ensures the provision of adequate and accessible educational services and facilities in Central Maui.

The proposed project indirectly supports the objective and policies as it will afford many Native Hawaiian families the opportunity to be closer in proximity to schools and services that can support their educational experience.

The project does not directly or indirectly maximize community-based educational opportunities. While these objectives and policies are valuable, this project concentrates on fulfilling Native Hawaiian housing needs.

STRENGTHEN SOCIAL AND HEALTHCARE SERVICES

Goal:

Health and social services in Maui County will fully and comprehensively serve all segments of the population.

Response:

Indirectly, this proposed project will support access to services. By providing affordable housing to families in a centrally located area, they will have easier access to utilize social and healthcare services, if needed.

While most of these policies are not directly or indirectly applicable to the project, one of the implementing actions of investing in programs designed to improve the general welfare and quality of life of Native Hawaiians holds merit. This project directly affects Native Hawaiians and aspires to improve their quality of life by providing affordable homes.

The objective and policies related to strengthening publicawareness programs related to healthy lifestyles and social and medical services are not directly or indirectly applicable to this affordable homestead project.

EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS

Goal:

Quality, island-appropriate housing will be available to all residents.

Response:

The proposed project supports this objective and related policies and implementing actions as it provides additional

affordable homestead opportunities for DHHL beneficiaries in an area that is consistent with beneficiaries' preferences, close to the government, business, and commercial centers of Wailuku and Kahului, and in a developed area in Central Maui, in proximity to existing infrastructure and services.

Although the proposed project repurposes land designated for agricultural use for housing, the land has not been in active agricultural production for some time. The project presents an opportunity to provide affordable homesteads for DHHL beneficiaries in an area that is close to the government, business, and commercial centers of Wailuku and Kahului.

Indirectly, this project will help to educate the DHHL beneficiaries' knowledge about home ownership and financing. The DHHL provides educational programs for beneficiaries regarding financing and financial planning. Through the process of owning a home, owners will need to educate themselves about home ownership thereby increasing their knowledge base.

STRENGTHEN THE LOCAL ECONOMY

Goal:

Maui County's economy will be diverse, sustainable, and supportive of community values.

Response:

This affordable homestead project will indirectly support Maui County's economy. According to the Economic and Fiscal Impacts Report, the proposed project will have positive economic and fiscal impacts to the County of Maui during and after construction. Refer to **Appendix "J"**.

The objective and policies as it relates to diversification and expansion of sustainable forms of agriculture and aquaculture are not directly or indirectly applicable to the proposed project.

The proposed project is an affordable homestead project for the DHHL beneficiaries. The objectives and policies around supporting a visitor industry is not applicable to the project. The objective of expanding economic sectors that increase living-wage job choices compatible with community values is indirectly applicable to the proposed residential project through supporting solar water heating system vendors as these will be installed on every home within the proposed development.

IMPROVE PARKS AND PUBLIC FACILITIES

Goal:

A full range of island-appropriate public facilities and recreational opportunities will be provided to improve the quality of life for residents and visitors.

Response:

The proposed residential project will indirectly support the goal, objective, and policies of expanding access to recreational opportunities and community facilities to meet the needs of residents. The centrally located and highly desirable site of this project will provide easy access to existing recreational activities and community facilities.

The objective and policies to improve the quality and adequacy of community facilities does not apply to this housing project.

The proposed project does not meet the objective of enhancing funding, management, and planning of public facilities and park lands. The policies outlined to meet this objective does not apply to the proposed project.

DIVERSIFY TRANSPORTATION OPTIONS

Goal:

Maui County will have an efficient, economical, and environmentally sensitive means of moving people and goods.

Response:

The proposed project will provide specific roadway improvements as determined by the TIAR and as discussed with the State Department of Transportation. Such improvements will comply with applicable federal policies for roadway safety and efficiency which will benefit the greater community. In addition, the proposed road widening along

Honoapi'ilani Highway will maintain an existing bike route and provide for the proposed landscaped lot.

The proposed affordable homestead project is centrally located between the small towns of Waikapū and Wailuku. The widening of Honoapi'ilani Highway will maintain an existing bike route in the paved shoulder that will provide residents with an alternative form of transportation.

This residential project does not meet the objective and policies of improving opportunities for affordable, efficient, safe, and reliable air transportation.

Improving opportunities for affordable, efficient, safe, and reliable ocean transportation is not applicable to the goal of providing affordable homesteads for DHHL beneficiaries.

The proposed project will directly support the improvement of transportation systems. The project is centrally located which will allow families to be closer to work, school, activities, and services, thereby limiting long distance road trips. The project will also be widening Honoapi'ilani Highway, maintaining a bike route and making road improvements for the safety of the larger community. As mentioned previously, existing trees along Honoapi'ilani Highway will be removed and replaced at a minimum of 1:1 with healthier trees.

IMPROVE PHYSICAL INFRASTRUCTURE

Goal:

Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.

Response:

The project directly supports this objective and related policies as it is located in an area that is serviced by existing County water infrastructure. Coordination will be undertaken with the DWS to determine if certain improvements to the County's water system will be required to service the project.

The objectives, policies and actions are directly and indirectly applicable to the proposed project. The project

proposes connection to the County wastewater system and improvements that would be needed to connect to the system. Coordination will be undertaken with the DEM to determine if certain improvements to the County's wastewater system will be required to service the project aside from the new sewerline that is proposed as part of the overall project. Construction waste will be disposed at the County's Central Maui Landfill or appropriate construction recycling centers. In addition, once built and occupied, the project is anticipated to be served by the County's refuse collection service.

Each home built, whether turn-key or lessee built, will be required to have a solar water heater system pursuant to MCC, Section 16.16B.R403.5.5. In addition, individual homeowners may choose to install solar PV systems on their homes if desired thus directly supporting this objective and related policies by advancing measures to lessen dependence on fossil fuel based energy.

The proposed project will be implemented in a developed area in Central Maui, in proximity to existing infrastructure and services. DHHL beneficiaries will be centrally located near jobs, schools, recreation, and other services.

It is important to note that this project will support the Native Hawaiian population to provide equitable access to housing. The project will also be implementing infrastructure improvements to service the proposed homes.

PROMOTE SUSTAINABLE LAND USE AND GROWTH MANAGEMENT

Goal:

Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.

Response:

Although the proposed project repurposes lands designated for agricultural uses for homes, the project area is located within the Urban and Rural Growth Boundaries as designated by the County of Maui's Maui Island Plan and within an area planned for growth. The proposed project will be implemented in a developed area in Central Maui, in

proximity to existing infrastructure and services and in an area outside of flood, tsunami, and sea level rise hazard areas.

As previously discussed, the proposed project will be developed on lands designated for agriculture use. Although designated for agriculture, the lands have not been in cultivation for over a decade, aside from intermittent cattle grazing. In the context of the amount of viable agriculture lands on the island of Maui, implementation of the proposed action to create much needed housing in a developed area with other residential subdivisions is not considered to adversely affect agricultural productivity on Maui. As such, the objective of improving planning for and managing agriculture lands and rural areas are not applicable to this project.

A landscaped lot will be developed along the project's frontage along Honoapi'ilani Highway to set the houses back and provide open space relief from the right-of-way. Also, trees will be planted along Honoapi'ilani Highway to provide further separation between the highway traffic and the neighborhood. Further the widening of Honoapi'ilani Highway will maintain a bike route in the paved shoulder, providing connectivity in the larger regional area.

The proposed project entails the development of affordable homesteads for beneficiaries of the DHHL. The design and environmental review processes involved detailed analysis of the proposed project's potential impacts on the environment, infrastructure, and socio-economic conditions. In addition, opportunities for public input were afforded through the environmental review process.

STRIVE FOR GOOD GOVERNANCE

Goal:

Government services will be transparent, effective, efficient, and responsive to the needs of residents.

Response:

The objective of strengthening governmental planning, coordination, consensus building, and decision making along with the policies that support this objective is not

directly applicable to the proposed project. However, it is important to note that continuing coordination between government entities is critical to the success of the project.

As mentioned previously, the design and environmental review processes involved opportunities for the public to provide input throughout the environmental review process. Public meetings and requests for comments were included which provided the space for engagement and feedback opportunities. Additionally, the HHC meetings are open to the public.

The objective and policies as it relates to improving the efficiency, reliability, and transparency of County government's internal processes and decision making is not applicable to the proposed project.

The objective and policies regarding the funding of the General Plan do not apply to the proposed action.

The objective and policies regarding the County of Maui implementing cultural and environmental practices does not apply to the proposed DHHL project.

2. <u>Maui Island Plan</u>

The Maui Island Plan (MIP) is applicable to the island of Maui only, providing more specific policy-based strategies for population, land use, transportation, public and community facilities, water and wastewater systems, visitor destinations, urban design, and other matters related to future growth.

As provided by Chapter 2.80B, the MIP shall include the following components:

- 1. An island-wide land use strategy, including a managed and directed growth plan
- 2. A water element assessing supply, demand and quality parameters
- 3. A nearshore ecosystem element assessing nearshore waters and requirements for preservation and restoration
- An implementation program which addresses the County's 20-year capital improvement requirements, financial program for implementation, and action implementation schedule

5. Milestone indicators designed to measure implementation progress of the MIP

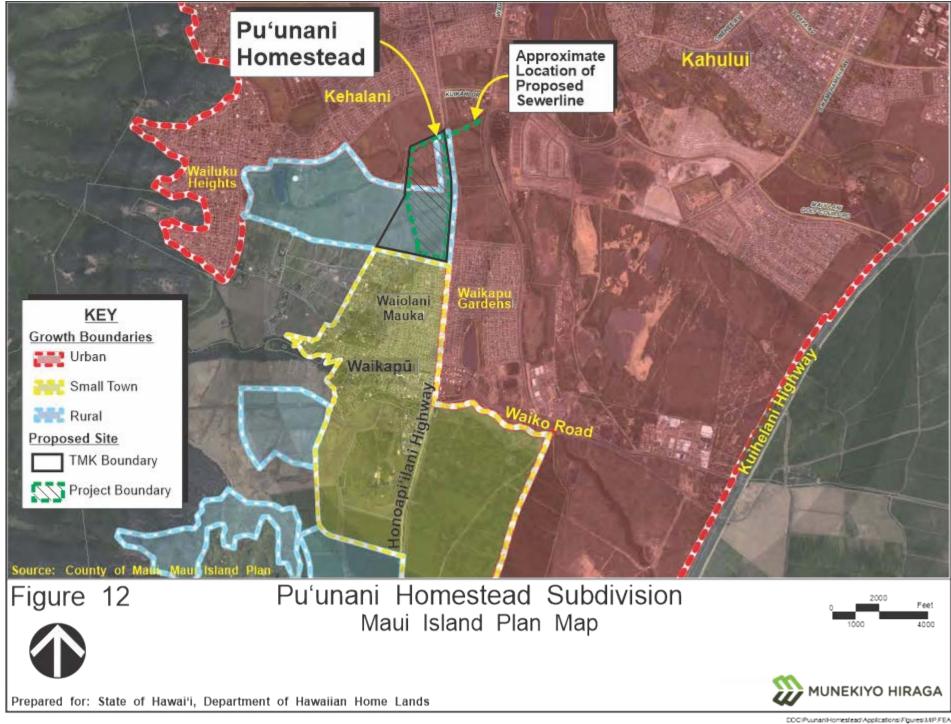
The MIP addresses a number of planning categories with detailed policy analysis and recommendations which are framed in terms of goals, objectives, policies and implementing actions. These planning categories address the following areas:

- 1. Population
- 2. Heritage Resources
- 3. Natural Hazards
- 4. Economic Development
- 5. Housing
- 6. Infrastructure and Public Facilities
- 7. Land Use

Additionally, an essential element of the MIP is its directed growth plan which provides a management framework for future growth in a manner that is fiscally, environmentally, and culturally prudent. Among the directed growth management tools developed through the MIP process are maps delineating urban growth boundaries (UGB), small town boundaries and rural growth boundaries. The respective boundaries identify areas appropriate for future growth and their corresponding intent with respect to development character.

The northern portion of the proposed project is located within the UGB of the MIP while the remainder is within the Rural Growth Boundary. Although a portion is within the Rural Growth Boundary, as previously stated, the property is under the jurisdiction of the DHHL, which has vested authority to develop its lands at its discretion, and as such, the project may proceed without the lands being fully entitled for residential use. In this regard, it is consistent with the directed growth strategy defined via growth maps adopted in the MIP. See **Figure 12**.

A summary of the project's relationship to the Maui Island Plan (MIP), as detailed in **Appendix "M-2"** is provided below. Following the assessment methodology used for the Hawai'i State Plan and the Countywide Policy Plan, the proposed action was reviewed with respect to its applicability to goals, objectives, and policies of the MIP. "Applicability" refers to a project's need, purpose and effects, and how these advance or promote a particular set of goals, objectives and priority guidelines. In assessing the relationship between a proposed action and the MIP, an action may be categorized in one of the following groups:



1. <u>Directly applicable</u>: the action and its potential effects directly advances or promotes the objective, policy or priority guideline.

Example: Again, using a county project to develop a new water source and related transmission facilities as an example, a project of this nature would be directly applicable to the MIP's Objective 6.3.2, which states: "Increase the efficiency and capacity of the water systems in striving to meet the needs and balance the island's water needs". As well, this action would directly advance the MIP's Policy 6.3.2.f, which states: "Acquire and develop additional sources of potable water". The need, purpose and effects of the proposed new water source project is directly applicable to the foregoing objective and policy.

2. <u>Indirectly applicable</u>: the action's potential effects indirectly supports or advances the objective, policy or priority guideline.

Example: The county water source project cited above supports the MIP's Objective 7.3.2 which states: "Facilitate more self-sufficient and sustainable communities". Additionally, this kind of action is indirectly applicable to the related MIP Policy 7.3.2.f, which states: "Facilitate the development of housing by focusing projects in locations where land and infrastructure costs facilitate the development of affordably-priced housing". In this case, the principle purpose of the project was not to specifically facilitate the development of affordably-priced housing.

However, the project's contribution to adequate infrastructure systems is supportive of the policy. In this instance, the proposed action may be deemed to be indirectly applicable to the objective and policy of the MIP.

3. **Not applicable:** The action and its potential effects have no direct or indirect relationship to the objectives and policies of the Maui Island Plan.

Example: That same county water source improvement project referenced above, may not have direct or indirect linkage to the MIP's Objective 4.2.1, which states: "Increase the economic contribution of the visitor industry to the island's environmental well-being for the island's residents' quality of life". In this case, there is no reasonably deduced direct or indirect relationship between the proposed action and Objective 4.2.1. Hence, the proposed action would be considered not applicable to the objective.

In general, a proposed action's applicability to the MIP is assessed on the basis of the action's direct or indirect relationship to the respective objectives, policies and implementing actions.

The assessment presented below summarizes the goals for each policy/planning category of the MIP, followed by a response which consolidates and summarizes the assessments provided in **Appendix "M-2"**. The responses examines whether the proposed action is directly applicable, indirectly applicable or not applicable to the respective MIP objectives, policies and implementing actions.

CHAPTER 1--POPULATION

<u>Goal:</u>

Maui's people, values, and lifestyles thrive through strong, healthy, and vibrant island communities.

Response:

The proposed project provides additional homestead opportunities for DHHL beneficiaries in an area that is close to the government, business, and commercial centers of Wailuku and Kahului. Further, the proposed project will provide for additional housing options for local families seeking to live on Maui island to be closer to their families and local employment, education, and social opportunities.

CHAPTER 2--HERITAGE RESOURCES

2.1 Cultural, Historical, and Archaeological Resources

Goal:

Our community respects and protects archaeological and cultural resources while perpetuating diverse cultural identities and traditions.

Response:

The objectives and policies relating to ensuring an effective and efficient planning and review process incorporating best available cultural resources inventory, protection techniques, and preservation strategies and enhancement of the island's historic, archaeological, and cultural resources are directly and indirectly applicable to the proposed project. An AIS was prepared in 2005 for a 215.8-acre area in Waikapū, which included the proposed subdivision site. In its acceptance letter of the AIS, the SHPD concurred that no further mitigation was necessary.

In addition, an AA was completed for the parcel on which the proposed sewerline will be located in relation to the Wailuku Apartment Rental Housing Project. In its acceptance letter, the SHPD concurred that archaeological monitoring must be undertaken. Should any archaeological resources be discovered during ground altering activities, work shall cease in the immediate area of the find and mitigation coordination will be undertaken with the SHPD. In addition, a CIA was prepared for the Proposed Pu'unani Homestead Subdivision project and noted that based on historical research and consultation, there is evidence of cultural practices related to Hawaiian rights related to agricultural pursuits, access to resources, and other customary activities presently occurring in the vicinity of the proposed project, but not necessarily within the proposed project area itself. In addition, a legendary grinding stone (Pōhākoʻi) is believed to be located in the vicinity of the site of the proposed subdivision. The CIA also noted that given the project site's proximity to sand dunes, there is a potential for human burials to be present. As such, the CIA provided recommendations that an archaeological field inspection be conducted by a qualified archaeologist prior to the commencement of any construction related ground altering activities in an effort to locate Pōhāko'i and that archaeological monitoring be conducted during all construction-related ground-altering activities. An archaeological field inspection was undertaken in August 2020, no discoveries were made. Nonetheless, future efforts to locate this important stone will occur during the archaeological monitoring of the project area during future ground altering activities.

2.2 Shoreline, Reefs, and Nearshore Waters

Goal:

An intact, ecologically functional system of reef, shoreline, and nearshore waters that are protected in perpetuity.

Response:

The proposed project is located inland, and not in close proximity to the shoreline. With the spatial separation, there are no direct project considerations as it relates to shoreline management programming, reef health, coastal water quality, marine life or shoreline lands and access rights.

However, inasmuch as the proposed action does involve grading and earth moving activities, the project may be considered to have indirect applicability to objectives and policies relating to coastal water quality. As such, appropriate BMPs will be implemented during construction to ensure that soil erosion and runoff do not adversely affect coastal waters.

2.3 Watersheds, Streams and Wetland

Goal:

Healthy watersheds, streams, and riparian environments.

Response:

The proposed project is not directly applicable to the goal of maintaining healthy watersheds, streams, and riparian environments, however, appropriate BMPs will be used during construction and applicable drainage detention and water quality measures will be provided for the long-term habitation of the site.

2.4 Wildlife and Natural Areas

Goal:

Maui's natural areas and indigenous flora and fauna will be protected.

Response:

The environmental review process for the proposed action included a flora and fauna survey addressing biological resources in the project area. This assessment addresses the objective of identification and protection (as applicable) restoration of wildlife habitats.

2.5 Scenic Resources

Goal:

Maui will continue to be a beautiful island steeped in coastal, mountain, open space, and historically significant views that are preserved to enrich the residents' quality of life, attract visitors, provide a connection to the past, and promote a sense of place.

Response:

The objectives and policies relating to protecting and maintaining scenic resources are directly applicable to the proposed project. The proposed project will be implemented along Honoapi'ilani Highway, which provides views of Haleakalā and the West Maui Mountains. The project has been carefully designed taking into consideration building profiles and massing. The proposed dwellings will be similar in scale and size to existing residential developments nearby and will be built in accordance with established subdivision standards. In addition, a landscaped buffer will be developed at the roadway footage along Honoapi'ilani Highway, providing a landscaped, open space setback from the roadway to the house lots.

CHAPTER 3--NATURAL HAZARDS

Goal:

Maui will be disaster resilient.

Response:

The objectives and policies related to making Maui disasterresilient are not directly or indirectly applicable to the proposed project. The proposed action is limited to the development of a new residential subdivision for beneficiaries of the DHHL.

CHAPTER 4—ECONOMIC DEVELOPMENT

4.1 Economic Diversification

Goal:

Maui will have a balanced economy composed of a variety of industries that offer employment opportunities and well-paying jobs and a business environment that is sensitive to resident needs and the island's unique natural and cultural resources.

Response:

The proposed project will generate short-term constructionrelated employment opportunities, as well as supporting the construction industry as a whole, including local businesses that rely on said industry. Further, the proposed action will indirectly affect the local economy, as it is anticipated that residents of the project will support small businesses nearby. The proposed project also provides affordable housing options for Native Hawaiian beneficiaries of the DHHL.

4.2 Tourism

Goal:

A healthy visitor industry that provides economic well-being with stable and diverse employment opportunities.

Response:

The proposed project does not have direct or indirect relationships to the goal for tourism and its accompanying objectives for increasing the visitor industry's contributions to our island's quality of life, managing future visitor unit expansion, and maximizing residents' benefits from the visitor industry.

4.3 Agriculture

Goal:

Maui will have a diversified agricultural industry contributing to greater economic, food, and energy security and prosperity.

Response:

The proposed project does not have direct or indirect relationships to the goal for agriculture and its related objectives for consumption for locally produced fruits and vegetables, maintaining or increasing agriculture's share in the local economy, and expanding diversified agricultural production. The proposed project is located on fallow agricultural lands that have not been used for active agricultural production in many years. As such, the proposed action is a prudent use of the land to provide much needed housing for beneficiaries of the DHHL in a developed area with other similar residential subdivisions.

4.4 Emerging Sectors

Goal:

A diverse array of emerging economic sectors.

Response:

The proposed project has a direct has a relationship to the goal for emerging sectors, particularly the objective and policy related to developing renewable energy technologies, as solar water heating systems will be installed on every residence.

4.5 Small Business Development

Goal:

Small businesses will play a key role in Maui's economy.

Response:

The proposed project consists of the development of a new residential subdivision in the Waikapū community for beneficiaries of the DHHL. Though the goal of making small businesses play a key role in Maui's economy is not directly applicable to the proposed project, it is anticipated that residents of the project will support small, locally-owned businesses that are in the vicinity. As such, the objective and policies related to small-business development are indirectly applicable to the proposed action.

4.6 Health Care Sector

Goal:

Maui will have a health care industry and options that broaden career opportunities that are reliable, efficient, and provide social well-being.

Response:

The proposed project does not have direct or indirect relationships to the goal for the health care and its related objectives for expanding the economic benefits of the health care sector, increasing efficiency of the health care delivery system, minimizing the costs of health care, and expanding Maui's alternative health care system.

4.7 Education and Workforce Development

Goal:

Maui will have effective education and workforce development programs and initiatives that are aligned with economic development goals.

Response:

The goal for education and workforce development is not directly or indirectly applicable to the proposed action. As well, the related objectives of improving preschool and K-12 education, increasing higher education certificates and degrees, and developing more jobs in the STEM-related sectors are not affected by the proposed project.

CHAPTER 5—HOUSING

Goal:

Maui will have safe, decent, appropriate, and affordable housing for all residents developed in a way that contributes to strong neighborhoods and a thriving island community.

Response:

The proposed project provides additional affordable homestead opportunities for DHHL beneficiaries in an area that is close to the government, business, and commercial centers of Wailuku and Kahului. The proposed development will be located near other urban areas with similar residential subdivisions, making prudent use of existing infrastructure and resources.

CHAPTER 6—INFRASTRUCTURE AND PUBLIC FACILITIES

6.1 Solid Waste

Goal:

Maui will have implemented the ISWMP thereby diverting waste from its landfills, extending their capacities.

Response:

Solid waste generated by the project during construction will be recycled to the extent practicable and disposed at appropriately permitted construction waste disposal sites.

6.2 Wastewater

Goal:

Maui will have wastewater systems that comply with or exceed State and Federal regulations; meet levels-of-service needs; provide adequate capacity to accommodate projected demand; ensure efficient, effective, and environmentally sensitive operation; and maximize wastewater reuse where feasible.

Response:

The proposed project will connect to the County wastewater system. Coordination will be undertaken with the DEM to determine if certain improvements to the County's wastewater system will be required to service the project aside from the new sewerline that is proposed as part of the overall project.

6.3 Water

Goal:

Maui will have an environmentally sustainable, reliable, safe, and efficient water system.

Response:

The objective and policies related to water service, systems and quality are indirectly applicable to the project. The project is located in an area that is serviced by existing County water infrastructure. Coordination will be undertaken with the DWS to determine if certain improvements to the County's water system will be required to service the project.

6.4 Transportation

Goal:

An interconnected, efficient, and well-maintained, multimodal transportation system.

Response:

The proposed project will provide improvements to safely integrate the project generated traffic to local roadways. DHHL will provide pedestrian sidewalk improvements to create a safer pedestrian condition within the project. Roadway improvements on Honoapi'ilani Highway include a road widening lot for the provision of turning lanes, a median refuge lane, and to maintain a bike route within the paved shoulder. These additional improvements directly and indirectly support the objectives of providing a safe, interconnected roadway, bicycle, and pedestrian network, as well as a multimodal transportation system that respects and enhances the natural environment, scenic views, and the surrounding community's character.

6.5 Transit

Goal:

An island-wide transit system that addresses the needs of residents and visitors and contributes to healthy and livable communities.

Response:

While the proposed project includes roadway improvements to Honoapi'ilani Highway, it does not directly or indirectly affect the goal and objectives for transit, specifically those

relating to the advancement of an integrated island wide transit system, and funding to support transit improvements and operations.

6.6 Parks

Goal:

Maui will have a diverse range of active and passive recreational parks, wilderness areas, and other natural-resource areas linked, where feasible, by a network of greenways, bikeways, pathways, and roads that are accessible to all.

Response:

Though the proposed project mainly consists of the development of a new residential subdivision for beneficiaries of the DHHL, the proposed action also consists of roadway improvements including maintaining a bike route within the paved shoulder. As such, the objective and policy relating to linking existing residential areas with a network of bikeways is indirectly supported by the proposed project.

6.7 Public Facilities

Goal:

Maui will have adequate public facilities that meet the diverse needs of residents.

Response:

The proposed action does not have direct or indirect relationships to the goal for public facilities. In this context, the project does not advance or promote the objective or more effective planning for public facilities which meet community needs.

6.8 Schools and Libraries

Goal:

Maui will have school and library facilities that meet residents' needs and goals.

Response:

Through the payment of impact fees to the DOE, the proposed project indirectly ensures the provision of adequate and accessible educational services and facilities in Central Maui. Further, the objective and policy related to providing a more expansive network of safe and convenient

pedestrian-friendly streets, trails, pathways, and bikeways between neighborhoods and schools is indirectly supported by the proposed action, as there will be sidewalks installed within the project site, and roadway improvements such as maintaining a bike route within the paved shoulder along Honoapi'ilani Highway.

6.9 Health Care

Goal:

All of Maui residents will have the best possible health care to include healthy living, disease prevention, as well as acute and long-term care.

Response:

The proposed action does not have direct or indirect relationships to the goal for healthcare. In this context, the residential housing project does not advance or promote the objectives for greater healthcare system autonomy, increase long-term care capacity and alternatives, support home care and community based programs, and improve preventative medicine and primary health care.

6.10 Energy

Goal:

Maui will meet its energy needs through local sources of clean, renewable energy, and through conservation.

Response:

Each home built, whether turn-key or lessee-built, will be required to have a solar water heater system pursuant to MCC, Section 16.16B.R403.5.5. In addition, individual homeowners may install photovoltaic panels on their homes if they so choose. With this information in mind, the objectives and policies of the goal to meeting Maui's energy needs through local sources of clean, renewable energy and through conservation are indirectly applicable to the proposed project.

6.11 Harbors and Airports

Goal:

Maui will have harbors and airports that will efficiently, dependably, and safely facilitate the movement of passengers and cargo.

Response:

The goal for harbors and airports are not applicable to the proposed project. In particular, the residential housing project does not advance or promote the upgrading of harbor and airport facilities, and establishing appropriately planned and functional small boat harbors.

CHAPTER 7—LAND USE

7.1 Agricultural Lands

Goal:

Maui will have a prosperous agricultural industry and will protect agricultural lands.

Response:

The proposed action does not have direct or indirect relationships to the goal for agriculture. As previously discussed, the proposed project will be developed on lands designated for agriculture use. Although designated for agriculture, the lands have not been in cultivation for over a decade, aside from intermittent cattle grazing. In the context of the amount of viable agriculture lands on the island of Maui, implementation of the proposed action is not considered to adversely affect agricultural productivity on Maui. In addition, it is noted that the proposed action will be located adjacent to existing, similarly scaled residential subdivisions.

7.2 Rural Areas

Goal:

Maui will have a rural landscape and lifestyle where natural systems, cultural resources and farm lands are protected and development enhances and compliments the viability and character of rural communities.

Response:

The northern portion of proposed project is located within the Urban Growth Boundary as designated by the County of Maui MIP. Although the remainder of the property is within the Rural Growth Boundary, as previously stated, the property is under the jurisdiction of the DHHL, which has vested authority to develop its lands at its discretion, and as such, the project may proceed without the lands being fully

entitled for residential use. The proposed project is not directly or indirectly applicable with these policies.

7.3 Urban Areas

Goal:

Maui will have livable human-scale urban communities, an efficient and sustainable land use pattern, and sufficient housing and services for Maui residents.

Response:

The proposed project provides additional homestead opportunities for DHHL beneficiaries in an area that is close to the government, business, and commercial centers of Wailuku and Kahului. The proposed project will be located in Waikapū, in proximity to the small businesses and public facilities that are offered to the community. Further, the proposed project has and continues to seek community involvement and input in the land use planning process. Ongoing coordination with various State and County agencies ensures that the proposed action accounts for and mitigates, to the extent possible, potential long-term cumulative impacts resulting from the residential subdivision.

CHAPTER 8—DIRECTED GROWTH PLAN

8.1 Urban and Small Town Growth Area

Goal:

Maui will have well-serviced, complete, and vibrant urban communities and traditional small towns through sound planning and clearly defined development expectations.

Response:

The northern portion of proposed project is located within the Urban Growth Boundary of the County of Maui's MIP while the remainder is within the Rural Growth Boundary. The project is not located within the Small Town Growth Boundary. The project is in consonance with the related UGB objective and policies of the MIP.

8.2 Rural Growth Area

Goal:

Maui will maintain opportunities for agriculture and rural communities through sound planning and clearly defined development expectations

Response:

The northern portion of the proposed project is located within the Urban Growth Boundary of the County of Maui's MIP while the remainder of the property is within the Rural Growth Boundary. It is noted that although the remainder of the property is within the Rural Growth Boundary, as previously stated, the property is under the jurisdiction of the DHHL, which has vested authority to develop its lands at its discretion, and as such, the project may proceed without the lands being fully entitled for residential use.

8.3 Protected Area Policy

Policy:

The Protected Areas in Diagram E-1, NW-1, N-1, NE-1, S-1, SE-1, and WC-1 should be concurrently reviewed with Table 8-2 and with any proposed land uses that may result inan adverse impact on a Protected Area. The County Council and the Administration should be notified if a Protected Area may be compromised by a development proposal.

Response:

Protected areas, as defined in Table 8-2 of the MIP are those lands categorized as preservation, park, greenbelt, greenway, and sensitive land. Diagram WC-1 shows that project site has preservation lands and a greenway/greenbelt along the south and east sides of the property, respectively, which correspond to buffers noted within the Maui Island Plan's Pu'unani Growth Area. As discussed previously, an analysis was undertaken by the DHHL to determine if the required 500-foot greenbelt along Honoapi'ilani Highway and 200-foot greenbelt along the project's boundary with the existing Waiolani Mauka subdivision could be accommodated. Based on this analysis, the inclusion of these two (2) greenbelts would result in the loss of approximately 68 out of the total 161 residential lots available for DHHL beneficiaries. As the waiting lists for DHHL homestead lots are in currently the

thousands, the DHHL determined that the inclusion of these two (2) greenbelts is not feasible and would be contrary to the mission and purpose of both the HHCA and DHHL, which are to provide as many homestead opportunities to beneficiaries, as possible.

F. WAILUKU-KAHULUI COMMUNITY PLAN

The project site is located within the Wailuku-Kahului Community Plan region, one (1) of nine (9) community plan regions established in the County of Maui. Each region's growth and development is guided by a Community Plan. The County's Community Plan reflects current and anticipated conditions in the Wailuku-Kahului region and advances planning goals, objectives, policies, and implementation considerations to guide decision-making in the region. The primary purpose of the Community Plan is to outline a detailed agenda for carrying out these policies and objectives. The Wailuku-Kahului Community Plan was adopted by the County of Maui through Ordinance Number 3061, and became effective on June 5, 2002. The Community Plan land use map designates the 47.4-acre project site as "Agriculture" with a portion also being designated "SF, Single-Family". See Figure 13. However, as previously discussed, the lands on which the proposed project will be developed are under the jurisdiction of the DHHL, which has vested authority to develop its lands at its discretion. It is also noted that the site of the proposed sewerline installation is also designated for "Agriculture" by the Wailuku-Kahului Community Plan. Refer to Figure 13. It is noted that Parcel 64 is entitled for the proposed Wailuku Apartment Rental Housing Project, by others.

The proposed project is consistent with the following goals, objectives, and policies of the Wailuku-Kahului Community Plan as outlined below.

CULTURAL RESOURCES

Goal:

Identification, protection, preservation, enhancement, and where appropriate, use of cultural practices and sites, historic sites and structures, and cultural landscapes and view planes that:

- Provide a sense of history and define a sense of place for the Wailuku-Kahului region; and
- Preserve and protect native Hawaiian rights and practices customarily and traditionally exercised for subsistence, cultural and religious purposes in accordance with Article XII, Section 7, of the Hawaii State
- Constitution, and the Hawaii Supreme Court's PASH opinion, 79 HAW.
 425 (1995).

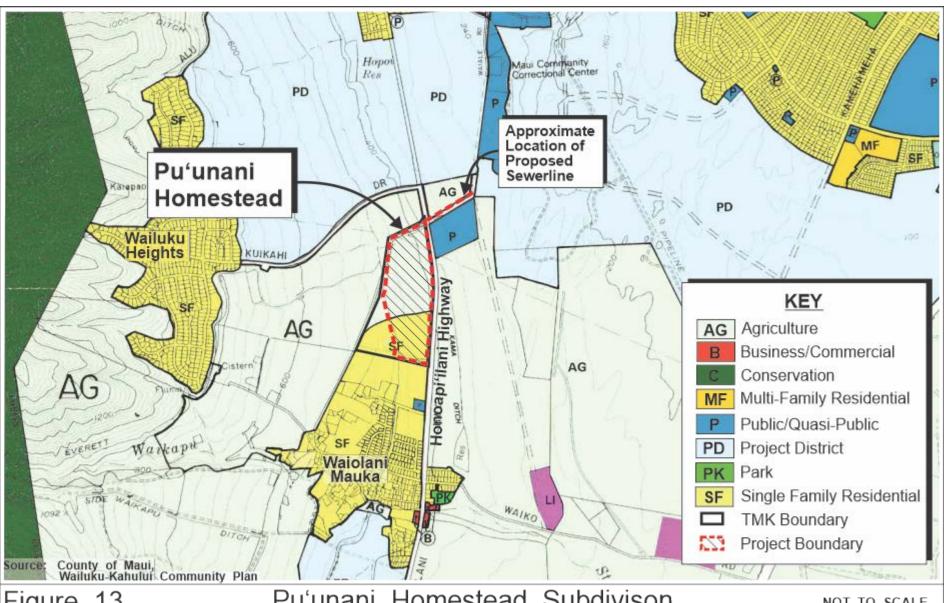


Figure 13

Pu'unani Homestead Subdivison Wailuku-Kahului Community Plan Map

NOT TO SCALE



Prepared for: State of Hawai'i, Department of Hawaiian Home Lands



Objective and Policy:

Preserve the character and integrity of historic sites in the Wailuku-Kahului region.

Discussion and Response: An AIS was prepared in 2005 for a 215.8-acre area in Waikapū, which included the proposed subdivision. In its acceptance letter of the AIS, the SHPD concurred that no further mitigation was necessary. However, the DHHL will conduct archaeological monitoring for the site of the proposed subdivision during all ground disturbance activities. In addition, an AA was completed for the parcel on which the proposed sewerline will be located in relation to the Wailuku Apartment Rental Housing Project. In its acceptance letter, the SHPD concurred that archaeological monitoring must be undertaken. Should any archaeological resources be discovered during ground altering activities, work shall cease in the immediate area of the find and mitigation coordination will be undertaken with the SHPD. In addition, a CIA was prepared for the Proposed Pu'unani Homestead Subdivision project and noted that based on historical research and consultation, there is evidence of cultural practices related to Hawaiian rights related to agricultural pursuits, access to resources, and other customary activities presently occurring in the vicinity of the proposed project, but not necessarily within the project area. In addition, a legendary grinding stone (Pōhāko'i) is believed to be located in the vicinity of the site of the proposed subdivision. The CIA also noted that given the project site's proximity to sand dunes, there is a potential for human burials to be present. As such, the CIA provided recommendations that an archaeological field inspection be conducted by a qualified archaeologist prior to the commencement of any construction related ground altering activities in an effort to locate Pohāko'i and that archaeological monitoring be undertaken during construction-related ground-altering activities. An archaeological field inspection was conducted in August 2020. No discoveries were made as Pōhāko'i may have been relocated given the extensive agricultural clearing and landscape modifications that previously occurred in the area. Nonetheless, future efforts to locate this important stone will occur during the archaeological monitoring of the project area during future ground-altering activities.

HOUSING

Goal:

A sufficient supply and choice of attractive, sanitary and affordable housing accommodations for the broad cross section of residents, including the elderly.

Objectives and Policies:

- Provide sufficient land areas for new residential growth which relax constraints on the housing market and afford variety in type, price, and location of units. Opportunities for the provision of housing are presently constrained by a lack of expansion areas. This condition should be relieved by a choice of housing in a variety of locations, both rural and urban in character.
- Seek alternative residential growth areas within the planning region, with high priority given to the Wailuku and Kahului areas. This action should recognize that crucial issues of maintaining important agricultural lands, achieving efficient patterns of growth, and providing adequate housing supply and choice of price and location must be addressed and resolved.

<u>Discussion and Response:</u> Although the proposed project involves repurposing land currently designated for agricultural uses for housing development, the lands have not been in active agricultural production for some time. The project provides additional housing opportunities for DHHL beneficiaries in an area that is close to existing residential developments as well as the government, business, and commercial centers of Wailuku and Kahului.

GOVERNMENT

Goal:

Government that demonstrates the highest standards of fairness; responsiveness to the needs of the community; fiscal integrity; effectiveness in planning and implementation of programs and projects; a fair and equitable approach to taxation and regulation; and efficient, results-oriented management.

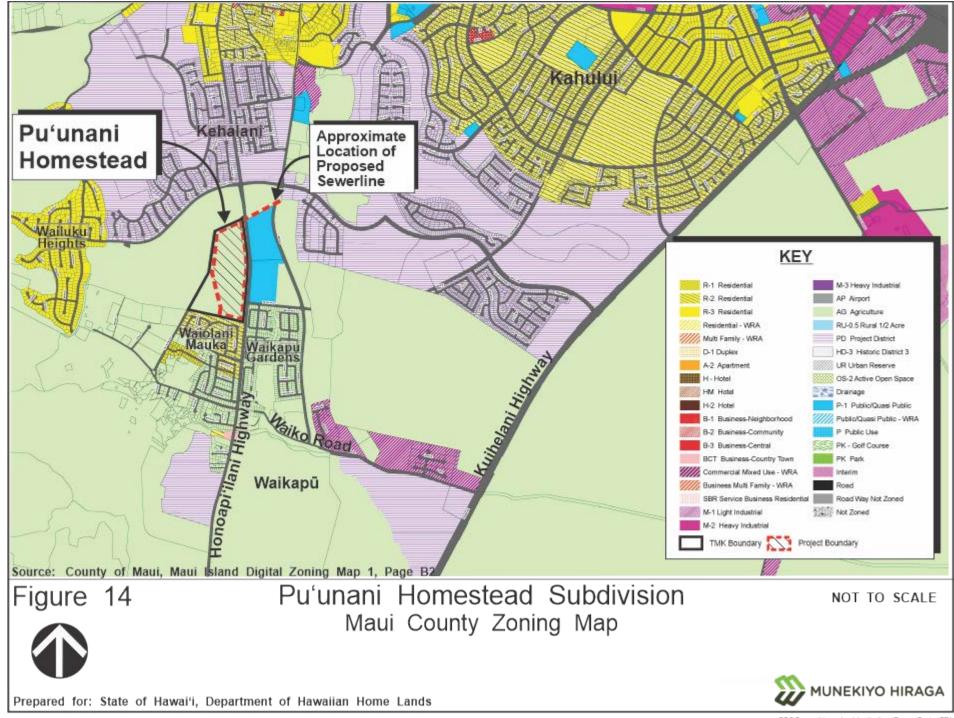
Objective and Policy:

• Ensure that adequate infrastructure is or will be available to accommodate planned development.

<u>Discussion and Response:</u> The proposed housing project will be implemented in a developed area in Central Maui, in proximity to existing infrastructure and services.

G. COUNTY ZONING

The land underlying the proposed project site is zoned "Agriculture" by the Maui County Zoning Ordinance. See **Figure 14**. However, as previously discussed, the lands on which the proposed project will be developed are under the jurisdiction of the DHHL, which has vested authority to develop its lands at its discretion. It is also noted that the site of the proposed sewerline installation is designated "Agriculture" by Maui County Zoning.



H. HAWAI'I COASTAL ZONE MANAGEMENT PROGRAM

The Hawai'i Coastal Zone Management Program (HCZMP), as formalized in Chapter 205A, HRS, establishes objectives and policies for the preservation, protection, and restoration of natural resources of Hawai'i's coastal zone. Although the proposed improvements are not within the County of Maui's Special Management Area, the applicability of coastal zone management considerations applies to all lands in the State of Hawai'i and, as such, has been reviewed and assessed as follows.

1. <u>Recreational Resources</u>

Objective:

Provide coastal recreational opportunities accessible to the public.

Policies:

- a. Improve coordination and funding of coastal recreational planning and management; and
- b. Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by
 - i. Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
 - ii. Requiring restoration of coastal resources that have significant recreational and ecosystem value, including but not limited to coral reefs, surfing sites, fishponds, sand beaches, and coastal dunes when these resources will be unavoidably damaged by development; or requiring monetary compensation to the State for recreation when restoration is not feasible or desirable:
 - iii. Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
 - iv. Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
 - Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;
 - vi. Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters:

- vii. Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and
- viii. Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting that dedication against the requirements of section 46-6.

Response: The project site is located inland and away from the coastline. The proposed action is not anticipated to impact coastal recreational opportunities or affect existing public access to and along the shoreline.

2. <u>Historic/Cultural Resources</u>

Objective:

Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

- a. Identify and analyze significant archaeological resources;
- b. Maximize information retention through preservation of remains and artifacts or salvage operations; and
- c. Support state goals for protection, restoration, interpretation, and display of historic resources.

Response: An AIS was prepared in 2005 for a 215.8-acre area in Waikapū, which included the proposed subdivision site. In its acceptance letter of the AIS, the SHPD concurred that no further mitigation was necessary. However, the DHHL will conduct archaeological monitoring for the site of the proposed subdivision during all ground disturbance activities. In addition, an AA was completed for the parcel on which the proposed sewerline will be located in relation to the Wailuku Apartment Rental Housing Project. In its acceptance letter, the SHPD concurred that archaeological monitoring must be undertaken. Should any archaeological resources be discovered during ground altering activities, work shall cease in the immediate area of the find and mitigation coordination will be undertaken with the SHPD. In addition, a CIA was prepared for the Proposed Pu'unani Homestead Subdivision project and noted that based on historical research and consultation, there is evidence of cultural practices related to Hawaiian rights for agricultural pursuits, access to resources, and other customary activities presently occurring in the vicinity of the proposed project, but not necessarily within the project area. In addition, a legendary grinding stone (Pōhākoʻi) is believed to be located in the vicinity of the site of the proposed subdivision. The CIA also noted that given the project site's proximity to sand dunes, there is a potential for human burials to be present. As such, the CIA provided recommendations that an archaeological field inspection be conducted by a qualified archaeologist prior to the commencement of any construction related ground altering activities in an effort to locate Pōhākoʻi and that archaeological monitoring be undertaken during construction-related ground-altering activities. An archaeological field inspection was conducted in August 2020. No discoveries were made as Pōhākoʻi may have been relocated given the extensive agricultural clearing and landscape modifications that previously occurred in the area. Nonetheless, future efforts to locate this important stone will occur during the archaeological monitoring of the project area during future ground-altering activities.

3. Scenic and Open Space Resources

Objective:

Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

- a. Identify valued scenic resources in the coastal zone management area;
- Ensure that new developments are compatible with their visual environment by designing and locating those developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
- c. Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and
- d. Encourage those developments that are not coastal dependent to locate in inland areas.

Response: As indicated previously, the project is located inland and not on or near the shoreline. The proposed project is not anticipated to adversely impact coastal scenic and open space resources.

4. <u>Coastal Ecosystems</u>

Objective:

Protect valuable coastal ecosystems, including reefs, beaches, and coastal dunes, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

- a. Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- b. Improve the technical basis for natural resource management;
- c. Preserve valuable coastal ecosystems of significant biological or economic importance, including reefs, beaches, and dunes;
- d. Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- e. Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Response: The proposed project is located inland, away from coastal ecosystems and is, therefore, not anticipated to have adverse impacts on coastal/shoreline resources, including reefs, beaches, dunes, and marine resources. Appropriate BMPs will be utilized to ensure that construction runoff is appropriately detained, minimizing any impact on coastal waters. In addition, an application for a National Pollutant Discharge Elimination System (NPDES) permit for construction will be submitted to the State Department of Health (DOH) for review and approval prior to the start of construction.

5. Economic Use

Objective:

Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

- Concentrate coastal dependent development in appropriate areas;
- b. Ensure that coastal dependent development and coastal related development are located, designed, and constructed to minimize exposure to coastal hazards and adverse social, visual, and environmental impacts in the coastal zone management area; and
- c. Direct the location and expansion of coastal development to areas designated and used for that development and permit reasonable long-term growth at those areas, and permit coastal development outside of designated areas when:

- i. Use of designated locations is not feasible;
- ii. Adverse environmental effects and risks from coastal hazards are minimized; and
- iii. The development is important to the State's economy.

Response: The proposed project is not a coastal dependent or related development. The project site is located inland from the shoreline. The proposed project will stimulate the economy through the generation of construction jobs. The project will also generate revenue for the State and County from general excise and income tax, real property tax, and impact fees. The proposed project does not contravene the objective and policies for economic use.

6. <u>Coastal Hazards</u>

Objective:

Reduce hazard to life and property from coastal hazards.

Policies:

- a. Develop and communicate adequate information about the risks of coastal hazards;
- b. Control development, including planning and zoning control, in areas subject to coastal hazards;
- c. Ensure that developments comply with requirements of the National Flood Insurance Program; and
- d. Prevent coastal flooding from inland projects.

Response: According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the area, the project site falls within Zone X (shaded), an area of minimal flooding. In addition, the project site is not located within the tsunami evacuation zone or projected 3.2-foot sea level rise exposure area. Drainage improvements will be designed in accordance with the Drainage Standards of the County of Maui to ensure that the project will not adversely affect downstream properties from the effects of flooding and erosion.

Adverse impacts to hazard-sensitive areas are not anticipated.

7. Managing Development

Objective:

Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies:

- Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
- b. Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and
- c. Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Response: Opportunities for agency and public review of the proposed action are provided pursuant to Chapter 343, HRS. The project was also discussed at a number of community and agency meetings. A summary of the outreach efforts is provided in Chapter XI. In addition, the DHHL actively engages with its beneficiaries on projects it intends to develop. The DHHL held beneficiary consultation meetings with the community homestead leaders on February 10, 2020 and July 8, 2020. In addition, the public will also have an opportunity to provide comments on the preliminary Final EA during the HHC's review of the document

8. <u>Public Participation</u>

Objective:

Stimulate public awareness, education, and participation in coastal management.

Policies:

- a. Promote public involvement in coastal zone management processes;
- b. Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and
- c. Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Response: The project has, and will continue to address public awareness, education, and participation objectives. As noted above, the applicant has undertaken outreach activities with a number of community agencies and associations as well as DHHL community homestead leaders. Opportunities for agency and public review of the proposed action are also provided through the

comment processes pursuant to Chapter 343, HRS, as well as during the HHC's review of the preliminary Final EA.

9. <u>Beach and Coastal Dune Protection</u>

Objectives:

- a. Protect beaches and coastal dunes for:
 - i. Public use and recreation:
 - ii. The benefit of coastal ecosystems; and
 - iii. Use as natural buffers against coastal hazards; and
- b. Coordinate and fund beach management and protection.

Policies:

- a. Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;
- b. Prohibit construction of private shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities;
- c. Minimize the construction of public shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities:
- d. Minimize grading of and damage to coastal dunes;
- e. Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor; and
- f. Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.

Response: The project site is located inland, away from the shoreline and is not anticipated to impact coastal and shoreline processes.

10. Marine and Coastal Resources

Objective:

Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies:

- a. Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial:
- b. Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;
- Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
- d. Promote research, study, and understanding of ocean and coastal processes, impacts of climate change and sea level rise, marine life, and other ocean resources to acquire and inventory information necessary to understand how coastal development activities relate to and impact ocean and coastal resources; and
- e. Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Response: The project is located inland, away from the ocean and is, therefore, not anticipated to have an impact on marine or coastal resources.

ALTERNATIVES TO THE PROPOSED ACTION



IV. ALTERNATIVES TO THE PROPOSED ACTION

The following is a discussion of the various development alternatives that have been considered by the Applicant as part of the planning process.

A. PREFERRED ALTERNATIVE

The preferred alternative is the proposed maximum 161-lot single-family residential subdivision and related improvements described in Chapter I of this document. The proposed subdivision represents a use which will serve to advance the Department of Hawaiian Home Lands' (DHHL) efforts to provide needed homestead opportunities for their beneficiaries.

As discussed previously, the mission of the DHHL is to effectively manage the Hawaiian Home Lands trust and to develop and deliver land to Native Hawaiians. The Hawaiian Homes Commission Act (HHCA), codified within the constitution of the State of Hawai'i, states as its purpose:

- (a) The Congress of the United States and the State of Hawaii declare that the policy of this Act is to enable native Hawaiians to return to their lands in order to fully support self-sufficiency for native Hawaiians and the self-determination of native Hawaiians in the administration of this Act, and the preservation of the values, traditions, and culture of native Hawaiians.
- (b) The principal purposes of this Act include but are not limited to:
 - (1) Establishing a permanent land base for the benefit and use of native Hawaiians, upon which they may live, farm, ranch, and otherwise engage in commercial or industrial or any other activities as authorized in this Act:
 - (2) Placing native Hawaiians on the lands set aside under this Act in a prompt and efficient manner and assuring long-term tenancy to beneficiaries of this Act and their successors;
 - (3) Preventing alienation of the fee title to the lands set aside under this Act so that these lands will always be held in trust for continued use by native Hawaiians in perpetuity;

Similarly, the DHHL General Plan, adopted in 2002, lists as goals under the Residential Uses objective:

• Substantially increase the number of residential homesteads awarded each year.

- Provide a mix of housing opportunities that reflect the needs and desires of native Hawaiian beneficiaries.
- Provide residential homesteads, financing, and other housing opportunities, especially to those most in need.

The proposed project directly supports these stated purposes.

Also as previously discussed, the DHHL Maui Island Plan (MIP), adopted in 2004 as the comprehensive resource for planning and managing the Maui Island lands and establishes land use designations to encourage orderly social, physical, and economic development on the island, also provides data from a beneficiary survey conducted in 2003 to assess the preferences of DHHL beneficiaries on Maui. The results of the survey show that most beneficiaries prefer an award of improved land with a turnkey single-family house on it. In addition, almost 900 beneficiaries indicated a preference of the Wailuku area in terms of award location. The proposed project is in line with beneficiary preferences as discussed in the MIP.

Furthermore, the location of the proposed project is in an area of Waikapū developed with existing residential developments of a similar nature, with existing infrastructure systems, and a handful of small businesses. Waikapū is a short distance from Wailuku Town, which is the seat of State and County government offices on Maui. Wailuku also features a number of professional services, restaurants, and retail outlets.

For these reasons, the preferred alternative is considered to be the most viable alternative which meets the stated purposes of DHHL and the HHCA, meets stated preferences of DHHL beneficiaries and which will be developed in an area making prudent use of existing infrastructure systems.

B. ALTERNATIVE CONFIGURATIONS

In addition to the proposed action, alternative configuration options were considered by DHHL. These included configurations consisting of lots of different sizes, different mixes of turn-key and owner-build lots, as well as different access point locations onto Honoapi'ilani Highway. The current subdivision layout represents the most feasible mix of lot sizes and turn-key and owner-build lots, accommodates the DHHL beneficiary preferences and is consistent with the adjacent residential subdivisions within the developed area of Waikapū. Also, the locations of the two (2) subdivision entrances were reviewed by the State Department of Transportation and provides for safe ingress and egress points given the topography of the land, locations of horizontal and vertical sight distance contraints in the roadway, and locations of other intersections along this stretch of roadway. After conducting studies of alternative design concepts and costs of development, the lot configuration and product mix selected as the preferred alternative proved to be the optimal option in meeting the goals of the DHHL.

C. PU'UNANI GROWTH AREA ALTERNATIVE

The proposed subdivision site is located within the planned Pu'unani Growth Area as defined in the County of Maui's Maui Island Plan (MIP). According to the MIP, the Pu'unani Growth Area was intended to be a mixed-use project (by others) located at the southwest edge of Wailuku, south of Kehalani below Wailuku Heights east of Honoapi'ilani Highway. The growth area was envisioned to be buffered by a 200-foot greenbelt along its eastern edge and adjacent to Honoapi'ilani Highway, as well as a 500-foot greenbelt along the area's southern extent. The greenbelt and rural lands were intended to provide separation between Wailuku and Waikapū, and provide a visual relief by creating a lower-density residential pattern than surrounding communities.

The Pu'unani Growth Area plan supports a number of goals and objectives of the MIP, including those related to supporting a thriving population, providing housing options for residents, use of existing infrastructure systems and public facilities, responsible land use, and supporting directed growth plans as identified in the MIP.

However, as the project site has since been acquired by the DHHL, the Pu'unani Growth Area plan, as envisioned by the MIP, is no longer a feasible alternative, as it does not directly meet the stated purposes of the DHHL and the HHCA as discussed above, nor would the plan directly meet the needs of DHHL beneficiaries. The currently proposed project is a separate and distinct project from the Pu'unani Growth Area plan and is smaller in scale. Also, the proposed project is not intended to connect with existing developments in Wailuku, thereby maintaining the existing physical separation between Waikapū and Wailuku. In addition, it is noted that the aforementioned greenbelts, if included in the project, would result in the loss of approximately 68 out of the total 161 developable lots available for DHHL beneficiaries. See Figure 15. As the Maui Residential Waiting List stands at approximately 3,819, while the Waiohuli Undivided Interest List is at approximately 272 beneficiaries awaiting homestead leases, the DHHL determined that the inclusion of these two (2) greenbelts and losing approximately 42 percent of developable lots is not feasible and goes against the mission and purpose of both the HHCA and DHHL, which are to provide as many homestead opportunities to beneficiaries as possible.

D. NO ACTION ALTERNATIVE

Under the "no action" alternative, the project site would remain "as is". The "no action" alternative is not considered to be in the best interest of DHHL beneficiaries as the "no action" alternative would not provide new homestead opportunities. The "no action" alternative is in direct conflict with the stated purposes of the DHHL and HHCA. In this context, the proposed project is considered the most appropriate alternative.

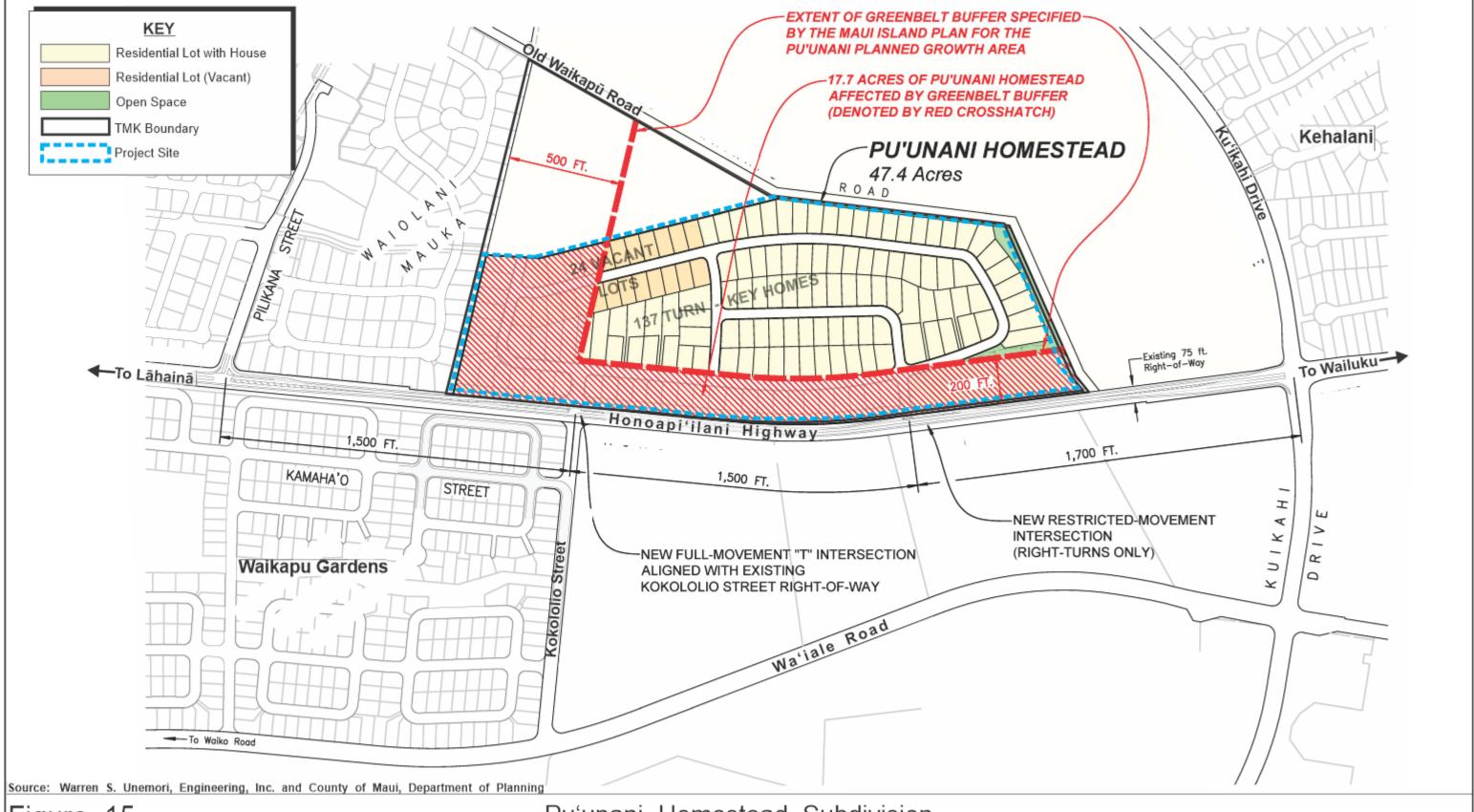


Figure 15

Pu'unani Homestead Subdivision Maui Island Plan Recommended Buffers

NOT TO SCALE





E. DEFERRED ACTION ALTERNATIVE

A deferral of the proposed action means that the development proposal would be pursued at a later point in time. The deferral alternative is not considered viable from a project implementation standpoint. The DHHL's commitment to planning, design, and construction allows for the project to proceed at this time. Delays in project implementation will likely result in higher development costs and greater uncertainty with respect to infrastructure systems adequacy. In addition, economic impacts resulting from delays in the project may also result in a longer waiting time for those of the DHHL homestead waiting list thereby not allowing the DHHL to fulfill its mission of providing homestead opportunities for its beneficiaries. The DHHL believes that the project can be viably developed under current market and financing conditions. With this in mind, the "deferred action alternative" is not considered appropriate.

SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

An assessment of construction-related and post construction-related impacts on the physical and socio-economic environment, including a biological resources survey, a Cultural Impact Assessment, archaeological consultation, and Traffic Impact Analysis Report were carried out as part of the environmental assessment documentation process. The proposed development may result in limited, unavoidable construction-related impacts on the environment, as described in Chapter II.

In the short term, construction associated with the proposed project will have a temporary impact on air quality from dust generation and discharge of exhaust from construction equipment during ground altering activities and site grading. Appropriate Best Management Practices will be incorporated to mitigate adverse construction-related impacts, including but not limited to, watering of exposed surfaces, installing dust screens, and regular maintenance of construction equipment.

Construction of the proposed project will also generate unavoidable short-term noise impacts. The use of properly maintained construction equipment will mitigate noise impacts caused by equipment. The incorporation of State Department of Health construction noise limits and curfew times are measures to mitigate noise impacts caused by construction activities.

The project will provide access and related improvements along Honoapi'ilani Highway to ensure that project-related traffic impacts can be mitigated. Refer to **Appendix** "K". Furthermore, although the State Historic Preservation Division has concurred that no further archaeological work is necessary in accordance with the findings of the previously accepted Archaeological Inventory Survey, the Department of Hawaiian Home Lands has elected to conduct archaeological monitoring during all ground disturbance activities at the site of the proposed subdivision. As such, an Archaeological Monitoring Plan (AMP) will be prepared and the contractor, once selected, will be required to follow the provisions of the AMP. In addition, monitoring will also be undertaken for the site of the proposed offsite sewerline in accordance with the recommendations of an Archaeological Assessment accepted by the SHPD for the development of the Wailuku Affordable Rental Housing Project, which is slated to be developed on the property where the proposed sewerline will be installed.

In summary, the proposed action is not anticipated to create any significant, long-term adverse environmental effects.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES



VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed action will not entail a substantial commitment of public services or facilities. Exisiting offsite infrastructure systems will be improved by the Applicant to address additional demands generated by the proposed project. Development of the proposed project will involve a commitment of energy, labor, fiscal, and material resources by the Department of Hawaiian Home Land (DHHL). The use of these resources, when weighed against the expected benefit to be derived from the single-family residential project for DHHL beneficiaries, and the construction-related employment that will be generated through implementation of the project is not considered an adverse commitment.

LIST OF PERMITS AND APPROVALS

VII. LIST OF PERMITS AND APPROVALS

The following permits and approvals may be required prior to the implementation of the project:

State of Hawai'i

- 1. Chapter 343, Hawai'i Revised Statutes, Environmental Assessment
- 2. Chapter 11-46, Community Noise Control, as applicable
- 3. Chapter 11-60.1-33, Fugitive Dust, as applicable
- 4. National Pollutant Discharge Elimination System (NPDES) Permit
- 5. Work on State Highway Permit

County of Maui

- 1. Construction permits (i.e., building and grading permits)
- 2. Approvals for removal and replacement of exceptional trees, as applicable.

SIGNIFICANCE CRITERIA ASSESSMENT



VIII. SIGNIFICANCE CRITERIA ASSESSMENT

The "Significance Criteria", defined in Chapter 11-200.1-13 of the Hawai'i Administrative Rules (HAR), were reviewed and analyzed to determine whether the proposed project will have significant effect on the environment. As defined under Chapter 343, Hawai'i Revised Statutes "significant effect" means the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State's environmental policies or long-term environmental goals as established by law, or adversely affect the economic welfare, social welfare, or cultural practices of the community and State. The analysis required to determine whether a proposed action may have a significant effect requires that every aspect of the proposed action, expected primary and secondary consequences, and the cumulative as well as the short-term and long-term effects are evaluated in accordance with the Significance Criteria of Section 11-200.1-13 of the Administrative Rules. The following criteria and analyses are provided.

1. <u>Irrevocably commit a natural, cultural, or historic resource.</u>

There are no known rare, threatened, or endangered species of flora, fauna, avifauna, or important habitats located within the project site. As mentioned previously, an Archaeological Inventory Survey (AIS) and an Archaeological Assessment (AA) were completed for the two (2) affected project parcels and no burial features or human remains were identified. As such, the AIS did not recommend any further archaeological mitigation. The AIS was submitted to and accepted by the State Historic Preservation Division (SHPD). The AA, which was prepared for the Wailuku Apartment Rental Housing Project and also accepted by the SHPD, recommended archaeological monitoring be conducted for all ground altering activities. The Department of Hawaiian Home Lands (DHHL) will coordinate with the developer of the Wailuku Apartment Rental Housing Project to ensure that archaeological monitoring of the site of the proposed sewerline construction will be conducted in accordance with the SHPD-accepted archaeological monitoring plan. In addition, the project archaeologist previously submitted a Section 6E, Hawai'i Revised Statutes (HRS) form to the SHPD to reconfirm SHPD's acceptance of the previous AIS and that no further action is necessary on the proposed subdivision site. It is further noted that the DHHL, by letter dated March 27, 2020, requested the SHPD's reconfirmation of the previous determinations made on the AIS and AA, and that no further work was required for Parcel 2, and monitoring would be required for the limited work within Parcel 64. The SHPD provided their concurrence via return signature on the March 27, 2020 letter. Refer to Appendix "G". In addition, although the SHPD has concurred that no further work is necessary in accordance with the findings of the previously accepted AIS, the DHHL has elected to conduct archaeological monitoring during all ground disturbance activities at the site of the proposed subdivision. As such,

an Archaeological Monitoring Plan (AMP) will be prepared and the contractor, once, selected, will be required to follow the provisions of the AMP. Should inadvertent archaeological features, cultural artifacts, or human burials be located during construction activities, work in the immediate area of the find shall be promptly halted and the find protected from further disturbance. The SHPD will be immediately contacted to determine the significance of the find and establish appropriate mitigative measures, as necessary. As mentioned previously, an archaeological field inspection was conducted in August 2020. No discoveries were made as Pōhākoʻi may have been relocated given the extensive agricultural clearing and landscape modifications that previously occurred in the area. Nonetheless, future efforts to locate this important stone will occur during the archaeological monitoring of the project area during future ground-altering construction activities.

With the mitigation measures presented herein, the proposed project will not involve an irrevocable commitment to loss or destruction of any natural, cultural, or historic resources.

2. Curtail the range of beneficial uses of the environment.

The proposed action will be implemented adjacent to existing residential developments of a similar nature, and the commitment of land resources for the proposed action will not curtail the range of beneficial uses of the environment. The project site, although designated for agricultural use, and is designated as "Prime" agricultural lands by the Agricultural Lands of Importance to the State of Hawai'i (ALISH), has not been in agricultural production for some time. On the island of Maui, approximately 70,714 acres of the total land area of the island are within the ALISH "Prime" Designation, this represents approximately 15 percent of the island. As such, the use of 47.4 acres or 0.07 percent of the "Prime" designated 70,714 acres on Maui for much needed residential housing in an existing urbanized area with other similar residential subdivisions is not considered a substantial adverse impact in the context of the overall Prime designated lands on Maui. The proposed use of the site for development of a new subdivision is compatible with surrounding residential uses.

3. <u>Conflict with the State's environmental policies or long-term environmental goals established by law.</u>

The proposed action does not conflict with the policies and guidelines of Chapter 343, HRS. An environmental assessment (EA) has been carried out to ensure the proposed project will not have significant adverse impacts on the environmental resources. While this project may cause adverse impacts, based on the analysis conducted in this EA, the adverse impacts are not anticipated to be significant.

Where mitigation measures are required due to potential impacts attributed to the project, DHHL will implement those applicable measures to further reduce adverse impacts.

4. Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.

The proposed action will have a beneficial effect on the local economy during the short and long term. As previously discussed, positive economic and social impacts are anticipated as a result of the project including construction-related jobs, real property assessment revenues, and contribution of water, wastewater, and educational assessment fees. In addition, a CIA was prepared for the Proposed Pu'unani Homestead Subdivision project and noted that based on historical research and consultation, there is evidence of cultural practices for Hawaiian rights for agricultural pursuits, access to resources, and other customary activities presently occurring in the vicinity of the proposed project, but not specifically within the proposed project area. In addition, a legendary grinding stone (Pōhāko'i) is believed to be located in the vicinity of the site of the proposed subdivision. As such, the CIA provided recommendations that an archaeological field inspection be conducted by a qualified archaeologist prior to the commencement of any construction related ground altering activities in an effort to locate Pōhāko'i, and that archaeological monitoring be conducted for all construction-related ground-altering activities. As previously discussed, an archaeological field inspection was undertaken, and yielded no discoveries. Furthermore, archaeological monitoring will be undertaken for all ground disturbance activities.

5. Have a substantial adverse effect on public health.

As mentioned previously, although the proposed subdivision site is former agricultural lands, a Phase I Environmental Site Assessment conducted did not reveal any recognized environmental conditions. Refer to **Appendix "I"**. In addition, the project is not anticipated to result in long-term air or noise impacts. Furthermore, the proposed action is not anticipated to create significant direct or indirect foreseeable greenhouse gas (GHG) emissions, and does not fall within the threshold of mandatory GHG reporting. As such, no adverse impact to public health or welfare is anticipated as a result of the proposed action.

6. <u>Involve adverse secondary impacts, such as population changes or effect on public facilities.</u>

The proposed project will provide needed additional residential lots in Waikapū, Central Maui for DHHL beneficiaries. While some residents of this new community may come from off island, most are expected to relocate from other areas on Maui.

As such, the project is not anticipated to involve substantial secondary impacts due to population change. Secondary impacts on public facilities are not anticipated.

The DHHL will provide the necessary onsite and offsite infrastructure to support the proposed project. No substantial changes or effects on public facilities are expected with project implementation.

While DHHL does not have to follow State or County land use plans and regulations, it is noted that this development is in line with County long-range development and population growth projections.

7. <u>Involve a substantial degradation of environmental quality.</u>

No substantial degradation of environmental quality resulting from the action is anticipated. Best Management Practices (BMPs) and appropriate erosion control measures will be utilized during the construction period. Drainage system improvements will be constructed in accordance with applicable regulatory design standards to ensure that surface runoff will not have an adverse effect on adjacent or downstream properties.

Any potential short-term impacts to air and noise quality during the construction phase of the project, will be mitigated through employing BMPs. In the long term, the project will not adversely impact air quality and ambient noise.

8. <u>Be individually limited but cumulatively have substantial adverse effect upon</u> the environment or involves a commitment for larger actions.

The proposed action is limited to the development of the proposed residential subdivision and sewerline improvement. The project is not a phase or increment of a larger total undertaking; a necessary precedent for a larger project; a commitment to some larger project; or one (1) of a series of individual actions planned by the DHHL within the area in the reasonably foreseeable future. The proposed project will stand on its own and is not reliant upon or a trigger for any other development. The cumulative impacts of the proposed project, together with other reasonably foreseeable actions, will include increased population and infrastructural demands, but this will not have a considerable effect on the environment. The DHHL will provide the necessary infrastructure to serve the proposed project. Drainage, wastewater, water, and roadway improvements will be designed to meet applicable local, State, and Federal regulations. The engineering and traffic reports prepared for the proposed project have assessed potential impacts and designed infrastructure systems in the context of future planned regional growth. Given the foregoing, the proposed project is not anticipated to cumulatively have considerable effect upon the environment, nor does it involve a commitment for larger actions.

9. <u>Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat.</u>

A Flora and Fauna Survey report was prepared to ensure that any sensitive terrestrial flora/fauna biological resources within the project site would be identified and provided adequate protection. No rare, threatened, or endangered species of flora, fauna, avifauna, or important habitats were identified on the affected properties. Refer to **Appendix "B" and Appendix "C"**. The project site is located adjacent to existing residential developments of a similar nature. The project is not anticipated to substantially affect rare, threatened, or endangered species, or its habitat.

10. <u>Have a substantial adverse effect on air or water quality or ambient noise levels.</u>

Construction activities will result in short-term air quality and noise impacts. BMPs, including erosion control and dust control measures (such as regular watering and sprinkling and installation of dust screens and timely revegetation of graded areas), will be implemented to minimize wind-blown emissions. In the short term, noise impacts will occur primarily from construction equipment. Equipment mufflers or other noise attenuating equipment, as well as proper vehicle maintenance and limiting construction to daylight hours, will be used during construction activities. Construction noise impacts will be mitigated through compliance with the provisions of the State of Hawai'i, Department of Health (DOH) Administrative Rules Title 11, Chapter 46, "Community Noise Control." These rules require a noise permit if the noise levels from construction activities are expected to exceed the allowable levels set forth in Chapter 46. In the long term, the proposed new subdivision is not anticipated to significantly impact ambient noise levels.

As such, with implementation of foregoing mitigation measures, the proposed project is not anticipated to detrimentally affect air or water quality or ambient noise levels.

11. Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

The project site is situated inland and is not anticipated to have any adverse impact upon coastal waters or resources, beaches, estuaries, or other fresh water bodies.

According to the Federal Emergency Management Agency's Flood Insurance Rate Maps currently in effect, the project site falls within Zone X (unshaded), an area of minimal flooding. The project site is located outside of the tsunami inundation zone.

In addition, the project site is located outside of the 3.2-foot projected sea level rise exposure area.

Drainage improvements will be designed to mitigate runoff in accordance with County drainage and stormwater quality rules and regulations. During construction, recommended BMPs will be implemented for erosion and sedimentation control to minimize potential impacts to water quality.

12. <u>Have a substantial adverse effect on scenic vistas and viewplanes, day or night, identified in county or state plans or studies.</u>

The proposed project has been designed to complement and enhance existing development in Waikapū. Careful consideration has been given during the planning process to formulate a site plan that is both sensitive and appropriate to Waikapū. In particular, the project provides open space relief and landscaping in the form of a landscaped lot along the project's frontage along Honoapi'ilani Highway and building forms to complement existing developed residential properties and the surrounding environment.

13. Require substantial energy consumption or emit substantial greenhouse gasses.

The proposed action will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction activities. However, this use is not anticipated to result in a substantial consumption of energy resources or substantial emission of greenhouse gasses. In the long term, the project will create an additional demand for electricity. However, this demand will not be substantially or excessively more than the energy consumed by similar developments throughout the region.

The project's technical characteristics and related impact considerations were thoroughly evaluated by the DHHL and the HHC. In accordance with HAR, Section 11-200.1-13, "Significance Criteria" every phase of the proposed action, the anticipated impacts, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action were considered. The analysis contained in this EA was supported through in-depth technical studies that were prepared by qualified professionals, and which were then reviewed by agencies having jurisdiction and expertise in their respective fields of authority.

Each section of the EA included a discussion and analysis of the impacts related to the respective environmental, infrastructural, public services and socio-economic parameters. While this project may cause impacts, based on the analysis conducted in the EA, the impacts are not anticipated to be significant. Where mitigation measures are required due to potential impacts attributed to the project, DHHL will implement those applicable measures to further reduce adverse impacts. Furthermore, the project will also result in positive impacts for DHHL beneficiaries, many of whom

are long-time Maui residents seeking affordable housing opportunities for themselves and their families.

It is noted that the Chapter 343, HRS environmental review process for the proposed project was conducted via an EA, and not an Environmental Impact Statement (EIS). This decision was made in concert with the DHHL based on comments received during the early consultation period from federal, state, and county agencies, as well as individuals and community organizations, and review of the technical studies prepared to identify any potential impacts of the proposed project. It was determined that the proposed project would likely not require an EIS, and, therefore, a Draft EA was prepared. The Draft EA and Anticipated Finding of No Significant Impact were published by the Office of Environmental Quality Control on May 23, 2020. The Draft EA was then revised to incorporate comments received during the 30-day public comment period and is presented as this Final EA.

In summary, the project site is situated adjacent to existing residential uses of a similar nature, in close proximity to services and commercial areas in the Wailuku and Kahului region. This project will be developed in an area with existing infrastructure systems, and will not extend County service areas. The proposed project is not anticipated to have a significant adverse impact on the surrounding physical, cultural and socio-economic environments. Based on the preceding analysis in this EA document, and in accordance with the significance criteria set forth in 11-200.1-13, HAR, the proposed project has been determined to qualify for a finding of no significant impact (FONSI).

PARTIES CONSULTED DURING
THE PREPARATION OF THE
DRAFT ENVIRONMENTAL
ASSESSMENT; LETTERS
RECEIVED AND RESPONSES
TO SUBSTANTIVE COMMENTS



IX. PARTIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies, organizations, and individuals were consulted during preparation of the Draft Environmental Assessment (EA). This Chapter addresses early consultation comments received from these agencies, organizations, and individuals.

FEDERAL AGENCIES

- Larry Yamamoto, State Conservationist Natural Resources Conservation Service U.S. Department of Agriculture P.O. Box 50004 Honolulu, HI 96850-0001
- Tunis McElwain, Acting Chief
 U.S. Department of the Army, Regulatory
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- Michelle Bogardus, Island Team Leader U. S. Fish and Wildlife Service 300 Ala Moana Blvd., Rm. 3-122 Honolulu, HI 96850

STATE AGENCIES

- Curt Otaguro, Comptroller State of Hawai'i Department of Accounting and General Services 1151 Punchbowl Street, #426 Honolulu, HI 96813
- Denise Albano, Chair State of Hawai'i Department of Agriculture 1428 South King Street Honolulu, HI 96814-2512
- Mike McCartney, Director State of Hawai'i Department of Business, Economic Development & Tourism P.O. Box 2359 Honolulu, HI 96804

- Christina Kishimoto, Superintendent State of Hawai'i Department of Education P.O. Box 2360 Honolulu, HI 96804
- Bruce Anderson, Director State of Hawai'i Department of Health 1250 Punchbowl St., Room 325 Honolulu, HI 96813
- State of Hawai'i
 Department of Health
 Environmental Health Administration
 P.O. Box 3378
 Honolulu, HI 96801
- Lene Ichinotsubo
 State of Hawai'i
 Department of Health
 Solid and Hazardous Waste Branch
 2827 Waimano Road, Suite 100
 Pearl City, HI 96782-1407
- 11. Patti Kitkowski State of Hawai'i Department of Health Maui Sanitation Branch 54 South High Street, Room 300 Wailuku, HI 96793
- Suzanne Case, Chairperson State of Hawai'i Department of Land and Natural Resources P. O. Box 621 Honolulu, HI 96809

- Dr. Alan Downer, Administrator State of Hawai'i Department of Land and Natural Resources State Historic Preservation Division 601 Kamokila Blvd., Room 555 Kapolei, HI 96707
- 14. Jade Butay, Director State of Hawai'i Department of Transportation 869 Punchbowl Street Honolulu, HI 96813
- 15. Craig Hirai, Executive Director State of Hawai'i Hawai'i Housing Finance and Development Corporation 677 Queen Street Honolulu, HI 96813
- Scott Glenn, Director State of Hawai'i
 Office of Environmental Quality Control 235 S. Beretania Street, Suite 702 Honolulu, HI 96813
- 17. State of HawaiiiOffice of Hawaiian Affairs560 N. Nimitz Highway, Suite 200Honolulu, HI 96817
- Mary Alice Evans, Director State of Hawai'i Office of Planning P. O. Box 2359 Honolulu, HI 96804
- Dan Orodenker, Executive Officer State of Hawai'i State Land Use Commission P.O. Box 2359 Honolulu, HI 96804

MAUI COUNTY AGENCIES

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- 21. David Thyne, Chief County of Maui Department of Fire and Public Safety 200 Dairy Road Kahului, HI 96732

- Lori Tsuhako, Director
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 2200 Main Street, Suite 546
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- 23. Karla Peters, Director County of Maui Department of Parks and Recreation 700 Halia Nakoa Street, Unit 2F Wailuku, HI 96793
- Michele Chouteau McLean, Director County of Maui Department of Planning 2200 Main Street, Suite 315 Wailuku, HI 96793
- Rowena Dagdag-Andaya, Director County of Maui Department of Public Works 200 South High Street Wailuku, HI 96793
- 26. Marc Takamori, Director County of Maui Department of Transportation David Trask Building, Suite 102 2145 Kaohu Street Wailuku, HI 96793
- Jeffrey Pearson, Director County of Maui Department of Water Supply 200 South High Street, 5th Floor Wailuku, HI 96793
- 28. Herman Andaya, Emergency Management Officer County of Maui Emergency Management Agency 200 South High Street Wailuku, HI 96793
- Tivoli Faaumu, Chief County of Maui Police Department
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- Kelly King, Council Chair Maui County Council 200 South High Street Wailuku, HI 96793

- 31. Alice Lee
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- Tasha Kama
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MAUI COUNTY ORGANIZATIONS

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- 34. Michael Grider, Manager, Engineering Maui Electric Company, Ltd. P.O. Box 398 Kahului, HI 96733
- 35. Clyde Kahalehau, Poʻo Aha Moku O Wailuku Email address: ahamokuowailuku@yahoo.com
- Scott Matsuura, President Kehalani Community Association Attention: Tiana Raymondo P.O. Box 1530 Wailuku, HI 96793
- Debbie Cabebe, Chief Executive Officer Maui Economic Opportunity
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- Wailuku Heights Extension Unit I Community Association
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- Lester Yano
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- Joseph G. Blackburn,II
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DHHL HOMESTEAD LEADERS

- 46. Charmaine Day, Secretary Ka 'Ohana o Kahikinui P.O. Box 434 Kula, Hawai'i 96790
- 47. Harry Rodriguez, Jr., President 'Ahahui 'Āina Ho'opulapula o Waiohuli PO Box 81712 Haiku, Hawai'i 96708
- 48. Mark Adams, Representative Wai'ehu Kou 22 Kuu One Hanau Way Wailuku, Hawai'i 96793
- 49. Perry Artates, President Waiohuli Hawaiian Homestead Association 95 Lono Ave Ste 104 Kahului, Hawai'i 96732
- Robin Newhouse, President Kēōkea Agriculture Hawaiian Homestead Association
 Keanuhea Street Kula, Hawai'i 96790
- 51. Rod Pa'ahana, President Leiali'i Homestead Association 124 Aipuni St. Lahaina, Hawai'i 96761

- 52. Roy Oliveira, President Wai'ehu Kou 3 49 Kaulana Na Pua Way Wailuku, Hawai'i 96793
- 53. Andrew A.M. Hatchie, Jr., Executive Director Pa'upena Community Development Corporation P.O. Box 81678 Haiku, Hawai'i 96708
- 54. Blossom Feiteira, Board Member Ka 'Ohana o Kahikinui blossom96708@yahoo.com
- 55. Kekoa Enomoto, Board Member Pau'pena Community Development Corporation 393 Pueo Drive Kula, Hawai'i 96790
- 56. Stephen Cramer, President Paukukalo Community Association 626 Kalakaua Street Wailuku, Hawai'i 96793
- 57. Kaleo Cullen, President Ka 'Ohana o Kahikinui PO Box 5014 Kahului, Hawai'i 96733



DEPARTMENT OF THE ARMY

HONOLULU DISTRICT, U.S. ARMY CORPS OF ENGINEERS FORT SHAFTER, HAWAII 96858-5440

October 15, 2019

SUBJECT: U.S. Army Corps of Engineers Regulatory Program Information for Hawaiian Home Lands Pu'unani Homestead, Waikapu, Maui, HI; Corps Reference Number: POH-2019-00175

Mr. Bryan Esmeralda Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

The Honolulu District, U.S. Army Corps of Engineers (Corps), Regulatory Branch is in receipt of the State of Hawaii, Department of Hawaiian Home Lands' (DHHL) proposed Pu'unani Homestead Subdivision project proposal to develop a new residential subdivision on approximately 48.3-acre portion of land in Waikapu, Island of Maui, Hawaii. There will be approximately 137 turn-key single-family residences and 24 vacant single-family lots, along with related improvements to be developed within the project that include internal roadways and sidewalks, a drainage detention basin, utility connections, as well as roadway frontage improvements along Honoapi'ilani Highway. You submitted a description of the preliminary project design with associated figures and requested comments regarding permitting requirements. The Corps reference number for this project is POH-2019-00175; please include it in any future correspondence regarding this project.

We have reviewed your submittal pursuant to our authorities under Section 404 of the Clean Water Act (33 U.S.C. 1344; "Section 404") and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403; "Section 10"). Section 404 requires Department of the Army (DA) authorization for the discharge (placement) of dredged and/or fill material into waters of the U.S., including marine waters, streams, drainages, and wetlands. Under Section 404, our line of jurisdiction is the high tide line. Section 10 requires DA authorization for the placement of structures in, under or over navigable waters of the U.S. and/or other work affecting the course, location, condition or capacity of such waters. Under Section 10, our line of jurisdiction is the mean high water mark.

Based on the preliminary project description and associated figures, it is unclear whether the project would require a DA permit. I've noted that lao stream is located on the north western section of the property. Work in a waters of the United States (U.S.) would require a permit from the Corps.

At the design stage, we strongly encourage project proponents to avoid all impacts to waters of the U.S. If you cannot design the project to avoid work in waters of the U.S. or if you do not know if the proposed work is in waters of the U.S., the Corps recommends you submit a request for a jurisdictional determination on the project site.

Information pertaining to our permitting program and the link to the Corps' jurisdictional determination request form can be found at: https://www.poh.usace.army.mil/Missions/Regulatory/Permits.aspx

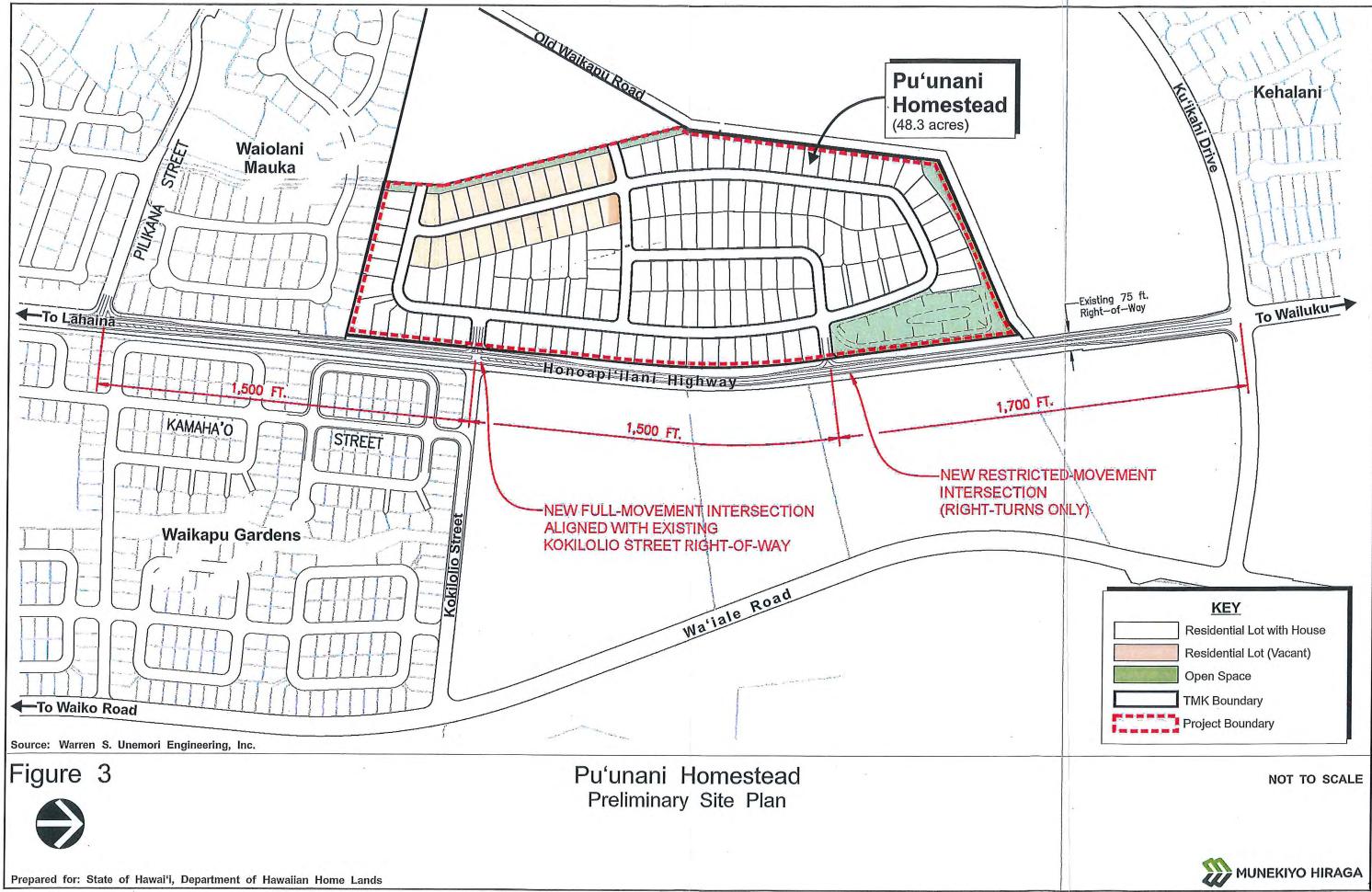
Please be aware that if a Corps permit is required we would also need to ensure your project is compliant with the following federal laws.

- 1. Section 7 of the Endangered Species Act.
- 2. Magnuson-Stevens Fishery Conservation and Management Act, Essential Fish Habitat.
- 3. Section 106 of the National Historic Preservation Act.
- 4. Coastal Zone Management Act, Federal Consistency.
- 5. Section 401 of the Clean Water Act

Thank you for your early coordination with the Honolulu District Regulatory Program. Please don't hesitate to contact me by email at Frank.J.Winter@usace.army.mil or (808) 835-4107 if you have any questions regarding the permitting process or our regulatory program.

Sincerely,

Linda Speerstra Chief, Regulatory Branch







Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

May 18, 2020

Linda Speerstra, Chief U.S. Department of the Army, Regulatory Branch U.S. Army Engineer District, Honolulu Regulatory Branch, Building 230 Fort Shafter, Hawai'i 96858-5440

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i (POH-2019-00175)

Dear Chief Speerstra:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated October 15, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

We understand that you reviewed our early consultation correspondence in relation to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, both of which require Department of Army (DA) authorization when triggered. We also note your comment that it is unclear from our correspondence if the project would require a DA permit for any work within waters of the U.S. We note your comment regarding 'Tao Stream. However, it is our understanding that 'Tao Stream lies approximately 7,600 feet to the north, and outside of the project site. There is a natural, typically dry drainageway located in the northwestern section of the property.

We acknowledge that if waters of the U.S. are anticipated to be affected by the project, a Jurisdictional Determination should be sought. Further, we understand that should a DA permit be required, compliance with the following Federal laws will also be required:

- 1. Section 7 of the Endangered Species Act
- 2. Magnuson-Stevens Fishery Conservation and Management Act, Essential Fish Habitat
- 3. Section 106 of the National Historic Preservation Act

Linda Speerstra, Chief May 18, 2020 Page 2

- Coastal Zone Management Act, Federal consistency 4.
- Section 401 of the Clean Water Act 5.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP Senior Associate

BKE:tn

Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands CC: Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\ArmyDept.doc



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Pacific Islands Fish and Wildlife Office 300 Ala Moana Boulevard Honolulu, Hawaii 96850

In Reply Refer To: 01EPIF00-2019-TA-0467

August 30, 2019

Mr. Bryan Esmeralda Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawai'i 96793

Subject:

Technical Assistance for Pu'unani Homestead Subdivision Project, Waikapū,

Maui

Aloha Mr. Esmeralda:

The U.S. Fish and Wildlife Service (Service) received your August 12, 2019, request for information to inform your development of a Draft Environmental Assessment for the Pu'unani Homestead Subdivision Project in Waikapū, Maui [TMK: (2) 3-5-002:002]. The Service offers the following comments to assist you in your planning process so that impacts to threatened and endangered species can be minimized. Our comments are provided under the authorities of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C 1531 *et seq.*).

The proposed residential project will consist of development of up to 161 residential lots in a 48-acre parcel and related infrastructure improvements. Each lot will be the site of a single-family dwelling and related accessory uses. The project will also include internal roadways and sidewalks, a drainage detention basin, utility connections, as well as roadway frontage improvements along Honoapi'ilani Highway. Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Project, six listed animal species that have the potential to either be in or fly through the vicinity of the project area: the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), nēnē or Hawaiian goose (*Branta sandvicensis*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Blackburn's sphinx moth (*Manduca blackburni*) and three Hawaiian seabirds: the endangered Hawaiian petrel (*Pterodroma sandwichensis*), band-rumped storm-petrel (*Oceanodroma castro*), and the threatened Newell's shearwater (*Puffinus newelli*). We recommend you incorporate the following conservation measures into your project design to minimize risks to these species:

Hawaiian hoary bat

The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be

harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as 3 feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To avoid or minimize impacts to the endangered Hawaiian hoary bat we recommend you incorporate the following applicable measures into your project description:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup-rearing season (June 1 through September 15).
- Do not use barbed wire for fencing.

Nēnē

Nēnē are found on the islands of Hawai'i, Maui, Moloka'i, and Kaua'i predominately, with a small population on O'ahu. They are observed in a variety of habitats, but prefer open areas, such as pastures, golf courses, wetlands, natural grasslands and shrublands, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

To avoid or minimize potential project impacts to nene we recommend you incorporate the following measures into your project description, as applicable:

- Do not approach, feed, or disturb nēnē.
- If nēnē are observed loafing or foraging within the project area during the breeding season (September through April), have a biologist familiar with the nesting behavior of nēnē survey for nests in and around the project area prior to the resumption of any work. Repeat surveys after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).
 - O Cease all work immediately and contact the Service for further guidance if a nest is discovered within a radius of 150 ft of proposed work, or a previously undiscovered nest is found within said radius after work begins.
- In areas where nene are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species. on-site.

Hawaiian seabirds

Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

To avoid or minimize potential project impacts to seabirds we recommend you incorporate the following applicable measures into your project description:

- Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.

• Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

Hawaiian stilt

Listed Hawaiian waterbirds are found in fresh and brackish-water marshes and natural or manmade ponds. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur. Threats to these species include non-native predators, habitat loss, and habitat degradation. Based on the project details provided, our information suggests that your project has the potential to result in standing water or the creation of open water during construction, thus attracting Hawaiian waterbirds to the site. In particular, the Hawaiian stilt is known to nest in sub-optimal locations (e.g. any ponding water), if water is present. Hawaiian waterbirds attracted to sub-optimal habitat may suffer adverse impacts, such as predation and reduced reproductive success, and thus the project may create an attractive nuisance. If Hawaiian stilts are noted on the project site, we recommend you work with our office so that we may assist you in developing measures to avoid potential project-related impacts to listed species (e.g., fencing, vegetation control, predator management).

Blackburn's sphinx moth

The Blackburn's sphinx moth may be in the vicinity of the proposed project area. Adult moths feed on nectar from native plants, including beach morning glory (*Ipomoea pes-caprae*), iliee (*Plumbago zeylanica*), and maiapilo (*Capparis sandwichiana*); larvae feed upon non-native tree tobacco (*Nicotiana glauca*) and native aiea (*Nothocestrum* sp.). To pupate, the larvae burrow into the soil and can remain in a state of torpor for up to a year (or more) before emerging from the soil. Soil disturbance can result in death of the pupae.

We offer the following survey recommendations to assess whether the Blackburn's sphinx moth is within the project area:

- A biologist familiar with the species should survey areas of proposed activities for Blackburn's sphinx moth and its larval host plant tree tobacco prior to work initiation.
 - O Surveys should be conducted during the wettest portion of the year (usually November-April or several weeks after a significant rain) and within 4-6 weeks prior to construction.
 - o Surveys should include searches for eggs, larvae, and signs of larval feeding (chewed stems, frass, or leaf damage).
 - o If moths or the native aiea or tree tobacco over 3 feet tall are found during the survey, please contact the Service for additional guidance to avoid take.

If no Blackburn's sphinx moth, aiea, or tree tobacco are found during surveys, it is imperative that measures be taken to avoid attraction of Blackburn's sphinx moth to the project location and prohibit tree tobacco from entering the site. Tree tobacco can grow greater than 3 feet tall in approximately 6 weeks. If it grows over 3 feet, the plants may become a host plant for Blackburn's sphinx moth. We therefore recommend that you:

- Remove any tree tobacco less than 3 feet tall.
- Monitor the site every 4-6 weeks for new tree tobacco growth before, during and after the proposed ground-disturbing activity.
 - Monitoring for tree tobacco can be completed by any person provided with picture placards of tree tobacco at different life stages.

Native Plants for Landscaping

Where disturbed areas do not need to be maintained as an open area, restore disturbed areas using native plants as appropriate for the location. Whenever possible we recommend using native plants for landscaping purposes. The following website is a good resources to use when choosing landscaping plants: Native Plants Hawaii (https://nativeplants.hawaii.edu/index/).

If this project should receive federal funding, federal permits, or any federal authorization, it will require a Section 7 consultation with the Service. The Service only conducts Section 7 consultations with the federal action agency or their designated representative.

Thank you for participating with us in the protection of our endangered species. If you have any further questions or concerns regarding this consultation, please contact John Vetter, Fish and Wildlife Biologist, 808-792-9406, e-mail: john_vetter@fws.gov. When referring to this project, please include this reference number: 01EPIF00-2019-TA-0467.

Sincerely,

MICHELLE BOGARDUS Digitally signed by MICHELLE BOGARDUS Date: 2019.09.03 12:00:48 -10'00'

Michelle Bogardus Island Team Leader Maui Nui and Hawaii Island



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT

Tessa Munekiyo Ng

May 18, 2020

Michelle Bogardus, Island Team Leader Maui Nui and Hawai'i Island U.S. Fish and Wildlife Service Pacific Islands Fish and Wildlife Office 300 Ala Moana Boulevard Honolulu, Hawai'i 96850

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i (01EPIF00-2019-TA-0467)

Dear Ms. Bogardus:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated August 30, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

We acknowledge your comment that the Hawai'i Biodiversity and Mapping project lists seven (7) animal species that have the potential to either be in or fly through the vicinity of the project area, which include: the federally endangered Hawaiian hoary bat (Lasiurus cinereus semotus); nēnē or Hawaiian goose (Branta sandvicensis); Hawaiian stilt (Himantopus mexicanus knudseni); Blackburn's sphinx moth (Manduca blackburni); and three (3) Hawaiian seabirds: the endangered Hawaiian petrel (Pterodroma sandwichensis); band-rumped storm-petrel (Oceanodroma castro); and the threatened Newell's shearwater (Puffinus newelli).

We also acknowledge the conservation measures noted in your letter. These conservation measures have been forwarded to the DHHL and design team for review and consideration for incorporation in to the proposed project.

It is further noted that a biological resources survey prepared for the project will be included and the results of the survey will be discussed in the Draft Environmental Assessment (EA) being prepared for the proposed project.

Michelle Bogardus, Island Team Leader May 18, 2020 Page 2

We note the following information and conservation measures from your letter:

1. Hawaiian Hoary Bat

We acknowledge that the Hawaiian hoary bat roosts in woody vegetation across Hawai'i and that they will leave their young unattended in trees while foraging, thus leaving them prone to being harmed or killed should trees or shrubs be cleared as they are too young to fly. We also acknowledge that the bats forage from as low as three (3) feet to higher than 500 feet above the ground, thus making them prone to becoming entangled in barbed wire fencing. As such, the following conservation measures will be considered:

- No disturbing, removing, or trimming of woody plants higher than 15 feet during the bat birthing and pup-rearing season of June 1 through September 15, as practicable
- No use of barbed wire fencing

2. Nēnē

We acknowledge that nēnē are predominantly found on the islands of Hawai'i, Maui, Moloka'i, and Kaua'i, with a small population on O'ahu, and that they are observed in a variety of habitats but prefer open areas such as pastures, golf courses, wetlands, natural grasslands and shrublands, and lava flows. Threats to these species include introduced mammalian and avian predators, wind facilities, and vehicle strikes. As such, the following conservation measures will be considered:

- No approaching, feeding, or disturbing nēnē
- If nēnē are observed at the project site during the breeding season of September through April, a biologist familiar with the nesting behavior of nēnē will be contacted to survey the area for nests prior to resumption of work. If a nest is discovered within 150 feet of any proposed work, the U.S. Fish and Wildlife Service will be contacted for further guidance.
- Should n\u00e4n\u00e4 be known to be present in the area, reduced speed limits and education for project personnel and contractors about their presence will be implemented.

3. Hawaiian Seabirds

We acknowledge that seabirds may traverse the project area at night during the breeding, nesting, and fledging seasons of March 1 to December 15. Because seabirds are attracted to lights, outdoor lighting could result in seabird disorientation, fallout, injury, or mortality as they become prone to exhaustion and collision with wires, buildings, or other structures. If they land on the ground, they become prone to threats from vehicle strikes, starvation, and predation by dogs, cats, and other mammalian predators. In addition, young birds in their first flights are particularly vulnerable. As such, the following conservation measures will be considered:

- Outdoor lighting will be shielded and downward facing
- Nighttime construction will be avoided during the seabird fledging period of September 15 through December 15

4. Hawaiian Stilt

We acknowledge that listed Hawaiian waterbirds are found in fresh and brackish water marshes and natural or man-made ponds, and that Hawaiian stilts in particular may also be found wherever ephemeral or persistent standing water may occur. Threats to waterbirds include non-native predators, habitat loss, and habitat degradation. Further, we acknowledge that Hawaiian stilts may be attracted to the project site due to the potential for periodic standing water within the proposed detention basin. This sub-optimal location has the potential to expose Hawaiian stilts to predation and reduced reproductive success. As such, should Hawaiian stilts be observed at the project site, the DHHL will consult with the U.S. Fish and Wildlife Service to develop mitigation measures to avoid project-related impacts.

5. Blackburn's Sphinx Moth

The Blackburn's sphinx moth, and/or their larvae, may be present at the project site as they feed on native plants. Further, the larvae burrow into the soil to pupate and can remain in a state of torpor for a year or more. In this regard, soil disturbance presents potential adverse impacts to the larvae in particular. As such, the following conservation measures will be considered:

 A biologist familiar with the species will survey the project area to determine the presence of the Blackburn's sphinx moth or its larval host Michelle Bogardus, Island Team Leader May 18, 2020 Page 4

plant. If moths or host plants greater than three (3) feet tall are observed, the Service will be contacted for further guidance.

- Removal of tree tobacco plants less than three (3) feet tall, as applicable
- Monitoring of the site every four (4) to six (6) weeks for new tobacco tree growth, as applicable

6. Native Plants for Landscaping

As practicable, native plants will be considered for landscaping. The website noted in your letter containing a resource of native plants will be consulted by the project's design team.

We note that the project will not utilize Federal funding, nor will it require Federal permits or any other Federal authorization. As such, the requirement for Section 7 consultation is not triggered by the proposed project.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, State of Hawaiʻi, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC

Robert Hobdy

K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\USFWS.doc

DAVID Y. IGE GOVERNOR



CURT T. OTAGURO COMPTROLLER

AUDREY HIDANO DEPUTY COMPTROLLER

STATE OF HAWAII DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)19.185

AUG 2 8 2019

Mr. Bryan K. Esmeralda, Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

Subject:

c:

Early Consultation Request for the Proposed Department of Hawaiian Home

Lands Puunani Homestead Subdivision Project

Waikapu, Maui, Hawaii

TMK No. (2) 3-5-002:002 (por.)

Thank you for the opportunity to comment on the subject project. We have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, your staff may call Ms. Dora Choy of the Public Works Division at 586-0488.

Sincerely,

for CURT T. OTAGURO

Comptroller

Mr. Wade Shimabukuro, DAGS-MDO



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng

May 18, 2020

Curt Otaguro, Comptroller Department of Accounting and General Services State of Hawai'i P.O. Box 119 Honolulu, Hawai'i 96810-0119

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i ((P)19.185)

Dear Mr. Otaguro:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated August 28, 2019, regarding the proposed Pu'unani Homestead Subdivision project. We acknowledge that the Department of Accounting and General Services (DAGS) has no comments to offer at this time, and that the proposed project does not impact any existing DAGS projects or facilities.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

CC:

Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

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SUPERINTENDENT



STATE OF HAWAI'I

DEPARTMENT OF EDUCATION

P.O. BOX 2360 HONOLULU, HAWAI'I 96804

OFFICE OF FACILITIES AND OPERATIONS

August 30, 2019

Bryan Esmeralda, Senior Associate Munekiyo & Hiraga Inc. 305 High Street, Suite 104 Wailuku, Hawaii 96793

Re: Early Consultation for Department of Hawaiian Home Lands Puunani Homestead Subdivision, Waikapu, Maui, TMK 3-5-002: por. 002

Dear Mr. Esmeralda:

The Department of Education (DOE) is responding to your request for early consultation on Puunani Homestead Subdivision (Project) proposed by the Department of Hawaiian Home Lands.

The Project is a 161 lot single-family subdivision, located in the DOE's Central Maui Impact Fee District. The state law on school impact fees, Chapter 302-A, Hawaii Revised Statutes, requires any developer of more than 50 residential units to meet with the DOE to execute an Education Contribution Agreement, before any approvals of subdivision or building permits. The agreement would set the timing for the collection of the school impact fees and establish whether the school land fee component would be in the form of land or a fee in lieu of land. The DOE looks forward to this meeting.

We think it is extremely important for the Project's Draft Environmental Assessment to state whether ohana or accessory dwelling units will be permitted on the 161 lots.

Students residing in the Project will most likely attend Puu Kukui Elementary, Maui Waena Intermediate, and Maui High. All three schools have current student enrollments that exceed their facility capacity. It is possible the project area may be reassigned to other schools depending on future conditions.

Thank you for the opportunity to raise these early considerations. If you have any questions, please call Heidi Meeker, Land Use Planer of the Facilities Development Branch, Planning Section, at 784-5095.

Respectfully

Kenneth G. Masden II Public Works Manager Planning Section

KGM:hm

c: Kathleen Dimino, Complex Area Superintendent, Baldwin/Kekaulike/Maui Complex Area



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

May 18, 2020

Kenneth Masden II, Public Works Manager Planning Section Department of Education State of Hawai'i P.O. Box 2360 Honolulu, Hawai'i 96804

SUBJECT: Response to Early Consultation Comments Regarding the

Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project TMK Nos. (2)3-5-002:002(por.) and

(2)3-5-001:064(por.);

Dear Mr. Masden:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated August 30, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

We acknowldge your comment that the state law on school impact fees, Chapter 302-A, Hawai'i Revised Statutes (HRS), requires developers of more than 50 residential lots to meet with the Department of Education (DOE) to execute an Education Contribution Agreement. The DHHL will be coordinating with the DOE to fulfill these requirements.

The proposed project will not allow 'ohana or accessory dwelling units to be developed. This information will be included in the Draft Environmental Assessment (EA).

We acknowledge your comment that students who will reside in the proposed project will likely attend Puu Kukui Elementary, Maui Waena Intermediate, and Maui High School. We also note your comment that enrollment at these schools currently exceed their facility capacity, which may result in students needing to be reassigned to other schools depending on future conditions.

Kenneth Masden II, Public Works Manager May 18, 2020 Page 2

Thank you for your participation in the Chapter 343, HRS environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

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DAVID Y. IGE GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE

54 HIGH STREET WAILUKU, HAWAII 96793-3378

August 27, 2019

LORRIN W. PANG, M.D., M.P.H. DISTRICT HEALTH OFFICER

BRUCE S. ANDERSON, Ph.D.

DIRECTOR OF HEALTH

Mr. Bryan K. Esmeralda Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

Subject:

Early Consultation Request for the Proposed Department of

Hawaiian Home Lands Pu'unani Homestead Subdivision

Project, Waikapu, Maui, Hawaii TMK: (2) 3-5-002:002 (por.)

Thank you for the opportunity to review this project. We have the following comments to offer:

- 1. Please address the wastewater disposal for this project. If you have any questions, please call Roland Tejano, Environmental Engineer, at 808 984-8232.
- 2. The land was formerly in the production of sugar cane and/or pineapple. Please contact the Department of Health, Hazard Evaluation and Emergency Response (HEER) office at 808 586-4249.

It is strongly recommended that you review the department's website at https://health.hawaii.gov/epo/files/2018/05/DOHEHA.LandUseContactList.20180502.pdf and any comments specifically applicable to this project should be adhered to.

Mr. Bryan K. Esmeralda August 27, 2019 Page 2

Should you have any questions, please contact me at 808 984-8230 or email me at patricia.kitkowski@doh.hawaii.gov.

Sincerely,

Patti Kitkowski

District Environmental Health Program Chief

c Sina Pruder, Acting EMD Administrator



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng

May 18, 2020

Patti Kitkowski, District Environmental Health Program Chief Department of Health Maui District Health Office State of Hawai'i 54 High Street Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the

Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Ms. Kitkowski:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated August 27, 2019 providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

Response to Comment No. 1

We acknowledge your comment regarding wastewater disposal. The project will connect to the County of Maui's existing wastewater system. A Preliminary Engineering Report addressing wastewater system requirements will be included in the Draft Environmental Assessment (EA). Coordination will be undertaken with the County Department of Environmental Management during the building permit phase to ensure that the system has adequate capacity. Should DHHL or its design team have any questions regarding Department of Health wastewater disposal regulation, coordination will be undertaken with Mr. Roland Tejano.

Response to Comment No. 2

We acknowledge your comment regarding prior use of the site. Although the property was formerly utilized for agriculture, the property has not been in active agricultural production for some time. Nevertheless, a Phase I Environmental Site Assessment was conducted for the property and the findings of which will be included in the Draft EA.

Patti Kitkowski, District Environmental Health Program Chief May 18, 2020 Page 2

Your comment has been forwarded to DHHL for further coordination with the Department of Health (DOH), Hazard Evaluation and Emergency Response in this regard, if required.

The standard comments on the DOH website will be reviewed for applicability to the proposed project.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan¹K. Esmeralda, AICP Senior Associate

BKE:yp

CC:

Stewart Matsunaga, State of Hawaiʻi, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc.

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DAVID Y. IGE GOVERNOR OF HAWAII





SUZANNE D. CASE CHAIRPERSON BOARD OF LAND AND NATURAL RESOURCES COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

September 3, 2019

Munekiyo Hiraga Attn: Mr. Bryan Esmeralda Senior Associate 305 High Street, Suite 104 Wailuku, Hawaii 96793

via email: <u>planning@munekiyohiraga.com</u>

Dear Mr. Esmeralda:

SUBJECT:

Early Consultation Request for the Proposed Department of Hawaiian Home Lands **Pu'unani Homestead Subdivision Project** located at Waikapu, Island of Maui; TMK: (2) 3-5-002: 002 (por.) on behalf of

Department of Hawaiian Home Lands

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request pertaining to the subject matter to DLNR's Divisions for their review and comments.

At this time, enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Y. Tsuji Land Administrator

Enclosure

cc: Central Files

DAVID Y. IGE GOVERNOR OF HAWAII





SUZANNE D, CASE
CHAIRFERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

August 20, 2019

MEMORANDUM

TO:

	Aaan	CIGC
DLNR	Auen	CIC3

__Div. of Aquatic Resources

Div. of Boating & Ocean Recreation

X Engineering Division

X Div. of Forestry & Wildlife

Div. of State Parks

X Commission on Water Resource Management

Office of Conservation & Coastal Lands

X Land Division – Maui District

X Historic Preservation

FRÓM: SUBJECT: Russell Y. Tsuji, Land Administrator

Early Consultation Request for the Proposed Department of Hawaiian Home

Lands Pu'unani Homestead Subdivision Project

LOCATION:

Waikapu, Island of Maui; TMK: (2) 3-5-002: 002 (por.)

APPLICANT:

Munekiyo Hiraga on behalf of Department of Hawaiian Home Lands

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **August 29, 2019**.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417 or by email at darlene.k.nakamura@hawaii.gov. Thank you.

) We ha	We have no objections.		
) We ha	ve no comments.		
✓) Comm	ients are attached.		
Signed:	45/5/1		
Print Name:	Carty S. Chang, Chief Engineer		
Date:	2/23/19		

Attachments

cc:

Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION

LD/Russell Y. Tsuji

Ref: Early Consultation Request for the Proposed Department of Hawaiian Home

Lands Pu'unani Homestead Subdivision Project

TMK(s): (2) 3-5-002: 002 (por.) Location: Waikapu, Island of Maui

Applicant: Munekiyo Hiraga on behalf of Department of Hawaiian Home

Lands

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT).

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- o <u>Hawaii Island</u>: County of Hawaii, Department of Public Works (808) 961-8327.
- o Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- o Kauai: County of Kauai, Department of Public Works (808) 241-4896.

Signed: CARTY S. CHANG, CHIEF ENGINEER

Date: 4/23/11



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

VICE PRESIDENT

May 18, 2020

Russel Tsuji, Land Administrator Land Division Department of Land and Natural Resources State of Hawai'i P.O. Box 621 Honolulu, Hawai'i 96809

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Mr. Tsuji:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 3, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

Engineering Division

We acknowledge the comment that State projects are required to comply with the rules and regulations of the National Flood Insurance Program, Title 44 of the Code of Federal Regulations when the proposed development falls within a Special Flood Hazard Area. We note that the project site is not located within a Special Flood Hazard Area. Nonetheless, should any local flood regulations be triggered, the proposed project will coordinate with the County of Maui, Department of Planning.

Russel Tsuji, Land Administrator May 18, 2020 Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc.

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DAVID Y, IGE GOVERNOR OF HAWAII





SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

September 11, 2019

Munekiyo Hiraga Attn: Mr. Bryan Esmeralda Senior Associate 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

SUBJECT:

Early Consultation Request for the Proposed Department of Hawaiian Home Lands **Pu'unani Homestead Subdivision Project** located at Waikapu, Island of Maui; TMK: (2) 3-5-002: 002 (por.) on behalf of

via email: planning@munekiyohiraga.com

Department of Hawaiian Home Lands

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated September 3, 2019, enclosed are comments from the Commission on Water Resource Management on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Y. Tsuji Land Administrator

Enclosure

cc: Central Files

DAVID Y, IGE GOVERNOR OF HAWAII





SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

August 20, 2019

	<u>M</u>	<u>EMORANDUM</u>		AUG BUG	URCE
TO:/	DLNR Agencies:			2	
	Div. of Aquatic Res			70	MANASEHEN
	Div. of Boating & C X Engineering Divisio		on	Ϋ́	
	X Div. of Forestry & V			 	E.
ER.	Div. of State Parks			69	
	X Commission on Wa				
	Office of Conservat XLand Division – Ma		ands.		
1	X Historic Preservatio				
TO.			1152		
FROM:	Russell Y. Tsuji, Land	Administrator	in December 11 - 1 - 1	II.	
SUBJECT:	Early Consultation Red Lands Pu'unani Hom e	quest for the Pr	oposed Department of Hawaii	ạn Hơ	me
LOCATION:	Waikapu, Island of Ma				
APPLICANT:	Munekiyo Hiraga on be	ehalf of Departn	nent of Hawaiian Home Lands	3	
Transmitte subject matter. F	ed for your review and Please submit any comme	l comment is ents by August	information on the above-re 29, 2019.	eferen	ced
If you have any q	onse is received by this uestions about this requ ne.k.nakamura@hawaii.g	est, please con	ssume your agency has no co tact Darlene Nakamura at 587	mme 7-0417	nts. ⁷ or
	•				
		() We ha	ave no objections. ave no comments.		
		(x) Comn	nents are attached.		
		Signed:	/s/ M. Kaleo Manuel		
		Print Name:	Deputy Director		
		Date:	September 4, 2019		

Attachments cc: Central Files

FILE ID: <u>RFD</u>, 5214.6 DOCID: <u>21791</u> DAVID Y, IGE



STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES COMMISSION ON WATER RESOURCE MANAGEMENT

P.O. BOX 621 HONOLULU, HAWAII 96809

SUZANNE D. CASE

BRUCE S. ANDERSON, PH.D. KAMANA BEAMER, PH.D. MICHAEL G. BUCK NEIL J. HANNAHS WAYNE K. KATAYAMA PAUL J. MEYER

M. KALEO MANUEL

September 4, 2019

REF: RFD.5214.6

TO:

Mr. Russell Tsuji, Administrator

Land Division

FROM:

M. Kaleo Manuel, Deputy Director LUKEL Commission on Water Resource Management

SUBJECT:

Early Consultation Request for the Proposed Department of Hawaiian Home Lands Puunani

Homestead Subdivision Project

FILE NO .:

RFD.5214.6

TMK NO .:

(2) 3-5-002:002 (por.)

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://dlnr.hawaii.gov/cwrm.

Our comments related to water resources are checked off below.

- We recommend coordination with the county to incorporate this project into the county's Water Use and lx l 1. Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information. We recommend coordination with the Engineering Division of the State Department of Land and Natural 2. Resources to incorporate this project into the State Water Projects Plan. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the Х 3. reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information. We recommend that water efficient fixtures be installed and water efficient practices implemented X 4. throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EAP as having high water efficiency can be found at http://www.epa.gov/watersense. We recommend the use of best management practices (BMP) for stormwater management to minimize
- Х 5. the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/
- We recommend the use of alternative water sources, wherever practicable. 6.
- We recommend participating in the Hawaii Green Business Program, that assists and recognizes 7. businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at http://energy.hawaii.gov/green-business-program.
- We recommend adopting landscape irrigation conservation best management practices endorsed by the X 8. Landscape Industry Council of Hawaii. These practices can be found online at

Mr. Russell Tsuji Page 2 September 4, 2019

		http:/	/www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.		
X	9.	There may be the potential for ground or surface water degradation/contamination and recommend approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.			
	10	The proposed water supply source for the project is located in a designated water management are a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on requirement to use dual line water supply systems for new industrial and commercial developments.			
	11	A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.			
	12	A Pump Installation Permit(s) is (are) required before ground water is developed as a source of the project.			
	13	There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.			
	14	Ground-water withdrawals from this project may affect streamflows, which may require an inst standard amendment.			
	15	A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.			
	16	A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.			
	17	A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion of surface water.			
	18	deten	lanned source of water for this project has not been identified in this report. Therefore, we cannot mine what permits or petitions are required from our office, or whether there are potential impacts to resources.		
X	OTH	ER:	Planning - The proposed water source(s) and projected water demands for the project, both potable and non-potable, should be identified and the calculations used to estimate demands should be provided. A discussion of the potential impacts on water resources and other public trust uses of water should be included, and any proposed mitigation measures described. Water conservation and efficiency measures to be implemented should be discussed.		

If you have any questions, please contact Lenore Ohye of the Commission staff at 587-0216.



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda PRESIDENT

Mark Alexander Rov VICE PRESIDENT

Tessa Munekiyo Ng

May 18, 2020

Russel Tsuji, Land Administrator Land Division Department of Land and Natural Resources State of Hawai'i P.O. Box 621 Honolulu, Hawai'i 96809

SUBJECT:

Response to Early Consultation Comments Regarding the Department of Hawaiian Home Lands Pu'unani Proposed Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Mr. Tsuji:

On behalf of the State of Hawaii, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 11, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

Commission on Water Resource Management

- We acknowledge the comment to work with the County of Maui, Department of Water Supply to have the project incorporated into the County's Water Use and Development Plan. Your comment has been forwarded to DHHL for consideration.
- We acknowledge your comment to work with the Engineering Division of the Department of Land and Natural Resources to have the project incorporated into the State Water Projects Plan. The comment has been forwarded to DHHL for consideration.
- We acknowledge your comment to work with the Department of Agriculture to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources incorporated into the State's Agricultural Water Use and Development Plan. The comment has been shared with DHHL for consideration. We note that while the project site has been designated "Agriculture" by the State

Oahu: 735 Bishop Street, Suite 321 * Honolulu, Hawaii 96813 * Tel: 808.983.1233

Maui: 305 High Street, Suite 104 * Wailuku, Hawaii 96793 * Tel: 808.244.2015 * Fax: 808.244.8729

Russel Tsuji, Land Administrator May 18, 2020 Page 2

Land Use Commission, a District Boundary Amendment is not proposed as part of the project. The Hawaiian Homes Commission Act vests onto DHHL the authority to use its lands at its discretion. As such, the DHHL is able to proceed with the project without having to reclassify the lands for residential use.

- To the extent practicable, water efficient fixtures and practices will be incorporated into the house packages and will be encouraged for implementation by individual lot only lessees of the proposed project. Furthermore, the resource provided regarding Leadership in Energy and Environmental Design certification will be reviewed.
- Best Management Practices (BMPs) for stormwater management to minimize the impact of the proposed project on the existing area's hydrology while maintaining onsite infiltration and prevention of polluted runoff will be implemented as part of the project. We note that as part of the project, an onsite stormwater detention basin will be constructed to capture stormwater runoff generated by the project so as to minimize potential impacts to neighboring and downstream properties and other water resources.
- We acknowledge the comment regarding the encouragement for use of alternative water sources. We note that the proposed project is anticipated to be serviced by the County's existing municipal water system.
- We acknowledge your comment regarding the use of landscape irrigation conservation BMPs endorsed by the Landscape Industry Council of Hawai'i. The resource provided in your letter will be reviewed by the project team for applicability to the proposed project.
- We acknowledge your comment. The State Department of Health has been included in the early consultation request for the proposed project.
- The Draft Environmental Assessment (EA) being prepared for the proposed project will include a Preliminary Engineering Report, which will calculate the estimated water demand for the proposed project, and describe water system improvements required to service the project. Potential impacts to water resources and proposed mitigation measures will also be included in the Draft EA.

Russel Tsuji, Land Administrator May 18, 2020 Page 3

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\DLNR CWRM.doc

ROBERT K. MASUDA FIRST DEPUTY

M. KALEO MANUEL

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT

ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LADD

LAND STATE PARKS

DAVID Y. IGE





STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION KAKUHIHEWA BUILDING 601 KAMOKILA BLVD, STE 555 KAPOLEI, HAWAII 96707

September 24, 2019

Russell Y. Tsuji, Land Administrator Land Division Department of Land and Natural Resources P.O. Box 621 Honolulu, HI 96809 c/o Darlene.K.Nakamura@hawaii.gov

William J. Aila Jr., Chairman Department of Hawaiian Homelands P.O. Box 1879 Honolulu, HI 96805 William J. Ailajr@hawaii.gov

Dear Sirs:

SUBJECT:

Chapter 6E-8 Historic Preservation Review -

Early Consultation Request for the Proposed Department of Home Lands

Pu'unani Homestead Subdivision Project

Pū'ali Komohana Ahupua'a, Waikapu District, Island of Maui

TMK: (2) 3-5-002:002 por.

This letter provides the State Historic Preservation Division's (SHPD's) comments on the submittal titled *Early Consultation Request for the Proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision*. The DHHL is proposing to develop a new residential subdivision on an ~48.3-acre portion of the 60.087-acre State-owned property. The SHPD received this submittal on August 21, 2019. The submittal includes a memorandum dated August 20, 2019 and project maps.

The submittal indicates that that the proposed project will include a maximum of 161 lots, with appurtenances. Additionally, the project will involve related improvements including internal roadways, sidewalks, drainage detention basin, roadway frontage improvements along Honoapi'ilani Highway include turning lanes and a bike lane.

At this time, the SHPD has insufficient information regarding the potential for the proposed project to adversely affect significant archaeological historic properties.

SHPD requests the following:

- 1. Cover letter initiating historic preservation consultation pursuant to HRS Chapter 6E including items #4 through #7;
- 2. Permit Set;
- 3. HRS 6E Submittal Form available at: https://dlnr.hawaii.gov/shpd/files/2018/01/012918-SHPD-HRS-6E-Submittal-Intake-Form-2.pdf

IN REPLY REFER TO: Log No. 2019.01856 Doc. No. 1909GC13

Archaeology

Russell Tsuji and William Aila September 24, 2019 Page 2

- 4. Cultural Resources Report produced in support of permit review, per Hawaii Administrative Rules (HAR) §13-275-5(a);
- 5. DHHL's evaluation of significance per HAR §13-275-6(a). If a historic property is identified, an assessment of significance shall be submitted;
- 6. Pursuant to HAR §13-275-7(a), the DHHL's HRS 6E historic properties project effect determination of:
 - o No historic properties affected or
 - o Effect, with agreed upon mitigation commitments

Note: Effect means destruction or alteration of the historic property, detrimental alteration, of the properties' surrounding environment, detrimental visual, spatial, noise or atmospheric impingement, increasing access with the chances of resulting damage and neglect resulting in deterioration or destruction.

7. Request for the State Historic Preservation Division's (SHPD's) concurrence with the HRS 6E project effect determination;

SHPD looks forward to continued consultation with the Department of Hawaiian Home Lands and the DLNR Land Division.

Please contact Dr. Susan A. Lebo, Archaeology Branch Chief at (808) 692-8019 or at <u>Susan.A.Lebo@hawaii.gov</u> for any questions regarding this letter.

Aloha, Alan Downer

Alan S. Downer, PhD Administrator, State Historic Preservation Division Deputy, State Historic Preservation Officer

cc: Bryan Esmeralda, Munekiyo Haraga <u>bryan@munekiyoharaga.com</u> Stewart Matsunaga, DHHL, <u>Stewart.t.matsunaga@hawaii.gov</u>



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

May 18, 2020

Alan Downer, PhD, Administrator State Historic Preservation Divsion Department of Land and Natural Resources State of Hawai'i 601 Kamokila Boulevard, Suite 555 Kapolei, Hawai'i 96707

SUBJECT:

Response to Early Consultation Comments Regarding the 0Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i (Log No.: 2019.01856, Doc. No.: 1909GC13, Archaeology)

Dear Dr. Downer:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 24, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

We note that the project's archaeological consultant, Scientific Consultant Services, Inc. (SCS), previously submitted to the State Historic Preservation Division (SHPD) by separate transmittal on April 5, 2019, a Chapter 6E, Hawai'i Revised Statutes (HRS) This Chapter 6E, HRS Submittal Form noted prior SHPD Submittal Form. correspondence (Log No. 2005.2398; Doc No. 0511MK22) that confirmed SHPD's previous acceptance of a 2005 Archaeological Inventory Survey (AIS) Report that was prepared for the area and SHPD's determination that no further archaeological mitigation is necessary. In addition, the proposed project involves the construction of a sewerline which will traverse a portion of Tax Map Key (2)3-1-5-001:064, which is the site of the proposed Wailuku Apartment Rental Housing Project by others. An Archaeological Assessment (AA) was prepared for this project and accepted by the SHPD. The AA recommended that archaeological monitoring be done for all ground altering activities. As such, we understand that an archaeological monitoring plan was prepared and submitted to the SHPD by others. DHHL will ensure that monitoring in the area of the proposed sewerline is undertaken in accordance with said monitoring plan.

Alan Downer, PhD, Administrator May 18, 2020 Page 2

It is further noted that the DHHL, by letter dated March 27, 2020, requested the SHPD's reconfirmation of the previous determinations made on the AIS and AA, and that no further work was required for Parcel 2, and monitoring would be required for the limited work within Parcel 64. The SHPD provided their concurrence via return signature on the March 27, 2020 letter.

Thank you for your participation in the Chapter 343, HRS environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC

Mike Dega, Scientific Consultant Services, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\SHPD.doc

DAVID Y, IGE GOVERNOR



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

September 13, 2019

JADE T. BUTAY DIRECTOR

Deputy Directors
LYNN A.S. ARAKI-REGAN
DEREK J. CHOW
ROSS M. HIGASHI
EDWIN H. SNIFFEN

IN REPLY REFER TO: DIR 0839 STP 8.2750

Mr. Bryan Esmeralda, AICP Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

Subject: Department of Hawaiian Home Lands (DHHL)

Puunani Homestead Subdivision Project

Early Consultation for Draft Environmental Assessment (DEA)

Waikapu, Maui, Hawaii TMK: (2) 3-5-002:002 (por)

The State Department of Transportation (DOT) understands that DHHL is proposing to develop a new 161 lot residential subdivision in Waikapu. The project is located mauka of Honoapi'ilani Highway. Related improvements to be developed with the project include internal roadways and sidewalks, a drainage detention basin, utility connections, and roadway frontage improvements along Honoapi'ilani Highway. Proposed roadway improvements along Honoapi'ilani Highway include provision of turning lanes and a bike lane. DOT's comments on the subject project are as follows:

Highways Division

- 1. A Traffic Impact Analysis Report (TIAR) is to be included in the DEA and should be prepared by a Professional Engineering with State certification and traffic expertise.
 - a. The study should include intersections:
 - i. Honoapi'ilani Highway and Waiko Road.
 - ii. Honoapi'ilani Highway and Kuikahi Drive.
 - b. The TIAR should include any phasing plan and the transportation improvements of each phase.

Mr. Bryan Esmeralda, AICP September 13, 2019 Page 2

2. According to the site plan (Figure 3), it appears that two stub-outs are planned at the rear property boundary. A discussion should be provided whether the stub-outs are for the purpose of connecting to a future expansion of the development.

Airports Division

- 1. The closest point of the proposed project area is approximately three miles from Kahului Airport (OGG). All projects within five miles from Hawaii State airports are advised to comply with the Technical Assistance Memorandum (TAM) for guidance with development and activities that may require further review and permits. The TAM can be viewed at this link: http://files.hawaii.gov/dbedt/op/docs/TAM-FAA-DOT-Airports_08-01-2016.pdf.
- 2. The developer and occupants of the residential subdivision should be aware of potential single event noise from aircraft operating to and from OGG.
- 3. In accordance with Federal Aviation Administration (FAA) Advisory Circular 150/5200-33B *Hazardous Wildlife Attractants on or near Airports*, the proposed drainage detention basin should be designed, engineered, constructed, and maintained for a maximum 48-hour detention period after the design storm and remain completely dry between storms to minimize hazardous wildlife attractants. If the project results in a wildlife attractant, these effects shall be immediately mitigated by the developer upon notification by DOT and/or FAA.

If there are any questions, please contact Mr. Blayne Nikaido of the DOT Statewide Transportation Planning Office at (808) 831-7979 or via email at blayne.h.nikaido@hawaii.gov.

Sincerely

JADE T. BUTAY Director of Transportation



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng VICE PRESIDENT

May 18, 2020

Jade Butay, Director Department of Transportation State of Hawai'i 869 Punchbowl Street Honolulu, Hawai'i 96813-5097

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i (DIR 0839, STP 8.2750)

Dear Mr. Butay:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 13, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

Highways Division

- 1. A Traffic Impact Analysis Report (TIAR) is being conducted for the proposed project by the project's traffic engineer. The results of the TIAR will be included in the Draft Environmental Assessment (EA) being prepared. Your comment regarding suggested study intersections was provided to the project's traffic engineer for inclusion in the TIAR. In addition, a phasing plan for the 137 turn-key homes is not anticipated. The 24 vacant improved lots will be lessee built and subject to each lessee timeline. As such, the study will include analyses of the Honoapiilani Highway and Waiko Road intersection and the Honoapiilani Highway and Kuikahi Drive intersection.
- 2. We note that the stub-outs illustrated on the mauka portion of the project site on Figure 3 (Conceptual Site Plan) of the early consultation letter are to provide access for the adjacent mauka property through the project site and to Honoapi'ilani Highway, as required by the County of Maui. This adjacent mauka property is not part of the project and will be under separate ownership. We

Oahu: 735 Bishop Street, Suite 321 · Honolulu, Hawaii 96813 · Tel: 808.983.1233

Jade Butay, Director May 18, 2020 Page 2

note, however, that moving forward, the site plan will reflect only one (1) access (or stub-out) to the adjacent mauka property. At this time, no future expansion of the project is planned.

Airports Division

- 1. We acknowledge your comment that the closest point of the proposed project is approximately three (3) miles from Kahului Airport (OGG), and that all projects within five (5) miles of Hawai'i airports are advised to comply with the Technical Assistance Memorandum (TAM) for guidance with development and activities that may require further review and permits. The TAM will be reviewed by DHHL and its design team for applicability to the proposed project.
- 2. We acknowledge your comment and note that the DHHL is aware of potential single event noise from aircrafts en route to and from OGG.
- 3. We acknowledge your comment that the proposed drainage detention basin should be designed, engineered, constructed, and maintained for a maximum 48-hour detention period after the design storm and remain dry between storms to minimize wildlife attractants pursuant to Federal Aviation Administration Advisory Circular 150/5200-33B Hazardous Wildlife Attractants on or near Airports. The Advisory Circular will be reviewed for applicability to the proposed project.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC

Tyler Fujiwara, Austin, Tsutsumi & Associates, Inc.

Darren Unemori, Warren S. Unemori Engineering, Inc.

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OF 1959

DAVID Y. IGE Governor

MIKE McCARTNEY
Director

DANIEL E. ORODENKER
Executive Officer

LAND USE COMMISSION artment of Business, Economic Development & Tourism

Department of Business, Economic Development & Tourism State of Hawai'i

August 28, 2019

Mr. Bryan K. Esmeralda, Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawai'i 96793

Dear Mr. Esmeralda:

Subject:

Early Consultation Request for the Proposed Department of Hawaiian

Home Lands Pu'unani Homestead Subdivision Project

Waikapū, Maui, Hawai`i TMK: (2) 3-5-002: 002 (por.)

We are in receipt of your letter dated August 12, 2019, requesting comments on the subject project.

Based on your description of the project, we understand that it will consist of a residential subdivision on approximately 48.3 acres of land. A total of 161 lots, consisting of approximately 137 turn-key single-family residences and 24 vacant single-family lots, are proposed. In addition to the planned residences and lots, the project will include internal roadways and sidewalks, a drainage detention basin, and utility connections. We further understand that the project will require roadway frontage improvments along the state-owned Honoapi`ilani Highway and will be developed by the Department of Hawaiian Home Lands (DHHL) on state-owned lands with state and private funds, all of which trigger the environmental review process under Hawai`i Revised Statutes (HRS) chapter 343.

As correctly indicated in your letter, the project site is designated within the State Land Use Agricultural District. As you may know, the site was included as part of a Petition for District Boundary Amendment filed with the Land Use Commission (LUC) under Docket No. A06-766/Towne Development of Hawaii, Inc.; Endurance Investors, LLC; and Association of II Wai Hui LP. Petitioners had requested the reclassification of approximately 210 acres of land from the State Land Use.

Mr. Bryan K. Esmeralda, Senior Associate August 28, 2019 Page 2

Agricultural District to the State Land Use Rural and Urban Districts for a residential development of 214 half-acre rural lots, 6 one-acre rural lots, approximately 90 single-family residential lots of 4,000 square feet, approximately 240 multi-family units, and a 14.6-acre park that would serve as a retention basin for the development. In January 2017, the LUC acknowledged Petitioners' request to withdraw the Petition as they would no longer be pursuing the project and deactivated the Petition. The Environmental Impact Statement Preparation Notice for the project was also withdrawn from the HRS chapter 343 environmental review process.

We request that the Draft Environmental Assessment (DEA) include the above history of the site in its description of the affected environment. We further request clarification as to whether the DHHL has any development plans for the remaining portion of TMK: (2) 3-5-002: 002.

Finally, we request that a copy of the DEA be forwarded to our office for review as soon as it becomes available.

We have no further comments to offer at this time. Thank you for the opportunity to comment during the early consultation period.

Should you have any questions or require further clarification, please call our office at 587-3822.

Daniel E. Orodenker

Executive Officer

¹ Petitioners subsequently revised the plans for the project to include 147 residential lots, a village mixed-use district consisting of approximately 450 multi-family units and approximately 25,000 square feet of commercial retail/office space, and an approximately 15-acre park/stormwater retention area.



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

VICE PRESIDENT

May 18, 2020

Daniel Orodenker, Executive Officer Land Use Commission State of Hawai'i P.O. Box 2359 Honolulu, Hawai'i 96804

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Mr. Orodenker:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated August 28, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

We acknowledge your comment and note that the history of the subject property and previous development proposal by others will be included in the Draft Environmental Assessment (EA), as requested. In addition, we note that the DHHL has no development plans for the remainder of the subject property, which will be under separate ownership.

As requested, the Draft EA will be provided to your office for review and comment when available.

Daniel Orodenker, Executive Office May 18, 2020 Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

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MICHAEL P. VICTORINO Mayor

ERIC A. NAKAGAWA, P.E. Acting Director

SHAYNE R. AGAWA, P.E. Deputy Director

MICHAEL P. RATTE Solid Waste Division

SCOTT R. ROLLINS, P.E. Wastewater Reclamation Division

TAMARA FARNSWORTH Environmental Protection & Sustainability Division



COUNTY OF MAUI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

2050 MAIN STREET, SUITE 2B WAILUKU, MAUI, HAWAII 96793

August 15, 2019

Munekiyo Hiraga

Attention: Bryan K. Esmeralda, Senior Associate

305 High Street, Suite 104 Wailuku, Hawaii 96793

SUBJECT:

PU'UNANI HOMESTEAD SUBDIVISION,

DEPARTMENT OF HAWAIIAN HOMELANDS

TMK (2) 3-5-002:002 (POR.), WAIKAPU, MAUI, HAWAII

We reviewed the subject application and have the following comments:

- 1. Solid Waste Division comments:
 - a. None.
- 2. Wastewater Reclamation Division (WWRD) comments:
 - a. Although wastewater system capacity is currently available as of the date of this letter, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
 - b. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.
 - c. Show or list minimum slope of new sewer laterals.
 - d. Plans should show the installation of a single service lateral and advanced riser for each lot. Any request for waiver of this requirement shall be made submitted in writing for approval by WWRD.
 - e. Indicate on the plans the ownership of each easement (in favor of which party). Note: County will not accept sewer easements that traverse private property.
 - f. Non-contact cooling water and condensate should not drain to the wastewater system.

- g. Connection to any County owned wastewater system shall be within street right of way and not easements.
- h. County will not accept any sewer easements for the ownership/maintenance of sewer infrastructure.
- i. Connection cannot occur until the Lower Main Sewer Upgrade project is completed and operating.
- j. Developer/builder will be responsible for any current and retroactive assessment fees as a condition of connecting to the County wastewater system.
- k. Developer may be required to upgrade sewer trunk line near Wailuku Wastewater Pump Station to expand capacity prior to connection.

If you have any questions regarding this letter, please contact Shayne Agawa at 270-8230.

Sincerely,

SHAYNE R. AGAWA

Deputy Director of Environmental Management



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng VICE PRESIDENT

May 18, 2020

Eric Nakagawa, P.E., Director Department of Environmental Management County of Maui 2050 Main Street, Suite 2B Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the

Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Mr. Nakagawa:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated August 15, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

Solid Waste Division

We acknowledge that the Solid Waste Division has no comments at this time.

Wastewater Reclamation Division

- a. We acknowledge the comment, and understand that wastewater system capacity for the proposed project cannot be confirmed until the issuance of building permits.
- b. We acknowledge the comment and DHHL will work with the Department regarding necessary offsite improvements related to the wastewater system.
- c. The Draft Environmental Assessment (EA) being prepared for the proposed project will include a Preliminary Engineering Report (PER) discussing the infrastructural needs and proposed systems to service the project. At the time of building permit, as requested, plans will reflect the minimum slope of proposed new sewer laterals.

Oahu: 735 Bishop Street, Suite 321 * Honolulu, Hawaii 96813 * Tel: 808.983.1233

Maui: 305 High Street, Suite 104 · Wailuku, Hawaii 96793 · Tel: 808.244.2015 · Fax: 808.244.8729

- d. As requested, at the time of building permit, the plans submitted will show the installation of a single service lateral and advanced riser for each lot. We acknowledge your comment that a request for waiver of this requirement must be submitted in writing to the Wastewater Reclamation Division, should it be desired.
- e. As requested, the building permit plans will indicate the ownership of each easement. Please see response g./h. regarding sewer easements.
- f. We acknowledge your comment that non-contact cooling water and condensate should not drain to the wastewater system.
- g./h. We acknowledge your comment that connections to the County wastewater system should be made in rights-of-way, and not within easements. DHHL will coordinate with the Wastewater Reclamation Division (WWRD) regarding sewer easements and ownership or maintenance of wastewater infrastructure.
- i. We acknowledge your comment and understand that connection to the County wastewater system cannot occur until the proposed Lower Main Sewer Upgrade project (by others) is complete and operating.
- j. We acknowledge your comment that DHHL and/or builder will be responsible for any current and retroactive assessment fees as a condition of connecting to the County wastewater system. Coordination will be undertaken with the WWRD by the project engineer as the project moves forward to determine applicable requirements.
- k. We acknowledge your comment that DHHL may be required to upgrade the wastewater trunk line near the Wailuku Wastewater Pump Station to expand capacity prior to the proposed project connecting to the system. As stated previously, coordination will be undertaken by the project engineer with WWRD as the project moves forward to determine applicable requirements.

Eric Nakagawa, P.E., Director May 18, 2020 Page 3

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc.

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> DAVID C. THYNE Fire Chief

BRADFORD K. VENTURA
Deputy Fire Chief





DEPARTMENT OF FIRE & PUBLIC SAFETY

COUNTY OF MAUI 200 DAIRY ROAD KAHULUI, HI 96732

September 13, 2019

Munekiyo Hiraga Attn: Bryan K. Esmeralda, Senior Associate 305 High St. Suite 104 Wailuku, HI 96793

SUBJECT: Pu'unani Homestead Subdivision – DHHL Proposed

Waikapu, HI

TMK: (2) 3-5-002: 002 (por.)

Dear Bryan,

Thank you for allowing our office to provide comment on the subject proposed project. As per your request, comments are provided below:

- Proposed water supply for fire protection shall be at a minimum of 1000 gallons per minute. Hydrant spacing shall be at 350 feet maximum.
- Where the proposed project abuts undeveloped lands, fire prevention measures shall be incorporated into the proposed project to address the concern of wildland fires. A minimum of 30 feet of defensible space shall be provided between proposed structures and the undeveloped lands. Our office can assist with this matter.
- Our office also reserves the right to comment on the proposed project during the subdivision process and the building permit review process when detailed plans for this project are routed to our office for review. At that time, fire department access, water supply for fire protection, and fire and life safety requirements will be addressed.

If there are any questions or comments, please feel free to contact me at (808) 876-4693 or by email at paul.haake@mauicounty.gov.

Sincerely,

Paul Haake

Parl House

Captain - Fire Prevention Bureau



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

May 18, 2020

Paul Haake, Captain Fire Prevention Bureau Department of Fire & Public Safety County of Maui 313 Manea Place Wailuku, Hawai'i 96793

SUBJECT: F

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawaii

and (2)3-3-00 1.004(por.), vvalidku, ivia

Dear Captain Haake:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 13, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

- We acknowledge your comment regarding water demand for fire protection. Your comment has been forwarded to the project's civil engineer for review and incorporation in the water system design for the proposed project.
- We acknowledge your comment regarding buffers for fire protection where the proposed project abuts undeveloped lands. Coordination on fire prevention measures will be undertaken with the Fire Prevention Bureau by the project engineer as the project moves forward.
- We acknowledge your comment that the Fire Prevention Bureau reserves the right to comment on the proposed project during the subdivision and building permit processes, when Fire Department access, water supply for fire protection, and fire and life safety requirements will be addressed.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in

Paul Haake, Captain May 18, 2020 Page 2

the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\Fire.doc

> LORI TSUHAKO Director

LINDA R. MUNSELL Deputy Director



DEPARTMENT OF HOUSING & HUMAN CONCERNS

COUNTY OF MAUI 2200 MAIN STREET, SUITE 546 WAILUKU, MAUI, HAWAI'I 96793 PHONE: (808) 270-7805

August 21, 2019

Mr. Esmeralda, Senior Associate Munekiyo & Hiraga, Inc. 305 High Street Wailuku, HI 96793

Dear Mr. Esmeralda:

Subject: Early Consultation Request for Proposed Department of

Hawaiian Home Lands Pu'unani Homestead Subdivision

Project, Waikapu, Maui, Hawaii.

TMK: (2)3-5-002:002(por.)

The Department has reviewed the Draft Environmental Request for the above subject project. Based on our review, we have determined that the project is subject to Chapter 2.96, Maui County Code, and must comply with all applicable regulations.

Please feel free to contact me at (808) 270-7355 if you have any questions.

Sincerely,

BUDDY ALMEIDA Housing Administrator

cc: Director of Housing and Human Concerns





Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

VICE PRESIDENT

May 18, 2020

Buddy Almeida, Housing Administrator Department of Housing and Human Concerns County of Maui 2200 Main Street, Suite 546 Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the

Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawaii

Dear Mr. Almeida:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated August 21, 2019 providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

We acknowledge your determination that the project is subject to the workforce housing requirements of Chapter 2.96, Maui County Code (MCC). We note, however, that the Hawaiian Homes Commission Act vests onto DHHL the authority to use its lands at its discretion. In this regard, although DHHL intends to exempt the project from the County workforce housing requirements of Chapter 2.96 from MCC, DHHL will develop and deliver affordable homesteads to their beneficiares. As appropriate, further coordination may be undertaken with your office by DHHL.

Buddy Almeida, Housing Administrator May 18, 2020 Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan^l K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

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KARLA H. PETERS
Director

JOHN L. BUCK III Deputy Director





DEPARTMENT OF PARKS AND RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793 Main Line (808) 270-7230 / Facsimile (808) 270-7942

August 21, 2019

Bryan Esmeralda, Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, HI 96793

Dear Mr. Esmeralda:

SUBJECT: Early Consultation Request for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK: (2) 3-5-002:002 (por.); Waikapu, Maui, Hawaii

Thank you for the opportunity to review and comment on the subject project. The Department of Parks & Recreation has no comment at this time, and is in support of the project.

Please feel free to contact me or Robert Halvorson, Chief of Planning and Development, at robert.halvorson@co.maui.hi.us or (808) 270-7387, should you have any questions.

Sincerely,

KARLA H. PETERS
Director of Parks & Recreation

Robert Halvorson, Chief of Planning and Development

KHP:RH:csa

C:



Michael T. Munekiyo
CHAIRMAN

Karlynn K. Fukuda
PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng

May 18, 2020

Karla Peters, Director Department of Parks and Recreation County of Maui 700 Hali'a Nakoa Street, Unit 2 Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the

Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Ms. Peters:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated August 21, 2019, regarding the proposed Pu'unani Homestead Subdivision project. We acknowledge that the Department of Parks and Recreation has no comments to offer at this time, and that the Department is in support of the project.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

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MICHELE CHOUTEAU MCLEAN, AICP Director

JORDAN E. HART Deputy Director





DEPARTMENT OF PLANNING

COUNTY OF MAUI ONE MAIN PLAZA 2200 MAIN STREET, SUITE 315 WAILUKU, MAUI, HAWAII 96793

September 9, 2019

Mr. Bryan Esmeralda Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

SUBJECT: REQUEST FOR COMMENT ON THE PROPOSED

DEPARTMENT OF HAWAIIAN HOMELANDS, PU'UNANI HOMESTEAD SUBDIVISION PROJECT LOCATED IN WAIKAPU, ISLAND OF MAUI, HAWAII;

TMK: (2) 3-5-002:002 (POR.) (RFC 2019/0078)

The Department of Planning (Department) is in receipt of the proposed Department of Hawaiian Homelands (DHHL) Pu'unani Homestead Subdivision Project (Project) Request for Comment (RFC) in preparation of the Draft Environmental Assessment (EA).

The Department understands the project will be comprised of a maximum of 161 lots with approximately 137 turn-key single-family residences and 24 vacant single-family lots on approximately 48.3 acres mauka of Honoapiilani Road in Waikapu. The site plan and lot counts will be finalized following detailed site engineering and design work and upon the completion of site acquisition by DHHL.

The Department is aware that the Hawaiian Homes Commission Act (HHCA) vests onto DHHL the authority to use its lands at its discretion when that use is for homesteading purposes and, as indicated in your proposal, DHHL has the authority to proceed with the project without the lands being fully entitled for residential use.

The Department therefore offers for your consideration the following comments:

1. The Maui Island Plan (MIP), Chapter 8 Directed Growth Plan, includes the identification and development story for the Pu'unani Planned Growth Area (See Exhibit 1 identified as page 8-21 of the MIP for the Planned Growth Area rationale for Pu'unani). This area, of which the Pu'unani Homestead Subdivision is a portion, is intended to be a mixed-use project bounded by a 200-foot greenbelt buffer along its eastern edge adjacent to

Honoapiilani Highway. (See Exhibit 2 for a map of the Pu'unani Planned Growth Area.) A critical component of this area is the 200-foot wide greenbelt, defined in detail in Exhibit 3 and shown in the map in Exhibit 4 identified as Lahaina-Central WC-1 map. The greenbelt along Honoapiilani Highway is intended to enhance views of the West Maui Mountains when traveling along Honoapiilani Highway and to reduce the visual impact of mauka development. Additionally, the MIP Pu'unani Plan includes a 500-foot wide preservation greenbelt along the area's southern boundary which is the Waiolani Mauka community. The preservation greenbelt extends from Honoapiilani Highway to the Old Waikapu Road shown in the map in Exhibit 4. This 500-foot wide greenbelt separates the Waiolani Mauka community from Wailuku providing a visual relief and a lower residential density pattern than surrounding communities. There also is consideration that such greenbelts can enhance fire protection by serving as fire breaks. It appears that the proposed Project is planned to cover portions of both of these greenbelts.

- 2. The subject 48.3 acre portion of the parcel includes approximately:
 - a. 14.7 acres within the urban growth boundary;
 - b. 15.8 acres within the rural growth boundary;
 - c. 9.9 acres of greenbelt (protected area), and;
 - d. 7.9 acres of preservation (protected area).

The density for the urban area of the MIP Pu'unani Plan is envisioned to include multi-family units, commercial and public/quasi-public uses with a residential density of 9-12 dwelling units/acre. See **Exhibit 5** for the Waikapu/Kahului C3 Growth Boundary Map provided in the MIP.

- 3. The Wailuku-Kahului Community Plan supports the provision of sufficient land areas for new residential growth which relax constraints on the housing market and afford variety in type, price, and location of units: Item 2, Housing Objectives and Policies.
- 4. While the HHCA vests the DHHL with the authority to use its lands at its discretion for homesteading purposes, the MIP is a blueprint that provides direction for future growth, the economy, and social and environmental decisions on the Island of Maui. It incorporated input from residents, including native Hawaiians, from across the Island through a multitude of community, planning commission and county council meetings held over several years and the Department hopes the MIP is considered when plotting out the Pu'unani Homestead Subdivision Project. The Department recognizes that the Project is providing much needed housing but the current proposed development does not conform to the MIP's designated

Mr. Bryan Esmeralda September 9, 2019 Page 3

growth densities for the area nor does it incorporate a buffer between Wailuku and Waiolani Mauka/Waikapu. Furthermore, the MIP has specific language that calls for the separation of development between Wailuku and Waikapu: "Policy 7.3.1.b Maintain a distinct separation between communities, such as but not limited to, Wailuku and Waikapu, ... to protect the character and identity of Maui's communities." The Department asks that there be consideration in the Project to consider the voice of the Maui Island community and provide a distinctive greenbelt preservation buffer between the Project and the Waiolani Subdivision and the greenway along Honoapiilani Highway.

- 5. The Department asks that the Draft EA addresses alternatives that more closely follow the goals and objectives of the MIP for this Pu'unani Growth Area and that consideration be given to the incorporation of the proposed greenbelts into the Project.
- 6. Finally, the Department would like to make comments on the Draft EA when completed and requests a copy of the Draft EA when available.

Thank you for the opportunity to comment on the preparation of the Draft EA for the Pu'unani Homestead Subdivision Project by DHHL. Should you require further clarification, please contact Staff Planner Kurt Wollenhaupt by email at kurt.wollenhaupt@mauicounty.gov or by phone at (808) 270-1789.

Sincerely,

MICHELE MCLEAN, AICP

prumenn

Planning Director

Attachments

xc: Clayton I. Yoshida, AICP, Planning Program Administrator (PDF)

Pam Eaton, Planning Program Administrator (PDF)

Danny A. Dias, Acting Planning Program Administrator (PDF)

Kathleen Aoki, Administrative Planning Officer (PDF)

Carolyn Cortez, Staff Planner (PDF)

Ann Cua, Current Planning Supervisor (PDF)

Kurt F. Wollenhaupt, Staff Planner (PDF)

Paul Critchlow, Staff Planner (PDF)

Bryan Esmeralda, Munekiyo Hiraga (PDF)

Project File

MCM:KFW:lak

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Pu`unani

The Pu'unani planned growth area is intended to be a mixed-use project located at the southwest edge of Wailuku. This urban and rural expansion is located south of Kehalani below Wailuku Heights and is bounded to the east by Honoapi'ilani Highway. The growth area will be buffered by a 200-foot greenbelt along its eastern edge and adjacent to Honoapi'ilani Highway. Additionally, a 500-foot greenbelt along the area's southern extent shall provide a separation between the Waiolani community and Wailuku. The greenbelt, greenway, and rural lands are intended to provide separation between Wailuku and Waikapu, and to provide a visual relief by creating a lower-density residential pattern than surrounding communities. This planned growth area will mark the southern boundary of Wailuku.

Planned Growth Area Rationale

Pu'unani is a residential expansion of the existing southern boundary of Wailuku Town. It is intended that infrastructure development be coordinated with neighboring developments including Kehalani, Wai'ale and Waikapū Tropical Plantation Town. The urban portion of the growth area will be comprised primarily of approximately 450 multifamily units and commercial and public/quasi-public uses. The rural component will be comprised of low-density residential lots that will provide for a transitional zone from the high-density, multifamily component of the growth area as well as Wailuku to the north. The precise rural residential densities and unit count for the rural component of the project will be determined at the time of zoning.

The area is currently zoned for agricultural use, and water and wastewater infrastructure, as well as transit access are in place. The Pu'unani planned growth area is depicted on Figure 8-1. Table 8-7 provides planning guidelines for this planned growth area:

Table 8 - 7: Pu'unani Planned Growth Area

Table 6 - 7. Tu unam Tianneu Growth Area					
Background Informatio	n:				
Project Name	Pu`unani	Directed Growth Map #:	C3		
Type of Growth:	Urban & Rural Expansion	Gross Site Acreage:	209 Acres		
Planning Guidelines	•				
Dwelling Unit Count:	Approximately	Residential Product Mix:	MF/VMX - 64 Acres		
	Urban - 450 Units		Rural - 143 Acres		
	Rural – To be determined ⁸		•		
Net Residential Density:	Urban – 9-12 du/acre	Parks and Open Space%9:	≥36%		
	Rural - To be determined				
		Commercial:	Neighborhood Serving		

⁸ Additional units may be permitted through a transfer of development rights program or to provide affordable housing in excess of what is required by law. Unit counts may be further defined through the entitlement process in response to infrastructure and environmental constraints.

⁹ The distinct boundaries of the parks and open space, specific location of the recreational uses, and the precise amenities will be further defined during the Wailuku – Kahului Community Plan Update and the project review and approval process.



Figure 8-1: Wailuku-Kahului Planned Growth Areas.

Kahului Infill and Redevelopment and Revitalization of Wailuku Town

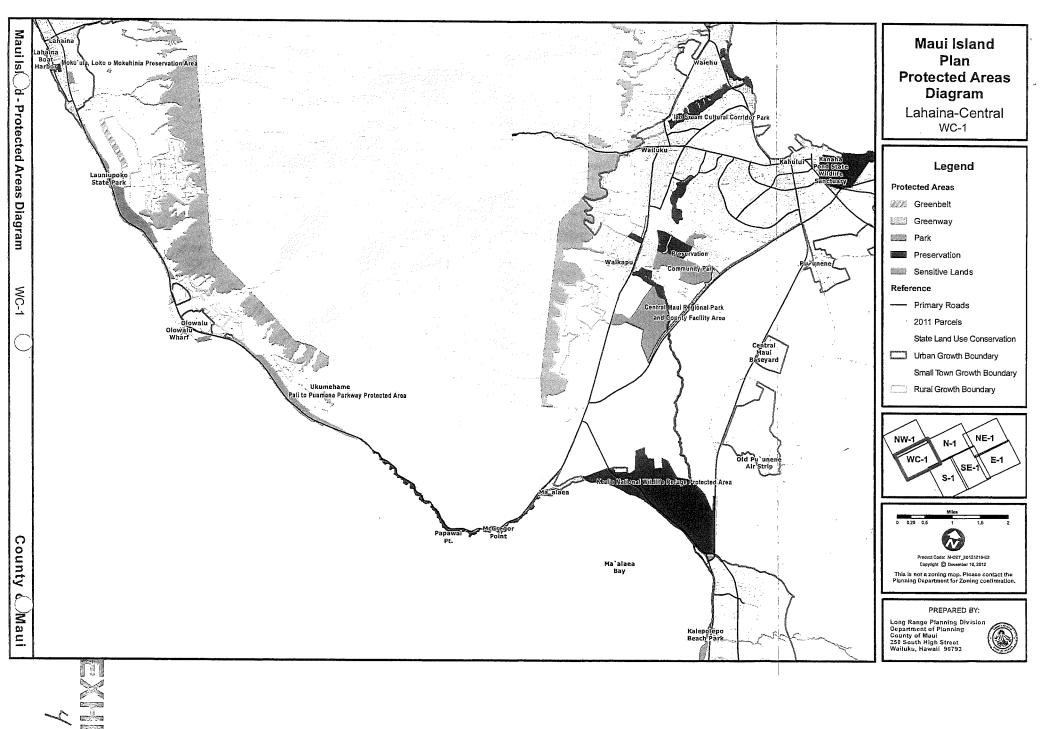
The plan proposes infill and redevelopment within Kahului. Much of Kahului is significantly underutilized and redevelopment will strengthen the economy, provide diverse housing opportunities within close proximity to jobs and services, and protect agricultural lands and the character of Maui's rural communities by making higher and better use of our existing urban areas. Redevelopment will also strengthen Kahului's identity, promote urban beautification and livability, and breathe vitality and life into the area.

The County should work with area landowners and the community to prepare the following studies: 1) Risk and Vulnerability Assessments (RVA); 2) specific area plans; and 3) supporting model development

Table 8 - 2: Growth Boundaries and Protected Area Types

	GROWTH BOUNDARIES (See Maps C-1 to C-5, S-1 to S-3, U-1 to U-4, N-1 to N-2, W-1 to W-4, E-1 to E-2)	CHARACTERISTICS	PURPOSE	IMPLEMENTATION STRATEGY
	Ueban	Urban areas contain a greater variety of land use types, including various housing types and densities, commercial, retail, industrial uses, and resort destination areas. Infrastructure is more complete and reflects the need to serve higher-density land uses.	Ensure that future development occurs in an orderly fashion; allows in-fill and revitalization opportunities and encourages "new urbanism" and "neo-traditional design" techniques.	Protect separation between communities through the use of Urban Growth Boundaries. Require community-based design processes and require design guidelines for future major development. Identify and promote redevelopment and in-fill opportunities. Encourage a mix of housing types and higher-density residential development to encourage resident housing opportunities.
	X Y Small Small	Small Towns are less intensely developed than urban areas with fewer services and a lower level of infrastructure. They may be more self-sufficient than Rural Villages. Primary employment opportunities are usually in nearby urban areas.	Protect the integrity, unique sense of place, and economic viability of Maui's traditional small towns.	Protect separation between communities through the use of Small Town Boundaries. Allow for expansion where appropriate. Utilize design guidelines and rural infrastructure standards to protect Small Town character.
	OUNDA	Rural Areas contain a mixture of agricultural activities, low-density residential areas, and small villages. Rural Villages may contain limited amounts of State and County urban designated	Provide a transition between Urban Areas and Small Towns and those areas in need of protection, including agricultural lands.	Minimize expansion of infrastructure that could lead to urbanization. Define areas appropriate for additional rural development patterns. Promote an equitable tax/water rate structure that reflects actual land use. Adopt appropriate infrastructure and subdivision standards to protect rural character.
	GROWTH BOUNDARY TYPES Lown Lo	lands including residential and small clusters of businesses and civic uses mostly to support surrounding rural residential uses and agricultural activities. Level of government services is generally limited and many essential goods and services are located in a larger town. The level of infrastructure may be lower than Small Towns. Employment is generally a function of nearby Urban Areas or Small Towns.	Contain the spread of residential uses into prime agricultural lands and provide a tool for designing villages with a mix of lots and lifestyle choices.	Maintain the separation of communities through the use of boundaries. Allow for Rural Villages where appropriate. Utilize rural design guidelines and appropriate infrastructure and subdivision standards to protect rural character.
		Rural Residential Areas are primarily a residential development pattern with lower residential densities (0.5 to 10 ACRE/du), agricultural activities, and few services or employment opportunities. Limited commercial and civic uses (churches, schools) may be allowed in accordance with applicable community plan and zoning.		
	PROTECTED AREA TYPES	(See Diagrams NW-1, WC-1, S-1, N-1, NE-1, E-1, SE-1)		
	S	Areas with significant natural and environmental resources, scenic, open space, and recreational resources, historic resources and other important assets that warrant additional protection. Preservation areas may include accessory structures such as public restrooms, structures related to a cultural or historical resource, and other structures and ancillary uses consistent with the purpose and intent of the preservation area.	significant environmental, ecological, cultural and	Protection using regulation, easements, Transfer of Development Rights (TDR) program or fee-simple purchase in cooperation with land trusts, environmental organizations, the County of Maui, State of Hawai'i and the Federal government. The appropriate community plan designation for this protected area type is park or open space as determined during a community plan update or the entitlement process.
	Park Park	Land areas devoted to passive (picnic facilities and gathering areas) and/or active (including, but not limited to, bike paths, hiking trails, ball fields, and tennis courts) uses that serve recreational needs.	Ensure that recreational and open space needs keep pace with future growth and are appropriately located consistent with the Maui Island Plan's Directed Growth Plan.	Acquisition, Transfer of Development Rights (TDR) program, and/or cooperative efforts with the development community during the design, project review and approval process. The appropriate community plan designation for this protected area type is park or open space as determined during a community plan update or the entitlement process.
	Greenbelt Greenway	Extensive area of largely undeveloped or sparsely occupied land established along natural corridors to protect environmental resources and to separate distinct communities. Greenbelts may include accessory structures and ancillary uses consistent with the purpose and intent of the greenbelt area.	Ensure natural and undisturbed separation between communities and protect environmentally sensitive lands.	Acquisition, Transfer of Development Rights (TDR) program, and/or cooperative efforts with the development community during the design, project review and approval process. Also implemented through the subdivision review process. The appropriate community plan designation for this protected area type is park or open space as determined during a community plan update or the entitlement process.
	Greenway	Typically a long, narrow piece of land, often times used for recreation, pedestrian, and bicycle traffic. Greenways can include community gardens and can be used to link community amenities (e.g. parks, shoreline). Greenways may include accessory structures and ancillary uses consistent with the purpose and intent of the greenway area.	Provide opportunities to inter-connect communities, ensure adequate recreational amenities, protect scenic resources, and link residential projects with service areas. Greenways may be improved to accommodate pedestrian, bicycle, equestrian and other similar uses.	Acquisition, Transfer of Development Rights (TDR) program, and/or cooperative efforts with the development community during the design, project review and approval process. Also implemented through the subdivision review process. The appropriate community plan designation for this protected area type is park or open space as determined during a community plan update or the entitlement process.
	Sensitive Land	Lands that contain development constraints including steep slopes greater than 35 percent, floodplains, significant drainage features, and adjacent intact forested areas.	Protect areas with significant development constraints and ensure sensitive areas are taken into consideration during site design.	An area that may require site design review and approval to ensure that areas with significant development constraints are avoided or appropriate mitigation measures are incorporated into projects.
	Meul County General Plan	s 2090 8–5 Meul Island Pian		
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Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng VICE PRESIDENT

May 18, 2020

Michele Chouteau McLean, AICP, Director Department of Planning County of Maui 2200 Main Street, Suite 315 Wailuku, Hawai'i 96793

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.): Wailuku, Maui, Hawai'i

Dear Ms. McLean:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 9, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

1. We acknowledge your comment that the proposed subdivision area is included within the Pu'unani Planned Growth Area as designated within the Maui Island Plan (MIP). The MIP states that the previous project (by others) was envisioned to be a mixed-use project bounded by a greenbelt buffer along its eastern edge adjacent to Honoapi'ilani Highway, as well as a preservation greenbelt buffer along the southern boundary adjacent to the existing Waiolani Mauka neighborhood.

We note that the currently proposed project is a separate and distinct project from the former Pu'unani project identified within the MIP, and is planned to be smaller in size, and limited to single-family residential development for DHHL beneficiaries as well as construction of a new sewerline to provide service to the new homes.

Further, it is noted and acknowledged that the project does not provide for a greenbelt buffer along Honoapi'ilani Highway or a preservation greenbelt buffer along the property's boundary adjacent to Waiolani Mauka. We note, however, that the massing of the proposed single-family community will be lesser in scale than the mixed-use project envisioned within the MIP, and will be similar in scale to the adjacent Waiolani Mauka community, thereby being less obstructive on existing view corridors. We also note that the proposed project is not intended to connect with existing developments in Wailuku, thereby maintaining the existing physical separation between Waikapū and Wailuku.

- 2. We acknowledge the comment regarding density. As previously stated, the proposed project will have a lower density than that of the previously proposed Pu'unani plan described within the MIP.
- 3. We acknowledge your comment and add that the proposed project will provide new dwelling units for Native Hawaiian beneficiaries of the DHHL. The current Wailuku-Kahului Community Plan designates the project subdivision site as "Single-Family Residential" and "Agriculture". The proposed project maintains consistency with the "Single-Family Residential" designation.
- 4. We acknowledge your comment and note that the proposed project will be located in the Pu'unani Planned Growth Area of the MIP, an area designated for residential growth, and will be lesser in density and smaller size with regards to the former mixed-use Pu'unani project (by others) as envisioned in the MIP. In addition, as previously noted, the proposed project, although adjacent to Waiolani Mauka, is not intended to connect to existing developments in Wailuku, thereby maintaining the physical separation between Waikapū and Wailuku.

Your comments regarding greenbelts and buffers are noted and was discussed further with DHHL for consideration. While the use of buffers and greenbelts would provide visual separation between the proposed project and adjacent properties, in part, the mission of DHHL is to develop and deliver land to Native Hawaiians. It is the priority of DHHL to provide as many housing opportunities to its beneficiaries as possible. The 500-foot wide greenbelt along the project's southern boundary and the 200-foot wide greenbelt along the project's eastern edge adjacent to Honoapi'ilani Highway, would equate to a reduction of approximately 68 homes. However, DHHL intends to install a landscaping strip along the project frontage, parallel to Honoapi'ilani Highway.

- 5. The Draft Environmental Assessment (EA) being prepared for the proposed project will address alternative(s) that more closely follow the goals and objectives of the MIP for the Pu'unani Growth Area. As indicated above, your comments regarding the incorporation of greenbelts is noted.
- 6. We acknowledge your comment, the Draft EA will be made available to the Department of Planning for review and comment.

Michele Chouteau McLean, AICP, Director May 18, 2020 Page 3

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc.

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ROWENA M. DAGDAG-ANDAYA Director

Deputy Director

GLEN A. UENO, P.E., L.S. Development Services Administration

RODRIGO "CHICO" RABARA, P.E. Engineering Division

JOHN R. SMITH, P.E. Highways Division

Telephone: (808) 270-7845 Fax: (808) 270-7955





COUNTY OF MAUI DEPARTMENT OF PUBLIC WORKS 200 SOUTH HIGH STREET, ROOM 434 WAILUKU, MAUI, HAWAII 96793

September 9, 2019

Mr. Bryan Esmeralda, Senior Associate MUNEKIYO HIRAGA 305 High Street, Suite 104 Wailuku, Maui, Hawaii 96793

Dear Mr. Esmeralda:

SUBJECT: EARLY CONSULTATION REQUEST FOR THE PROPOSED

DEPARTMENT OF HAWAIIAN HOME LANDS PU'UNANI

HOMESTEAD SUBDIVISION PROJECT;

TMK: (2) 3-5-002:POR. 002

We reviewed the subject application and have no comments at this time.

If you have any questions regarding this memorandum, please call Rowena M. Dagdag-Andaya at 270-7845.

Sincerely,

ROWÉNA)M. DAGDAG-ANDAYA

Director of Public Works

RMDA:da

xc: Engineering Division

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Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng VICE PRESIDENT

May 18, 2020

Rowena Dagdag-Andaya, Director Department of Public Works County of Maui 200 South High Street, Room 434 Wailuku, Hawai'i 96793

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Ms. Dagdag-Andaya:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 9, 2019, regarding the proposed Pu'unani Homestead Subdivision project. We acknowledge that the Department of Public Works has no comments to offer at this time.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

cc: Stewa

Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands Darren Okimoto. DDC LLC

MARC I. TAKAMORI
Director

MICHAEL B. DU PONT Deputy Director





DEPARTMENT OF TRANSPORTATION

COUNTY OF MAUI 200 SOUTH HIGH STREET WAILUKU, MAUI, HAWAI'I 96793

> TELEPHONE: (808) 270-7511 FAX: (808) 270-7505

> > August 22, 2019

Munekiyo Hiraga Attn: Bryan K. Esmeralda, Senior Associate 305 High Street, Suite 104 Wailuku, HI 96793

SUBJECT:

Early Consultation Request for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK (2)3-5-002:002(por.); Waikapū, Maui,

Hawaii.

Dear Mr. Esmeralda,

We appreciate the opportunity to provide comments on the Pu'unani Homestead project.

We currently have one bus route that operates within the vicinity of the Pu'unani Homestead project. The Lahaina Islander Route #20 which travels past this area on Honoapi'ilani Highway hourly traveling between Kahului and Lahaina. The closest bus stop to this area is in Waikapū. There are two Wailuku Loop and Reverse Routes #1 and #2 that provide services within the Wailuku area but the nearest stops are at Kamole Street in Kehalani and Ka Hale A Ke Ola on Waiale Rd.

While loop or villager services are not currently in this vicinity, planning for expansions are always considered. Such expansions are dependent on through streets within an area. Providing interconnecting sidewalks and ample lighting in the evening is necessary for walkable communities and the safety of potential public transit riders.

Sincerely,

Marc Takamori

Director



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda

Mark Alexander Roy VICE PRESIDENT

Tessa Munekiyo Ng VICE PRESIDENT

May 18, 2020

Marc Takamori, Director Department of Transportation County of Maui 2145 Kaohu Street, Suite 102 Wailuku, Hawai'i 96793

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Mr. Takamori:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated August 22, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

We acknowledge that the County of Maui, Department of Transportation (MDOT) has one (1) bus route, the Lahaina Islander Route #20, that currently travels along Honoapi'ilani Highway fronting the site of the proposed project, and that the closest bus stop for this route is nearby in Waikapū. We also acknowledge that two (2) Wailuku Routes, the Wailuku Loop and Reverse Routes #1 and #2 currently provide service to the Wailuku area, with bus stops on Kamole Street and on Wai'ale Road being the closest in proximity to the project site.

We acknowledge that while these Wailuku routes do not currently service the area of the proposed project, MDOT frequently considers potential expansions. We acknowledge your comments that expansions are dependent on through streets, and sidewalks and lighting, which you also noted are necessary for walkable communities and the safety of potential transit riders.

Marc Takamori, Director May 18, 2020 Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands CC:

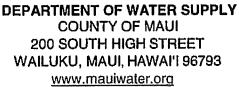
Darren Okimoto, DDC LLC

Tyler Fujiwara, Austin, Tsutsumi & Associates, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\MDOT.doc

JEFFREY T. PEARSON, P.E. Director

HELENE KAU Deputy Director







September 17, 2019

Mr. Bryan K. Esmeralda, Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

RE: Early Consultation Request for the Proposed Department of Hawaiian Home Lands (DHHL) Puunani

Homestead Subdivision Project

TMK: (2) 3-5-002:002(por.); Waikapu, Maui, Hawaii

Dear Mr. Esmeralda,

The Department of Water Supply (DWS) thanks you for the opportunity to offer an early consultation on the proposed DHHL new residential subdivision.

Source, Infrastructure, and Demand

The property overlies the Iao Aquifer with a sustainable yield of 20 million gallons per day according to the Commission on Water Resource Management (CWRM). According to <u>Water System Standards, 2002, State of Hawaii</u>, projected water demand for the entire project area will be approximately 144,900 gallons per day. This project is subject to the County of Maui's availability policy, codified in Title 14 of the Maui County Code in the subdivision process. Written verification of a long-term, reliable supply of water and the receipt of an approved engineering report for a long-term reliable supply of water for the subdivision will be required.

Wellhead Protection, Pollution Prevention, and Conservation

A portion of the proposed development (approximately 32 acres) is within the 10-year time of travel capture zone/wellhead protection area of a DWS municipal well (see attached). This project may be subject to design guidelines in the proposed July 24, 2018 "Bill for An Ordinance Amending Title 19, Maui County Code, To Establish A Wellhead Protection Overlay District." The best location of storm water detention facilities is outside the Wellhead Protection Overlay District. Additional measures should be undertaken during construction and in developing the community covenants, conditions, and restrictions for protecting the ground water in this zone.

CWRM promotes the protection of groundwater and the value of treating storm water as a resource including groundwater recharge capability when contained onsite with its document titled <u>A Handbook</u> for Stormwater Reclamation and Reuse Best Management Practices in Hawaii, December, 2008 found

here: http://files.hawaii.gov/dlnr/cwrm/planning/hsrar_handbook.pdf. DWS recommends including design elements and Best Management Practices (BMPs) contained in the document, such as permeable surfaces to reduce storm water loss (for example, permeable detention ponds and vegetated filter strips), bio-retention rain gardens, and the incorporation of native plants in landscaping design. All permeable water facilities would need ground water contamination prevention design as well. LEED certification is recommended for water conservation.

DWS recommends conserving resources and preventing pollution of the aquifer by following BMPs for Conservation and Construction (see attached) as well as integrating stormwater reclamation BMPs for ground water recharge and ground water contamination prevention.

Should you have any questions, please contact staff planner Audrey Dack at (808) 463-3109 or audrey.dack@co.maui.hi.us.

Sincerely,

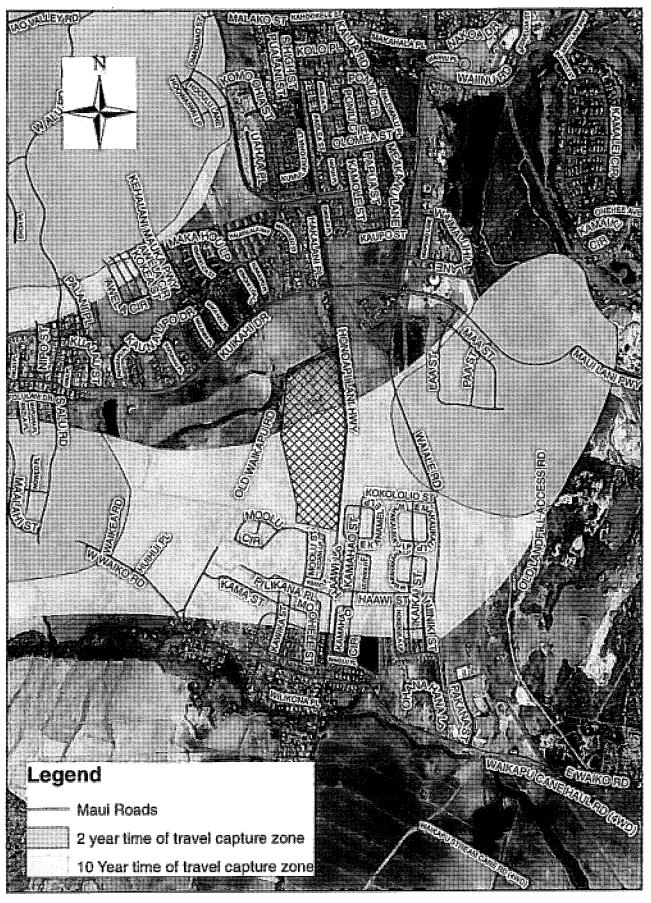
Jeffrey T. Pearson, P.E.

Director apd

cc: DWS engineering division

attachments

Puunani Subdivision Project Wellhead Protection Area



Best Management Practices BMPs

Construction BMPs for Pollution Prevention

In order to protect ground and surface water resources as well as our coastal areas, we recommend that in addition to any required Best Management Practices (BMPs) the following measures designed to minimize infiltration and runoff be implemented during construction:

- Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the ground. Remove all construction debris and toxic substances daily to prevent entry into the ocean.
- Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed off-site.
- Properly install and maintain erosion control barriers such as silt fencing or straw bales.
- Disturb the smallest area possible.
- Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid stand establishment. Apply biocides only during dry periods of low rainfall to minimize chemical run-off.
- Keep run-off on site.
- Dust control: Reclaimed water for dust control is available from the Kahului Wastewater Treatment plant at a reasonable cost. If feasible, it should be considered as an alternative source of water for dust control during construction.

Conservation BMPs

Indoor

DWS recommends the following indoor conservation measures be implemented:

- Use EPA WaterSense labeled plumbing fixtures.
- Install flow reducers and faucet aerators in all plumbing fixtures wherever possible.
- Install dual flush toilets with high efficiency models that use 1.28 gallons per flush or less.
- Install showerheads with a flow rate of 1.5 gallons per minute (gpm) at 60 pounds per square inch
 (psi).
- Install bathroom sink faucets with fixtures that do not exceed 1 gpm at 60 psi.
- Laundry facilities and/or individual unit machines should use Energy Star labeled washers.

Outdoor

DWS recommends the following outdoor conservation measures be implemented:

- Use Smart Approved WaterMark irrigation products. Examples include evapotranspiration irrigation controllers, drip irrigation, and water saving spray heads.
- After plants are established, avoid fertilizing and pruning to stimulate excessive growth. Time watering to occur in the early morning or evening to limit evaporation. Limit turf to as small an area as possible.
- Use native climate-adapted plants for landscaping. Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species.



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

May 18, 2020

Jeffrey Pearson, P.E., Director Department of Water Supply County of Maui 200 South High Street Wailuku, Hawai'i 96793

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.): Wailuku, Maui, Hawai'i

Dear Mr. Pearson:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 17, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

Source, Infrastructure, and Demand

We acknowledge your comment that the subject property overlies the 'Īao Aquifer, which has a sustainable yield of 20 million gallons per day according to the Commission on Water Resource Management (CWRM). We also acknowledge your comment that the project is subject to the County of Maui's availability policy in regards to subdivision processes, as codified in Title 14 of the Maui County Code (MCC). We note, however, that the Hawaiian Homes Commission Act vests onto DHHL the authority to use its lands at its discretion. In this regard, DHHL intends to exempt the project from the County of Maui's availability policy, codified in Title 14 of the MCC. Additionally, the Draft Environmental Assessment (EA) being prepared for the project will describe the planned water system improvements that will serve the proposed subdivision.

Wellhead Protection, Pollution Prevention, and Conservation

We acknowledge your comment that a portion of the project area is within the 10-year time of travel capture zone/wellhead protection area of a DWS municipal well, as depicted in the attachment to your letter. As such, we understand that the project may

Jeffrey Pearson, P.E., Director May 18, 2020 Page 2

be subject to design guidelines as established by the "Bill for An Ordinance Amending Title 19, Maui County Code, To Establish A Wellhead Protection Overlay District", dated July 24, 2018. We note that per the Preliminary Site Plan (Figure 3 of the early consultation letter), the proposed stormwater detention basin for the project lies outside of the wellhead protection area. Furthermore, your comment regarding the suggested implementation of additional measures to protect groundwater in the area both during construction and occupancy was forwarded to the DHHL and its civil engineer for consideration.

We acknowledge the comment that CWRM promotes the protection of groundwater and the value of treating stormwater as a resource for groundwater recharge capability when contained onsite. The handbook for stormwater reclamation cited in your letter is noted. Design elements and Best Management Practices (BMPs) for stormwater management as described in the handbook will be reviewed and incorporated into the project's design where feasible.

In addition, the DWS' BMPs for conservation and construction as well as those for stormwater reclamation will be reviewed and implemented as feasible.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc.

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COUNTY OF MAUI EMERGENCY MANAGEMENT AGENCY

200 South High Street Wailuku, HI 96793 phone: 808.270.7285; fax: 808.270.7275

e-mail: emergency,management@mauicounty.gov



August 21, 2019

MEMO TO: Munekiyo Hiraga

Attn: Bryan K. Esmeralda, Senior Associate

305 High Street, Suite 104 Wailuku, Hawai'i 96793

FROM: Anthony Joyce, Maui Emergency Management Agency (MEMA)

SUBJECT: Re: Early Consultation Request for the Proposed Department of Hawaiian Home

Lands Pu'unani Homestead Subdivision Project; TMK (2)3-5-002:002(por.);

Waikapū, Maui, Hawai'i

Dear Mr. Esmeralda,

Thank you for your proposal and the opportunity for us to submit suggestions and comments on the proposed Pu'unani Homested Subdivision project. We have read the request and have offered some comments and considerations for your convenience below.

- 1) The current proposed location of the Pu'unani Homestead off of Honoapi'ilani Highway in Waikapū is in a low-to-moderate risk flood zone and determined to be outside of the 0.2% annual chance floodplain (for technical guidance, please see the State of Hawai'i Department of Land and Natural Resources Flood Hazard Assessment Tool). Although there is no mandatory need for homeowners in this region to have flood insurance, it is still available to these communities. We urge the developer to speak with county engineers to determine if flooding is a threat to this particular subdivision from other drainage retention basins in the area.
- 2) In regards to surface runoff, special consideration should be taken in determining whether surface runoff from the proposed subdivision will drain to the detention basin east of Wa'iale Road (20.44° N, 156.37° W), and if so, this detention basin should be enlarged. If this is not the plan, we recommend installing proper water drainage to reduce flooding down slope of the development, and decrease the possibility of overwhelming the city sewer.
- 3) We strongly urge the developer to build homes that adhere or exceed Hawai'i building



COUNTY OF MAUI **EMERGENCY MANAGEMENT AGENCY**

200 South High Street Wailuku, HI 96793 phone: 808.270.7285; fax: 808.270.7275 e-mail: emergency.management@mauicounty.gov



Herman Andaya Administrator

code regulations, and are hurricane resistant. Based on historical data from the National Oceanic and Atmospheric Administration (NOAA) and the National Weather Service (NWS), MEMA recommends that future dwellings be built to withstand at least a Category 2 hurricane (winds 96-110 mph; for technical guidance, please refer to Hwang, Dennis J. 3rd ed., vol. 3.2, University of Hawai'i, Sea Grant Program, 2018) and coast.noaa.gov/hurricanes for historical data.

Thank you for allowing us to make our suggestions to your project. Should you have any questions, please feel free to contact Anthony Joyce at (808) 270-7286, or via email at Herman.Andaya@co.maui.hi.us.

Sincerely,

MEMA Administrator

227



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

VICE PRESIDENT

May 18, 2020

Herman Andaya, Administrator Emergency Management Agency County of Maui 200 South High Street Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the

Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Mr. Andaya:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter memo dated August 21, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We offer the following information in response to the comments received.

- 1. We acknowledge your comment that the proposed project site is in a low-to-moderate risk flood zone, and outside of the 0.2 percent chance floodplain. Your request that the developer speak to County engineers regarding potential threats of flooding as it relates to flood insurance options was forwarded to the DHHL for consideration. We also note that the County Department of Public Works has been and will continue to be consulted as part of the Chapter 343, Hawaii Revised Statutes (HRS), environmental review process.
- 2. Thank you for your comment. As part of the proposed development, an onsite drainage detention basin will be constructed to collect runoff generated from development of the project. We note that a Preliminary Engineering Report addressing the project's drainage plan will be included as part of the Draft Environmental Assessment (EA) being prepared for the project.
- 3. We acknowledge your comment. The homes will be constructed in compliance with adopted building code regulations.

Herman Andaya, Administrator May 18, 2020 Page 2

Thank you for your participation in the Chapter 343, HRS environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan¹ K. Esmeralda, AICP

Senior Associate

BKE:yp

Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\MEMA.doc



MAYOR

OUR REFERENCE

YOUR REFERENCE

POLICE DEPARTMENT

COUNTY OF MAUI

55 MAHALANI STREET WAILUKU, HAWAII 96793 (808) 244-6400 FAX (808) 244-6411

September 3, 2019



TIVOLI S. FAAUMU CHIEF OF POLICE

DEAN M. RICKARDDEPUTY CHIEF OF POLICE

Mr. Bryan K. Esmeralda Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Re: Early Consultation Request for the Proposed Department of

Hawaiian Home Lands Pu'unani Homestead Subdivision Project,

TMK (2) 3-5-002:002 (por.), Waikapu, Maui, Hawaii

Dear Mr. Esmeralda:

This is in response to your letter dated August 12, 2019 requesting comments on the proposed Hawaiian Home Lands Pu'unani Homestead Subdivision project in Waikapu.

In review of the submitted documents, we have no comments or recommendations to offer at this time.

Thank you for giving us the opportunity to comment on this project.

Sincerely,

Assistant Chief John Jakubczak for: TIVOLI S. FAAUMU

or: TIVULIS, MAAUNU

Chief of Police



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng VICE PRESIDENT

May 18, 2020

Tivoli Faaumu, Chief Police Department County of Maui 55 Mahalani Street Wailuku, Hawai'i 96793

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Chief Faaumu:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 3, 2019, regarding the proposed Pu'unani Homestead Subdivision project. We acknowledge that the Police Department has no comments to offer at this time.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

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September 30, 2019

Munekiyo Hiraga Attn: Mr. Bryan Esmeralda, Senior Associate 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda,

Subject:

Pu'unani Homestead Subdivision Project

Early Consultation Request for the Proposed Department of Hawaiian

Homelands along Honoapiilani Highway

Waikapu, Maui, Hawaii

Tax Map Key: (2) 3-5-002:002 (por.)

Thank you for allowing us to comment on the subject project.

In reviewing our records and the information received, Maui Electric Company, Limited has no objections to the project at this time. However, we highly encourage the customer's electrical consultant to submit the electrical demand requirements and project time schedule as soon as practical so that any new service and facility upgrades can be provided on a timely basis.

Should you have any other questions or concerns, please feel free to call me at 871-2340.

Sincerely,

Ray Okazaki

Folymente

Engineer II, Engineering



Michael T. Munekiyo
CHAIRMAN
Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy
VICE PRESIDENT
Tessa Munekiyo Ng
VICE PRESIDENT

May 18, 2020

Ray Okazaki, Engineer Maui Electric Company, Ltd. P.O. Box 398 Kahului, Hawai'i 96733

SUBJECT: Response to Early Consultation Comments Regarding the

Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawaiii

Dear Mr. Okazaki:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 30, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project. We note that Maui Electric Company has no objections to the proposed project.

In addition, as requested, the project's electrical engineer will submit the electrical demand requirements and project time schedule, when ready, in order to ensure that any needed service and facility upgrades to serve the project can be provided.

Ray Okazaki, Engineer May 18, 2020 Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC Mark Rickard, ECM, Inc.

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Maui Economic Opportunity, Inc.



P.O. Box 2122 Kahului, HI 96733 808-249-2990 Fax: 808-249-2991 www.meoinc.org

May 29, 2018

Bryan Esmeralda, AICP Muneyiko Hiraga 305 High Street, Suite 104 Wailuku, HI 96793

Re:

Early Consultation Request for the Proposed Department of Hawaiian Home

Lands Pu'unani Homestead Subdivision Project; TMK (2)3-5-002:002(por.);

Waikapū, Maui, Hawai'i

Dear Mr. Esmeralda,

We do not have any objection or comment to the proposed DHHL proposed Pu'unani Homestead Subdivision Project in Waikapū, Maui.

Thank you for seeking community comments.

Mahalo nui loa,

Debbie Cabebe, SPHR Chief Executive Officer





Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

May 18, 2020

Debbie Cabebe, SPHR, Chief Executive Officer Maui Economic Opportunity, Inc. P.O. Box 2122 Kahului, Hawai'i 96733

SUBJECT: Response to Early Consultation Comments Regarding the

Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Ms. Cabebe:

On behalf of the State of Hawaiii, Department of Hawaiian Home Lands (DHHL), thank you for your letter received August 28, 2019, regarding the proposed Pu'unani Homestead Subdivision project. We acknowledge that Maui Economic Opportunity, Inc. has no objection to the project or additional comments to offer at this time.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

CC:

Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

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August 28th 2019

Munekiyo Hiraga

Attention: Bryan K. Esmeralda, Senior Associate

305 High Street, Suite 104

Wailuku HI 96793

RE: Response to Letter Dated August 12th 2019: Pu'unani Homestead Subdivision

Project

Dear Bryan:

The Waikapu Gardens Homeowners Association is very concerned about the map showing Kokololio Street having access to Honoapiilani Highway. This road is owned by the Waikapu Gardens Homeowner's Association and the Board does not feel the area should be used as a highway access at the intersection of Honoapiilani Highway and Kokololio Street.

If have any questions, please contact Joseph Blackburn at (808)442-3063 or via email at <u>MLB@MLB808.com</u>.

Sincerely Yours,

Joseph Blackburn Managing Agent

Email: MLB@MLB808.com Website: www.MauiProperty4You.com



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

VICE PRESIDENT

May 18, 2020

Joseph Blackburn, Managing Agent Waikapū Gardens P.O. Box 2390 Wailuku, Hawai'i 96793

SUBJECT: Res

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Mr. Blackburn:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated August 28, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project from the Waikapu Gardens Homeowners Association. We offer the following information in response to the comments received.

Thank you for your comments regarding Kokololio Street. We note that the proposed project does not include planned improvements to the privately-owned Kokololio Street. The base map utilized in the project's site plan showing the existing Kokololio Street right-of-way came from a previous County-approved subdivision map for Waikapu Gardens and is reflected on the County's Real Property Tax map. We note again, that the project does not include any improvements to the existing Kokololio Street, including its extension to Honoapi'ilani Highway on the makai side.

Joseph Blackburn, Managing Agent May 18, 2020 Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc.

Tyler Fujiwara, Austin, Tsutsumi & Associates, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\WaikapuGardens MA.doc

Subject:

FW: Pu'unani Project - Waikapu Gardens Comments

Attachments:

Pu'unani Hwan Hms. Comments Final.docx

From: gncadolpho@hawaiiantel.net [mailto:gncadolpho@hawaiiantel.net]

Sent: Thursday, September 5, 2019 5:36 AM

To: Bryan Esmeralda < bryan@munekiyohiraga.com > **Subject:** Pu'unani Project - Waikapu Gardens Comments

Aloha Bryan,

Hope this email finds you doing well. Please see attached comments from our Waikapu Gardens HOA regarding the proposed Pu'unani Hawaiian Homes project.

Thank you for allowing our HOA an extension to submit comments. Please advise if you need me to mail a copy to you or if this attachment will be sufficient.

Have a wonderful day!

Glenn Adolpho Waikapu Gardens HOA September 2, 2019

Attention: Bryan K. Esmeralda, Senior Associate Munekiyo Hiraga 305 High street, Suite 104 Wailuku, HI 96793

RE: Pu'unani Hawaiian Homes Project - Request for Comments

Dear Mr. Esmeralda:

The Waikapu Gardens Homeowners Association (HOA) appreciates the opportunity to give the following comments on the proposed Pu'unani Hawaiian Homes Project, located in Waikapu, Maui.

After reviewing the information forwarded to our Homeowners Association, we would like to offer the following comments for your consideration:

- 1. Being one of Maui's truly affordable projects, The Waikapu Gardens Homeowners Association supports the Pu'unani project as it will help bring much needed "affordable housing" to our local families who live and work on Maui.
- 2. The Waikapu Gardens HOA is very concerned about potential plans to connect Kokololio Street, which is part of our subdivision and privately owned, to the existing Honoapi'ilani Highway. This would generate a significant increase in traffic through our subdivision causing negative impacts on our homeowners. Considering the current and future developments which are being proposed on Waiale Road, connecting thru Kokololio would contribute significantly to increased traffic and cause a safety concern for residents exiting out of our subdivision onto Waiale Road.
- 3. Our HOA kindly requests to be included in all future planning and consultations regarding the development of the Pu'unani Project.

Mahalo for allowing our Waikapu Gardens HOA the opportunity to provide comments regarding this project. We look forward to working with you and developing a positive relationship as future neighbors of the Waikapu Community.

Sincerely,

The Waikapu Gardens Homeowners Board of Directors P.O. Box 2390 Wailuku, HI 96793



Michael T. Munekiyo
CHAIRMAN
Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy
VICE PRESIDENT
Tessa Munekiyo Ng
VICE PRESIDENT

May 18, 2020

Glenn Adolpho Waikapū Gardens Homeowners Association P.O. Box 2390 Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the

Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK (2)3-5-002:002(por.);

Wailuku, Maui, Hawai'i

Dear Mr. Adolpho:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated September 2, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project from the Waikapu Gardens Homeowners Board of Directors. We offer the following information in response to the comments received.

- 1. We thank you and appreciate your support of the project.
- 2. We acknowledge your comment, and understand that Kokololio Street is owned by the Waikapū Gardens Homeowners Association. We note that the proposed project does not include planned improvements to the privately-owned Kokololio Street. The base map utilized in the project's site plan showing the existing Kokololio Street right-of-way came from a previous County-approved subdivision map for Waikapu Gardens and is reflected on the County's Real Property Tax Map. We note again, however, that the project does not include any improvements to the existing Kokololio Street, including its extension to Honoapi'ilani Highway on the makai side.
- 3. We will continue to include the Waikapū Gardens Homeowners Association in all future outreach related to the proposed project.

Glenn Adolpho May 18, 2020 Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC

Tyler Fujiwara, Austin, Tsutsumi & Associates, Inc. Darren Unemori, Warren S. Unemori Engineering, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\WaikapuGardens HOA.doc



Waiolani Mauka Community Association, P.O. Box 1067, Wailuku, HI 96793

October 16, 2019

Munekiyo Hiraga Attention: Bryan K. Esmeralda, Senior Associate 305 High Street, Suite 104 Wailuku, HI 96793

Dear Bryan,

I the Waiolani Mauka Community Association Board of Directors has the following comments regarding the Proposed Department of Hawaiian Homelands Puunani Homestead Subdivision Project.

- 1. Please follow the Wailuku Community Plan and provide a 500' greenway buffer between proposed project and the Waiolani Mauka Subdivision.
- 2. General Plan documents call for a separation between the communities of Wailuku and Waikapu.
- 3. An Environmental Assessment should be done and include our request as a the Waiolani Mauka Community Association for a 500' greenway between proposed development and Waiolani Mauka.

If you have any questions, please call Joe Blackburn at 442.3063.

Sincerely Yours

Jøseph Blackburn Managing Agent



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng

May 18, 2020

Joseph Blackburn, Managing Agent Waiolani Mauka Community Association P.O. Box 1067 Wailuku, Hawai'i 96793

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawai'i

Dear Mr. Blackburn:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your letter dated October 16, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project from the Waiolani Mauka Community Association Board of Directors. We offer the following information in response to the comments received.

1. We acknowledge your comment and note that the currently proposed project is a separate and distinct project from the former Pu'unani mixed use project (by others) identified within the Maui Island Plan (MIP), which provided for a 500-foot greenway buffer between the project site and Waiolani Mauka Subdivision. The current Wailuku-Kahului Community Plan designates the project site as "Single-Family Residential" and "Agriculture". See **Exhibit "A"**. The proposed project maintains consistency with the "Single-Family Residential" designation.

We note that the proposed DHHL Pu'unani Homestead Subdivision project is planned to be smaller in size, and limited to single-family residential development.

In addition, the massing of the proposed single-family community will be lesser in scale than the planned Pu'unani mixed-use project envisioned within the MIP, and will be similar in scale to the adjacent Waiolani Mauka community, thereby being less obstructive on existing view corridors.

Joseph Blackburn, Managing Agent May 18, 2020 Page 2

Your comments regarding the provision of a greenway buffer are noted and was discussed further with DHHL for consideration. While the use of a greenway buffer would provide visual separation between the proposed project and adjacent properties, in part, the mission of DHHL is to develop and deliver land to Native Hawaiians. It is the priority of DHHL to provide as many housing opportunities to its beneficiaries as possible. The 500-foot wide buffer along the project's southern boundary would equate to a reduction of approximately 30 homes.

- 2. We note that the proposed project is not intended to connect with existing developments in Wailuku, thereby, maintaining the existing physical separation between Waikapū and Wailuku.
- 3. A copy of your letter will be included in the Draft Environmental Assessment (EA) being prepared for the project. As previously mentioned, the 500-foot greenway buffer cannot be provided at the site, due to the number of residential homes for DHHL beneficiaries and their families that would be lost as a result.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

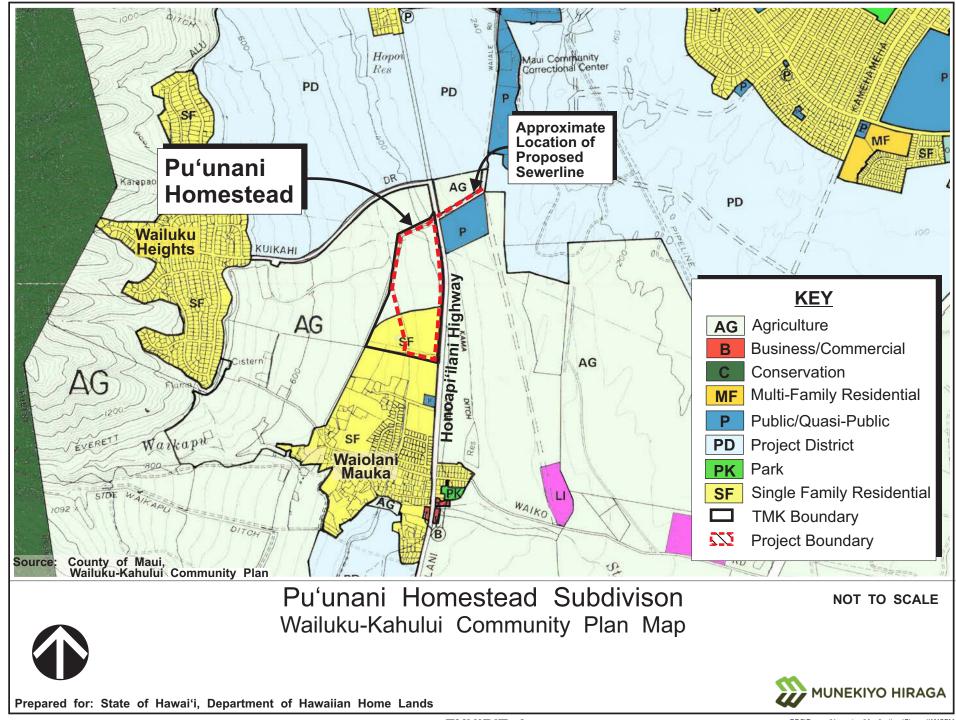
Senior Associate

BKE:tn Attachment

cc: Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc.

K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\WMCA.doc



Subject:

FW: DHHL Proposed Puunani Estates.

Attachments:

DHHL EA Statement from WCA.pdf; ATT00001.htm

From: Waikapu Community Association < waikapuca@gmail.com>

Date: September 30, 2019 at 11:38:13 AM HST

To: Bryan Esmeralda <bryan@munekiyohiraga.com>

Cc: Travis Polido < trpolido@gmail.com> Subject: DHHL Proposed Puunani Estates.

Bryan,

Attached is some of the communities concerns for the proposed project listed above. Please confirm the receipt of this email along with attachment. Thank you for this opportunity and I look forward to working with you folks in the near future. Aloha,

Travis Polido 8082984680 waikapuca@gmail.com President, Waikapu Community Association ATTN: Bryan Esmeralda
Munekiyo Hiraga
305 High street, Suite 104
Wailuku, HI 96793
RE: Pu'unani Hawaiian Homes Project – Request for Comments
30September 2019

Dear Mr. Esmeralda,

Below are a few comments that came from the community about the proposed Department of Hawaiian Home Lands(DHHL) Puunani Homestead Subdivision Project.

Aloha,

I want to ask for DHHL to assist more in building homes in Lahaina because there are so many kanaka maoli waiting for their homes. There's only a very small percentage of homes built there. They need more support out there before building this Waikapu phase!!!!

Aloha kākou,

I am giving input about Waikapu Pu'unani Homestead subdivision, I'm currently an applicant for DHHL residential. And so are many of my family members, my mom, brothers, and sister. We have been waiting many years for Lahaina Leiali'i 1B and/ or Honokowai agriculture lots to get built. I feel that there needs to be more focus on getting Hawaiians on the land in Lahaina and Honokowai that anywhere else on Maui. West Maui only has 7% of the housing for DHHL on Maui, as opposed to 38% for Central Maui. We need to build up our community in West Maui. Hawaiians have been waiting decades to get a home. And will continue waiting because we want to live where our community is, ie. West Maui. We are trying to get our legislators to be on board to advocate for the funding. We also are trying to advocate for the funding as well. Please help West Maui out by allowing us to prioritize getting Hawaiians on the land. It will also help preserve that side. The more Hawaiians, the better because we could advocate for that part of the island. Currently, DHHL only wants to build 50 lots in 7 years at Leiali'i 1B. However, we have a total of 260 lots that are supposed to built there, but that project lacks the funding. And there are supposed to be hundreds more ag lots that will be built at Honokowai. Both projects are heavily delayed. Honokowai Ag lots should have been built by 2024 already and they haven't even started the process yet and don't plan to for a long time.

Thank you for listening to my concerns.

September 2, 2019

Attention: Bryan K. Esmeralda, Senior Associate Munekiyo Hiraga 305 High street, Suite 104 Wailuku, HI 96793

RE: Pu'unani Hawaiian Homes Project - Request for Comments

Dear Mr. Esmeralda:

The Waikapu Gardens Homeowners Association (HOA) appreciates the opportunity to give the following comments on the proposed Pu'unani Hawaiian Homes Project, located in Waikapu, Maui.

After reviewing the information forwarded to our Homeowners Association, we would like to offer the following comments for your consideration:

- 1. Being one of Maui's truly affordable projects, The Waikapu Gardens Homeowners Association supports the Pu'unani project as it will help bring much needed "affordable housing" to our local families who live and work on Maui.
- 2. The Waikapu Gardens HOA is very concerned about potential plans to connect Kokololio Street, which is part of our subdivision and privately owned, to the existing Honoapi'ilani Highway. This would generate a significant increase in traffic through our subdivision causing negative impacts on our homeowners. Considering the current and future developments which are being proposed on Waiale Road, connecting thru Kokololio would contribute significantly to increased traffic and cause a safety concern for residents exiting out of our subdivision onto Waiale Road.
- 3. Our HOA kindly requests to be included in all future planning and consultations regarding the development of the Pu'unani Project.

Mahalo for allowing our Waikapu Gardens HOA the opportunity to provide comments regarding this project. We look forward to working with you and developing a positive relationship as future neighbors of the Waikapu Community.

Sincerely,

The Waikapu Gardens Homeowners Board of Directors P.O. Box 2390 Wailuku, HI 96793

Other concerns are:

If this project was to move forward, what type of infrastructure is the developer or DHHL planning to set in place for its development so that the existing communities, as well as the future communities in the surrounding areas will benefit.

- 1. How is the developer or DHHL planning to help relieve the already congested area such as, Honoapiilani Highway, Pilikana Street, E. Waiko/W. Waiko Roads, Waiale Road, Kuikahi Drive. If we were to take a low number of two (2) cars that would mean we just added Three Hundred Twenty Two (322) more cars on our already congested roads.
- 2. How is the developer or DHHL planning to help relieve the overcrowding of the schools in the district. As of right now Wailuku district has Three (3) Elementary schools feeding one (1) Intermediate School. If we were to take a low number of two (2) children per household that would mean we have added Three Hundred Twenty Two (322) more children in our area. Puu Kukui is only built for Five Hundred Fifty (550) students.
- 3. How is the developer or DHHL planning on getting the water for this development. Where is the water going to come from, as of right now the Waikapu Community is on a "VOLUNTARY WATER RESTRICTION" adding these houses will just add to the problem.
- 4. How is the developer or DHHL planning to take care of the sewage problem.
- 5. What is the developer or DHHL planning to do about power. It the development going to be dependent on MECO, or is going to take the "go green approach".
- 6. Is the developer or DHHL planning to add street lamps to light up a very dark Honoapiilani Highway at its full-movement and right turn in and right turn out entrances.
- 7. Is the developer or DHHL planning to put in lighted crosswalk signs at these entrances.
- 8. As stated in one of the comments above from "The Waikapu Gardens HOA is very concerned about potential plans to connect Kokololio Street, which is part of our subdivision and privately owned, to the existing Honoapi'ilani Highway. This would generate a significant increase in traffic through our subdivision causing negative impacts on our homeowners. Considering the current and future developments which are being proposed on Waiale Road, connecting thru Kokololio would contribute significantly to increased traffic and cause a safety concern for residents exiting out of our subdivision onto Waiale Road".
- 9. We also see as a potential "HAZARD" and a "SAFETY" issue due to the fact that you folks are proposing two (2) entrances from Honoapiilani Highway. One (1) full-movement intersection with the existing Kokololio Street, and another right-turn in, right-turn out only entrance approximately 1,500 feet to the North, which would put the (right-turn in, right-turn out only entrance) right on or near the bend in the road that is located on Honoapiilani Highway.
- 10. Is the developer or DHHL planning to install another Street light on Honoapiilani Highway at its full-movement intersection.

Mr. Esmeralda,

We the Waikapu Community Association ask that your office, as well as the developer, and DHHL not only hears but listens to the voices, and comments in the community on what the wants and needs are for the community to support this project. We the Waikapu Community Association humbly ask that we get a commitment in writing stating that if this project moves forward with its plans, our Waikapu Community will be updated from start-finish of the project which includes planning, permitting, committee and council hearings (if any) etc... and everything in between from both the developer and DHHL. We also ask that if the project does move forward in our community, that we the Waikapu Community get another commitment in writing stating that the Waikapu Community will get an update every six (6) months once the project breaks ground from both the developer and DHHL. The Waikapu Community wants to thank you, your place of business, the developer, and the DHHL for giving the Waikapu Community this opportunity to let our voices, and concerns be expressed. We ask that in the future, if a development proposal is being proposed in our community and it passes through your folks place of business that your office gives our community this opportunity again so that we the community can collaboratively work together with all entities involved to try and make our Island a better community. We look forward to working with the offices of Munekiyo Hiraga on any future endeavors that involves the Waikapu Community and wish you folks the best, until then Mahalo for your time and consideration.

Aloha,
Travis Polido
8082984680
waikapuca@gmail.com
President, Waikapu Communty Association



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng VICE PRESIDENT

May 18, 2020

Via email: waikapuca@gmail.com

Travis Polido, President Waikapū Community Association

SUBJECT:

Response to Early Consultation Comments Regarding the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawaiii

Dear Mr. Polido:

On behalf of the State of Hawai'i, Department of Hawaiian Home Lands (DHHL), thank you for your email of September 30, 2019, providing comments on the proposed Pu'unani Homestead Subdivision project from individuals within the community, the Waikapu Community Association, and the Waikapu Gardens Homeowners Board of Directors. We offer the following information in response to the comments received.

Comments from the Waikapū Community Association

Project Location

We acknowledge your association members' comments regarding their preference for the DHHL to provide housing for beneficiaries in West Maui rather than at the proposed location in Waikapū. We note that based on surveys conducted of DHHL beneficiaries in 2003 and 2014, the majority of respondents stated that they desired housing in Central Maui. The DHHL has noted its priority to provide housing for its beneficiaries and the need for housing in all regions.

Traffic

We acknowledge your comment requesting information on the developer's plans to address congestion on area roadways that may result from implementation of the proposed project. As part of the environmental review process, a licensed traffic engineer will prepare a Traffic Impact Analysis Report (TIAR) which will project an estimated number of trips to be generated by the buildout and occupancy of the proposed project, and the impact of these added trips on area roadways. The report will

Travis Polido, President May 18, 2020 Page 2

also take into account other known planned developments in the area. Based on the projections and anticipated impacts, the TIAR will recommend mitigation strategies, as appropriate, for the area roadways which will aim to avoid or minimize added congestion. The results of the TIAR will be discussed in the Draft Environmental Assessment (EA).

Schools

We note your comment regarding potential overcrowding at area schools that may result from implementation of the project. The DHHL will coordinate with the State Department of Education (DOE) to address any requirements that may be necessitated as a result of the project. It is also noted that the DHHL will comply with requirement for school impact fees and will execute an Education Contribution Agreement with the DOE.

Water

We note your comment regarding water supply for the project. The DHHL and its design team will coordinate with the County Department of Water Supply to ensure that there is adequate water to serve the project. Further, a Preliminary Engineering Report (PER) addressing water requirements for the project will be included in the Draft EA.

Wastewater

We note your comment regarding wastewater systems for the project. The DHHL and its design team will coordinate with the County Department of Environmental Management to ensure that there is adequate system capacity to serve the project. As noted above, a PER will be included in the Draft EA. The PER will also assess wastewater requirements for the project.

Electrical Demand

We acknowlege your comment regarding electrical systems for the project. The DHHL will coordinate with Maui Electric Company (MECO) to ensure that there is adequate system capacity to serve the project. It is also noted that individual homeowners may choose to install solar panels to provide photovoltaic energy to their respective homes thereby lessening demand on the existing MECO grid.

Travis Polido, President May 18, 2020 Page 3

Kokololio Street

We acknowledge your comment, and understand that Kokololio Street is owned by the Waikapū Gardens Homeowners Association. The proposed project will have an access point along the mauka portion of Honoapi'ilani Highway that lines up in the vicinity of existing Kokololio Street, although Kokololio Street does not currently provide access from Honoapi'ilani Highway on the makai side. The proposed project does not include planned improvements to the privately-owned Kokololio Street. The site plan for the project utilizes a previous County-approved subdivision map for this area which shows Kokololio Street's right-of-way up to Honoapi'ilani Highway, although currently there is no roadway connection point. As such, the existing

Kokololio Street is not planned to connect to Honoapi'ilani Highway as part of the project.

Project Access Points

We acknowledge your comment regarding safety of the project's proposed access points along Honoapi'ilani Highway. We note that the design of the access points was made with the safety of residents of the project, as well as other motorists traveling along Honoapi'ilani Highway in mind.

We note your comment and add that at this time, an additional traffic signal along Honoapi'ilani Highway is not warranted by the proposed project. Street lights illuminating the project's two (2) access points at Honoapi'ilani Highway are proposed.

Further, through consultation with the State Department of Transportation, no crosswalks are proposed at the project's access points. Rather, existing crosswalks are provided at Honoapi'ilani Highway's signalized intersections with Kuikahi Drive and Pilikana Street, to the north and south, respectively. As such, lighted crosswalk signage is not proposed at the project's access points.

Project Updates

We acknowledge your comment. The Waikapū Community Association (WCA) was and will continue to be consulted as the project moves forward through the EA process. As such, the WCA will receive a copy of the Draft EA that will be prepared for the project. In addition, the WCA will be notified of public meetings on the project, including meetings before the Hawaiian Homes Commission.

Travis Polido, President May 18, 2020 Page 4

<u>Waikapū Gardens Homeowners Board of Directors Letter Dated September 2, 2019</u>

Thank you for providing a copy of the Waikapū Gardens Homeowners Board of Directors letter dated September 2, 2019 providing comments on the proposed project. We note that our office has received this letter separately and directly from the Waikapu Gardens Homeowners Board of Directors. A response letter has been prepared and sent directly to their organization.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for the project. In the meantime, should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

CC:

Stewart Matsunaga, State of Hawai'i, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC

Daren Unemori, Warren S. Unemori Engineering, Inc. Tyler Fujiwara, Austin, Tsutsumi & Associates, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\EC\EC Response Letters\WCA.doc

LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT REVIEW PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS



X. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT REVIEW PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies were consulted during preparation of the Draft Environmental Assessment (EA). Agency comments and responses to substantive comments are included herein.

FEDERAL AGENCIES

- Larry Yamamoto, State Conservationist Natural Resources Conservation Service U.S. Department of Agriculture P.O. Box 50004 Honolulu, HI 96850-0001
- Linda Speerstra, Chief
 U.S. Department of the Army, Regulatory
 Branch
 U.S. Army Engineer District, Honolulu
 Regulatory Branch, Building 230
 Fort Shafter, HI 96858-5440
- Michelle Bogardus, Island Team Leader U. S. Fish and Wildlife Service 300 Ala Moana Blvd., Rm. 3-122 Honolulu, HI 96850

STATE AGENCIES

- Curt Otaguro, Comptroller State of Hawai'i Department of Accounting and General Services 1151 Punchbowl Street, #426 Honolulu, HI 96813
- Phyllis Shimabukuro-Geiser, Chair State of Hawai'i Department of Agriculture 1428 South King Street Honolulu, HI 96814-2512
- Mike McCartney, Director State of Hawai'i Department of Business, Economic Development & Tourism P.O. Box 2359 Honolulu, HI 96804

- Christina Kishimoto, Superintendent State of Hawai'i Department of Education P.O. Box 2360 Honolulu, HI 96804
- Bruce Anderson, Director State of Hawai'i Department of Health 1250 Punchbowl St., Room 325 Honolulu, HI 96813
- State of Hawai'i
 Department of Health
 Environmental Health Administration
 P.O. Box 3378
 Honolulu, HI 96801
- 10. Lene Ichinotsubo State of Hawai'i Department of Health Solid and Hazardous Waste Branch 2827 Waimano Road, Suite 100 Pearl City, HI 96782-1407
- Patti Kitkowski
 State of Hawai'i
 Department of Health
 Maui Sanitation Branch
 54 South High Street, Room 300
 Wailuku, HI 96793
- Suzanne Case, Chairperson State of Hawai'i Department of Land and Natural Resources P. O. Box 621 Honolulu, HI 96809

- Dr. Alan Downer, Administrator State of Hawai'i Department of Land and Natural Resources State Historic Preservation Division 601 Kamokila Blvd., Room 555 Kapolei, HI 96707
- 14. Jade Butay, Director State of Hawai'i Department of Transportation 869 Punchbowl Street Honolulu, HI 96813
- 15. Denise Iseri-Matsubara, Executive Director State of Hawai'i Hawai'i Housing Finance and Development Corporation 677 Queen Street Honolulu, HI 96813
- State of Hawai'i
 Office of Hawaiian Affairs
 N. Nimitz Highway, Suite 200
 Honolulu, HI 96817
- 17. Mary Alice Evans, Director State of Hawai'i Office of Planning P. O. Box 2359 Honolulu, HI 96804
- Dan Orodenker, Executive Officer State of Hawai'i State Land Use Commission P.O. Box 2359 Honolulu, HI 96804

MAUI COUNTY AGENCIES

- Eric Nakagawa, Director County of Maui Department of Environmental Management 2050 Main Street, Suite 2B Wailuku, HI 96793
- 20. David Thyne, Chief County of Maui Department of Fire and Public Safety 200 Dairy Road Kahului, HI 96732

- Lori Tsuhako, Director
 County of Maui
 Department of Housing and Human
 Concerns
 2200 Main Street, Suite 546
 Wailuku, HI 96793
- 22. Karla Peters, Director County of Maui Department of Parks and Recreation 700 Halia Nakoa Street, Unit 2F Wailuku, HI 96793
- Michele Chouteau McLean, Director County of Maui Department of Planning 2200 Main Street, Suite 315 Wailuku, HI 96793
- Rowena Dagdag-Andaya, Director County of Maui Department of Public Works 200 South High Street Wailuku, HI 96793
- 25. Marc Takamori, Director County of Maui Department of Transportation David Trask Building, Suite 102 2145 Kaohu Street Wailuku, HI 96793
- Jeffrey Pearson, Director County of Maui Department of Water Supply 200 South High Street, 5th Floor Wailuku, HI 96793
- 27. Herman Andaya, Emergency Management Officer County of Maui Emergency Management Agency 200 South High Street Wailuku, HI 96793
- 28. Tivoli Faaumu, Chief County of Maui Police Department 55 Mahalani Street Wailuku, HI 96793
- Alice Lee
 Maui County Council
 200 South High Street
 Wailuku, HI 96793

30. Tasha Kama Maui County Council 200 South High Street Wailuku, HI 96793

MAUI COUNTY ORGANIZATIONS

- 31. Hawaiian Telecon 60 South Church St Wailuku, HI 96793
- 32. Michael Grider, Manager, Engineering Maui Electric Company, Ltd. P.O. Box 398 Kahului, HI 96733
- 33. Clyde Kahalehau, Poʻo Aha Moku O Wailuku Email address: ahamokuowailuku@yahoo.com
- Scott Matsuura, President Kehalani Community Association Attention: Mya Pagdilao P.O. Box 1530 Wailuku, HI 96793
- Debbie Cabebe, Chief Executive Officer Maui Economic Opportunity
 Mahalani Street
 Wailuku, HI 96793
- 36. Blossom Feteira
 Maui Mokupuni Council
 Email address: blossom96708@yahoo.com
- 37. Travis Polido, President
 Waikapu Community Association
 Email address: tpolido@gmail.com
- Waikapu Gardens Homeowners Association
 P.O. Box 2390
 Wailuku, HI 96793
- Wailuku Heights Extension Unit I Community Association P.O Box 968 Wailuku. HI 96793
- Lester Yano
 Wailuku Heights Extension Unit II
 Community Association
 c/o Hawaiiana Management Co.
 140 Hoohana Street, Suite 208
 Kahului, HI 96732

- Joseph G. Blackburn, II Waiolani Community Association P.O. Box 1067 Wailuku, HI 96793
- 42. Joseph G. Blackburn,II Waiolani Elua Community Association P.O. Box 1067 Wailuku, HI 96793
- Joseph G. Blackburn, II
 Waiolani Mauka Community Association
 P.O. Box 1067
 Wailuku, HI 96793
- 44. Linda Schatz, Principal Schatz Collaborative lindaschatz@schatzcollaborative.com

DHHL HOMESTEAD LEADERS

- 45. Charmaine Day, Secretary Ka 'Ohana o Kahikinui P.O. Box 434 Kula, Hawai'i 96790
- 46. Harry Rodriguez, Jr., President 'Ahahui 'Āina Ho'opulapula o Waiohuli PO Box 81712 Haiku, Hawai'i 96708
- 47. Mark Adams, Representative Wai'ehu Kou 2 2 Kuu One Hanau Way Wailuku, Hawai'i 96793
- Perry Artates, President Waiohuli Hawaiian Homestead Association 95 Lono Ave Ste 104 Kahului, Hawai'i 96732
- Robin Newhouse, President Kēōkea Agriculture Hawaiian Homestead Association 695 Keanuhea Street Kula, Hawai'i 96790
- 50. Rod Pa'ahana, President Leiali'i Homestead Association 124 Aipuni St. Lahaina, Hawai'i 96761
- Roy Oliveira, President Wai'ehu Kou 3
 Kaulana Na Pua Way Wailuku, Hawai'i 96793

- 52. Andrew A.M. Hatchie, Jr., Executive Director Pa'upena Community Development Corporation P.O. Box 81678 Haiku, Hawai'i 96708
- 53. Blossom Feiteira, Board Member Ka 'Ohana o Kahikinui blossom96708@yahoo.com
- 54. Kekoa Enomoto, Board Member Pau'pena Community Development Corporation 393 Pueo Drive Kula, Hawai'i 96790
- 55. Stephen Cramer, President Paukukalo Community Association 626 Kalakaua Street Wailuku, Hawai'i 96793
- 56. Kaleo Cullen, President Ka 'Ohana o Kahikinui PO Box 5014 Kahului, Hawai'i 96733

DAVID Y. IGE GOVERNOR



CURT T. OTAGURO COMPTROLLER

AUDREY HIDANO DEPUTY COMPTROLLER

STATE OF HAWAII DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

(P)20.085

P.O. BOX 119, HONOLULU, HAWAII 96810-0119

JUN - 3 2020

Mr. Brian K. Esmeralda, Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Maui, Hawaii 96793

Dear Mr. Esmeralda:

Subject:

Draft Environmental Assessment for

Proposed Department of Hawaiian Home Lands

Puunani Homestead Subdivision Project

TMK Nos.: (2)3-5-002 (por.) and (2)3-5-001:064 (por.)

Waikapu, Maui, Hawaii

Thank you for the opportunity to comment on the subject project. We have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, your staff may call Ms. Dora Choy of the Public Works Division at 586-0488.

Sincerely

CHRISTINE L. KINIMAKA Public Works Administrator

DC:mo

c: Mr. Wade Shimabukuro, DAGS-MDO



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Christine Kinimaka, Public Works Administrator Department of Accounting and General Services State of Hawai'i P.O. Box 119 Honolulu, Hawai'i 96810-0119

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Ms. Kinimaka:

Thank you for your letter dated June 3, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We acknowledge that the Department of Accounting and General Services (DAGS) has no comments to offer at this time as the proposed project does not impact any of DAGS' projects or facilities.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

CC:

Stewart Matsunaga, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

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DAVID Y. IGE



BRUCE S. ANDERSON, Ph.D. DIRECTOR OF HEALTH

STATE OF HAWAII DEPARTMENT OF HEALTH P. O. BOX 3378

P. O. BOX 3378 HONOLULU, HI 96801-3378 In reply, please refer to File:

LUD - 2 3 5 002 002 etc DEA Prop Puunani Homestead Subd ID 5157

June 22, 2020

Mr. Bryan K. Esmeralda AICP Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

Subject:

Draft Environmental Assessment (DEA)

Pu'unani Homestead Subdivision Project

Waikapu, Hawaii 96793

TMK Nos. (2) 3-5-002: 002 (portion) and TMK (2) 3-5-001: 064 (portion)

Thank you for allowing us the opportunity to provide comments for the subject project's DEA. The subject project is located in the critical wastewater disposal area as determined by the Maui County Wastewater Advisory Committee. The Wastewater Branch has no objection to the subject project since sewer connection to the existing Kahului Wastewater Reclamation Facility is being proposed.

Please be informed that the proposed wastewater systems for the subdivision/development may have to include design considerations to address any effects associated with the construction of and/or discharges from the wastewater systems to any public trust, Native Hawaiian resources or the exercise of traditional cultural practices. In addition, all wastewater plans must conform to applicable provisions of the Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems" and the Department of Health's "Reuse Guidelines" Volumes 1 and 2, 2016 and the Department of Health's Animal Waste Guidelines.

Should you have any questions, please call Mr. Mark Tomomitsu of my staff at (808) 586-4294.

Sincerely,

Sur RL

SINA PRUDER, P.E., CHIEF

Wastewater Branch

LM/MST:lmj

c: Mr. Roland Tejano, WWB Maui, via email: roland.tejano@doh.hawaii.gov



Michael T. Munekiyo CHAIRMAN Karlynn K. Fukuda PRESIDENT Mark Alexander Roy VICE PRESIDENT Tessa Munekiyo Ng

September 22, 2020

VICE PRESIDENT

Sina Pruder, P.E., Chief Wastewater Branch Department of Health State of Hawai'i P.O. Box 3378 Honolulu, Hawai'i 96801-3378

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

File: LUD-235002002 etc DEA Prop Puunani Homestead Subd ID

5157

Dear Ms. Pruder:

Thank you for your letter dated June 22, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to the comments provided.

- We understand that the project is located in the critical wastewater disposal area as determined by the Maui County Wastewater Advisory Committee.
- We acknowledge that the Wastewater Branch has no objection to the proposed project as a sewer connection to the existing Kahului Wastewater Reclamation Facility is being proposed.
- We understand that the proposed wastewater system may have to include design considerations to address any effects associated with the construction of and/or discharges from the system to any public trust, Native Hawaiian resources, or the exercise of traditional cultural practices.

Sina Pruder, P.E., Chief September 22, 2020 Page 2

We acknowledge that all wastewater plans must conform to applicable provisions of the Hawai'i Administrative Rules, Chapter 11-62, "Wastewater Systems" and the Department of Health's "Reuse Guidelines", Volumes 1 and 2, 2016 and the Department of Health's Animal Waste Guidelines.

In addition, the standard comments on the DOH website will be reviewed for applicability to the proposed project.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP Senior Associate

BKE

CC:

Stewart Matsunaga, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC Darren Unemori, Warren S. Unemori Engineering, Inc. K.\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\DOH WWB response.doc

Subject:

FW: DOH Clean Air Branch Comments on Draft EA for Pu'unani Homestead Subdivisions

From: Cab General < Cab.General@doh.hawaii.gov>

Sent: Wednesday, June 24, 2020 8:17 AM

To: Matsunaga, Stewart T < stewart.t.matsunaga@hawaii.gov >; General eMail < planning@munekiyohiraga.com >

Subject: DOH Clean Air Branch Comments on Draft EA for Pu'unani Homestead Subdivisions

Aloha

Thank you for the opportunity to provide comments on the subject project. Please see our standard comments at:

https://health.hawaii.gov/cab/files/2019/04/Standard-Comments-Clean-Air-Branch-2019.pdf

Please let me know if you have any questions.

Barry Ching Clean Air Branch Hawaii Department of Health (808) 586-4200



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda

PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng

September 22, 2020

Via email: <u>CAB.General@doh.hawaii.gov</u>

Barry Ching Clean Air Branch Department of Health State of Hawai'i

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Mr. Ching:

Thank you for your email dated June 24, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to the comments provided.

The standard comments on the DOH website will be reviewed for applicability to the proposed project.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Maui: 305 High Street, Suite 104 · Wailuku, Hawaii 96793 · Tel: 808.244.2015 · Fax: 808.244.8729

Oahu: 735 Bishop Street, Suite 321 * Honolulu, Hawaii 96813 * Tel: 808.983.1233

Barry Ching September 22, 2020 Page 2

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

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DAVID Y. IGE



BRUCE S. ANDERSON, Ph.D. DIRECTOR OF HEALTH

LORRIN W. PANG, M.D., M.P.H. DISTRICT HEALTH OFFICER

STATE OF HAWAII DEPARTMENT OF HEALTH MAUI DISTRICT HEALTH OFFICE 54 HIGH STREET WAILUKU, HAWAII 96793-3378

June 8, 2020

Mr. Bryan K. Esmeralda, AICP Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

Subject:

Draft Environmental Assessment for the Proposed Department of Hawaiian

Homes Lands Pu'unani Homestead Subdivision Project, Waikapu, Maui, Hawaii

TMK: (2) 3-5-002:002 (por.) and (2) 3-5-001:064 (por.)

Thank you for the opportunity to review this project. We have the following comments to offer:

- 1. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules, Chapter 11-46, "Community Noise Control." A noise permit may be required and should be obtained before the commencement of work. Please call the Indoor & Radiological Health Branch at 808 586-4700.
- 2. All lands formerly in the production of sugarcane, pineapple or other agricultural crops should be characterized for soil contamination. Chemicals associated with the sugarcane industry persist in the soil today and may be a threat to public health and the environment. If arsenic is detected above the US EPA Region Preliminary Remediation Goal (PRG) for non-cancerous effects, then a removal and/or remedial plan must be submitted to the Hazard Evaluation and Emergency Response (HEER) Office of the State Department of Health for approval. Please contact them at 808 586-4249.

It is strongly recommended that you review the department's website at https://health.hawaii.gov/epo/files/2018/05/DOHEHA.LandUseContactList.20180502.pdf and contact the appropriate program that concerns your project.

Mr. Bryan K. Esmeralda June 8, 2020 Page 2

Should you have any questions, please contact me at 808 984-8230 or email me at patricia.kitkowski@doh.hawaii.gov.

Sincerely,

Patti Kitkowski

District Environmental Health Program Chief

c Marianne Rossio, Acting EMD Administrator



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy VICE PRESIDENT

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Patti Kitkowski, District Environmental Health Program Chief Maui District Health Office Department of Health State of Hawai'i 54 High Street Wailuku, Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Ms. Kitkowski:

Thank you for your letter dated June 8, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to the comments provided.

- 1. If required, a noise permit will be obtained for the project prior to initiation of construction.
- We acknowledge your comment. Although the property was formerly utilized for agriculture, the property has not been in active agricultural production for some time. Nevertheless, a Phase I Environmental Site Assessment was conducted for the property and the findings were included in the Draft EA. See Appendix I. As such, contaminants related to agricultural use are not anticipated to be present at the site. Nonetheless, your comment has been forwarded to the DHHL for coordination with the Department of Health (DOH), Hazard Evaluation and Emergency Response office, if needed.

In addition, the standard comments on the DOH website will be reviewed for applicability to the proposed project.

Patti Kitkowski, District Environmental Health Program Chief September 22, 2020 Page 2

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP Senior Associate

BKE:yp

cc: Stewart Matsunaga, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

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SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

June 19, 2020

Munekiyo Hiraga Attn: Mr. Bryan Esmeralda Senior Associate 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

SUBJECT:

Draft Environmental Assessment for the Proposed Pu'unani Homestead

via email: bryan@munekiyohiraga.com

Subdivision Project located at Waikapu, Island of Maui; TMK: (2) 3-5-

002:002 (por.) & (2) 3-5-001:064 (por.)

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request pertaining to the subject matter to DLNR's Divisions for their review and comments.

At this time, enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji Land Administrator

Enclosure

CC:

Central Files

DAVID Y. IGE GOVERNOR OF HAWAII





SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

May 29, 2020

FROM	:	ME	MORANDUM				
TO:	FROM: SUBJECT:	Office of Conservation X Land Division – Maui X Historic Preservation Russell Y. Tsuji, Land A Draft Environmental Ass Subdivision Project	ean Recreation (DLNR.ENGR@ ildlife (rubyrosa er Resource Ma on & Coastal La District (daniel (DLNR.Intake.s dministrator sessment for the	Dhawaii.gov) .r.terrago@hawaii.gov) nagement (DLNR.CWRM@hawaii.gov) nds .l.ornellas@hawaii.gov) SHPD@hawaii.gov) ssell Tsuji e Proposed Pu'unani Homestead			
	LOCATION: APPLICANT:			002:002 (por.) & (2) 3-5-001:064 (por.) ent of Hawaiian Home Lands			
	Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by June 19, 2020. The DEA can be found on-line at: http://health.hawaii.gov/oeqc/ (Click on The Environmental Notice in the middle of the page.)						
	If you have any qu		st, please cont <u>v</u> . Thank you.	sume your agency has no comments. act Darlene Nakamura at 587-0417or additional ve no objections. ve no comments. ents are attached.			
			Signed:	459			
			Print Name:	Carty S. Chang, Chief Engineer			
			Date:	Jun 4, 2020			

Attachments

cc: Central Files





SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

June 23, 2020

Munekiyo Hiraga Attn: Mr. Bryan Esmeralda Senior Associate 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

SUBJECT:

Draft Environmental Assessment for the Proposed Pu'unani Homestead

via email: bryan@munekiyohiraga.com

Subdivision Project located at Waikapu, Island of Maui; TMK: (2) 3-5-

002:002 (por.) & (2) 3-5-001:064 (por.)

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated June 19, 2020, enclosed are comments from the Division of Forestry & Wildlife on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji Land Administrator

Enclosure

cc: Central Files

DAVID Y. IGE GOVERNOR OF HAWAII





SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

Log no, 2672

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

May 29, 2020

	MEI	<u>MORAN</u>	DUM				
TO:	DLNR Agencies:Div. of Aquatic ResorvedDiv. of Boating & OccX Engineering DivisionX_Div. of Forestry & WireDiv. of State ParksX_Commission on WateOffice of ConservationX_Land Division - MauiX_Historic Preservation.	ean Rec (DLNR.F ildlife (ru er Resou on & Coa District	ENGR@ byrosa. rce Mar stal Lar (daniel.	hawaii.gov) r.terrago@hawaii.gov) nagement (DLNR.CWRM@hawaii.gov) nds l.ornellas@hawaii.gov)			
FROM: SUBJECT:	Russell Y. Tsuji, Land A Draft Environmental Ass Subdivision Project		ator	sell Tsuji e Proposed Pu'unani Homestead			
LOCATION: APPLICANT:	Waikapu, Island of Maui; TMK: (2) 3-5-002:002 (por.) & (2) 3-5-001:064 (por.) Munekiyo Hiraga on behalf of Department of Hawaiian Home Lands						
Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by June 19, 2020 .							
The DEA can be found on-line at: http://health.hawaii.gov/oegc/ (Click on The Environmental Notice in the middle of the page.)							
If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417or by email at darlene.k.nakamura@hawaii.gov . Thank you.							
		()	We hav	ve no objections. ve no comments. ents are attached.			
		Signed	: -	DAVID C CMITH A L. C. CARACA			
		Print N	ame:	DAVID G. SMITH, Administrator			
		Date:		Jun 19, 2020			

Attachments

cc: Central Files

DAVID Y. IGE GOVERNOR OF HAWAII





STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF FORESTRY AND WILDLIFE 1151 PUNCHBOWL STREET, ROOM 325 HONOLULU, HAWAII 96813

June 19, 2020

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA

M. KALEO MANUEL DEPUTY DIRECTOR - WATE

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILLLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND

Log no. 2672

MEMORANDUM

TO: RUSSELL Y. TSUJI, Administrator

Land Division

FROM: DAVID G. SMITH, Administrator

Division of Forestry and Wildlife

SUBJECT: Division of Forestry and Wildlife Comments on the Draft Environmental

Assessment for the Proposed Pu'unani Homestead Subdivision Project

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your inquiry regarding review of the Draft Environmental Assessment for the proposed Pu'unani Homstead subdivision project in Waikapu on Maui, Hawai'i, TMKs: (2) 3-5-002:002 (por.) and (2) 3-5-001:064 (por.). The proposed project consists of constructing a maximum of 161 single-family lots of approximately 7500 square feet each, internal roadways and sidewalks, a drainage detention basin, utility connections, and a road widening lot for turning and bike lanes.

The State listed Hawaiian Hoary Bat or 'Ōpe'ape'a (*Lasiurus cinereus semotus*) has the potential to occur in the vicinity of the project area and may roost in nearby trees. When site clearing and tree removal is conducted this should be timed to avoid disturbance during the bat birthing and pup rearing season (June 1 through September 15). If this cannot be avoided, woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed without consulting DOFAW.

The State listed Blackburn's Sphinx Moth (BSM; *Manduca blackburni*) has a historic range that encompasses the project area. Larvae of BSM feed on many nonnative hostplants that include tree tobacco (*Nicotiana glauca*) which grows in disturbed soil. We recommend contacting our Maui DOFAW office at (808) 984-8100 for further information about where BSM may be present and whether a vegetation survey should be conducted to determine the presence of plants preferred by BSM. To avoid harm to BSM, DOFAW recommends removing plants less than one meter in height or during the dry time of the year. If you remove tree tobacco over one meter in height or disturb the ground around or within several meters of these plants, they must be checked thoroughly for the presence of eggs and larvae.

State listed waterbirds such as the Hawaiian Duck (*Anas wyvilliana*), Hawaiian Stilt (*Himantopus mexicanus knudseni*), Hawaiian Coot (*Fulica alai*), and Hawaiian Goose or Nēnē (*Branta sandvicensis*) have the potential to occur in the vicinity of the proposed project site. It is against State law to harm or harass these species. If any of these species are present during construction activities, then all activities within 100 feet (30 meters) should cease, and the bird should not the

approached. Work may continue after the bird leaves the area of its own accord. If a nest is discovered at any point, please contact the Maui DOFAW Office at (808) 984-8116

We note that artificial lighting can adversely impact seabirds that may pass through the area at night by causing disorientation. This disorientation can result in collision with manmade artifacts or grounding of birds. For nighttime lighting that might be required, DOFAW recommends that all lights be fully shielded to minimize impacts. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open sea. For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawai'i please visit: https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf.

DOFAW recommends minimizing the movement of plant or soil material between worksites, such as in fill. Soil and plant material may contain invasive fungal pathogens (e.g. Rapid 'Ōhi'a Death), vertebrate and invertebrate pests (e.g. Little Fire Ants, Coconut Rhinoceros Beetles), or invasive plant parts that could harm our native species and ecosystems. We recommend consulting the Maui Invasive Species Committee at (808) 573-6472 in planning, design, and construction of the project to learn of any high-risk invasive species in the area and ways to mitigate spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species. Gear that may contain soil, such as work boots and vehicles, should be thoroughly cleaned with water and sprayed with 70% alcohol solution to prevent the spread of Rapid 'Ōhi'a Death and other harmful fungal pathogens.

DOFAW recommends using native plant species for landscaping that are appropriate for the area (i.e. climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Please do not plant invasive species. DOFAW recommends consulting the Hawai'i-Pacific Weed Risk Assessment website to determine the potential invasiveness of plants proposed for use in the project (https://sites.google.com/site/weedriskassessment/home). We recommend that you refer to www.plantpono.org for guidance on selection and evaluation for landscaping plants.

We appreciate your efforts to work with our office for the conservation of our native species. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Lauren Taylor, Protected Species Habitat Conservation Planning Coordinator at (808) 587-0010 or lauren.taylor@hawaii.gov.

Sincerely,

DAVID G. SMITH Administrator

1005





SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

July 10, 2020

Munekiyo Hiraga Attn: Mr. Bryan Esmeralda Senior Associate 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

SUBJECT:

Draft Environmental Assessment for the Proposed Pu'unani Homestead

via email: bryan@munekiyohiraga.com

Subdivision Project located at Waikapu, Island of Maui; TMK: (2) 3-5-

002:002 (por.) & (2) 3-5-001:064 (por.)

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated June 19 and 23, 2020, enclosed are comments from the Commission on Water Resource Management on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji Land Administrator

Enclosure

CC:

Central Files

DAVID Y. IGE



SUZANNE D. CASE

BRUCE S. ANDERSON, PH.D. KAMANA BEAMER, PH.D. MICHAEL G. BUCK NEIL J. HANNAHS WAYNE K. KATAYAMA PAUL J. MEYER

M. KALEO MANUEL

REF: RFD.5214.6

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES COMMISSION ON WATER RESOURCE MANAGEMENT

P.O. BOX 621 HONOLULU, HAWAII 96809

July 9, 2020

TO: Mr. Russell Tsuji, Administrator

Land Division

M. Kaleo Manuel, Deputy Director FROM:

Commission on Water Resource Management

SUBJECT: Draft Environmental Assessment for the Proposed Pu'unani Homestead Subdivision Project

FILE NO.: RFD.5214.6

TMK NO.: (2) 3-5-001:064 (por.), (2) 3-5-002:002 (por.

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://dlnr.hawaii.gov/cwrm.

Our comments related to water resources are checked off below.

Χ	1.	We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
X	2.	We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
3	3.	We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
X	4.	We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EAP as having high water efficiency can be found at http://www.epa.gov/watersense.
Χ	5.	We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/
X	6.	We recommend the use of alternative water sources, wherever practicable.
X	7.	We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program

description can be found online at http://energy.hawaii.gov/green-business-program.

Landscape Industry Council of Hawaii. These practices can be found online at

We recommend adopting landscape irrigation conservation best management practices endorsed by the

http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH Irrigation Conservation BMPs.pdf.

	9.	There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
3)—	10	The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
(0)	11	A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.
(0)	12	A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
Ø-	13	There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
(0)	14	Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
(0)	15	A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.
(0)	16	A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
.00	17	A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
(2)	18	The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
0	OTH	HER:

If you have any questions, please contact Lenore Ohye of the Commission staff at 587-0216.



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Russell Tsuji, Land Administrator Land Division Department of Land and Natural Resources State of Hawai'i P.O. Box 621 Honolulu, Hawai'i 96809

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Mr. Tsuji:

Thank you for your letters dated June 19, June 23, and July 10, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to the comments received.

Comments from the Engineering Division

 We acknowledge that the Engineering Division has no additional comments to offer at this time.

Comments from the Division of Forestry and Wildlife (DOFAW)

- We acknowledge your comment that the Hawaiian hoary bat or 'Ōpe'ape'a (Lasiurus cinereus semotus) has the potential to occur in the vicinity of the project area and may roost in nearby trees. As such, disturbing, removing, or trimming of woody plants will be timed to avoid disturbance during the bat birthing and puprearing season of June 1 through September 15, as practicable. If this is unavoidable, woody plants greater than 15 feet tall will not be disturbed, removed, or trimmed without consulting DOFAW.
- We acknowledge your comment that the Blackburn's sphinx moth (Manduca blackburni) has a historic range that encompasses the project area, and that larvae

Russell Tsuji, Land Administrator September 22, 2020 Page 2

DOFAW office will be contacted should it be anticipated that the Blackburn's sphinx moth or its larvae would be present at the project site. We acknowledge your comment that plants less than one (1) meter in height be removed and that plants over one (1) meter in height be checked thoroughly for the presence of eggs and/or larvae.

- We acknowledge your comment that State listed waterbirds such as the Hawaiian Duck (Anas wyvilliana), Hawaiian Stilt (Himantopus mexicanus knudseni), Hawaiian Coot (Fulica alai), and Hawaiian Goose or Nēnē (Branta sandvicensis) have the potential to occur in the vicinity of the proposed project site, and that it is against State law to harm or harass these species. As such, if any of these species are present during construction activities, all activities within 100 feet will cease, and the bird will not be approached. We understand that work will be able to resume once the bird leaves the area of its own accord. The Maui DOFAW office will be contacted should a nest be discovered at any point for implementation of appropriate protocol.
- We acknowledge that artificial lighting can adversely impact seabirds that may
 pass through the area at night by causing disorientation which can result in
 collision with manmade artifacts or grounding of birds. As recommended, nighttime
 lighting will be fully shielded to minimize impacts. Furthermore, nighttime work that
 requires outdoor lighting will be avoided during the seabird fledging season from
 September 15 through December 15, as practicable.
- We acknowledge your comment recommending minimizing the movement of plant or soil material between worksites as soil and plant material may contain invasive fungal pathogens such as Rapid 'Ōhi'a Death, vertebrate and invertebrate pests such as Little Fire Ants and Coconut Rhinoceros Beetles, or invasive plant parts that could harm native species and ecosystems. Your comment recommending consulting the Maui Invasive Species Committee in the planning, design, and construction of the project to learn of any high-risk invasive species in the area and ways to mitigate spread has been forwarded to DHHL for consideration. Furthermore, we acknowledge your comment that equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species, and that gear which may contain soil, such as work boots and vehicles be thoroughly cleaned with water and sprayed with an alcohol solution to prevent the spread of Rapid 'Ōhi'a Death and other harmful fungal pathogens.
- We acknowledge your comment recommending the use of native plant species for landscaping that are appropriate for the area. To the extent practicable, native

Russell Tsuji, Land Administrator September 22, 2020 Page 3

plant species will be utilized. The Hawai'i-Pacific Weed Risk Assessment website and www.plantpono.org will be consulted for guidance on selection and evaluation for landscaping plants, as practicable.

Comments from the Commission on Water Resource Management (CWRM)

- We acknowledge your comment to work with the County of Maui, Department of Water Supply to have the project incorporated into the County's Water Use and Development Plan. The comment has been forwarded to DHHL for consideration.
- We acknowledge your comment to work with the Engineering Division of the Department of Land and Natural Resources to have the project incorporated into the State Water Projects Plan. The comment has been forwarded to DHHL for consideration.
- To the extent practicable, water efficient fixtures and practices will be encouraged for implementation by individual lessees of the proposed project. Furthermore, the resource you provided regarding Leadership in Environmental Design certification will be reviewed.
- Best Management Practices (BMPs) for stormwater management to minimize the
 impact of the proposed project on the existing area's hydrology while maintaining
 onsite infiltration and prevention of polluted runoff will be implemented. We note
 that as part of the project, an onsite detention basin will be constructed to capture
 stormwater runoff generated by the project so as to avoid adverse impacts to
 neighboring and downstream properties and other water resources.
- We acknowledge your comment regarding the encouragement for use of alternative water sources. We note that the proposed project is anticipated to be serviced by the County's existing municipal water system.
- We acknowledge your comment regarding participating in the Hawaii Green Business Program which assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The comment has been shared with DHHL for consideration.
- We acknowledge your comment regarding the use of landscape irrigation conservation BMPs endorsed by the Landscape Industry Council of Hawai'i. The resource provided in your letter will be reviewed for applicability to the proposed project.

Russell Tsuji, Land Administrator September 22, 2020 Page 4

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. Copies of your comment letters and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP Senior Associate

BKE:yp

cc: Stewart Matsunaga, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc.

Robert Hobdy, Environmental Consultant

Mike Miyabara, Miyabara Associates

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

JADE T. BUTAY
DIRECTOR

Deputy Directors
LYNN A.S. ARAKI-REGAN
DEREK J. CHOW
ROSS M. HIGASHI
EDWIN H. SNIFFEN

IN REPLY REFER TO: DIR 0497 STP 8.2933

June 17, 2020

Mr. Bryan K. Esmeralda, AICP Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

Subject: Draft Environmental Assessment (DEA)

Department of Hawaiian Home Lands (DHHL) Puunani Homestead Subdivision

Project

Waikapu, Maui, Hawaii

Tax Map Key: (2) 3-5-002:002 (por) and 3-5-001:064 (por)

The Hawaii Department of Transportation (HDOT) understands DHHL is proposing to develop the Puunani Homestead Subdivision which will consist of 161 single-family residences on 47.4 acres of land in the Waikapu area. Access to the subdivision would be via Honoapiilani Highway (State Route 30).

Highways Division (HDOT-HWY)

Proposed improvements potentially affecting the HDOT-HWY Right-of-Way (ROW) traffic conditions and safety, include the following:

- 1. Construct 2 access driveways on Honoapiilani Highway. The southern access driveway would be aligned opposite Kokilolio Street (County jurisdiction) and serve as the primary site access. The secondary access would be located approximately 1,500 feet north of the primary access and traffic movements would be limited to right turn in and right turn out of the site.
- 2. Widen Honoapiilani Highway 25 feet (maximum) into the site's highway frontage to accommodate turning lanes at the primary access, a median refuge lane, and a bike lane. Remove existing mature trees within the Honoapiilani Highway ROW and plant new trees within the widened ROW to meet site distance requirements.
- 3. Construct an underground wastewater sewer line that crosses Honoapiilani Highway ROW between the northeast corner of the site and the eastern edge of the ROW. The underground infrastructure would extend further offsite and east to the County of Maui existing wastewater infrastructure at Waiale Road (County jurisdiction).

- 4. Landscape the sloped Honoapiilani Highway frontage to create a 25-foot buffer between the house lots and the highway.
- 5. Construct a stormwater retention basin at the northeast corner of the site to mitigate for increased runoff associated with the development.

HDOT-HWY previously provided comments on the Pre-Environmental Assessment Consultation and would like to thank you for the inclusion of a Traffic Impact Analysis Report (TIAR), and for clarifying in your response letter dated May 18, 2020 that the remainder of Parcel 2, outside of Puunani Homestead Subdivision, will not be owned or developed by DHHL.

The HDOT-HWY has reviewed the May 2020 DEA, including the Final Draft TIAR (dated January 16, 2020) and has the following comments relevant to State highways:

- 1. Discuss Old Waikapu Road, including its jurisdiction, condition, and existing/future use.
- 2. The TIAR assessed 18 intersections in the study area, including four existing and two proposed intersections with Honoapiilani Highway. 2024 was identified as the year of full-subdivision build-out. The overall Level of Service (LOS) at the four existing Honoapiilani Highway intersections remained acceptable with or without the project during peak traffic hours. The LOS would be acceptable at the site's north access driveway. The eastbound left turn movement at the proposed south access driveway would be unacceptable during a.m. and p.m. peak hours but a traffic signal is not warranted. The TIAR recommends a median refuge lane to mitigate the unacceptable LOS. The DEA incorporates the median, improvements to site distance and a landscaped buffer in the project description; therefore, no significant adverse impact to State highways traffic condition is anticipated.
- 3. A Permit to Perform Work Upon State Highways and a Traffic Management Plan (TMP) are required for any work within the State ROW. Construction plans prepared by a Hawaii licensed engineer shall be submitted to the HDOT Maui District Engineer for review and approval prior to applying for a permit to perform work. There is potential for adverse impact to traffic during construction of the subdivision. Mitigation for potential construction phase impacts will be addressed in the TMP.
- 4. An HDOT-HWY permit is required to operate or transport oversize and/or overweight vehicles and loads over State highways.
- 5. A Use and Occupancy Permit approved by the HDOT-HWY, ROW Branch is required for any use of the ROW, including the proposed underground sewer pipeline.
- 6. The applicant shall adhere to HDOT-HWY Pipeline Policy. No pipes, conduits or utility lines shall be abandoned in the State ROW and allowed to cause future problems, such as creating "voids" in the ground when pipelines rust/deteriorate and break. The Policy includes procedures for encountering abandoned infrastructure.
- 7. Currently, stormwater sheet flows west to east across the site to Honoapiilani Highway where it collects in the highway shoulder and flows north to a typically dry natural

drainageway aligned east-west through the northern portion of the parcel. The water in the drainageway is conveyed east beneath Honoapiilani Highway through HDOT-HWY culverts. No additional discharge of surface water runoff onto State highway ROW is permitted. This includes the use of existing State drainage culverts and channels. All additional stormwater runoff from the project site shall be managed and mitigated onsite. The proposed onsite retention basin would be designed to avoid additional surface water runoff into the State highway ROW. No adverse impact to State highway drainage is anticipated.

- 8. Honoapiilani Highway ROW shoulders are paved, but there are no existing curbs, gutters, or sidewalks along the project frontage area. Bikes and pedestrians use the paved shoulder fronting the site. Provide more information on the existing and planned pedestrian, transit and bicycle routes in the vicinity of the site.
- 9. The DEA mentions a "bike lane" will be accommodated in the proposed highway widening. Clarify whether the bike lane would be an improvement to existing conditions or restoration of existing conditions.

Airports Division (HDOT-A)

- The proposed development is approximately three miles from Kahului Airport (OGG).
 Although the project is located outside of the 55 Day-Night Level (DNL) noise contours
 on the Five-Year 1998 Noise Exposure Map, the developer and occupants of the
 residential subdivision should be aware of potential single event noise from aircraft
 operating to and from OGG.
- 2. In an early consultation letter dated September 9, 2019, HDOT-A notified DHHL of the Airport Zoning Act, Hawaii Revised Statutes, Chapter 262, which requires HDOT-A to prevent hazards and non-conforming uses that conflict with the Federal Aviation Administration (FAA) regulations on Hazardous Wildlife Attractants.
 - HDOT-A reiterates that the proposed 4.2 acre-feet stormwater detention basin to be located at the north east corner of the subdivision (DEA page 56, PDF Reader p. 72) may result in over 48-hours accumulation of standing water at the project site, thereby creating a potential for a wildlife attractant. HDOT-A recommends that DHHL incorporates measures to minimize hazardous wildlife attractants in compliance with <u>FAA Advisory Circular (AC) 150/5200-33B</u>, as amended in <u>FAA AC 150/5200-33C Hazardous Wildlife Attractants on or near Airports</u>. If the proposed stormwater detention basin becomes a wildlife attractant, these effects shall be immediately mitigated by DHHL upon notification by the HDOT-A and/or FAA.
- 3. If DHHL or the Homestead Subdivision decides to add photovoltaic (PV) solar panels to the development in the future, a glint and glare analysis must be submitted for FAA review. The following website may assist you with preparation of a glint and glare analysis: https://share-ng.sandia.gov/glare-tools/. If the glint or glare from a PV array creates a hazardous condition for pilots, the owner of the PV system shall immediately mitigate the hazard upon notification by the HDOT-A and/or FAA.

4. PV installations have been known to emit radio frequency interference (RFI) to aviation-dedicated radio signals, disrupting the reliability of air-to-ground communications. An owner must ensure that an operating PV installation shall not create any RFI that interferes with any aviation communication frequency. If the proposed project creates an RFI situation, the owner of the PV system shall immediately mitigate the RFI hazard upon notification by the HDOT-A and/or FAA.

If there are any questions, please contact Mr. Blayne Nikaido of the HDOT Statewide Transportation Planning Office at (808) 831-7979 or via email at blayne.h.nikaido@hawaii.gov.

Sincerely

JADE T. BUTAY

Director of Transportation



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng

September 22, 2020

Jade Butay, Director State of Hawai'i Department of Transportation 869 Punchbowl Street Honolulu, Hawai'i 96813-5097

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i (DIR 0497, STP 8.2933)

Dear Mr. Butay:

Thank you for your letter dated June 17, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

COMMENTS FROM HIGHWAYS DIVISION (HDOT-HWY)

Comment No. 1:

Discuss Old Waikapu Road, including its jurisdiction, condition, and existing/future use.

Response:

Based on confirmation from the County of Maui, Department of Public Works (DPW), there is no clear record of ownership for Old Waikapū Road. It is an unpaved, dirt road that does not provide through access for vehicles as it is gated and does not connect to Honoapi'ilani Highway. DHHL has no plans to improve Old Waikapū Road or to use it to provide access to the proposed Pu'unani Homestead Subdivision project.

Comment No. 2

The TIAR assessed 18 intersections in the study area, including four existing and two proposed intersections with Honoapiilani Highway. 2024 was identified as the year of full-subdivision build-out. The overall Level of Service (LOS) at the four existing Honoapiilani Highway intersections remained acceptable with or without the project during peak traffic hours. The LOS would be acceptable at the site's north access driveway. The eastbound left turn movement at the proposed south access driveway would be unacceptable during a.m. and p.m. peak hours but a traffic signal is not warranted. The TIAR recommends a median refuge lane to mitigate the unacceptable LOS. The DEA incorporates the median, improvements to site distance and a landscaped buffer in the project description; therefore, no significant adverse impact to State highways traffic condition is anticipated.

Response: We acknowledge your comment that the median refuge lane, improvements to site distance, and the landscaped buffer along Honoapi'ilani Highway will adequately mitigate any potential significant adverse impacts such that no significant adverse impacts to the State highway traffic condition are anticipated.

Comment No. 3:

A Permit to Perform Work Upon State Highways and a Traffic Management Plan (TMP) are required for any work within the State ROW. Construction plans prepared by a Hawaii licensed engineer shall be submitted to the HDOT Maui District Engineer for review and approval prior to applying for a permit to perform work. There is potential for adverse impact to traffic during construction of the subdivision. Mitigation for potential construction phase impacts will be addressed in the TMP.

Response: We acknowledge that a Permit to Perform Work Upon State Highways and a Traffic Management Plan are required for any work within the State right-of-way (ROW), and that mitigation for potential construction phase impacts will be addressed as part of the TMP review process. The State of Hawai'i, Department of Transportation (HDOT) Maui District Office will be contacted for guidance in preparing these items.

Comment No. 4:

An HDOT-HWY permit is required to operate or transport oversize and/or overweight vehicles and loads over State highways.

Response: We acknowledge that a HDOT-HWY permit is required to operate or transport oversize and/or overweight vehicles and loads over State highways. The HDOT Maui District Office will be contacted for guidance in

preparing this application, as needed.

Comment No. 5:

A Use and Occupancy Permit approved by the HDOT-HWY, ROW Branch is required for any use of the ROW, including the proposed underground sewer pipeline

Response: We acknowledge that a Use and Occupancy Permit approved by the HDOT-HWY ROW Branch is required for use of any right-of-way, including the proposed sewerline. The DHHL and developer have already reached out to HDOT Maui District Office for guidance in preparing this application.

Comment No. 6:

The applicant shall adhere to HDOT-HWY Pipeline Policy. No pipes, conduits or utility lines shall be abandoned in the State ROW and allowed to cause future problems, such as creating "voids" in the ground when pipelines rust/deteriorate and break. The Policy includes procedures for encountering abandoned infrastructure.

Response: We acknowledge your comment. The DHHL will abide by the provisions of the HDOT-HWY Pipeline Policy.

Comment No. 7:

Currently, stormwater sheet flows west to east across the site to Honoapiilani Highway where it collects in the highway shoulder and flows north to a typically dry natural drainageway aligned east-west through the northern portion of the parcel. The water in the drainageway is conveyed east beneath Honoapiilani Highway through HDOT-HWY culverts. No additional discharge of surface water runoff onto State highway ROW is permitted. This includes the use of existing State drainage culverts and

> channels. All additional stormwater runoff from the project site shall be managed and mitigated onsite. The proposed onsite retention basin would be designed to avoid additional surface water runoff into the State highway ROW. No adverse impact to State highway drainage is anticipated.

Response: We acknowledge your comment regarding the current stormwater flow pattern on the project site, and understand your comment that no additional discharge of surface water runoff is permitted on the State highway right-of-way and existing drainage culverts and channels. As noted in your letter, an onsite drainage detention basin is being proposed to mitigate all project-related increases in stormwater runoff onsite. As such, we acknowledge your comment that adverse impacts to the State highways are not anticipated.

Comment No. 8:

Honoapiilani Highway ROW shoulders are paved, but there are no existing curbs, gutters, or sidewalks along the project frontage area. Bikes and pedestrians use the paved shoulder fronting the site. Provide more information on the existing and planned pedestrian, transit and bicycle routes in the vicinity of the site.

Response: We acknowledge your comment. Sidewalks are being provided along interior streets of the proposed subdivision. As Honoapi'ilani Highway is a State highway, the DHHL will provide paved shoulders to be consistent with the rest of the Honoapi'ilani Highway in the Waikapū area where a majority of the section between the Waiolani Mauka Subdivision to the Maui Tropical Plantation do not have sidewalks. As noted in the Draft EA, there are existing signalized intersections with crosswalks across Honoapi'ilani Highway available at Pilikana Street as well as at Ku'ikahi Drive. In addition, the proposed road widening lot will maintain the existing shoulder bike route along Honoapi'ilani Highway fronting the project and thus bikes and pedestrians will be able to continue using the paved shoulder fronting the site.

Comment No. 9:

The DEA mentions a "bike lane" will be accommodated in the proposed highway widening. Clarify whether the bike lane would be an improvement to existing conditions or restoration of existing conditions.

Response: The existing bike route within the paved shoulder will be maintained within

the proposed road widening lot.

COMMENTS FROM AIRPORTS DIVISION

Comment No. 1:

The proposed development is approximately three miles from Kahului Airport (OGG). Although the project is located outside of the 55 Day-Night Level (DNL) noise contours on the Five-Year 1998 Noise Exposure Map, the developer and occupants of the residential subdivision should be aware of potential single event noise from aircraft operating to and from OGG.

Response: We acknowledge your comment regarding potential single event noise

from aircraft operating to and from Kahului Airport given the project site's

location approximately three (3) miles away.

Comment No. 2:

In an early consultation letter dated September 9, 2019, HDOT-A notified DHHL of the Airport Zoning Act, Hawaii Revised Statutes, Chapter 262, which requires HDOT-A to prevent hazards and non-conforming uses that conflict with the Federal Aviation Administration (FAA) regulations on Hazardous Wildlife Attractants.

HDOT-A reiterates that the proposed 4.2 acre-feet stormwater detention basin to be located at the north east corner of the subdivision (DEA page 56, PDF Reader p. 72) may result in over 48-hours accumulation of standing water at the project site, thereby creating a potential for a wildlife attractant. HDOT-A recommends that DHHL incorporates measures to minimize hazardous wildlife attractants in compliance with FAA Advisory Circular (AC) 150/5200-33B, as amended in FAA AC 150/5200-33C Hazardous Wildlife Attractants on or near Airports. If the proposed stormwater detention basin becomes a wildlife attractant, these effects shall be immediately mitigated by DHHL upon notification by the HDOT-A and/or FAA.

Response: We acknowledge your comment that the proposed drainage detention basin may result in over 48-hours accumulation of standing water, thereby creating a potential for a wildlife attractant. The FAA Advisory Circular

> 150/5200-33B - Hazardous Wildlife Attractants on or near Airports will be reviewed for measures to minimize hazardous wildlife attractants. In the event the detention basin inadvertently becomes an attractant, any effects will be mitigated by the DHHL upon notification by the HDOT-A and/or FAA.

Comment No. 3:

If DHHL or the Homestead Subdivision decides to add photovoltaic (PV) solar panels to the development in the future, a glint and glare analysis must be submitted for FAA review. The following website may assist you with preparation of a glint and glare analysis: https://shareng.sandia.gov/glare-tools/. If the glint or glare from a PV array creates a hazardous condition for pilots, the owner of the PV system shall immediately mitigate the hazard upon notification by the HDOT-A and/or FAA.

Response:

The DHHL shall make known to all future lessees that should solar photovoltaic (PV) panels be installed, a glint and glare analysis must be submitted for FAA review, and that any hazards created by PV systems must be mitigated by the system's owner upon notification by the HDOT-A and/or FAA.

Comment No. 4:

PV installations have been known to emit radio frequency interference (RFI) to aviation- dedicated radio signals, disrupting the reliability of air-toground communications. An owner must ensure that an operating PV installation shall not create any RFI that interferes with any aviation communication frequency. If the proposed project creates an RFI situation, the owner of the PV system shall immediately mitigate the RFI hazard upon notification by the HDOT-A and/or FAA.

Response: The DHHL shall make known to all future lessees that should PV panels be installed, the PV system must not generate any RFI that interferes with any aviation communication frequency, and that any RFI situation created by PV systems must be mitigated by the system's owner upon notification by the HDOT-A and/or FAA.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP Senior Associate

BKE:tn

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori, Engineering, Inc.

Tyler Fujiwara, Austin, Tsutsumi & Associates, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\State DOT.doc

DAVID Y. IGE GOVERNOR



DENISE ISERI-MATSUBARA INTERIM EXECUTIVE DIRECTOR

STATE OF HAWAII

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM HAWAII HOUSING FINANCE AND DEVELOPMENT CORPORATION

IN REPLY REFER TO: 20:DEV/093

677 QUEEN STREET, SUITE 300 HONOLULU, HAWAII 96813 FAX: (808) 587-0600

June 10, 2020

Munekiyo Hiraga Attn: Bryan K. Esmeralda, AICP, Senior Associate 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

Re: Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands (DHHL) Pu`unani Homestead Subdivision Project; TMK Nos: (2) 3-5-002: 002 (por.) and (2) 3-5-001: 064 (por.); Waikapu, Maui, Hawaii.

Thank you for providing the Hawaii Housing Finance and Development Corporation (HHFDC) with the opportunity to review the subject Draft Environmental Assessment for the proposed Pu`unani Homestead Subdivision project.

HHFDC has no comments or objections to the project, but requests that design and construction of the proposed sewer line be coordinated with Legacy Wailuku LLC, the developer of the adjacent Wailuku Apartment Rental Project project, planned to be constructed on TMK 3-5-001: 064.

Sincerely.

Deepak Neupane, P.E., AIA Development Branch Chief

CC: Stewart Matsunaga, DHHL



Michael T. Munekiyo

Karlynn K. Fukuda

Mark Alexander Roy VICE PRESIDENT

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Deepak Neupane, P.E., AIA, Development Branch Chief Hawai'i Housing Finance and Development Corporation State of Hawai'i 677 Queen Street Honolulu, Hawai'i 96813

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i (20:DEV/093)

Dear Mr. Neupane:

Thank you for your letter dated June 10, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We acknowledge that the Hawai'i Housing Finance and Development Corporation has no comments or objections to the project. We note that the design and construction of the proposed sewerline within TMK (2)3-5-001:064 will be coordinated with developer, Legacy Wailuku, LLC.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Deepak Neupane, P.E., AIA, **Development Branch Chief** September 22, 2020 Page 2

Should you have any questions, or require additional information, please feel free to contact me at 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC
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UNIVERSITY OF HAWAI'I AT MĀNOA

Institute for Astronomy Office of the Director

June 23, 2020

Via email:

Department of Hawaiian Homelands, State of Hawaii 94-5420 Kapolei Parkway Kapolei, HI 96707

Attention: Mr. Stewart Matsunaga, Acting Land Development Division Administrator

(stewart.t.matsunaga@hawaii.gov)

Re: Draft Environmental Assessment & Anticipated Finding of No Significant Impact (DEA-

AFNSI)

Proposed Pu'unani Homestead Subdivision Project, Waikapū, Maui, HI

TMK NOs. (2) 3-5-002:002 (por.) and (2) 3-4-001:064 (port); Paia, Maui, Hawaii

Dear Mr. Matsunaga:

Thank you for the opportunity to comment on the DEA-AFNSI for the proposed Pu'unani Homestead Subdivisione Project referenced above (published May 23, 2020), specifically with respect to issues and concerns regarding light pollution.

The University of Hawai'i Institute for Astronomy (IfA) conducts research in astronomy using telescopes located on Haleakalā and Maunakea and operated by IfA and our partner institutions. Both Haleakalā and Maunakea are among the best sites in the world for astronomical facilities because of their elevation, clear skies, favorable atmospheric conditions, and low levels of light pollution. Hawai'i-based observatories have played major roles in the advancement of astronomy and astrophysics for over 50 years and are well positioned to remain at the forefront of astronomical research for decades to come.

Because of the outstanding quality and productivity of these facilities, IfA is acutely concerned about negative impacts on astronomy from increased light pollution. Our work to combat light pollution has also brought us into contact with others concerned about light pollution for other reasons, including impacts on wildlife (particularly seabirds) and on human health. While IfA's comments focus on the impacts of light pollution on astronomy, appropriate mitigation measures also help to reduce non-astronomy impacts.

With that background, we offer the following comments:

Any new or additional artificial light at night has an adverse effect on astronomical observations by increasing the night sky brightness. All observations performed by the Pan-STARRS observatories, the ATLAS telescope, and the Faulkes telescope on Haleakalā are sky-background limited. This means that there is a natural sky brightness coming from airflow and zodiacal light.

Artificial light increases the sky brightness, thereby decreasing the sensitivity of the telescopes. Some of the observations performed by the Air Force telescopes atop Haleakala are also sky-background limited, so those observations, performed for national defense purposes, will also be adversely affected.

Appropriate general steps to reduce the impact on the observatories would include:

- 1. Any outdoor lighting must follow the Maui County lighting ordinance. All lighting must be fully shielded. This means that all lighting fixtures must emit zero light above the horizontal plane.
- 2. The minimum possible amount of outdoor lighting should be used. Motion sensor activated lighting is strongly preferred. Blue light is most harmful to the observatories, so blue-deficient lighting should be exclusively selected. The best choices are filtered LED lights, or amber LED lights. Under no circumstances should high-intensity discharge lamps such as metal halide be used; fluorescent lights also must be avoided. Both of these types of lamps use mercury and emit light at wavelengths that is very damaging to astronomy.
- 3. White light should be avoided because the blue component of white light is very damaging to astronomy. White light should always have a Correlated Color Temperature of 2700 K or below.

Finally, we note that there is a strong need for further dialog with the University regarding light pollution on Maui, and a strong need for revision of the present lighting ordinance to properly address the impacts of changes in lighting technology including LED lighting.

Thank you for your consideration of these comments and attention to IfA's concerns. If you have questions or need further detail regarding these comments, please do not hesitate to contact the undersigned or Richard Wainscoat (rjw@hawaii.edu).

Very truly yours,

Robert McLaren Interim Director

cc: Mr. Bryan Esmeralda, Munekiyo Hiraga, (planning@munekiyohiraga.com)



Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng

September 22, 2020

Robert McLaren, Interim Director Institute for Astronomy University of Hawai'i 2680 Woodlawn Drive, C-205 Honolulu, Hawai'i 96822

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Mr. McLaren:

Thank you for your letter dated June 23, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to the comments provided.

We acknowledge your comments that the University of Hawai'i Institute for Astronomy (IfA) has long conducted research in astronomy using telescopes located on Haleakalā and Mauna Kea operated by IfA and partner institutions, and that both Haleakalā and Mauna Kea are among the best sites in the world for astronomical facilities because of their elevation, clear skies, favorable atmospheric conditions, and low levels of light pollution.

We understand that IfA is concerned about negative impacts on astronomy from increased light pollution, as well as light pollution impacts on wildlife (particularly seabirds) and on human health.

We understand that any new or additional artificial light at night can have an adverse effect on astronomical observations by increasing the night sky brightness, and that all observations performed by the observatories and telescopes on Haleakalā are sky-background limited, meaning that because there is a natural sky brightness coming from airflow and zodiacal light, any increases in light can affect operations.

Robert McLaren, Interim Director September 22, 2020 Page 2

We acknowledge your comments that the minimum possible amount of outdoor lighting should be used, and that motion sensor activated lighting is strongly preferred. We understand that blue light is most harmful to the observatories. Blue-deficient lighting will be selected for use, as practicable. We acknowledge your comment that high-intensity discharge lamps such as metal halide should not be used, as well as fluorescent lights as both of these types of lamps use mercury and emit light at wavelengths that is very damaging to astronomy. We also acknowledge your comment that white light should be avoided because the blue component of white light is very damaging to astronomy. Your suggestions will be reviewed by DHHL for implementation in the project, as feasible.

Finally, we acknowledge your comment that there is a strong need for further dialog with the University regarding light pollution on Maui, and a strong need for revision of the present lighting ordinance to properly address the impacts of changes in lighting technology. We recommend follow-up with the Department of Public Works to share your concerns and suggestions, if you have not already done so.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

cc: Stewart Matsunaga, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\UH InstituteforAstronomy.docx

From: Elaine Baker [mailto:Elaine.Baker@co.maui.hi.us]

Sent: Friday, July 10, 2020 1:00 PM

To: Bryan Esmeralda < <u>bryan@munekiyohiraga.com</u>>

Subject: HHL Pu'unani Homestead

Hi Bryan:

County Solid Waste Division has no comments. E



Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Elaine Baker Solid Waste Division Department of Environmental Management County of Maui 2200 Main Street, Suite 225 Wailuku, Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui. Hawai'i

Dear Ms. Baker:

Thank you for your email dated July 10, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We acknowledge that the Department of Environmental Management, Solid Waste Division has no comments to offer.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Elaine Baker September 22, 2020 Page 2

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC
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MICHAEL P. VICTORINO

Mayor

DAVID C. THYNE

Fire Chief

BRADFORD K. VENTURA

Deputy Fire Chief





DEPARTMENT OF FIRE & PUBLIC SAFETY

FIRE PREVENTION BUREAU COUNTY OF MAUI 313 MANEA PL. WAILUKU, HI 96793

June 25, 2020

Munekiyo Hiraga Attn: Bryan K. Esmeralda 305 High Street, Suite 104 Wailuku, HI 96793

SUBJECT: Draft Environmental Assessment (EA)

Proposed – Department of Hawaiian Home Lands Pu'unani Homestead

Subdivision Project

TMK: (2) 3-5-002:002 (por.); (2)3-5-001:064(por.)

Dear Bryan Esmeralda,

Thank you for allowing our office to provide comment on the proposed project. As per your request, comments are provided below:

- There are no objections in regards to the information provided as part of the Draft Environmental Assessment (EA).
- This project shall incorporate fire prevention measures to address the concern of wildland fires posed by vacant lands abutting the project. At a minimum, 30 feet of defensible space shall be provided between the proposed structures associated with this project and undeveloped lands abutting the project. Our office is willing to assist on this matter.

If there are any questions or comments, please feel free to contact me at (808) 876-4693 or by email at paul.haake@mauicounty.gov.

Sincerely,

Paul Haake, Captain - Fire Prevention Bureau



Michael T. Munekiyo

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy VICE PRESIDENT

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Paul Haake, Captain
Fire Prevention Bureau
Department of Fire and Public Safety
County of Maui
313 Manea Place
Wailuku, Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Captain Haake:

Thank you for your letter dated June 25, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

- We acknowledge that the Fire Prevention Bureau has no objection in regards to the information provided in the Draft EA.
- We acknowledge your comment. Coordination on fire prevention measures will be undertaken with the Fire Prevention Bureau by the project engineer as the project moves forward.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Paul Haake, Captain September 22, 2020 Page 2

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\DF&PS.docx

MICHAEL P. VICTORINO Mayor

> LORI TSUHAKO Director

LINDA R. MUNSELL Deputy Director



DEPARTMENT OF HOUSING & HUMAN CONCERNS COUNTY OF MAUI 2200 MAIN STREET, SUITE 546 WAILUKU, MAUI, HAWAII 96793 PHONE: (808) 270-7805



June 4, 2020

Mr. Bryan K. Esmeralda, AICP, Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

Subject:

Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project: TMK Nos. (2) 3-5-002:002(por.) and (2) 3-5-001:064(por.); Waikapu,

Maui, Hawaii

The Department has reviewed the draft Environmental Assessment for the above subject project. Based on our review, we have determined that the project is subject to Chapter 2.96, Maui County Code, and is required to execute a Residential Workforce Housing Agreement.

Please call Mr. Buddy Almeida of our Housing Division at 270-7355 if you have any questions.

C. BUDDY ALMEIDA Housing Administrator

cc:

Lori Tsuhako, Director of Housing and Human Concerns Stewart Matsunaga, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC

TO SUPPORT AND EMPOWER OUR COMMUNITY TO REACH IT'S FULLEST POTENTIAL FOR PERSONAL WELL-BEING AND SELF-RELIANCE



Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

C. Buddy Almeida, Housing Administrator Department of Housing and Human Concerns County of Maui 2200 Main Street, Suite 546 Wailuku, Hawai'i 96793

SUBJECT: (

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Mr. Almeida:

Thank you for your letter dated June 4, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

We acknowledge your determination that the project is subject to the workforce housing requirements of Chapter 2.96, Maui County Code (MCC). As stated in our letter dated May 18, 2020 in response to your Department's early consultation comments, the Hawaiian Homes Commission Act vests onto DHHL the authority to use its lands at its discretion. In this regard, although DHHL intends to exempt the project from the County workforce housing requirements of Chapter 2.96, MCC, DHHL will develop and deliver affordable homesteads to its beneficiaries. As appropriate, further coordination may be undertaken with your Department by DHHL.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

C. Buddy Almeida, Housing Administrator September 22, 2020 Page 2

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

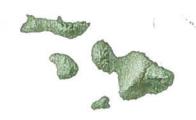
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MICHAEL P. VICTORINO Mayor

> KARLA H. PETERS Director

JOHN L. BUCK III Deputy Director





DEPARTMENT OF PARKS AND RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793 Main Line (808) 270-7230 / Facsimile (808) 270-7942

June 3, 2020

Bryan Esmeralda, Senior Associate Munekiyo Hiraga 305 South High Street, Suite 104 Wailuku, HI 96793

Dear Mr. Esmeralda:

SUBJECT: Draft Environmental Assessment for the Proposed Department of

Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos: (2) 3-5-002:002 (por.) and (2) 3-5-001:064 (por.); Waikapu,

Maui, Hawaii

Thank you for the opportunity to review and comment on the subject project. The Department of Parks and Recreation recommends that the applicant continue to work with the Arborist Committee on the request to remove exceptional trees and replace with an acceptable type of tree.

Should you have any questions, please feel free to contact me or Cheryl Akiona, Capital Improvements Project Coordinator at cheryl.akiona@co.maui.hi.us or (808) 270-7388.

Sincerely,

KARLA H. PETERS

Director of Parks and Recreation

KHP:csa



Michael T. Munekiyo

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng

September 22, 2020

Karla Peters, Director Department of Parks and Recreation County of Maui 700 Hali'a Nakoa Street, Unit 2 Wailuku, Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Ms. Peters:

Thank you for your letter dated June 3, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

At its meeting on February 12, 2020, the Maui County Arborist Committee voted to recommend that the Maui County Council remove the exceptional trees designation for 34 existing trees along Honoapi'ilani Highway fronting the proposed DHHL subdivision. Furthermore, at its meeting on July 9, 2020, the Council's Healthy Families and Communities committee voted to recommend that the 34 trees be delisted. The matter was then referred to the County Council for final action. At its meeting of August 18, 2020, the Maui County Council passed an ordinance delisting the 34 trees as exceptional trees on second and final reading. It is the DHHL's intent to replace each of these trees with a new, healthy tree. The DHHL will continue working with the Arborist Committee, as well as other required agencies for the DHHL's proposed minimum 1:1 replacement of the trees.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Karla Peters, Director September 22, 2020 Page 2

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC

Mike Miyabara, Miyabara Associates
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MICHAEL P. VICTORINO
Mayor

MICHELE CHOUTEAU MCLEAN, AICP
Director

JORDAN E. HART Deputy Director





DEPARTMENT OF PLANNING

COUNTY OF MAUI ONE MAIN PLAZA 2200 MAIN STREET, SUITE 315 WAILUKU, MAUI, HAWAII 96793

June 9, 2020

Mr. Bryan Esmeralda, AICP Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

SUBJECT: REQUEST FOR COMMENT ON THE DRAFT

ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED DEPARTMENT OF HAWAIIAN HOMELANDS, PU'UNANI HOMESTEAD SUBDIVISION PROJECT LOCATED IN WAIKAPU, ISLAND OF MAUI, HAWAII; TMK: (2) 3-5-002:002 (POR.) AND (2) 3-5-001:064 (POR.)

(EAC 2020/0003)

The Department of Planning (Department) is in receipt of the proposed Department of Hawaiian Homelands (DHHL) Pu'unani Homestead Subdivision Project (Project) request for comments on the Draft Environmental Assessment (EA). The Department understands that the Hawaiian Homes Commission will serve as the approving agency for the EA.

The Department understands the project will be comprised of 161 lots with approximately 137 turn-key single-family residences and 24 vacant single-family lots on approximately 47.4 acres owned by the DHHL located mauka of the Honoapi'ilani Highway adjacent to the Waiolani Mauka subdivision in Waikapu. Additionally sewerline improvements will be a part of this development.

The Department is aware that the Hawaiian Homes Commission Act vests the DHHL with the authority to use its lands at its discretion when that use is for homesteading purposes and that the DHHL has the authority to proceed with the project without the lands being fully entitled for residential use. Furthermore, the Department understands that the DHHL intends to exempt the project from certain County code and rule requirements in order to develop the property.

The Department thanks you, Mr. Esmeralda, for your thoughtful and detailed responses to our extensive early consultation comments sent on September 9, 2019. The Department reiterates our comments in this letter which is included in the Draft EA, as the project has not

Mr. Bryan Esmeralda June 9, 2020 Page 2

substantially changed since these comments were sent. Therefore, the Department will not repeat in detail previous comments.

The Department clearly understands that the mission of the DHHL is to effectively manage the Hawaiian Home Lands trust and to develop and deliver lands to Native Hawaiians and this project does just that. However, the Department respectfully asks the DHHL to again consider the guidelines in the Maui Island Plan for this particular area. The Department understands that this current project is vastly different from that originally proposed for the Pu'unani Planned Growth Area. Nevertheless, the critical components of a greenbelt along the Honoapi'ilani Highway to reduce the visual impact of mauka development and the inclusion of a preservation greenbelt along the area's southern boundary with the Waiolani Mauka community would best be further evaluated in the context of development along the Highway and in this general area of Waikapu.

Thank you for the opportunity to comment on the Draft EA for the Pu'unani Homestead Subdivision Project by DHHL. Should you require further clarification, please contact Staff Planner Kurt Wollenhaupt by email at kurt.wollenhaupt@mauicounty.gov or by phone at (808) 270-1789.

Sincerely,

MICHELE MCLEAN, AICP

mullen

Planning Director

Clayton I. Yoshida, AICP, Planning Program Administrator (PDF) xc:

John Rapacz, Planning Program Administrator (PDF)

Kathleen Aoki, Administrative Planning Officer (PDF)

Kurt F. Wollenhaupt, Staff Planner (PDF)

Bryan Esmeralda, Munekiyo Hiraga (PDF)

Project File

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Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng

September 22, 2020

Michele McLean, AICP, Director Department of Planning County of Maui 2200 Main Street, Suite 315 Wailuku. Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Ms. McLean:

Thank you for your letter dated June 9, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

We acknowledge that the Department of Planning (Department) reiterates its early consultation comments sent via letter dated September 9, 2019.

We acknowledge the Department's request that the project consider the guidelines in the County's Maui Island Plan for this area. We understand the significance of a greenbelt along Honoapi'ilani Highway to reduce the visual impact of mauka development, as well as a greenbelt along the subdivision area's southern boundary to buffer it from the neighboring Waiolani Mauka subdivision.

As stated in the Draft EA, the greenbelts that were envisioned with the previous mixed-use project (by others), if incorporated, would equate to a reduction of approximately 68 lots, thus not allowing the DHHL to optimally fulfill its mission of providing housing opportunities to its Native Hawaiian beneficiaries. We note that a landscaped lot between the Honoapi'ilani Highway right-of-way and the houselots will be provided along the sloped frontage of the subdivision, providing an open space, green buffer setback from the highway.

Michele McLean, AICP, Director September 22, 2020 Page 2

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC
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MICHAEL P. VICTORINO Mayor

ROWENA M. DAGDAG-ANDAYA Director

> JORDAN MOLINA Deputy Director

GLEN A. UENO, P.E., L.S. Development Services Administration

RODRIGO "CHICO" RABARA, P.E. Engineering Division

JOHN R. SMITH, P.E. Highways Division

Telephone: (808) 270-7845 Fax: (808) 270-7955





COUNTY OF MAUI DEPARTMENT OF PUBLIC WORKS

200 SOUTH HIGH STREET, ROOM 434 WAILUKU, MAUI, HAWAII 96793

July 28, 2020

Mr. Bryan K. Esmeralda, AICP, Sr. Associate MUNEKIYO HIRAGA 305 High Street, Suite 104 Wailuku, Maui, Hawai'i 96793

Dear Mr. Esmeralda:

SUBJECT:

DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED

DEPARTMENT OF HAWAIIAN HOME LANDS PU'UNANI HOMESTEAD

SUBDIVISION PROJECT

TMK: (2) 3-5-002:002(POR.) AND (2) 3-5-001:064(POR.)

We reviewed the subject application and have the following comments:

Comment from the Development Services Administration (DSA), Construction Plans Review Section:

 Right- of- way and pavement widening requirements related to Old Waikapu Road will be determined at the time the subdivision application is submitted.

Comments from the Engineering Division:

- 2. 3.1 Roadway Network: Posted speed limit on Waiale Road, between Maui Lani Parkway/Kuikahi Drive and Waiko Road, is now 30 mph.
- 3.3 Existing Traffic Conditions: Honoapiilani Highway/Kehalani Parkwayis the AM queue solely due to the police officer directing traffic at Aupuni Street? Police officer is there to help regulate congestion at signal at the Main Street/High Street intersection.
- 4. 4.3 Planned Roadway Projects: Identify the intersections that median refuge lanes are recommended or state in report that locations/intersections will be discussed further in later sections. How much will median refuge lanes improve the level of service (LOS) at the intersection(s)?

Mr. Bryan K. Esmeralda, AICP, Sr. Associate July 28, 2020 Page 2

- 5. 1.2 Trip Distribution: Provide discussion on why the project trip distribution assumes that there are no eastbound left-turn (EBLT) trips at the Honoapiilani Highway/Kehalani Parkway after dropping students off at school? Same comment for Kamehameha Avenue/Maui Lani Parkway intersection.
- 6. 5.2 Future 2024 Analysis:
 - a. Provide discussion as to why south project access will be aligned with Kokololio Street. Are there plans for a future extension of Kokololio Street to Honoapiilani Highway?
 - b. Waiale Road/Olomea Street/Waimaluhia Lane: Waimaluhia has two "driveways" at Olomea. Provide discussion and recommendations for restricting access to one of them or making it right in, right out (RIRO)?
 - c. Waiale Road/Kaupo Street: Since operating at LOS F, provide discussion on whether a median refuge lane would help here.
- 7. Upon development of the detailed drainage report, please ensure compliance with the following: Title MC-15, Chapter 4, "Rules for the Design of Storm Drainage Facilities in the County of Maui". Title MC-15, Chapter 111, "Rules for the Design of Storm Water Treatment Best Management Practices".

Please call Jordan Molina at 270-7845 if you have any questions regarding this letter.

Sincerely,

FOR ROWENA M. DAGDAG-ANDAYA

Jordan Molin

Director of Public Works

RMDA:JM:da

xc: Highways Division

Engineering Division

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Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy VICE PRESIDENT

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Rowena Dagdag-Andaya, Director Department of Public Works County of Maui 200 South High Street, Room 434 Wailuku, Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū,

Maui, Hawai'i

Dear Ms. Dagdag-Andaya:

Thank you for your letter dated July 28, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

Comments from Development Services Administration, Construction Plans Review Section

1. We acknowledge your comment and note that the DHHL has no plans to use Old Waikapū Road to provide access to the Pu'unani Homestead Subdivision project.

Comments from Engineering Division

- 2. We acknowledge your comment. The Traffic Impact Analysis Report (TIAR) will be updated to correctly note the posted speed limit on Wai'ale Road, between Maui Lani Parkway/Ku'ikahi Drive and Waikō Road.
- 3. Thank you for your comment. The morning queue is not solely due to the police officer directing traffic at Aupuni Street. The TIAR will be updated to clarify.
- As stated in the Draft EA, a median refuge lane will be provided at the project's 4. main access point along Honoapi'ilani Highway to allow drivers making a left-hand turn out of the project to make this turn in a two-step approach. The TIAR will be

Oahu: 735 Bishop Street, Suite 321 · Honolulu, Hawaii 96813 · Tel: 808.983.1233

Maui: 305 High Street, Suite 104 · Wailuku, Hawaii 96793 · Tel: 808.244.2015 · Fax: 808.244.8729

Rowena Dagdag-Andaya, Director September 22, 2020 Page 2

updated to expand the discussion of median refuge lanes at various intersections in the Wailuku area.

- 5. The TIAR accounted for project trips generated by the nearby schools. We acknowledge that a portion of vehicles may make the east-bound left-turn movement. The TIAR will be updated to determine the appropriate proportion of vehicles exiting Pu'u Kukui Elementary School (Kehalani Parkway) and Pōmaika'i Elementary School (Maui Lani Parkway).
- 6a. The location of the project's access points were coordinated with the State Department of Transportation (SDOT) and provides for safe ingress and egress points, taking into account the topography of the land, locations of horizontal and vertical sight distance constraints in the roadway, and locations of other intersections along this stretch of roadway. As stated in the Draft EA, Kokololio Street is a privately owned roadway, and no improvements to this roadway are being undertaken as part of the proposed project, including no extension to Honoapi'ilani Highway on the makai side.
- 6b. The TIAR will be updated to provide discussion and recommendations for the two Waimaluhia Lane "driveways" at Olomea Street.
- 6c. Additional discussion will be provided in the TIAR to address this Wai'ale Road/Kaupo Street intersection.
- 7. The detailed drainage report, to be submitted in the future with the project construction plans, will discuss compliance with the County's "Rules for the Design of Storm Drainage Facilities in the County of Maui" and the "Rules for the Design of Storm Water Treatment Best Management Practices".

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Rowena Dagdag-Andaya, Director September 22, 2020 Page 3

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:yp

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC

Tyler Fujiwara, Austin, Tsutsumi & Associates, Inc. Darren Unemori, Warren S. Unemori Engineering, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\DPW.docx



MICHAEL P. VICTORINO MAYOR

OUR REFERENCE
YOUR REFERENCE

POLICE DEPARTMENT

COUNTY OF MAUI

55 MAHALANI STREET WAILUKU, HAWAII 96793 (808) 244-6400 FAX (808) 244-6411

June 5, 2020



TIVOLI S. FAAUMU CHIEF OF POLICE

DEAN M. RICKARDDEPUTY CHIEF OF POLICE

Mr. Bryan K.Esmeralda, AICP Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Re: Draft Environment Assessment for the Proposed Department of

Hawaiian Home Lands Pu'unani Homestead Subdivision Project;

TMK Nos. (2) 3-5-002:002 (por.) and (2) 3-5-001:064 (por.);

Waikapu, Maui, Hawaii

Dear Mr. Esmeralda:

This is in response to your letter dated May 21, 2020 requesting comments on the Draft Environmental Assessment (EA) for the proposed Pu'unani Homestead Subdivision Project pursuant to Hawaii Revised Statutes (HRS) Chapter 343 and Hawaii Administrative Rules Title 11, Chapter 200.1.

In review of the submitted documents, we would like to suggest the project manager utilize flag men to conduct traffic control if the road is temporarily closed for alternating traffic, and post proper signage along the routes during construction. We also suggest the project meets the minimal standards set forth by county codes and state laws.

Thank you for giving us the opportunity to comment on this project.

Sincerely,

TIVOLI S. FAÁÚMU Chief of Police



Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng

September 22, 2020

Tivoli Faaumu, Chief Police Department County of Maui 55 Mahalani Street Wailuku, Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Chief Faaumu:

Thank you for your letter dated June 5, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

We acknowledge your suggestion regarding the use of flag men to conduct traffic control should Honoapi'ilani Highway be closed for alternating traffic, as well as the use of proper signage during the construction phase. Your comment has been forwarded to DHHL for review and consideration. At a minimum, the project will comply with applicable County codes and State laws.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Tivoli Faaumu, Chief September 22, 2020` Page 2

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP Senior Associate

BKE:yp

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\MPD.docx



Waiolani Mauka Community Association, P.O. Box 1067, Wailuku, HI 96793

June 9, 2020

Munekiyo Hiraga Attention: Bryan K. Esmeralda, Senior Associate 305 High Street, Suite 104 Wailuku, HI 96793

Dear Bryan,

I the Waiolani Mauka Community Association Board of Directors has the following comments regarding the Proposed Department of Hawaiian Homelands Puunani Homestead Subdivision Project.

- 1. Please follow the Wailuku Community Plan and provide a 500' greenway buffer between proposed project and the Waiolani Mauka Subdivision.
- 2. General Plan documents call for a separation between the communities of Wailuku and Waikapu.
- 3. An Environmental Assessment should be done and include our request as a the Waiolani Mauka Community Association for a 500' greenway between proposed development and Waiolani Mauka.

If you have any questions, please call Joe Blackburn at 442.3063.

This same letter was sent on October 16, 2019 and no response was received.

Sincerely Yours

Joseph Blackburn Managing Agent

Ph: 808.442.3063 Fax: 808.442.7482 Email: MLB@MauiProperty4You.com Web Page: www.MauiProperty4You.com



Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng

September 22, 2020

Joseph Blackburn, Managing Agent Waiolani Mauka Community Association P.O. Box 1067 Wailuku, Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Mr. Blackburn:

Thank you for your letter dated June 9, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

As stated in our letter dated May 18, 2020 (included in the Draft EA) in response to the Waiolani Mauka Community Association's early consultation comments:

1. We acknowledge your comment and note that the currently proposed project is a separate and distinct project from the former Pu'unani mixed use project (by others) identified within the Maui Island Plan (MIP), which provided for a 500-foot greenway buffer between the project site and Waiolani Mauka Subdivision. The current Wailuku-Kahului Community Plan designates the project site as "Single-Family Residential" and "Agriculture". See **Exhibit "A"**. The proposed project maintains consistency with the "Single-Family Residential" designation.

We note that the proposed DHHL Pu'unani Homestead Subdivision project is planned to be smaller in size, and limited to single-family residential development.

In addition, the massing of the proposed single-family community will be lesser in scale than the planned Pu'unani mixed-use project envisioned within the MIP, and will be similar in scale to the adjacent Waiolani Mauka community.

Joseph Blackburn, Managing Agent September 22, 2020 Page 2

Your comment regarding the provision of a greenway buffer is noted and was discussed further with DHHL for consideration. While the use of a greenway buffer would provide visual separation between the proposed project and adjacent properties, we note that it is the mission of DHHL is to develop and deliver land to Native Hawaiians. It is the priority of DHHL to provide as many housing opportunities to its beneficiaries as possible. The 500-foot wide buffer along the project's southern boundary would equate to a reduction of at least 30 residential lots, thus not allowing the DHHL to optimally fulfil its mission of providing housing opportunities to its Native Hawaiian beneficiaries.

- 2. We note that the proposed project is not intended to connect with existing developments in Wailuku, thereby, maintaining the existing physical separation between Waikapū and Wailuku. Furthermore, we note that there will still remain a swath of open, undeveloped land between the project's northern boundary and Ku'ikahi Drive, providing separation between Wailuku and Waikapū.
- 3. An EA was prepared for the project and includes your comment letters and responses to each. As previously mentioned, the 500-foot greenway buffer cannot be provided at the site, due to the number of residential homes for DHHL beneficiaries and their families that would be lost as a result.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

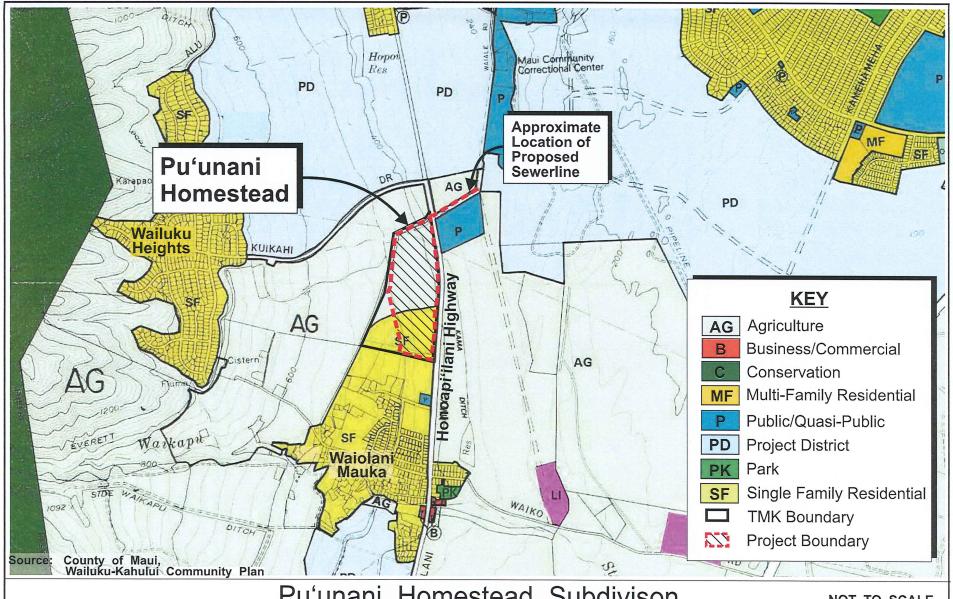
Senior Associate

BKE:yp Enclosure

cc: Stewart Matsunaga, Department of Hawaiian Home Lands (w/enclosure)

Darren Okimoto, DDC LLC (w/enclosure)

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Pu'unani Homestead Subdivison Wailuku-Kahului Community Plan Map

NOT TO SCALE



Prepared for: State of Hawai'i, Department of Hawaiian Home Lands



Page 1

TO: Mr. Stewart Matsunaga, (808) 620-9500 stewart.t.matsunaga@hawaii.gov Department of Hawaiian Home Lands, State of Hawai'i 91-5420 Kapolei Parkway, Kapolei, HI 96707

TO: Mr. Bryan Esmeralda (808) 983-1233, planning@munekiyohiraga.com Munekiyo Hiraga; 305 High Street, Suite 104, Wailuku, HI 96793

TO: Ms. Michele McLean, Planning Director, 808-270-1735 Michele.McLean@co.maui.hi.us Maui County Planning Department, Wailuku, Maui, HI 96793

RE: Pu'unani Homestead Subdivision --Draft EA (AFNSI)

The Waikapu community would like to see updated numbers to be more accurate, (i.e. 2019-2020 School Year numbers, Traffic Studies)

Schools:

Schools are already overwhelmed with the capacity it is at this point, now with the uncertain times we are all facing, how does the DHHL plan to offset this by adding another housing project. If we take a number of 2 kids/vehicles per household, that would be 322 kids/vehicles added to the current traffic congestion that is already happening. According to the DEA kids would be attending Pu'u Kuku'i Elementary, which is within 1.5 mile radius of the subdivision. Children within 1.5 mile radius of a school do not have bus services. This would mean children at the elementary level, will either walk to school or be driven, thus adding to the already traffic congestion. How does DHHL plan to mitigate the traffic situation? I am a generational family of Waikapu, never have I heard a child from Waikapu, attending Maui Waena Intermediate, or Maui High School, unless it was Exempted. Who came up with this recommendation. According to the DEA the D.O.E. will be getting \$870,000 in assessment fees. What schools in the community will be getting these fees, and is the regulations/stipulations on how these monies are used..

Water:

Where is the water going to come from. In 2019 Waikapu was put on a water restriction, with these 161 homes proposed how does DHHL plan to mitigate this from happening.

Drainage:

Is it possible to connect to the drainage system that is on the Northeast and have the storm water drain into the retention basin located on Waiale Rd.

Lighting:

Street lights and lamps should be added along the Honoapiilani Hwy fronting the proposed project. According to the DEA, this will not be added. Why is that. I would suggest for the safety of the beneficiaries of this project. Honoapiilani Hwy is not a safe and easy Highway to pull out of, therefore if this project is passed a street light should be added where the full movement intersection will be. Being that stretch of highway is dark, street lamps should also be in place for the safety of the community.

Sewer:

Have there been talks with DHHL, County of Maui, other private developers, in the Waikapu area to possibly connect to the Waikapu Country Town Development. Mr Atherton is building a Sewer Treatment Facility, why can't the existing/upcoming developments tie into this facility. The County of Maui, and Mr.Atherton is in talks about having Maalaea community pump 3 miles up to this facility. So why can't this happen for this project.

Traffic:

According to the traffic study for the DEA, it is estimated for the projects in the Waikapu area.

139 movements for AM and 141 movements for PM(Wailuku Affordable Rental) out of 324 units. Less than half the occupancy. With a low number of 1 vehicle per unit.

89 movements for AM and 100 movements for PM (Waiko Light Industrial) out of 20 units. 4-5 times more occupancy. With a low number of 1 vehicle per unit.

59 movements for AM and 77 movements for PM (Waiale Elua) out of 70 units. A little less, a little more, with a low number of 1 vehicle per unit.

68 movements for AM and 86 movements for PM (Waikapu Venture Project) out of 80 units. A little less, a little more, with a low number of 1 vehicle per unit.

112 movements for AM and 150 movements for PM (Waikapu Country Town) out of 1,400+ units. This 12- 14 times below the projected occupancy, with a low number of 1 vehicle per unit.

I find this outrageous. Can And will the DHHL conduct a new traffic study with more accurate numbers. Is these numbers averaged out on an all day window, or is it specific to the times.

In conclusion I am for this project, however I am against the location of this project. Other communities have suggested they want it in their community (i.e. Lahaina), I say go for it. The Waikapu community has a proposed 7,000+ homes to build in our community, therefore we don't need any more.

Aloha,

Travis Polido 8082984680 trpolido@gmail.com Waikapu Community Association President



Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy VICE PRESIDENT

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Via email: tpolido@gmail.com

Travis Polido, President Waikapū Community Association

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Mr. Polido:

Thank you for your email received on July 7, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

Comment No. 1:

The Waikapu community would like to see updated numbers to be more accurate, (i.e. 2019- 2020 School Year numbers, Traffic Studies)

Response: We acknowledge your comment. Updated school enrollment data will be included in the Final EA, as available. With regards to the Traffic Impact Analysis Report (TIAR), this report represents an in-depth technical study that was prepared by a qualified professional in the traffic engineering field, utilizing reasonable and appropriate traffic engineering methodology and assumptions. The technical basis for and analysis of traffic impacts documented in the TIAR is being reviewed by the State Department of Transportation (SDOT) and the County Department of Public Works (DPW) as part of the Draft EA review period.

Travis Polido, President September 22, 2020 Page 2

Comment No. 2:

Schools are already overwhelmed with the capacity it is at this point, now with the uncertain times we are all facing, how does the DHHL plan to offset this by adding another housing project. If we take a number of 2 kids/vehicles per household, that would be 322 kids/vehicles added to the current traffic congestion that is already happening. According to the DEA kids would be attending Pu'u Kuku'i Elementary, which is within 1.5 mile radius of the subdivision. Children within 1.5 mile radius of a school do not have bus services. This would mean children at the elementary level, will either walk to school or be driven, thus adding to the already traffic congestion. How does DHHL plan to mitigate the traffic situation? I am a generational family of Waikapu, never have I heard a child from Waikapu, attending Maui Waena Intermediate, or Maui High School, unless it was Exempted. Who came up with this recommendation.

Response: We acknowledge your comment and concerns regarding the potential increase in area traffic due to the increased number of children needing to get to area schools. The TIAR included in the Draft EA includes an analysis of existing traffic patterns and a projection of future patterns in the region, both with and without the proposed project. The project trips anticipated to be generated by residents of the proposed subdivision represents an accounting of ambient growth in the overall region based on the traffic engineer's knowledge of local development conditions and the progress of specific proposed actions, as well as the Trip Generation Manual, 10th Edition, a book of trips rates and/or formulae based on empirical data compiled from a body of more than 4,250 trip generation studies submitted by public agencies, developers, consulting firms, and associations.

> Although there will be an increase in vehicular trips generated by the proposed project, the DHHL will be installing the proper deceleration lanes and turn lanes so vehicles turning into the subdivision will not adversely impact the flow of traffic heading north and south on Honoapi'ilani Highway at its main project access. Similarly, for vehicles turning left out of the subdivision, a median refuge lane will be provided that allows a twostage approach to minimize potential impacts. A traffic signal was not warranted at either of the two (2) accesses.

> The recommendation for where students residing in the project will attend school was from a DOE letter received during the early consultation

Travis Polido, President September 22, 2020 Page 3

process that was included in the Draft EA.

Furthermore, we note that the DHHL recognizes the current enrollment and capacity issues facing Central Maui schools, and is willing and ready to support and comply with the mitigation protocols that have been adopted by the Department of Education (DOE). The DHHL also recognizes that school capacity concerns are community-wide issues which must be addressed in the context of broader educational facilities capital improvements planning. The DHHL will comply with the requirement for DOE school impact fees totaling approximately \$870,000.00.

Comment No. 3:

According to the DEA the D.O.E. will be getting \$870,000 in assessment fees. What schools in the community will be getting these fees, and is the regulations/stipulations on how these monies are used.

Response: DOE School Impact Districts are designated areas of high growth that will require new schools, or the expansion of existing schools, to accommodate increases in new families and school enrollments. The proposed DHHL Pu'unani Homestead Subdivision is within the Central Maui School Impact District. As such, the approximately \$870,000.00 in impact fees paid will be allocated to school improvement projects within this district as determined by the DOE.

Comment No. 4:

Where is the water going to come from. In 2019 Waikapu was put on a water restriction, with these 161 homes proposed how does DHHL plan to mitigate this from happening.

Response: The DHHL is working with the Department of Water Supply to ensure that sufficient water source will be available to serve the project, while ensuring that other areas will have the same opportunity to access water. We note that reservations of water for DHHL homesteading is a protected public trust use of water per the State Water Code.

Travis Polido, President September 22, 2020 Page 4

Comment No. 5:

Is it possible to connect to the drainage system that is on the Northeast and have the storm water drain into the retention basin located on Waiale Rd.

Response: Thank you for your question. It is not possible to do what you describe at this time, as DHHL lacks the easements over private property and drainage rights necessary to send runoff from its Pu'unani Homestead subdivision into the open drainage channel that flows to the large drainage retention basin constructed by Kehalani below Wai'ale Road in Waikapū.

Comment No. 6:

Street lights and lamps should be added along the Honoapiilani Hwy fronting the proposed project. According to the DEA, this will not be added. Why is that. I would suggest for the safety of the beneficiaries of this project. Honoapiilani Hwy is not a safe and easy Highway to pull out of, therefore if this project is passed a street light should be added where the full movement intersection will be. Being that stretch of highway is dark, street lamps should also be in place for the safety of the community.

Response: We acknowledge your comment and note that in consideration of safety for vehicles entering and exiting the proposed subdivision, streetlights will be installed at both project entry points.

Comment No. 7:

Have there been talks with DHHL, County of Maui, other private developers, in the Waikapu area to possibly connect to the Waikapu Country Town Development. Mr Atherton is building a Sewer Treatment Facility, why can't the existing/upcoming developments tie into this facility. The County of Maui, and Mr. Atherton is in talks about having Maalaea community pump 3 miles up to this facility. So why can't this happen for this project.

Response: We acknowledge your comment. The DHHL has not approached the developer of the Waikapū Country Town Development regarding the potential to tie-in wastewater flows to the proposed treatment facility that is proposed to be developed as part of this project for a number of reasons. First, through discussions with the County of Maui, Department of Environmental Management, it was determined that the existing Wailuku-Kahului Wastewater Reclamation Facility has adequate capacity to accept wastewater flows from the proposed project. Secondly, the timing of the development of the proposed Waikapū Country Town wastewater treatment facility is unknown and may not fit with the schedule for this DHHL project.

Comment No. 8:

According to the traffic study for the DEA, it is estimated for the projects in the Waikapu area.

139 movements for AM and 141 movements for PM (Wailuku Affordable Rental) out of 324 units. Less than half the occupancy. With a low number of 1 vehicle per unit.

89 movements for AM and 100 movements for PM (Waiko Light Industrial) out of 20 units. 4-5 times more occupancy. With a low number of 1 vehicle per unit.

59 movements for AM and 77 movements for PM (Waiale Elua) out of 70 units. A little less, a little more, with a low number of 1 vehicle per unit.

68 movements for AM and 86 movements for PM (Waikapu Venture Project) out of 80 units. A little less, a little more, with a low number of 1 vehicle per unit.

112 movements for AM and 150 movements for PM (Waikapu Country Town) out of 1,400+ units. This 12-14 times below the projected occupancy, with a low number of 1 vehicle per unit.

I find this outrageous. Can And will the DHHL conduct a new traffic study with more accurate numbers. Is these numbers averaged out on an all day window, or is it specific to the times.

Response:

The TIAR included in the Draft EA includes an analysis of existing traffic patterns and a projection of future patterns in the region, both with and without the proposed project. The project trips anticipated to be generated by residents of the proposed subdivision represents an accounting of ambient growth in the overall region based on the traffic engineer's knowledge of local development conditions and the progress of specific

Travis Polido, President September 22, 2020 Page 6

proposed actions, as well as the Trip Generation Manual, 10th Edition.

The TIAR noted that the increase in traffic attributed to the project does not warrant a traffic signal to be installed at the Honoapi'ilani Highway and project driveway intersection. As noted previously, the DHHL will be installing the proper deceleration lanes and turn lanes so vehicles turning into the subdivision will not adversely impact the flow of traffic heading north and south on Honoapi'ilani Highway at its main project access. Similarly, for vehicles turning left out of the subdivision, a median refuge lane will be provided that allows a two-stage approach to minimize potential impacts.

As part of the Draft EA agency review process, the technical basis for and analysis of traffic impacts documented in the TIAR is being reviewed by the SDOT and the County DPW.

Comment No. 9:

In conclusion I am for this project, however I am against the location of this project. Other communities have suggested they want it in their community (i.e. Lahaina), I say go for it. The Waikapu community has a proposed 7,000+ homes to build in our community, therefore we don't need any more.

Response: We appreciate your support for the proposed DHHL Pu'unani Homestead Subdivision project, and acknowledge your opposition to its location within Waikapū. We add that housing development proposals by others within the Central Maui region will contribute to meeting the island's housing needs. Collectively, all projects, whether they be in Central Maui, South Maui, or West Maui, are considered complementary to addressing Maui's housing shortage and improving life quality on Maui. As noted in the Draft EA, the selection of the property for development of the proposed project is in-line with DHHL beneficiaries' preference for homestead opportunities in Central Maui and in accordance with the residential goals of the DHHL Maui Island Plan to acquire additional lands in Central Maui to meet the Native Hawaiian beneficiary demand for residential homesteads. We add that DHHL is also currently planning for additional homestead opportunities to be developed in the Upcountry and West Maui regions in the foreseeable future.

Travis Polido, President September 22, 2020 Page 7

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP Senior Associate

BKE:tn

cc: Stewart Matsunaga, Department of Hawaiian Home Lands

Darren Okimoto, DDC LLC

K:\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\Polido Travis.doc



Mobile: 808.428.8717

Email: lindaschatz@schatzcollaborative.com

Schatzcollaborative.com

July 24, 2020

Mr. Bryan K. Esmeralda, AICP Senior Associate Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793

Dear Mr. Esmeralda:

Subject: Draft Environmental Assessment for the Proposed

Department of Hawaiian Homelands (DHHL) Pu'unani Homestead Subdivision Project

TMKs: (2) 3-5-002:002 (por) and 3-5-001:064 (por)

Waikapu, Maui, Hawaii

Thank you for meeting with me to discuss the proposed DHHL Pu'unani Homestead Subdivision project and for providing the opportunity to comment on the project's Draft Environmental Assessment. My partners and I who are building the Wailuku Apartment Rental Housing Project have no comments or objections to the proposed DHHL residential subdivision and supports another affordable housing project in the area. Any project that increases the housing inventory helps Maui.

Please continue to keep us informed as the DHHL Pu'unani Homestead Subdivision project progresses and we will work with you to coordinate the design and construction of the proposed sewerline that will run through our Wailuku Apartments Rental Housing Project parcel.

Should you have any questions, please feel free to contact me by phone at (808) 428-8717 or by email at lindaschatz@schatzcollaborative.com.

Aloha,

Linda Schatz

industrato

Principal



Michael T. Munekiyo

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Via email to: lindaschatz@schatzcollaborative.com

Linda Schatz, Principal Schatz Collaborative

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Ms. Schatz:

Thank you for your email dated July 24, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to the comments provided.

We acknowledge your comment that you and your partners, who are developing the Wailuku Apartment Rental Housing Project, have no comments or objections to the proposed project. We appreciate your support of this project which increases the housing inventory for Maui, and provides affordable homesteading opportunities for beneficiaries of the Department of Hawaiian Home Lands.

As the sewerline for the Pu'unani Homestead Subdivision Project will traverse the Wailuku Apartment Rental Housing Project property, the DHHL will continue coordination with the developer, Legacy Wailuku, LLC.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Linda Schatz, Principal September 22, 2020 Page 2

Should you have any questions, or require additional information, please feel free to contact me at 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate.

BKE:yp

Darren Okimoto, DDC LLC CC:

Stewart Matsunaga, Department of Hawaiian Home Lands K:\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\Schatz Linda.docx

Subject:

FW: Definition of Puunani? You all know what punani is.

From: Sylvia Cabral <sylviacabralmaui@gmail.com>

Sent: Wednesday, June 10, 2020 8:45 AM

To: stewart.t.matsunaga@hawaii.gov; General eMail <planning@munekiyohiraga.com>; waikapuca@gmail.com

Cc: Alice L. Lee <Alice.Lee@mauicounty.us>; Kelly.king@mauicounty.us; keani.rawlins@mauicounty.us;

tasha.kama@mauicounty.us; riki.hokama@mauicounty.us; mike.molina@mauicounty.us;

tamara.paltin@mauicounty.us; yukilei.sugimura@gmail.com; shane.sinenci@mauicounty.us; Alan Fukuyama

<Alan.Fukuyama@co.maui.hi.us>

Subject: Definition of Puunani? You all know what punani is.

I cannot find the definition of Puunani and have asked a few Hawaiiana experts.

I suggest a name change for the HI Homes Waikapu subdivision.

For children growing up there, the name fosters sexism and will always be a JOKE, hurtful and ignorant especially for women.

While searching for Puunani as it was spelled in the WCA notice, I only found:

<u>What does punani mean - Definition of punani - -Word finder</u>- to look at more definitions close your eyes...

findwords.info/term/punani

Hawaiian slang for vagina or vulva, derived from the Hawaiian word "puanani" meaning "beautiful flower".

The experts replied:

From Kumu Gwen Kama "Pu'u Nani....Beautiful hill....they should do actual research on the real Hawaiian name for the area, instead of assigning a generic name. Need to look in the land records, Mahele records for the name of the 'ili or ahupua'a. Tell them call OHA. Yep. Call them out. Yes too close to punani...hope you are doing great! Me ke aloha, kumu naone"

From Executive of Hawaiian Homes "The names of the areas are about different waters. As for the development, I agree with you."

I see that since all the trees have been removed for development and the last admin saw at the Council Chambers the video presented by the bee keeper who showed how bees had to relocate. The removal of the trees has also caused the rains to diminish. Waikapu is very very dry, although it is named for Waters. You need the "Noelani" (rainbow mist). I leave it to you to work on a name change.

Please Be Very Very Well,

Sylvia Cabral Realty 808 879 9007



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Via email to: sylviacabralmaui@gmail.com

Sylvia Cabral Sylvia Cabral Realty

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui Hawai'i

<u>Maui, Hawaiʻi</u>

Dear Ms. Cabral:

Thank you for your email dated June 10, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to the comments provided.

We acknowledge your comments, and understand the sensitivity around the proposed project name. We appreciate the time you have taken to reach out to individuals familiar with the Hawaiian language to provide insight. The DHHL will work with the beneficiaries who will reside in the proposed subdivision to select a place-appropriate name for the project that will honor its location in Waikapū.

We acknowledge your comment regarding the removal of trees, and add that while the proposed project involves the removal of 34 trees fronting the proposed subdivision area along Honoapi'ilani Highway to provide safe access, the DHHL is proposing a minimum 1:1 replacement of these trees with new, healthier trees.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Sylvia Cabral September 22, 2020 Page 2

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP Senior Associate

BKE:yp

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC
K:\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\Cabral Sylvia.doc

Subject: FW: DHHL Pu'unani Homestead Subdivision - Community Comments

Attachments: DHHL 2020.pdf

----Original Message-----

From: Russel Y. Gushi <yoshigushi@hawaii.rr.com>

Sent: Monday, June 22, 2020 9:32 AM To: stewart.t.matsunaga@hawaii.gov

Cc: Waikapu Community Association <waikapuca@gmail.com>; General eMail <planning@munekiyohiraga.com>

Subject: DHHL Pu'unani Homestead Subdivision - Community Comments

Good Morning Mr. Matsunaga,

Please find attached a copy of the letter consolidating the comments from several residents of Waikapu in response to the request for community comments to the proposed Department of Hawaiian Home Land Draft Environmental Assessment. In general, we support the housing project for the beneficiaries of the HHCA but have some concerns that are identified in the letter. We hope they're considered in earnest by DHHL.

Thank you for the opportunity to submit this letter.

Mahalo,

Russel Gushi

Waikapu Resident

Russel Y. Gushi, Resident 185 W. Waiko Road (Waikapu) Wailuku, Maui, Hawaii 96793

June 22, 2020

Mr. Stewart Matsunaga
Acting Land Development Division Administrator
State of Hawaii
Department of Hawaiian Home Lands
91-5420 Kapolei Parkway
Kapolei, Hawaii 96707

Re: Proposed Pu'unani Homestead Subdivision, Waikapu, Maui, Hawaii Publication of the Draft Environmental Assessment (DEA) Public Comments

Dear Mr. Matsunaga,

This project was initially presented to the Waikapu Community Association several months ago during a WCA quarterly meeting by the project developer and consultant for community comments. This current DEA submittal is the second opportunity for our community to respond to what is being proposed but is being done in writing instead due to the State coronavirus health and safety guidelines and restrictions on public gatherings. This letter represents the interest and concerns of several generations of current residents of Waikapu that share similar views and values. Although we are in support of providing housing for the beneficiaries of the Hawaiian Homes Commission Act (HHCA) we believe there are some features being proposed for this development that could be better addressed that would add more value while upholding a high standard of quality of life for this and its surrounding communities. Thank you for the opportunity to express our concerns.

In summary, the three (3) major points regarding this project that are identified with our comments to the DEA that we'd like addressed are:

- That the existing scenic vistas and views of Mauna Kahalawai be preserved as much as possible.
- That the 'Green' corridor established by landscape buffers and Monkeypod trees that defining the section of Honoapi'ilani Highway between Wailuku and Waikapu and partly exist at the Wailuku end be continued to Waikapu Town (at least to Waiko Road).
- That some kind of recreation open space be provided within the subdivision for the use and benefit of the HHCA beneficiaries.

Comments in response to the submitted DEA are as follows:

Project Summary:

- A. The thirty-four (34) existing mature Monkeypod trees currently still designated as 'exceptional trees' (probably not as individual trees but because of their grouping that historically provide shade and visual relief along that section of Honoapi'ilani Highway) are proposed to be removed and provided with a 1:1 replacement. We strongly urge that the replacement trees be of the same variety, <u>Samanea saman</u>, Monkepod, to provide continuity of trees lining Honoapi'ilani Highway between Wailuku and Waikapu. Alternative tree types shall be Hawaiian native species with mature growth size similar and comparable to Monkeypod trees. All other plantings within the 25-foot wide landscape lot be Hawaiian native species.
- B. The proposed 25-foot wide road widening lot shall be a separate and distinct lot from the proposed 25-foot wide landscape lot that is to serve as a landscape buffer along Honoapi'ilani Highway. We strongly recommend that the proposed landscape lot be as wide and consistent with the existing landscape lot fronting Honoapi'ilani Highway for the Kehalani Mauka subdivision to the north of the project. This would satisfy the community's standing desire to have a 'Green' transportation corridor (Greenway) established between Wailuku and Waikapu, and preserve views of Mauna Kahalawai West Maui Mountains that have been identified as a natural and scenic resource.
- C. Both single-story and two-story model home types are being proposed for the project. In order to preserve natural and scenic resource (Mauna Kahalawai West Maui Mountains) and its vista from the well-travelled Honoapi'ilani Highway we recommend that the proposed row of homes fronting Honoapi'ilani Highway be limited to the single-story model home types to reduce the visual impact of obstructing the views of the mountains when travelling along the highway. Currently, existing homes in both the Kehalani Mauka and Waiolani Mauka projects have 2-story homes that near completely obstruct the mountain scenic vistas. This should not continue.

II. Description of the Existing Conditions, Potential Impacts and Mitigation Measures

- A. Item 7, subsection B, Page 23: It should be noted that the Monkeypod Trees to be removed from the proposed road right-of-way lot shall have a 1:1 replacement with the new trees located in a separate landscape lot along Honoapi'ilani Highway.
- B. Item 14, page 34: (See comment in Section I.B above).
- C. Subsection C PUBLIC SERVICES, item 4, page 42: With the addition of 161 households we believe that there will be a significant impact on the existing and accessible recreational resources in the area. There are currently a limited number of existing neighborhood parks or community parks on the mauka side of Honoapi'ilani Highway for keiki to safely access by walking or riding bicycles (Waiolani Mauka Park and Kehalani Maui Park). These couple of County parks serve

all the households of the various Waiolani and Kehalani subdivisions on the mauka side of the highway. As proposed, the Pu'unani Homestead Subdivision does not indicate any sidewalks along Honoapi'ilani Highway nor are there any accsess points from the subdivision for pedestrians or bicycles to any of these existing parks. Since the DHHL has at its discretion to provide safe and accessible park/playground, we recommend that they provide this amenity and a place to gather for the beneficiaries of this project that foster good physical, psychological, and emotional health. Similar to the successful Waiehu Kou DHHL Homestead Subdivision a neighborhood park should be located in a central location within this project that's easily and safely accessible for the beneficiaries. (The County of Maui Richard 'Pablo' Caldito Park is adjacent to the Waiehu Kou community and on the same side of Kahekili Highway making it safe and accessible either by walking or riding bicycles).

III. Relationship to Governmental Plans, Policies, and Controls

- A. Subsection C **Hawai'i State Plan** Part I, Chapter 226-12, Policy #3, page 71: (See comments in Section I.B and I.C above).
- B. Subsection E **Countywide Policy Plan**, subsection A, Objective (1), Policy (g), page 95: (See comments in Section I.B and I.C above).
- D. Subsection E **Countywide Policy Plan**, subsection A, Objective (1), Implementation Actions (a), page 96: (See comment in Section I.C above).
- E. Subsection E **Countywide Policy Plan**, subsection A, Objective (2), Policy (c), page 96: (See comment in Section I.C above).
- F. Subsection E **Countywide Policy Plan**, subsection B, Objective (1), Policy (d), page 98: This project should incorporate the use on Hawaiian native plants in all the commonly landscape areas as appropriate (areas where grass is best suited should be exempt).
- G. Subsection E **Countywide Policy Plan**, subsection G, Objective (1), Policies (b,c and g), page 108: This project should provide the beneficiaries with some kind of park/playground/social gathering space that is easily accessible to residents of all ages and physical abilities to promote good health, physical fitness, a social interaction.
- H. Subsection E **Countywide Policy Plan**, subsection H, Objective (5), Policies (a and h), page 112: Encourage and accommodate the use of public transportation and assure that the 25-wide landscape lot is planted with the appropriate size trees to create a 'Green' transportation corridor and is properly maintained.
- I. Subsection F Maui Island Plan, Chapter 2.5, Policies (2.5.1.a, 2.5.1.b page 131; 2.5.2.b, 2.5.2.c and 2.5.3.a, page 132: (See comments in Section I.B and I.C above).
- J. Subsection F **Maui Island Plan**, Chapter 6.4, Policies (6.4.2.a, 6.4.2.c, and 6.4.2.f, page 147: Addressing these policies would provide safe and accessible bicycle and pedestrian routes as alternative transportation modes to reduce reliance on the automobile.
- K. Subsection F **Maui Island Plan**, Chapter 6.6, Policies (6.6.1.c and 6.6.1.f), page 149: This project should provide the beneficiaries with some kind of park/playground/social gathering space that is easily accessible to residents of all

- ages and physical abilities to promote good health, physical fitness, and social interaction.
- L. Subsection G Wailuku-Kahului Community Plan, Goal, page 165: The view plane of the Mauna Kahalawai West Maui Mountains should be protected, preserved and enhanced.

These comments should be considered in earnest in the development of the Pu'unani Homestead Subdivision to assure a quality project that will enhance the environment and lifestyle of its beneficiaries, the surrounding existing communities, and the general public. We believe that the intentions set forth with the goals of the policies established in the various government agencies' plans are for the development of a Maui Island that values the quality of life for its residents and the preservation of its natural environment, culture, and history.

Mahalo.

Photos of Existing Conditions:



Existing unobstructed views of Mauna Kahalawai (West Maui Mountains) along Honoapi'ilani Highway, and opposite existing Kokololio Street that should be preserved as much as possible.

Photos (con't)



Existing older one-story with view, and Kehalani Mauka two-story homes near completely obstructing views of Mauna Kahalawai.



Existing 'Green' corridor section of Honoapi'ilani Highway heading south (Waikapu) as you leave Wailuku.

Photos (Con't)



Generous Kehalani Mauka landscape buffer lot fronting Honoapi'ilani Highway north of Ku'ikahi Drive. Continue the planting of large canopy trees, such as the existing Monkeypod trees to create a 'Green' corridor..



Waiehu Kou neighborhood park adjacent to retention basin within Waiehu Kou Homestead Subdivision.



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng

September 22, 2020

Via email: yoshigushi@hawaii.rr.com

Russel Y. Gushi 185 W. Waikō Road Wailuku. Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui. Hawai'i

Dear Mr. Gushi:

Thank you for your email dated June 22, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

Comments Related to Letter Purpose

- This letter represents the interest and concerns of several generations of current residents of Waikapu that share similar views and values. Although we are in support of providing housing for the beneficiaries of the Hawaiian Homes Commission Act (HHCA) we believe there are some features being proposed for this development that could be better addressed that would add more value while upholding a high standard of quality of life for this and its surrounding communities.
- These comments should be considered in earnest in the development of the Pu'unani Homestead Subdivision to assure a quality project that will enhance the environment and lifestyle of its beneficiaries, the surrounding existing communities, and the

general public. We believe that the intentions set forth with the goals of the policies established in the various government agencies' plans are for the development of a Maui Island that values the quality of life for its residents and the preservation of its natural environment, culture, and history.

Response: We acknowledge your comment that your letter represents the interests and concerns of several current Waikapū residents. We appreciate your support for the project and its purpose of providing much needed housing for Native Hawaiian beneficiaries of the DHHL pursuant to the Hawaiian Homes Commission Act (HHCA).

> Furthermore, we appreciate you taking time to provide your input on the proposed DHHL Pu'unani Homestead Subdivision project to ensure that the proposed development, as well as others that may occur in Waikapū, is carried out respectfully and is of the highest quality. The comments and information provided in your letter will be carefully considered by the DHHL.

Comments Related to Open Space Buffers and Landscaping

- That the existing scenic vistas and views of Mauna Kahalawai be preserved as much as possible.
- That the 'Green' corridor established by landscape buffers and Monkeypod trees that defining the section of Honoapi'ilani Highway between Wailuku and Waikapu and partly exist at the Wailuku end be continued to Waikapu Town (at least to Waiko Road).
- The thirty-four (34) existing mature Monkeypod trees currently still designated as 'exceptional trees' (probably not as individual trees but because of their grouping that historically provide shade and visual relief along that section of Honoapi'ilani Highway) are proposed to be removed and provided with a 1:1 replacement. We strongly urge that the replacement trees be of the same variety, Samanea saman, Monkepod, to provide continuity of trees lining Honoapi'ilani Highway between Wailuku and Waikapu. Alternative tree types shall be Hawaiian native species with mature growth size similar and comparable to Monkeypod trees.
- All other plantings within the 25-foot wide landscape lot be Hawaiian native species.

- The proposed 25-foot wide road widening lot shall be a separate and distinct lot from the proposed 25-foot wide landscape lot that is to serve as a landscape buffer along Honoapi'ilani Highway. We strongly recommend that the proposed landscape lot be as wide and consistent with the existing landscape lot fronting Honoapi'ilani Highway for the Kehalani Mauka subdivision to the north of the project. This would satisfy the community's standing desire to have a 'Green' transportation corridor (Greenway) established between Wailuku and Waikapu, and preserve views of Mauna Kahalawai West Maui Mountains that have been identified as a natural and scenic resource.
- Item 7, subsection B, Page 23: It should be noted that the Monkeypod Trees to be removed from the proposed road right-of-way lot shall have a 1:1 replacement with the new trees located in a separate landscape lot along Honoapi'ilani Highway.
- Item 14, page 34: (See comment in Section I.B above).
- Subsection C **Hawai'i State Plan** Part I, Chapter 226-12, Policy #3, page 71: (See comments in Section I.B and I.C above).
- Subsection E **Countywide Policy Plan**, subsection A, Objective (1), Policy (g), page 95: (See comments in Section I.B and I.C above).
- Subsection E **Countywide Policy Plan**, subsection B, Objective (1), Policy (d), page 98: This project should incorporate the use on Hawaiian native plants in all the commonly landscape areas as appropriate (areas where grass is best suited should be exempt).
- Subsection E Countywide Policy Plan, subsection H, Objective (5), Policies (a and h), page 112: Encourage and accommodate the use of public transportation and assure that the 25-wide landscape lot is planted with the appropriate size trees to create a 'Green' transportation corridor and is properly maintained.
- Subsection F Maui Island Plan, Chapter 2.5, Policies (2.5.1.a, 2.5.1.b page 131; 2.5.2.b, 2.5.2.c and 2.5.3.a, page 132: (See

comments in Section I.B and I.C above).

Response:

We acknowledge your comments. The proposed project involves the development of a landscaped lot separate from the proposed highway widening area along the project's sloped frontage along Honoapi'ilani Highway, as well as the removal and replacement of the 34 existing Monkeypod trees fronting the project site. The DHHL is, at this time, not intending to develop a landscaped area other than the frontage of its own project area.

The landscaped lot that is being proposed along the project's sloped frontage on Honoapi'ilani Highway is intended to set back the houses from the highway and provide a green buffer and open space relief from the right-of-way, which would be an improvement when compared to the multiple tiered retaining walls built up against the Honoapi'ilani Highway right-of-way (ROW) by the adjacent subdivision with no green space buffer.

We add that this lot will be provided as a buffer only, and not as part of a greenway transportation corridor between Wailuku and Waikapū as it will be located on a sloped frontage. In addition, the proposed subdivision will be located along an existing route for the Maui Bus.

We acknowledge your comment stating that Monkeypod, although not endemic or indigenous to Hawai'i, is your preferred choice of tree to replace the Monkeypod trees that are proposed to be removed along the project frontage on Honoapi'ilani Highway as they are an identifiable feature when driving into Waikapū from Wailuku. However, we note that through consultation with the State Department of Transportation (DOT), Monkeypod is not a desirable replacement tree due to the maintenance required as well as the tendency of their roots to undermine the roadway surface, as is the case with some of the existing Monkeypod trees. Nonetheless, an acceptable replacement tree will be selected and DHHL will coordinate with the Maui County Arborist Committee and State DOT. The Final EA will be updated to note that the Monkeypod trees proposed to be removed along the project's frontage on Honoapi'ilani Highway will be replaced at a minimum of 1:1.

We acknowledge your comment requesting the use of native plants

Russel Y. Gushi September 22, 2020 Page 5

within the landscaped lot along the project frontage on Honoapi'ilani Highway. To the extent practicable in the context of maintenance needs and availability, native plants will be the preferred choice for use in the landscaped lot.

Comment Relating to Parks and Recreation

- That some kind of recreation open space be provided within the subdivision for the use and benefit of the HHCA beneficiaries.
- Subsection C PUBLIC SERVICES, item 4, page 42: With the addition of 161 households we believe that there will be a significant impact on the existing and accessible recreational resources in the area. There are currently a limited number of existing neighborhood parks or community parks on the mauka side of Honoapi'ilani Highway for keiki to safely access by walking or riding bicycles (Waiolani Mauka Park and Kehalani Maui Park). These couple of County parks serve all the households of the various Waiolani and Kehalani subdivisions on the mauka side of the highway. As proposed, the Pu'unani Homestead Subdivision does not indicate any sidewalks along Honoapi'ilani Highway nor are there any accsess points from the subdivision for pedestrians or bicycles to any of these existing parks. Since the DHHL has at its discretion to provide safe and accessible park/playground, we recommend that they provide this amenity and a place to gather for the beneficiaries of this project that foster good physical, psychological, and emotional health. Similar to the successful Wajehu Kou DHHL Homestead Subdivision a neighborhood park should be located in a central location within this project that's easily and safely accessible for the beneficiaries. (The County of Maui Richard 'Pablo' Caldito Park is adjacent to the Waiehu Kou community and on the same side of Kahekili Highway making it safe and accessible either by walking or riding bicycles).
- Subsection E Countywide Policy Plan, subsection G, Objective (1), Policies (b,c and g), page 108: This project should provide the beneficiaries with some kind of park/playground/social gathering space that is easily accessible to residents of all ages and physical abilities to promote good health, physical fitness, a social interaction.

Subsection F – Maui Island Plan, Chapter 6.6, Policies (6.6.1.c and 6.6.1.f), page 149: This project should provide the beneficiaries with some kind of park/playground/social gathering space that is easily accessible to residents of all ages and physical abilities to promote good health, physical fitness, and social interaction.

Response: We acknowledge your comments. An analysis was undertaken to determine if a park could be accommodated within the proposed subdivision. However, the inclusion of a park would result in the loss of developable homestead lots available for DHHL beneficiaries. As the waiting lists for DHHL homestead lots are currently at 3,819 beneficiaries on the Residential Waiting List and 272 beneficiaries on the Waiohuli Undivided Interest Waiting List, the DHHL determined that the inclusion of a park is not feasible as the mission and purpose of both the HHCA and DHHL is to provide as many homestead opportunities to beneficiaries as possible.

Comments Related to Views

- Both single-story and two-story model home types are being proposed for the project. In order to preserve natural and scenic resource (Mauna Kahalawai - West Maui Mountains) and its vista from the well-travelled Honoapi'ilani Highway we recommend that the proposed row of homes fronting Honoapi'ilani Highway be limited to the single-story model home types to reduce the visual impact of obstructing the views of the mountains when travelling along the highway. Currently, existing homes in both the Kehalani Mauka and Waiolani Mauka projects have 2-story homes that near completely obstruct the mountain scenic vistas. This should not continue.
- Subsection E Countywide Policy Plan, subsection A, Objective (1). Implementation Actions (a), page 96: (See comment in Section I.C above).
- Subsection E Countywide Policy Plan, subsection A, Objective (2), Policy (c), page 96: (See comment in Section I.C above).
- Subsection G Wailuku-Kahului Community Plan, Goal, page 165: The view plane of the Mauna Kahalawai – West Maui Mountains should be protected, preserved and enhanced.

Russel Y. Gushi September 22, 2020 Page 7

Response: The proposed turn-key homes will be similar in scale and size to existing residential developments nearby and will be set back from the Highway with the landscape lot. Your comment that the row of homes fronting Honoapi'ilani Highway should be single-story homes has been forwarded to DHHL for consideration, however DHHL also needs to take into consideration the needs of its beneficiaries in selecting and qualifying for homes.

Comment Related to Pedestrian Safety

Subsection F - Maui Island Plan, Chapter 6.4, Policies (6.4.2.a, 6.4.2.c, and 6.4.2.f, page 147: Addressing these policies would provide safe and accessible bicycle and pedestrian routes as alternative transportation modes to reduce reliance on the automobile.

Response: We acknowledge your comment. Sidewalks are being provided along interior streets of the proposed subdivision. As Honoapi'ilani Highway is a State highway, the DHHL will provide paved shoulders to be consistent with the rest of the Honoapi'ilani Highway in the Waikapū area where a majority of the section between the Waiolani Mauka subdivision to the Maui Tropical Plantation do not have sidewalks. As noted in the Draft EA, there are existing signalized intersections with crosswalks across Honoapi'ilani Highway available at Pilikana Street as well as at Ku'ikahi Drive. In addition, the proposed road widening lot will maintain the existing shoulder bike route along Honoapi'ilani Highway fronting the project and thus bikes and pedestrians will be able to continue using the paved shoulder fronting the site.

Russel Y. Gushi September 22, 2020 Page 8

Comment Related to Existing View Conditions

Photos of Existing Conditions:



Existing unobstructed views of Mauna Kahalawai (West Maui Mountains) along Honoapi'ilani Highway, and opposite existing Kokololio Street that should be preserved as much as possible.



Existing older one-story with view, and Kehalani Mauka two-story homes near completely obstructing views of Mauna Kahalawai.



Existing 'Green' corridor section of Honoapi'ilani Highway heading south (Waikapu) as you leave Wailuku.



Generous Kehalani Mauka landscape buffer lot fronting Honoapi'ilani Highway north of Ku'ikahi Drive. Continue the planting of large canopy trees, such as the existing Monkeypod trees to create a 'Green' corridor.



Waiehu Kou neighborhood park adjacent to retention basin within Waiehu Kou Homestead Subdivision.

Response:

We thank you for providing these photos of the existing conditions found when driving along Honoapi'ilani Highway. As previously mentioned, the landscaped lot that is being proposed along the project's sloped frontage on Honoapi'ilani Highway is intended to set back the houses from the highway and provide a green buffer and open space relief from the right-of-way, which would be an

Russel Y. Gushi September 22, 2020 Page 10

> improvement when compared to the multiple tiered retaining walls built up against the Honoapi'ilani Highway ROW by the adjacent subdivision with no green space buffer.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC
K:\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\Gushi Russell.doc

Subject: FW: Draft Environmental Assessment for Proposed Pu'unani Homestead Subdivision;

TMK NOS. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawaii 96793

Attachments: MTF_Pu'unani DEA Comment Letter.pdf

From: Albert Perez < director.mauitomorrow@gmail.com >

Sent: Monday, June 22, 2020 4:34 PM **To:** stewart.t.matsunaga@hawaii.gov

Cc: General eMail <<u>planning@munekiyohiraga.com</u>>

Subject: Draft Environmental Assessment for Proposed Pu'unani Homestead Subdivision; TMK NOS. (2)3-5-002:002(por.)

and (2)3-5-001:064(por.); Wailuku, Maui, Hawaii 96793

Aloha,

Attached please find our comments re. the subject project.

Mahalo, Albert

--

Albert Perez Executive Director Maui Tomorrow Foundation www.maui-tomorrow.org From: Albert Perez, Executive Director
Maui Tomorrow Foundation

To: Stewart Matsunaga, Acting Administrator, Land Development Division Department of Hawaiian Home Lands State of Hawaii stewart.t.matsunaga@hawaii.gov

Bryan K. Esmeralda Munekiyo Hiraga planning@munekiyohiraga.com

Date: June 22, 2020

Re: Draft Environmental Assessment for Proposed Pu'unani Homestead Subdivision; TMK NOS. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Wailuku, Maui, Hawaii 96793

Dear Mr. Matsunaga,

We have reviewed the subject Draft Environmental Assessment (DEA), and have the following comments.

The impacts of the proposed project are significant as defined in HAR 11-200-13. Accordingly, an environmental assessment is insufficient, and an Environmental Impact Statement is required.

Per HAR 11-200.1-2,

"'Significant effect' or 'significant impact' means the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State's environmental policies or long-term environmental goals and guidelines as established by law, adversely affect the economic welfare, social welfare, or cultural practices of the community and State, or are otherwise set forth in section 11-200.1-13."

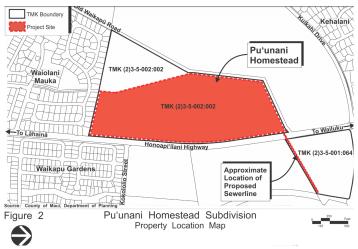
HAR 11-200.1-13(b) sets forth the significance criteria for determining whether a proposed action is significant. Since the proposed project will trigger several of these criteria, the project will have significant impact on the environment, and an environmental assessment is not appropriate. An Environmental Impact Statement is required.

According to HRS 11-200.1-13, an action shall be determined to have a significant effect on the environment if it may:

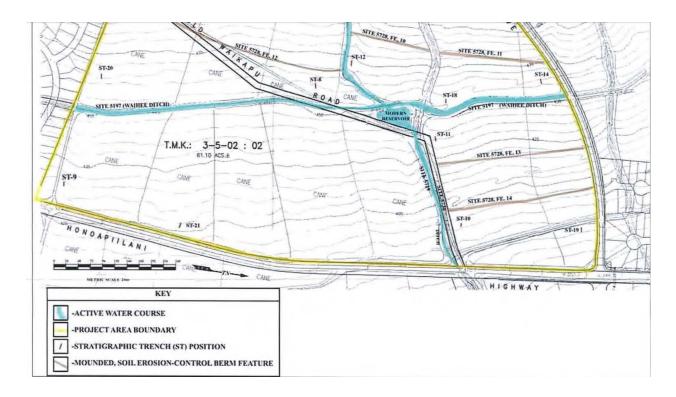
(1) Irrevocably commit a natural, cultural, or historic resource;

An AIS report was completed in 2005 for a previously proposed project. The current project area is within the larger area that was studied. This same AIS study written in 2005 is being used to assess the proposed Pu'unani Homestead Subdivision project 15 years later. The AIS determined in 2005 that no mitigation was required, which includes archaeological monitoring during construction. The 2005 AIS covered 215.8 acres in its analysis; the proposed Pu'unani subdivision only makes up 47.4 acres of the area studied. The excavation process of the AIS consisted of 21 trenches, which were dug evenly throughout the 215.8 acres. The current proposed project area only makes up approximately 22% of the land assessed in the AIS, which could be indicative that only a small percentage of the dug trenches are actually located in the current proposed project area.

Page 3 of the DEA shows the project area in red:



Page 5 in the AIS shows the locations of the 21 trenches dug throughout the study area. The photo below shows a portion of the studied area in 2005, which includes the current proposed project area:



Through observation of both maps, the boundary of the current proposed project area follows Old Waikapū Road and the Waine'e Ditch. Of the trench sites dug for analysis, only two occur in the proposed project area, including ST-9 and ST-21.

Additionally, according to the CIA report completed for the proposed Pu'unani Subdivision, burials have been discovered in areas surrounding the proposed project in recent decades. For example:

"The Bernice Pauahi Bishop Museum (Rotunno-Hazuka et al. 1995) conducted archaeological subsurface testing at the Maui Lani Development Property which resulted in the **identification of multiple traditional pre-Contact native Hawaiian burials**" (33).

"Aki Sinoto Consulting (Pantaleo and Sinoto 1996) conducted archaeological subsurface sampling at the Maui Lani Development. Findings included one concentration of multiple burials and isolated individual burials located at the tip of the dune..." (33).

"Scientific Consultant Services, Inc. (Perzinski and Dega 2012) conducted an Archaeological Inventory Survey of 2.0 acres of arid land in Waikapū, Waikapū Ahupua'a, Wailuku District, Maui Island, Hawaii... Four Historic Period archaeological sites were documented during the Inventory Survey [including].... Waikapū Cemetery. The community cemetery, which is not a municipal cemetery, contains approximately 75 marked burials and 20 unmarked burials, and was used for

interment from 1900 through 1961... State site 50-50-04-6811 represents at least two traditional Native Hawaiian burials that have been identified through consultation as occurring makai or east of the historic cemetery..." (35-36).

Burials have been located and documented in the area surrounding the proposed project area for many years, including in 2012; seven years after the 2005 AIS report was completed. As reported in the CIA report completed for the proposed Pu'unani Subdivision, Mr. Pellegrino was interviewed and the CIA shared his mana'o:

Although lands were extensively impacted and modified historically for the commercial cultivation of sugarcane, they retain the potential to contain information about the traditional use of these lands. In addition, there may still be kupuna who have connections to those lands... He stated that it was not uncommon for Māhele land parcels to have burial sites both pre-western and post-contact. He stressed the need especially for a Hawaiian Organization such as DHHL to go above and beyond the basic requirements and processes for developing land, especially knowing that these were Native Hawaiian ancestral kuleana lands." (48).

Considering the significant history of the surrounding area, and due to a lack of thorough investigation of the proposed project area, the DEA needs to conclude that there may be a significant impact on cultural and/or historic resources based upon the available information; an environmental impact statement needs to be prepared.

(2) Curtail the range of beneficial uses of the environment;

The proposed Pu'unani Homestead Subdivision project's 47.4-acre area is designated for agricultural use by the State Land Use Commission, Maui County Zoning, and the Wailuku-Kahului Community Plan. It should also be noted that the Wailuku-Kahului Community Plan does designate a small portion of this area as SF- single family. In response to this, the DEA states:

The Hawaiian Homes Commission Act (HHCA), codified within the constitution of the State of Hawai'i, vests onto the DHHL the authority to use its lands at its discretion. Specifically, HHCA Section 204 states, 'all available lands shall immediately assume the status of Hawaiian home lands and be under the control of the department to be used and disposed of in accordance with the provisions of this Act'. As the DHHL owns the project site, the above-noted provision grants the DHHL the authority to proceed with the project without the lands being fully entitled for residential use. In addition, through the provisions of the above-noted Act, DHHL intends to exempt the project from certain County code and rule requirements in order to develop the project (vii).

The power that the DHHL has is well-understood, however, construction of the proposed project would still be a significant deviance from the applicable plans. The Maui County Department of Planning shared concerns during the early commenting stage of this DEA:

While the HHCA vests the DHHL with the authority to use its lands at its discretion for homesteading purposes, the MIP is a blueprint that provides direction for future growth, the economy, and social and environmental decisions on the Island of Maui. It incorporated input from residents, including native Hawaiians, from across the Island through a multitude of community, planning commission and county council meetings held over several years and the Department hopes the MIP is considered when plotting out the Pu'unani Homestead Subdivision Project (253).

The HHCA gives DHHL the authority to use their lands as they please, however, the significant deviation still constitutes a significant impact, and the impacts of the deviation from plans applicable to the proposed project should be addressed, analyzed, and mitigated.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State;

The DEA gives inadequate and insufficient information in regard to how the cultural practices in the surrounding area of the proposed project will be impacted and adequately mitigated. The DEA states:

There is evidence of cultural practices for Hawaiian rights for agricultural pursuits, access to resources, and other customary activities presently occurring in the vicinity of the proposed project. In addition, a legendary grinding stone (Pōhākoʻi) is believed to be located in the vicinity of the site of the proposed subdivision. As such, the CIA provided a recommendation that an archaeological field inspection be conducted by a qualified archaeologist prior to the commencement of any construction related ground altering activities in an effort to locate Pōhākoʻi (184).

The DEA states that there is evidence of cultural practices for Hawaiian rights, but does not explain the project's impact upon those cultural practices, nor how the developer plans to mitigate those impacts. Additionally, the CIA further emphasizes the importance of Pōhāko'i:

Near the Old government Road that is adjacent to the western and northern boundaries of the project area, near the northwest corner of the current project area, there once was located a very important stone called Pohako'i. Pohako'i was first and foremost a hoana, or grinding stone... secondly, it was a commonly known palena 'aina (boundary marker) for the northern end of the Waikapu ahupua'a according to Mr. Pelligrino. Mr. Pellegrino says that Pohako'i is shown on approximately 60 historic maps of Waikapu... it was an

important cultural site, not just for being a boundary marker and a grinding stone, but also for being a place name... Pohako'i is such a significant site; it has been mentioned in mele [songs], in oli [chants], and historical mo'olelo [legends] (47).

Pōhākoʻi is more significant than what the DEA implies when discussing mitigation. Furthermore, the DEA does not provide mitigation suggestions if archaeological surveying locates Pōhākoʻi. Other cultural practices and insights regarding how these cultural practices could be impacted include:

Mr. Pellegrino wanted to include the importance of water resources as being a major cultural impact. While most if not all of the project site's historical land use was wetland kalo cultivation, these lands are not likely going to be returning to that practice knowing that a housing development is being proposed. There are currently agricultural practices being conducted on that land, although not cultural, they are an important part of retaining the historic and cultural nature of the Waikapū ahupua'a (50-51).

The proposed project area and the surrounding area has a rich history and is an important location where cultural practices take place. Even though there have not been agricultural practices taking place in the proposed subject area, the area has traditionally been used for agriculture, including taro cultivation. The opportunity for living and future generations to culturally reconnect with this land will be lost with the proposed construction of the subdivision. This significantly impacts the cultural practices that take place here, and have taken place in the area, which need to be more carefully and thoroughly addressed and mitigated.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities.

The DEA explains how the proposed subdivision is mostly intended to serve residents who already live on the island, which means that the population on the island will not increase. However, more people will be living and using facilities in the Waikapū/Wailuku area. This means more cars, pedestrians, and bikers in the area, and more resources and facilities being used in Central Maui. An increased density of people can have significant impacts on the facilities in that area. For example, traffic in the proposed project area and the surrounding area will inevitably increase. In fact, after reviewing the TIAR report, comparing the existing traffic conditions and future conditions show that congestion will either remain the same in some intersections, or in many cases increase. There are several intersections with a LOS F score in future analyzed conditions, which indicates an overcapacity at those particular intersections. The DEA states:

In consideration of the above information for base year 2024, the TIAR stated that LOS for turning movements at various intersections throughout the study area roadway network are **anticipated to worsen from existing conditions**. Refer to Appendix "K" (49).

Additionally, the Department of Education submitted a comment during the early commenting phase of the DEA. The concern states:

Students residing in the project area will most likely attend Puu Kukui Elementary, Maui Waena Intermediate, and Maui High. All three schools have current student enrollments that exceed their facility capacity. It is possible the project area may be reassigned to other schools depending on future conditions (208).

School assignments are typically based on location of the student's home and the proximity of homes to the school. There could be significant impacts if children are assigned to schools further away from their homes, impacting commute times and traffic during peak times of the day. The DEA's response is that they are working with the Department of Education, however, the potential significant impacts are not addressed.

Overall, the DEA contains insufficient information to declare whether or not the project will have a significant impact on public facilities.

7. Involve a substantial degradation of environmental quality.

The DEA states that "Best Management Practices (BMPs) and appropriate erosion control measures will be utilized during the construction period." It also states that "Drainage system improvements will be constructed in accordance with applicable regulatory design standards to ensure that surface runoff will not have an adverse effect on adjacent or downstream properties."

The use of BMPs does not eliminate the potential for significant impacts.

In addition, the County of Maui storm drainage standards that require the project to handle runoff from a 10-year, 1-hour storm will fail to protect beneficiaries living in the project area, as well as residents and businesses, and the ecosystem downstream of the project, in the event of an 11-year storm or greater. Since climate change may be increasing the frequency and/or of large storms, building the drainage systems to the current County drainage standards may result in more significant impacts than anticipated. These potential impacts, which are becoming increasingly likely, need to evaluated; the drainage systems need to be larger than required by County standards, or an environmental impact statement needs to be prepared.

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies;

The DEA claims that the proposed project will not have a significant impact upon scenic views and vistas because the planned houses will only be 1 or 2 stories high. Despite this fact, the view in the area will still be impacted simply due to the size of the proposed subdivision and especially due to the fact that the developer does not intend to provide a greenbelt buffer along Honoapi'ilani Highway or along the property's boundary adjacent to Waiolani Mauka. The Maui County Department of Planning states their concerns in early submitted comments:

The Department recognizes that the Project is providing much needed housing <u>but the current proposed development does not conform to the MIP's designated growth densities for the area nor does it incorporate a buffer between Wailuku and Waiolani Mauka/Waikapu... the MIP has specific language that calls for the separation of development between Wailuku and Waikapu: "Policy 7.3.1.b Maintain a distinct separation between communities, such as but not limited to, Wailuku and Waikapu,... to protect the character and identity of Maui's communities."</u>

The DEA does not adequately address the impacts associated with not including these two greenbelts described in the Maui Island Plan. Additionally, the CIA report shares another perspective:

Mr. Pellegrino's other major concern is the view plain. There are specific ridges, like Kahoi, Lapaleihua, and Kalapaooka'īlio, where he and his family gather lā'au lapa'au [medicinal plants] and which house some very rare native plant species. These are all ridges mauka [west] of the project area. Mr. Pellegrino is concerned that during the construction phase of the current project the land would be filled to the extent that these culturally important view plains would be blocked from those who are genealogically connected to Waikapū Ahupua'a and living in the lower areas below (49).

Since there may be a significant impact upon scenic views and vistas, an environmental impact statement needs to be prepared.

IV: Alternatives Considered

The discussion of alternatives considered in the Draft EA is inadequate.

The first alternative mentioned in the DEA is Alternative Lot Configurations, which is severely lacking in information. The section simply states, "after conducting studies of alternative design concepts and costs of development, the lot configuration and product mix selected as the preferred alternative proved to be the optimal option in meeting the goals of the DHHL" (178). No details are provided as to why other lot configurations were unsatisfactory, nor what the other considerations even were.

The next alternative discusses the Pu'unani Growth Area Alternative, the original project that the Maui Island Plan intended for the proposed project area and surrounding areas. The discussion includes the greenbelts mentioned earlier in this comment letter, which will not be included in the proposed project. The alternative simply describes how the greenbelts at the size stated in the Maui Island Plan cannot fit into the proposed project because it would result in a decrease of built homes. More alternatives should be considered in regard to incorporating greenbelts, including consideration of incorporating smaller sized greenbelts, provision of smaller lots, or fewer lots.

The Deferred Alternative is not a true alternative, but the exact same project pursued at a later time. With respect to environmental impacts, the timing of the project is irrelevant.

Additional Comments:

1. The DEA acknowledges no irreversible or irretrievable commitment of resources, noting the use of "energy, labor, fiscal, and material resources . . . when weighed against the expected benefit to be derived from the single-family residential project for DHHL beneficiaries, is not considered an adverse commitment." DEA at 181.

The DEA lacks information concerning the irreversible and irretrievable destruction of historic properties and cultural resources, including the character of the surrounding towns. Without identification of impacts, an anticipated finding of no significant impact is improper.

The DEA fails to identify impacts such as overcrowding in Central Maui, demands on public services, and traffic.

2. Single-Family subdivision uses of water resources may diminish traditional and customary water uses in the surrounding area. The CIA states, "The remnant irrigation ditches and reservoir not only point to massive landscape modification in the area during the Historic Period but also strongly infer the aridness of the area, which required large-scale water importation. Soil borings conducted during geotechnical analyses in a nearby project area failed to reveal the presence of the area's water table to at least 25 feet below the surface" (13). Furthermore, the CIA shares concerns about water resources related to cultural practices, "A major concern that he has is the

potential impacts this project will have on both surface and ground water resources, both of which are directly tied to cultural practices. While not necessarily tied to the project site, both ground water and surface water resources would likely cause impacts to those surrounding ahupua'a in Nā Wai 'Ehā, which have already seen great strain for decades' (51).

The DEA fails to discuss the potential impacts of the proposed project's on cultural practices in the area and the strained water system overall in Central Maui. More information is needed before declaring an anticipated finding of no significant impact.

Conclusion:

In view of the deficient information, and the fact that the impacts of the project are significant, as defined by HAR 11-200.1-13, an Environmental Impact Statement is required instead of an Environmental Assessment.

Mahalo for the opportunity to comment.



Michael T. Munekiyo

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Via email: director@maui-tomorrow.org

Albert Perez, Executive Director Maui Tomorrow Foundation 55 N. Church Street, Suite A4 Wailuku, Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Mr. Perez:

Thank you for your email dated June 22, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

Comments Related to EA Preparation

- The impacts of the proposed project are significant as defined in HAR 11-200-13. Accordingly, an environmental assessment is insufficient, and an Environmental Impact Statement is required.
- Per HAR 11-200.1-2,

"Significant effect' or 'significant impact' means the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State's environmental policies or long-term environmental goals and guidelines as established by law, adversely affect the economic welfare, social welfare, or cultural practices of the community and State, or are otherwise set forth in section 11-200.1-13."

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- HAR 11-200.1-13(b) sets forth the significance criteria for determining whether a proposed action is significant. Since the proposed project will trigger several of these criteria, the project will have significant impact on the environment, and an environmental assessment is not appropriate. An Environmental Impact Statement is required.
- 1. The DEA acknowledges no irreversible or irretrievable commitment of resources, noting the use of "energy, labor, fiscal, and material resources . . . when weighed against the expected benefit to be derived from the single-family residential project for DHHL beneficiaries, is not considered an adverse commitment." DEA at 181.

The DEA lacks information concerning the irreversible and irretrievable destruction of historic properties and cultural resources, including the character of the surrounding towns. Without identification of impacts, an anticipated finding of no significant impact is improper.

The DEA fails to identify impacts such as overcrowding in Central Maui, demands on public services, and traffic.

• In view of the deficient information, and the fact that the impacts of the project are significant, as defined by HAR 11-200.1-13, an Environmental Impact Statement is required instead of an Environmental Assessment.

Response:

The project's technical characteristics and related impact considerations were thoroughly evaluated by the DHHL and the Hawaiian Homes Commission (HHC). In accordance with Hawaiii Administrative Rules (HAR), Section 11-200.1-13, "Significance Criteria" every phase of the proposed action, the anticipated impacts, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action were considered. The analysis contained in the Draft EA was supported through in-depth technical studies that were prepared by qualified professionals, and which were then reviewed by agencies having jurisdiction and expertise in their respective fields of authority.

Each section of the Draft EA included a discussion and analysis of the impacts related to the respective environmental, infrastructural, public service and socio-economic parameters. The assessment of each

significance criteria set forth in Section 11-200.1-13, HAR is included as Chapter VIII of the Draft EA. This chapter will be carried forward to the Final EA. While this project may cause impacts, based on the analysis conducted in the Draft EA, the potential adverse impacts are not anticipated to be significant. Where mitigation measures are required due to potential impacts attributed to the project, DHHL will implement those applicable measures to reduce potential adverse impacts. As a disclosure document, the Draft EA has allowed Federal, State, and County agencies having jurisdiction and expertise in their respective fields of authority to comment on the proposed project scope and identified mitigation measures. If more specific mitigation measures are raised by agencies as the project advances, DHHL will continue dialogue with the applicable agencies to define how such measures can be addressed as part of the engineering and design phases of work. Furthermore, the project will also result in positive impacts for DHHL Native Hawaiian beneficiaries, many of whom are long-time Maui residents seeking affordable housing opportunities for themselves and their families.

In light of the foregoing, the need for a full Environmental Impact Statement is not deemed warranted. The decision on the Final EA rests solely with the HHC in the context of the level of impacts, analysis and mitigation measures documented in the Draft EA.

Comments Related to Archaeology

 According to HRS 11-200.1-13, an action shall be determined to have a significant effect on the environment if it may:

(1) Irrevocably commit a natural, cultural, or historic resource;

An AIS report was completed in 2005 for a previously proposed project. The current project area is within the larger area that was studied. This same AIS study written in 2005 is being used to assess the proposed Pu'unani Homestead Subdivision project 15 years later. The AIS determined in 2005 that no mitigation was required, which includes archaeological monitoring during construction. The 2005 AIS covered 215.8 acres in its analysis; the proposed Pu'unani subdivision only makes up 47.4 acres of the area studied. The excavation process of the AIS consisted of 21 trenches, which were dug evenly throughout the 215.8 acres. The current proposed project area only makes up approximately 22% of

the land assessed in the AIS, which could be indicative that only a small percentage of the dug trenches are actually located in the current proposed project area.

Page 5 in the AIS shows the locations of the 21 trenches dug throughout the study area.

Through observation of both maps, the boundary of the current proposed project area follows Old Waikapū Road and the Waine'e Ditch. Of the trench sites dug for analysis, only two occur in the proposed project area, including ST-9 and ST-21.

 Additionally, according to the CIA report completed for the proposed Pu'unani Subdivision, burials have been discovered in areas surrounding the proposed project in recent decades. For example:

"The Bernice Pauahi Bishop Museum (Rotunno-Hazuka et al. 1995) conducted archaeological subsurface testing at the Maui Lani Development Property which resulted in the identification of multiple traditional pre-Contact native Hawaiian burials" (33).

"Aki Sinoto Consulting (Pantaleo and Sinoto 1996) conducted archaeological subsurface sampling at the Maui Lani Development. Findings included one concentration of multiple burials and isolated individual burials located at the tip of the dune..." (33).

"Scientific Consultant Services, Inc. (Perzinski and Dega 2012) conducted an Archaeological Inventory Survey of 2.0 acres of arid land in Waikapū, Waikapū Ahupua'a, Wailuku District, Maui Island, Hawaii... Four Historic Period archaeological sites were documented during the Inventory Survey [including].... Waikapū Cemetery. The community cemetery, which is not a municipal cemetery, contains approximately 75 marked burials and 20 unmarked burials, and was used for interment from 1900 through 1961... State site 50-50-04-6811 represents at least two traditional Native Hawaiian burials that have been identified through consultation as occurring makai or east of the historic cemetery..." (35-36).

> Burials have been located and documented in the area surrounding the proposed project area for many years, including in 2012; seven vears after the 2005 AIS report was completed. As reported in the CIA report completed for the proposed Pu'unani Subdivision, Mr. Pellegrino was interviewed and the CIA shared his mana'o:

Although lands were extensively impacted and modified historically for the commercial cultivation of sugarcane, they retain the potential to contain information about the traditional use of these lands. In addition, there may still be kupuna who have connections to those lands... He stated that it was not uncommon for Māhele land parcels to have burial sites both pre-western and post-contact. He stressed the need especially for a Hawaiian Organization such as DHHL to go above and beyond the basic requirements and processes for developing land, especially knowing that these were Native Hawaiian ancestral kuleana lands." (48).

Considering the significant history of the surrounding area, and due to a lack of thorough investigation of the proposed project area, the DEA needs to conclude that there may be a significant impact on cultural and/or historic resources based upon the available information; an environmental impact statement needs to be prepared.

Response: We acknowledge your comments. As stated in the Draft EA, in accordance with State historic preservation laws, the DHHL submitted a Hawai'i Revised Statutes (HRS) Chapter 6E submittal form for the project, and referenced the 2005 Archaeological Inventory Survey (AIS) completed for the project area as well as additional lands in proximity to the site, and the SHPD's acceptance of that AIS and their previous determination that no further archaeological mitigation was necessary for the proposed subdivision site. Via letter dated March 27, 2020, the SHPD maintained their determination. However, the DHHL has elected to conduct archaeological monitoring during all ground disturbance activities at the site of the proposed subdivision. As such, an Archaeological Monitoring Plan (AMP) will be prepared and the contractor, once selected, will be required to follow the provisions of the AMP. Should any historical sites or artifacts be inadvertently discovered, work in the immediate vicinity of the find will stop, and the SHPD will be contacted for further guidance. An end-of-field work Archaeological Monitoring Report (AMR) will be submitted to SHPD documenting any significant cultural deposits or

burials encountered.

The results of the previous subsurface testing was that none of the 21 trenches (that were taken at representative portions of the area covered by the previous AIS), including the two (2) trenches within the proposed DHHL project area, revealed any type of artifact, charcoal deposit, or midden deposit. In addition, the 100 percent systematic pedestrian survey conducted over the entire DHHL parcel was also negative in terms of collected artifact classes and samples; and, no traditional Hawaiian cultural material was found. If burials are inadvertently identified during the project, DHHL will work with the SHPD and a representative of the Maui Lāna'i Island Burial Council (MLIBC) to determine if the remains will be left in place or re-located on site. Once monitoring has been completed, a burial treatment plan for the iwi would be written and submitted to the SHPD and MLIBC for approval.

Comment Related to Exemptions

• (2) Curtail the range of beneficial uses of the environment;

The proposed Pu'unani Homestead Subdivision project's 47.4-acre area is designated for agricultural use by the State Land Use Commission, Maui County Zoning, and the Wailuku- Kahului Community Plan. It should also be noted that the Wailuku-Kahului Community Plan does designate a small portion of this area as SF-single family. In response to this, the DEA states:

The Hawaiian Homes Commission Act (HHCA), codified within the constitution of the State of Hawai'i, vests onto the DHHL the authority to use its lands at its discretion. Specifically, HHCA Section 204 states, 'all available lands shall immediately assume the status of Hawaiian home lands and be under the control of the department to be used and disposed of in accordance with the provisions of this Act'. As the DHHL owns the project site, the above-noted provision grants the DHHL the authority to proceed with the project without the lands being fully entitled for residential use. In addition, through the provisions of the above-noted Act, DHHL intends to exempt the project from certain County code and rule requirements in order to develop the project (vii).

The power that the DHHL has is well-understood, however, construction of the proposed project would still be a significant deviance from the applicable plans. The Maui County Department of Planning shared concerns during the early commenting stage of this DEA:

While the HHCA vests the DHHL with the authority to use its lands at its discretion for homesteading purposes, the MIP is a blueprint that provides direction for future growth, the economy, and social and environmental decisions on the Island of Maui. It incorporated input from residents, including native Hawaiians, from across the Island through a multitude of community, planning commission and county council meetings held over several years and the Department hopes the MIP is considered when plotting out the Pu'unani Homestead Subdivision Project (253).

The HHCA gives DHHL the authority to use their lands as they please, however, the significant deviation still constitutes a significant impact, and the impacts of the deviation from plans applicable to the proposed project should be addressed, analyzed, and mitigated.

Response:

We acknowledge your comment. Per the Hawaiian Homes Commission Act (HHCA), the HHC has sole authority over land use on Hawaiian Home Lands. As a result, DHHL is not subject to County land use regulations. It has been DHHL's policy to voluntarily subject itself to County regulations that promote public health and safety as compliance with those regulations create safe and healthy environments in which its beneficiaries can live in and thrive. We note the project will be a single-family residential subdivision that is both consistent and compatible with the existing residential land uses of the nearby developed residential subdivisions in Waikapū and Wailuku.

Comments Related to Cultural Impact Assessment

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State;

> The DEA gives inadequate and insufficient information in regard to how the cultural practices in the surrounding area of the proposed project will be impacted and adequately mitigated. The DEA states:

> > There is evidence of cultural practices for Hawaiian rights for agricultural pursuits, access to resources, and other customary activities presently occurring in the vicinity of the proposed project. In addition, a legendary grinding stone (Pōhākoʻi) is believed to be located in the vicinity of the site of the proposed subdivision. As such, the CIA provided a recommendation that an archaeological field inspection be conducted by a qualified archaeologist prior to the commencement of any construction related ground altering activities in an effort to locate Pōhākoʻi (184).

The DEA states that there is evidence of cultural practices for Hawaiian rights, but does not explain the project's impact upon those cultural practices, nor how the developer plans to mitigate those impacts.

 Additionally, the CIA further emphasizes the importance of Pōhāko'i:

Near the Old government Road that is adjacent to the western and northern boundaries of the project area, near the northwest corner of the current project area, there once was located a very important stone called Pohako'i. Pohako'i was first and foremost a hoana, or grinding stone... secondly, it was a commonly known palena 'aina (boundary marker) for the northern end of the Waikapu ahupua'a according to Mr. Pelligrino. Mr. Pellegrino says that Pohako'i is shown on approximately 60 historic maps of Waikapu... it was an important cultural site, not just for being a boundary marker and a grinding stone, but also for being a place name... Pohako'i is such a significant site; it has been mentioned in mele [songs], in oli [chants], and historical mo'olelo [legends] (47).

Pōhākoʻi is more significant than what the DEA implies when discussing mitigation. Furthermore, the DEA does not provide mitigation suggestions if archaeological surveying locates Pōhākoʻi.

Response: DHHL understands the importance of cultural sites such as Pōhāko'i. As stated in Mr. Pellegrino's Cultural Impact Assessment (CIA) interview, the exact location of this resource is unknown and it is unknown if Pōhāko'i remains in situ or if it has been relocated. However based on the information provided and the CIA research, DHHL understands that it is believed to be near the northwestern corner of the proposed subdivision. Based on the recommendations in the CIA, DHHL and the developer will have the project archaeologist perform an archaeological field inspection in an effort to locate this feature prior to the commencement of any construction related ground altering activities. If Pōhāko'i is located within the proposed project and it is determined to be a significant historic property, then DHHL will work with SHPD on mitigation measures. As previously discussed, although the SHPD did not recommend any further archaeological work for the area of the proposed subdivision via letter dated March 27, 2020 (Appendix G of the Draft EA), the DHHL has elected to conduct archaeological monitoring during all ground disturbance activities.

> Furthermore, following publication of the Draft EA, the consultation process was extended by DHHL and the developer to accommodate additional outreach for potential additional cultural informant interviews with those knowledgeable about the Waikapū area. We note that although the COVID-19 pandemic affected the scheduling of and ability to reach out and conduct in-person interviews, the potential interviews by telephone or virtual means are being finalized and will be included in an updated final CIA report, which will be included as an appendix to and discussed in the Final EA. As mentioned previously, DHHL and the developer will have the project archaeologist perform an archaeological field inspection in an effort to locate Pōhāko'i prior to the commencement of any construction related ground altering activities. If Pōhāko'i is located within the proposed project and it is determined to be a significant historic property, then DHHL will work with SHPD on mitigation measures.

Comment Related to Agriculture

Other cultural practices and insights regarding how these cultural practices could be impacted include:

> Mr. Pellegrino wanted to include the importance of water resources as being a major cultural impact. While most if not all of the project site's historical land use was wetland kalo cultivation, these lands are not likely going to be returning to

that practice knowing that a housing development is being proposed. There are currently agricultural practices being conducted on that land, although not cultural, they are an important part of retaining the historic and cultural nature of the Waikapū ahupua'a (50-51).

The proposed project area and the surrounding area has a rich history and is an important location where cultural practices take place. Even though there have not been agricultural practices taking place in the proposed subject area, the area has traditionally been used for agriculture, including taro cultivation. The opportunity for living and future generations to culturally reconnect with this land will be lost with the proposed construction of the subdivision. This significantly impacts the cultural practices that take place here, and have taken place in the area, which need to be more carefully and thoroughly addressed and mitigated.

Response:

We acknowledge your comment. It is the DHHL's intent to utilize the subject property for much needed residential homesteading purposes in accordance with the HHCA given the property's location within the developed area of Waikapū, adjacent to residential neighborhoods of a similar character. While we understand that traditional agricultural practices are important to uphold, we note that the DHHL has other lands on Maui which are designated for agriculture and subsistence agriculture which may be better suited for this purpose.

Comment Related to Traffic:

• (6) Involve adverse secondary impacts, such as population changes or effects on public facilities.

The DEA explains how the proposed subdivision is mostly intended to serve residents who already live on the island, which means that the population on the island will not increase. However, more people will be living and using facilities in the Waikapū/Wailuku area. This means more cars, pedestrians, and bikers in the area, and more resources and facilities being used in Central Maui. An increased density of people can have significant impacts on the facilities in that area. For example, traffic in the proposed project area and the surrounding area will inevitably increase. In fact, after reviewing the TIAR report, comparing the existing traffic conditions and future conditions show that congestion will either remain the

same in some intersections, or in many cases increase. There are several intersections with a LOS F score in future analyzed conditions, which indicates an overcapacity at those particular intersections. The DEA states:

In consideration of the above information for base year 2024, the TIAR stated that LOS for turning movements at various intersections throughout the study area roadway network **are** anticipated to worsen from existing conditions. Refer to Appendix "K" (49).

Response:

The Traffic Impact Analysis Report (TIAR) included in the Draft EA includes an analysis of existing traffic patterns and a projection of future patterns in the region, both with and without the proposed project. The project trips anticipated to be generated by residents of the proposed subdivision represents an accounting of ambient growth in the overall region based on the traffic engineer's knowledge of local development conditions and the progress of specific proposed actions, as well as the Trip Generation Manual, 10th Edition, a book of trips rates and/or formulae based on empirical data compiled from a body of more than 4,250 trip generation studies submitted by public agencies, developers, consulting firms, and associations.

The TIAR noted that the increase in traffic attributed to the project does not warrant a traffic signal to be installed at the Honoapi'ilani Highway and project driveway intersection. As part of the Draft EA agency review process, the technical basis for and analysis of traffic impacts documented in the TIAR is being reviewed by the State Department of Transportation and the County Department of Public Works.

Comment Related to Schools

 Additionally, the Department of Education submitted a comment during the early commenting phase of the DEA. The concern states:

Students residing in the project area will most likely attend Puu Kukui Elementary, Maui Waena Intermediate, and Maui High. All three schools have current student enrollments that exceed their facility capacity. It is possible the project area may be reassigned to other schools depending on future conditions (208).

School assignments are typically based on location of the student's home and the proximity of homes to the school. There could be significant impacts if children are assigned to schools further away from their homes, impacting commute times and traffic during peak times of the day. The DEA's response is that they are working with the Department of Education, however, the potential significant impacts are not addressed.

Overall, the DEA contains insufficient information to declare whether or not the project will have a significant impact on public facilities.

Response: We acknowledge your comment and agree that school assignments are typically based on the location of the student's home and the proximity of the homes to the school. While the Department of Education (DOE) is responsible for school assignments of children that may reside within the proposed DHHL Pu'unani Homestead Subdivision project, the DHHL recognizes that school capacity concerns are community-wide issues that must be addressed in the context of broader educational facilities capital improvements planning. As stated in the Draft EA, the DHHL will comply with the requirement for DOE school impact fees totaling approximately \$870.000.00.

Comments Related to Grading and Drainage

Involve a substantial degradation of environmental 7. quality.

The DEA states that "Best Management Practices (BMPs) and appropriate erosion control measures will be utilized during the construction period." It also states that "Drainage system improvements will be constructed in accordance with applicable regulatory design standards to ensure that surface runoff will not have an adverse effect on adjacent or downstream properties."

The use of BMPs does not eliminate the potential for significant impacts.

In addition, the County of Maui storm drainage standards that require the project to handle runoff from a 10-year, 1-hour storm will fail to protect beneficiaries living in the project area, as well as

> residents and businesses, and the ecosystem downstream of the project, in the event of an 11- year storm or greater. Since climate change may be increasing the frequency and/or of large storms, building the drainage systems to the current County drainage standards may result in more significant impacts than anticipated. These potential impacts, which are becoming increasingly likely, need to evaluated; the drainage systems need to be larger than required by County standards, or an environmental impact statement needs to be prepared.

Response: We acknowledge your comments. Grading work will comply with applicable requirements of Chapter 20.08, Soil Erosion and Sedimentation of the Maui County Code (MCC). This, in addition to the use of Best Management Practices, is anticipated to mitigate any potential significant adverse impacts that may occur as a result of the project. In addition, the project will secure a National Pollutant Discharge Elimination System Permit from the State Department of Health to reduce and mitigate potential pollutants in stormwater discharges during construction.

> The first improvement constructed on the Pu'unani Homestead site will be its drainage basin, which sits at the low point of the property in an ideal position to guard the drainage gully against sediment and other potential water pollutants generated on the rest of the site. Putting this basin in place first so that it can provide pollution and sediment control at the outset of grading will offer an exceptionally high degree of assurance that water pollution can be avoided even if a large storm should occur before the permanent drainage improvements are in place when the potential risk of water pollution is at its greatest.

> As stated in the Draft EA, the project's drainage detention basin will be designed and sized to provide the storage capacity required to detain projected increases in peak stormwater flows generated by the project for a 50 year-1 hour design storm. In addition, to peak flow mitigation, the drainage basin will also have the storage capacity required to meet the County of Maui's water quality criteria. In accordance with the County drainage standards, a basin outlet structure with an emergency spillway will direct potential overflow runoff greater than the design storm to the existing drainageway where it is currently going per the existing drainage pattern. As such, the detention basin is anticipated to fully mitigate the project's hydrologic impact in accordance with the drainage standards so as not to adversely affect downstream properties.

Comments Related to Open Space and Views

 (12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies;

The DEA claims that the proposed project will not have a significant impact upon scenic views and vistas because the planned houses will only be 1 or 2 stories high. Despite this fact, the view in the area will still be impacted simply due to the size of the proposed subdivision and especially due to the fact that the developer does not intend to provide a greenbelt buffer along Honoapi'ilani Highway or along the property's boundary adjacent to Waiolani Mauka. The Maui County Department of Planning states their concerns in early submitted comments:

The Department recognizes that the Project is providing much needed housing <u>but</u> the <u>current proposed</u> <u>development does not conform to the MIP's designated</u> growth densities for the area nor does it incorporate a buffer <u>between Wailuku and Waiolani Mauka/Waikapu... the MIP has specific language that calls for the separation of development between Wailuku and Waikapu: "Policy 7.3.1.b <u>Maintain a distinct separation between communities, such as but not limited to, Wailuku and Waikapu,... to protect the character and identity of Maui's communities."</u></u>

The DEA does not adequately address the impacts associated with not including these two greenbelts described in the Maui Island Plan.

Additionally, the CIA report shares another perspective:

Mr. Pellegrino's other major concern is the view plain. There are specific ridges, like Kahoi, Lapaleihua, and Kalapaooka'īlio, where he and his family gather lā'au lapa'au [medicinal plants] and which house some very rare native plant species. These are all ridges mauka [west] of the project area. Mr. Pellegrino is concerned that during the construction phase of the current project the land would be filled to the extent that these culturally important view plains would be blocked from those who are genealogically

connected to Waikapū Ahupua'a and living in the lower areas below (49).

Since there may <u>be a significant impact upon scenic views and vistas</u>, an environmental impact statement needs to be prepared.

Response:

We appreciate your comments providing background into the Maui Island Plan's (MIP) greenbelts along Honoapi'ilani Highway. An analysis was undertaken by the DHHL to determine if the MIP-required 500-foot greenbelt along Honoapi'ilani Highway and 200-foot greenbelt along the project's boundary with the existing Waiolani Mauka subdivision could be accommodated. Based on this analysis, the inclusion of these two (2) greenbelts would result in the loss of approximately 68 out of the total 161 developable lots available for DHHL beneficiaries. As the waiting lists for DHHL homestead lots are currently at 3,819 beneficiaries on the Residential Waiting List and 272 beneficiaries on the Waiohuli Undivided Interest Waiting List, the DHHL determined that the inclusion of these two (2) greenbelts is not feasible and would be contrary to the mission and purpose of both the HHCA and DHHL, which are to provide as many homestead opportunities to beneficiaries as possible. Furthermore, we note that these greenbelts were required as part of a former planned Pu'unani development project, by others, which far exceeds the size and scale of the currently proposed 161-lot subdivision. Additionally, the sloped frontage along Honoapi'ilani Highway is proposed to be maintained as a landscaped lot to set back the houses from the highway and provide a green buffer and open space relief from the right-of-way (ROW), which would be an improvement when compared to the multiple tiered retaining walls built up against the Honoapi'ilani Highway ROW by the adjacent subdivision with no green space buffer. As such, the DHHL has determined that the proposed landscaped lot along Honoapi'ilani Highway and buffer along the project's northern boundary, abutting vacant lands, are adequate so they do not compromise the mission to maximize the affordable homestead opportunities. In addition, the project's proposed drainage basin is located at the northeast corner of the property and will provide a buffer (average width of over 200 feet) along approximately onethird of the project's frontage along Honoapi'ilani Highway.

Furthermore, while grading work will need to be undertaken to set internal roadway grades and adjacent grades for developable lots, design work for the project will respect existing topography to the extent practicable in order to minimize extensive cut and fill activity.

Comments Related to Alternatives

• The discussion of alternatives considered in the Draft EA is inadequate.

The first alternative mentioned in the DEA is Alternative Lot Configurations, which is severely lacking in information. The section simply states, "after conducting studies of alternative design concepts and costs of development, the lot configuration and product mix selected as the preferred alternative proved to be the optimal option in meeting the goals of the DHHL" (178). No details are provided as to why other lot configurations were unsatisfactory, nor what the other considerations even were.

- The next alternative discusses the Pu'unani Growth Area Alternative, the original project that the Maui Island Plan intended for the proposed project area and surrounding areas. The discussion includes the greenbelts mentioned earlier in this comment letter, which will not be included in the proposed project. The alternative simply describes how the greenbelts at the size stated in the Maui Island Plan cannot fit into the proposed project because it would result in a decrease of built homes. More alternatives should be considered in regard to incorporating greenbelts, including consideration of incorporating smaller sized greenbelts, provision of smaller lots, or fewer lots.
- The Deferred Alternative is not a true alternative, but the exact same project pursued at a later time. With respect to environmental impacts, the timing of the project is irrelevant.

Response:

Other lot configurations included lots of different sizes, different mixes of turn-key and owner-build lots, as well as different access point locations onto Honoapi'ilani Highway. The current subdivision layout represents the most feasible mix of lot sizes and turn-key and owner-build lots, accommodates the DHHL beneficiary preferences, and is consistent with the adjacent residential subdivisions within the developed area of Waikapū. Also, the location of the two (2) subdivision entrances was vetted by the State Department of Transportation and provides for safe ingress and egress points given the topography of the land, locations of horizontal and vertical sight distance constraints in the roadway, and locations of other intersections along this stretch of roadway. As the Residential Waiting list for DHHL homestead lots is currently at 3,819, and

the Undivided Interest list is currently at 272, one of the goals of the subdivision is to maximize the number of residential lots to provide as many homes as possible to these Native Hawaiian beneficiaries and their families. This information will be added to the Alternatives chapter of the Final EA.

As stated in the Draft EA, incorporating potential greenbelts was analyzed and the inclusion of these two (2) greenbelts would result in the loss of approximately 68 out of the total 161 developable lots available for DHHL beneficiaries. As the waiting lists for DHHL homestead lots are currently in the thousands, the DHHL determined that the inclusion of these two (2) greenbelts and losing over 42 percent of the possible residential lots is not feasible and goes against the mission and purpose of both the HHCA and DHHL, which are to provide as many homestead opportunities to their Native Hawaiian beneficiaries as possible. Similarly, reducing the number of lots to accommodate greenbelts of a reduced size is also contradictory to the mission and purpose of the HHCA and DHHL. The proposed lot sizes are similar to the nearby residential subdivisions in Waikapū and Wailuku and the DHHL Wai'ehu Kou subdivisions. We note that the DHHL maintained landscape lot at the sloped frontage along Honoapi'ilani Highway is proposed to be maintained as a landscaped buffer to set back the houses and provide open space relief from the highway right-of-way. which would be an improvement when compared to the multiple tiered retaining walls built up against the Honoapi'ilani Highway right-of-way by the adjacent subdivision with no green space buffer.

This deferred alternative was intended to highlight the fact that the project, if pursued at a later date, would result in economic impacts to the DHHL. The DHHL is in a position to implement the proposed project at this current time to provide much needed residential housing. Unforeseen circumstances that may occur should the project be delayed may result in increased construction costs and a longer waiting time for those on the Residential Waiting Lists, thereby not allowing the DHHL to fulfil its mission of providing homestead opportunities for its Native Hawaiian beneficiaries.

Comments Related to Water

• 2. Single-Family subdivision uses of water resources may diminish traditional and customary water uses in the surrounding area. The CIA states, "The remnant irrigation ditches and reservoir not only point to massive landscape modification in the area during

the Historic Period but also strongly infer the aridness of the area, which required large-scale water importation. Soil borings conducted during geotechnical analyses in a nearby project area failed to reveal the presence of the area's water table to at least 25 feet below the surface" (13). Furthermore, the CIA shares concerns about water resources related to cultural practices, "A major concern that he has is the potential impacts this project will have on both surface and ground water resources, both of which are directly tied to cultural practices. While not necessarily tied to the project site, both ground water and surface water resources would likely cause impacts to those surrounding ahupua'a in Nā Wai 'Ehā, which have already seen great strain for decades" (51).

The DEA fails to discuss the potential impacts of the proposed project's on cultural practices in the area and the strained water system overall in Central Maui. More information is needed before declaring an anticipated finding of no significant impact.

Response:

The DHHL is working with the Department of Water Supply (DWS) to ensure that sufficient water source will be available to serve the project, while ensuring that other areas will have the same opportunity to access water without significant impacts to ground and surface water resources. Furthermore, we understand the importance of water resources as it relates to traditional and customary rights and practices and note that reservations of water for DHHL homesteading is a protected public trust use of water per the State Water Code. Please note that if the project site stayed in active agriculture, then the average daily water demand would be 5,000 gpd/acre per the County DWS standards and could use up to 237,000 gpd, which is more than double the estimated average daily water demand for the proposed residential subdivision.

Thank you again for your participation in the Chapter 343, HRS environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan¹K. Esmeralda, AICP Senior Associate

BKE:tn

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori Engineering, Inc. K:\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\Maui Tomorrow.doc

Subject: FW: Pu'unani Homestead Project - Draft-EA (Dick Mayer) **Attachments:** Mayer - DEA Letter -Pu'unani-201H Housing June-21-2020B.doc

From: Dick Mayer < dickmayer@earthlink.net>

Sent: Monday, June 22, 2020 8:35 PM

To: stewart.t.matsunaga@hawaii.gov; General eMail planning@munekiyohiraga.com;

Michele.McLean@co.maui.hi.us; trpolido@gmail.com; waikapuca@gmail.com

Subject: Pu'unani Homestead Project - Draft-EA

Aloha,

Please see my **ATTACHED** comments on the Pu'unani Homestead Project - Draft-EA.

Mahalo, Richard "Dick" Mayer

- TO: Mr. Stewart Matsunaga, (808) 620-9500, <u>stewart.t.matsunaga@hawaii.gov</u> Page 1
 Department of Hawaiian Home Lands, State of Hawai'i
 91-5420 Kapolei Parkway, Kapolei, HI 96707
- TO: Mr. Bryan Esmeralda (808) 983-1233, <u>planning@munekiyohiraga.com</u>
 Munekiyo Hiraga; 305 High Street, Suite 104, Wailuku, HI 96793
- TO: Ms. Michele McLean, Planning Director, 808-270-1735 Michele.McLean@co.maui.hi.us Maui County Planning Department, Wailuku, Maui, HI 96793
- TO: Mr. Travis Polido, trpolido@gmail.com; waikapuca@gmail.com; waikapuca@gmailto:waikapuca@gmail.com; waikapuca@gmailto:waikapuca@gmail.com; waikapuca@gmailto:waikapuca@gm

FROM: Prof. Richard "Dick" Mayer, <u>dickmayer@earthlink.net</u> June 21, 2020 1111 Lower Kimo Dr. Kula, Maui, HI 96790

RE: Pu'unani Homestead Subdivision--Draft EA (AFNSI)

The Department of Hawaiian Home Lands intends to develop a new residential subdivision for its beneficiaries on a 47.4-acre portion of land owned by the DHHL, identified by TMK (2)3-5-002:002, in Waikapū, Maui, mauka of Honoapiʻilani Highway. A new sewerline to serve the subdivision will also be constructed, which will cross the highway from Parcel 2 and run along a portion of TMK (2)3-5-001:064. The project will feature a max of 161 single-family lots (137 turn-key homes and 24 vacant lots).

Each of the lots will be approximately 7500 square feet in area and will be improved with graded pads and stubbed utility connections. Related improvements to also be developed include internal roadways and sidewalks, a drainage detention basin, utility connections, and roadway frontage improvements along the highway including a road widening lot for turning lanes, a median refuge lane, a bike lane, as well as for site distance requirements.

NOTE: The comments below are not a vote for or against the HHL Pu'unani Homestead project, but are intended to highlight the deficiencies in the Draft-EA, to request that AFNSI not be issued, and to have a full Environmental Impact Statement prepared so that numerous impacts can be properly mitigated.

In view of the impacts and information deficiencies noted in the existing Draft-EA, and the fact that the impacts of the project are significant, as defined by HAR 11-200-12, (See Appendix A below) an Environmental Impact Statement is required instead of an Environmental Assessment.

Specifically, the DEA does not adequately address:

- Cumulative impacts of traffic from ALL nearby developments and roads
- Cumulative impacts on over-capacity schools
- Secondary impacts on other developments resulting from this project's water use
- Impact of the closing of open space between Wailuku and Waikapu And many other impacts, discussed below.

Specific comments on the Project's Draft-EA (AFNSI):

- 1. <u>Full-EIS</u>: This project is trying to use a Draft Environmental Assessment (DEA) with an "Anticipated Finding of NO Significant Impact" (AFNSI) in hopes of getting a "Finding of NO Significant Impact" (FONSI). Since significant major and many minor impacts and problems do exist, a full Environmental Impact Statement (EIS) should be required by the Hawaiian Homes Commission and DHHL which are both the applicant and the approving authority for this project. <u>A "Full EIS" is needed and should be required to examine the many significant cumulative and secondary impacts and how they will be mitigated.</u>
- 2. <u>Impacts</u>: This Homestead DEA has numerous impacts (intersections at "F levels", schools already beyond capacity, distance from parks, shopping and schools with no safe routes, distant bus stops, etc.). It is necessary to indicate some possible mitigating solutions with a promise to implement them.
- 3. <u>DHHL Exemptions</u>: The Applicant DHHL apparently anticipates certain exemptions from HRS statutes, Maui County Code ordinances, and rules relating to planning, zoning, construction standards for subdivisions, development and improvement of land, and the construction of dwelling units. These exemptions, their consequent impacts need to be described, and mitigation measures need to be addressed.

Although numerous DHHL exemptions will be requested, the impacts from the exempted statutes, ordinances, charter provisions, and rules relating to planning, zoning, construction standards for subdivisions, etc. MUST be discussed and mitigated in an environmental review. They are not.

4. <u>Population</u>: The Draft-EA makes references to the fact that the population of Central Maui and the adjoining districts is growing rapidly and that there is a significant need for housing, and in particular affordable housing.

However, when it comes to describing impacts on infrastructure (schools and other facilities), the Draft-EA states that there will be no impact at all because people are merely moving around. This reasoning neglects to point out that people moving into this project may be coming from upcountry, South Maui, even Honolulu. In each case infrastructure (water, waste water, schools, will be "impacted" and should not be ignored.

5. <u>Schools</u> (Draft EA pages 41 + 42) which will service the Homestead Project's many families are all significantly <u>over capacity NOW</u>. In fact, the Draft-EA does not even estimate the potential number of students. Nor does the Draft-EA indicate how the neighboring schools are <u>already at or over capacity</u>!

Pu'u Kukui Elementary School is currently over capacity by approximately 100 students and this over capacity condition is expected to remain or increase over the next five (5) years. **Maui Waena Intermediate School** is over capacity by approximately 250 students. **Maui High School** is over capacity by approximately 300 students.

Dick Mayer Pu'unani Homestead Subdivision--Draft EA (AFNSI) June-21-2020 Page 3

The small school impact fee to be paid by the State to the State (less than \$1 million) will not begin to satisfy the DOE's ability to build the additional classrooms or improve school capacities. And the State does not have adequate funding for any additional school. So, where will the many students attend school?? A Full-EIS is needed to address these impacts and concerns. An EA and AFNSI are not enough.

6. <u>Play Areas and Parks</u>: This project will have 161 units and approximately 500-600 residents. There will be many children in a project catering to families who do not have the income to purchase a home in a regular sub-division that provides needed amenities. That is great.

A great impact will fall on the toddlers and many children of school age. These children will need to get to parks and playing fields along streets lacking bicycle routes and with minimum sidewalks and by crossing very busy and dangerous high traffic avenues, including Honopiilani Highway.

Residential subdivisions in the County of Maui are required to dedicate land for park/playground purposes, improvements to a park in the same community plan area, or make payment of an *in lieu* fee to the County. However, since the DHHL has the authority to use its lands at its discretion for providing residences for its beneficiaries, the Draft-EA states that DHHL will be exempting the project from this requirement. So no parks or recreation area for children. None in the project and none nearby!

The Draft-EA states that most residents are anticipated to relocate from other areas on Maui. As such, adverse impacts to recreational resources are just not anticipated; that is incorrect.

- 7. <u>Pedestrian Safety</u>: This DEA has limited safety features for pedestrians and cyclists: sidewalks only on one side of the streets; no mention of crosswalks across Honopiilani Highway for pedestrians or cyclists to get to schools, parks, Foodland and Longs. Most significantly, there are no sidewalks along Honopiilani Highway or along Waiale Road. That will be a very dangerous trip for residents of the Pu'unani Homestead project to get to schools, parks and stores. <u>A Full-EIS is needed to address these impacts and concerns. An EA and AFNSI are not enough.</u>
- 8. <u>Water:</u> The Draft-EA assumes that the County Water system has existing adequate capacity for potable uses and fire flow. What impact will the use of this water for this project have on not only Central Maui developments (many of which have sizeable affordable units), but also those planned in South Maui (again with many affordable units) while drawing on the same Na Wai Eha Water Management Area? <u>A Full-EIS is needed to address these impacts and concerns. An EA and AFNSI are not enough.</u>
- **9.** Prime Agricultural Land (Draft EA Page 14 + Page 15 Map)

enough.

The homestead project site is located within the ALISH's "**Prime**" agricultural land area. The Draft-EA goes on to state incorrectly and arrogantly, "As the lands are not currently actively cultivated, there are no adverse impacts to agriculturally productive lands as a result of the proposed action". For the long-term sustainability of Maui and Hawaii the impacts must be analyzed and not dismissed. **A Full-EIS is needed to address these impacts and concerns. An EA and AFNSI are not**

- **10.** <u>Drainage Issues</u> (Draft EA Page 55) The Draft-EA makes the absurd statement that there will be no drainage issues, even though the land has a 7-8% slope and has an affordable housing project immediately below this project. It bases its assessment on a short, one-hour storm, as if it never rains for more than an hour! What happens if it rains for two hours? or three hours? Where will the water go? How will it be handled on that moderate slope? <u>A Full-EIS is needed to address these impacts and concerns. An EA and AFNSI are not enough.</u>
- 11. <u>A&B's 2,550 unit Waiale project:</u> Maps throughout the DEA do not show the major neighboring project to the South and to the East. The maps and text should include the largest project (A&B's 2,550 unit Waiale project). It will have the greatest impact on the proposed HHL Homestead project, and vice-versa, it will be affected by this HHL Pu'unani Homestead project.
- **12.** <u>Traffic</u>: (Draft EA Pages 43-53 + Appendix "K") Major Draft-EA omissions relate to traffic. **12.A.** The Draft-EA TIAR traffic analysis has selectively <u>under-estimated</u> the future impacts from several large, well-known, nearby housing and commercial developments. Specifically: A&B's 545 acre, already partially completely entitled 2,550 unit Waiale project; and the nearby, fully entitled 1,450 unit Waikapu Town Center.

Those other projects in their own Full-EIS have already-approved EIS documents with comprehensive TIAR information, but they did <u>not</u> include this Homestead Housing project in their TIAR analysis. Both of these projects have already received entitlements, and it is likely that they will soon be impacting this project's traffic in a <u>very</u> significant manner. And the HHL Homestead project will affect them. <u>A full EIS with a proper, complete TIAR is needed to evaluate and mitigate these cumulative impacts.</u>

- **12.B.** The TIAR has used an early, premature date of 2024 as its analytical "Base Year." It thus avoids having to examine the great increase in traffic from the neighboring projects. It avoids looking clearly at the cumulative traffic impacts from the nearby projects that will soon be built and which will greatly impact all the intersections described in the TIAR. A year 2028 would be more appropriate as the base year.
- **12.C.** Since there is the cumulative future traffic being generated from all of these nearby projects which could significantly affect the already very limited roads in the area, I request that the Hawaiian Homes Commission and the Maui Planning Organization (MPO) require:
 - i) that, along with the other developers, all the projects be <u>required to provide a "fair share" of the cost of: a comprehensive traffic study of the Central Maui region which will examine the cumulative effects/impacts from all the projects and indicate the <u>necessary costs to mitigate regional traffic problems</u>; and</u>
 - ii) that, along with the other major developments, the HHL Homestead project be <u>required</u> to pay its "fair share" to upgrade the highways, roads and intersections in this area.

13. Segmentation and Avoidance of Cumulative Impacts (Draft EA Page 1)

On several maps at the beginning of the draft EA it shows a large parcel and then shows a portion of that parcel as being the homestead project. There is no description about what is going to be happening on the smaller remainder of that larger parcel.

This seems to be a "segmentation" that avoids all the needed discussion of the impacts of the project. In fact it is not even made clear as to who owns the remainder of the parcel. And weather HHL will be developing that part of the parcel in the future.

The 47.4-acre portion of Parcel 2 to be developed as the proposed subdivision is Lot 1 of the "Pu'unani Ag Subdivision" application which is currently being processed by the County of Maui, Department of Public Works as Development Services Administration (DSA) Subdivision No. 3.2405. The remainder of Parcel 2 will not be developed as part of the proposed project.

14. Separation of Each Community Although this is the last item on the list, it is visually the most important of all the many impacts, and should not be taken lightly.

I was the Vice-Chair of the 25-member GPAC (citizen advisory committee) for the Maui Island Plan. We spent several years putting together our recommendations for the plan. One of the concerns which we heard over and over again from the community was the need to separate our traditional communities with open space, agriculture, parks, etc.

The idea was that we should not allow the spaces and land between communities such as Wailuku and Waikapu to become one contiguous urbanized area. The proposed project will go directly against the Maui Island Plan by closing off the last remaining open space between the traditional towns of Wailuku and Waikapu.

This project makes only the very tiniest recognition of this filling in of the remaining open space with a token 25-foot strip of land along the highway. It further exacerbates the closing off of the open space by having housing built right up against Honopiilani Highway, thus blocking the beautiful views of the West Maui Mountains. The impacts will be most dramatic to every resident who drives along that highway.

<u>SUMMARY</u> Multiple affordable housing projects are needed on Maui, ones that will meet our local residents' housing needs. <u>HOWEVER</u>, this project includes:

- several severe impacts (some disclosed and others not described); and
- <u>unknown exemptions</u> from Maui County's Maui Island Plan, and the Wailuku-Kahului Community Plan. Even though DHHL has an authority to over-ride local plans, that does not mean that the potential impacts can be ignored in the Environmental Review process, as is seemingly being done here. It could cost the residents and the broader community dearly.
 - → DO A COMPLETE EIS (not just an EA with AFNSI).

Mahalo for allowing me the opportunity to share my comments on the Draft-EA and to make my concerns known,

400

Appendix A

HAR §11-200-12 Significance criteria.

- (a) In considering the significance of potential environmental effects, agencies shall consider the sum of effects on the quality of the environment, and **shall evaluate the overall and cumulative effects** of an action.
- (b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected consequences, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action. In most instances, an action shall be determined to have a significant effect on the environment if it:
- 1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;
- 2. Curtails the range of beneficial uses of the environment;
- 3. Conflicts with the state's long-term environmental policies, or goals, or/and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;
- 4. Substantially affects the economic welfare, or social welfare, and cultural practices of the community or State;
- 5. Substantially affects public health;
- 6. Involves substantial secondary impacts, such as population changes or effects on public facilities;
- 7. Involves a substantial degradation of environmental quality;
- 8. Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;
- 9. Substantially affects a rare, threatened, or endangered species, or its habitat;
- 10. Detrimentally affects air or water quality or ambient noise levels;
- 11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;
- 12. Substantially affects scenic vistas and view planes identified in county or state plans or studies; or,
- 13. Requires substantial energy consumption.



Michael T. Munekiyo

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng

September 22, 2020

Via Email: dickmayer@earthlink.net

Prof. Richard "Dick" Mayer 1111 Lower Kimo Drive Kula, Hawai'i 96790

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui. Hawai'i

Dear Mr. Mayer:

Thank you for your email dated June 21, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

Comments Related to EA Preparation:

- NOTE: The comments below are not a vote for or against the HHL Pu'unani Homestead project, but are intended to highlight the deficiencies in the Draft-EA, to request that AFNSI not be issued, and to have a full Environmental Impact Statement prepared so that numerous impacts can be properly mitigated.
- In view of the impacts and information deficiencies noted in the existing Draft-EA, and the fact that the impacts of the project are significant, as defined by HAR 11-200-12, (See Appendix A below) an Environmental Impact Statement is required instead of an Environmental Assessment.

Specifically, the DEA does not adequately address:

■ Cumulative impacts of traffic from ALL nearby developments

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and roads

- Cumulative impacts on over-capacity schools
- Secondary impacts on other developments resulting from this project's water use
- Impact of the closing of open space between Wailuku and Waikapu And many other impacts, discussed below.
- 1. <u>Full-EIS</u>: This project is trying to use a Draft Environmental Assessment (DEA) with an "Anticipated Finding of NO Significant Impact" (AFNSI) in hopes of getting a "Finding of NO Significant Impact" (FONSI). Since significant major and many minor impacts and problems do exist, a full Environmental Impact Statement (EIS) should be required by the Hawaiian Homes Commission and DHHL which are both the applicant and the approving authority for this project. <u>A "Full EIS" is needed and should be required to examine the many significant cumulative and secondary impacts and how they will be mitigated.</u>

Response:

The project's technical characteristics and related impact considerations were thoroughly evaluated by the DHHL and the Hawaiian Homes Commission (HHC). In accordance with Hawaii Administrative Rules (HAR), Section 11-200.1-13, "Significance Criteria", every phase of the proposed action, the anticipated impacts, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action were considered. The analysis contained in the Draft EA was supported through in-depth technical studies that were prepared by qualified professionals, and which were then reviewed by Federal, State, and County agencies having jurisdiction and expertise in their respective fields of authority.

Each section of the Draft EA included a discussion and analysis of the impacts related to the respective environmental, infrastructural, public service and socio-economic parameters. The assessment of each significance criteria set forth in Section 11-200.1-13, HAR is included as Chapter VIII of the Draft EA. This chapter will be carried forward to the Final EA. While this project may cause impacts, based on the analysis conducted in the Draft EA, the potential adverse impacts are not anticipated to be significant. Where mitigation measures are required due to potential impacts attributed to the project, DHHL will implement those applicable measures to reduce potential adverse impacts. As a disclosure document, the Draft EA has allowed Federal, State, and County agencies

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having jurisdiction and expertise in their respective fields of authority to comment on the proposed project scope and identified mitigation measures. If more specific mitigation measures are raised by agencies as the project advances, DHHL will continue dialogue with the applicable agencies to define how such measures can be addressed as part of the project engineering and design phases of work. Furthermore, the project will also result in positive impacts for DHHL Native Hawaiian beneficiaries, many of whom are long-time Maui residents seeking affordable housing opportunities for themselves and their families.

In light of the foregoing, the need for a full Environmental Impact Statement is not deemed warranted. The final decision on the Final EA rests solely with the HHC in the context of the level of impacts, analysis and mitigation measures documented in the EA document.

Comment Related to Exemptions:

• 3. <u>DHHL Exemptions</u>: The Applicant DHHL apparently anticipates certain exemptions from HRS statutes, Maui County Code ordinances, and rules relating to planning, zoning, construction standards for subdivisions, development and improvement of land, and the construction of dwelling units. These exemptions, their consequent impacts need to be described, and mitigation measures need to be addressed.

Although numerous DHHL exemptions will be requested, the impacts from the exempted statutes, ordinances, charter provisions, and rules relating to planning, zoning, construction standards for subdivisions, etc. MUST be discussed and mitigated in an environmental review. They are not.

Response:

We acknowledge your comment. Per the Hawaiian Homes Commission Act (HHCA), the HHC has sole authority over land use on Hawaiian Home Lands. As a result, DHHL is not subject to County land use regulations. It has been DHHL's policy to voluntarily subject itself to County regulations that promote public health and safety as compliance with those regulations create safe and healthy environments in which its beneficiaries can live in and thrive. We note the project will be a single-family residential subdivision that is both consistent and compatible with the existing residential land uses of the nearby developed residential subdivisions in

Waikapū and Wailuku.

Comments Related to Impact Analysis:

- 2. <u>Impacts:</u> This Homestead DEA has numerous impacts (intersections at "F levels", schools already beyond capacity, distance from parks, shopping and schools with no safe routes, distant bus stops, etc.). It is necessary to indicate some possible mitigating solutions with a promise to implement them.
- 4. <u>Population</u>: The Draft-EA makes references to the fact that the population of Central Maui and the adjoining districts is growing rapidly and that there is a significant need for housing, and in particular affordable housing.

However, when it comes to describing impacts on infrastructure (schools and other facilities), the Draft-EA states that there will be no impact at all because people are merely moving around. This reasoning neglects to point out that people moving into this project may be coming from upcountry, South Maui, even Honolulu. In each case infrastructure (water, waste water, schools, will be "impacted" and should not be ignored.

• 11. A&B's 2,550 unit Waiale project: Maps throughout the DEA do not show the major neighboring project to the South and to the East. The maps and text should include the largest project (A&B's 2,550 unit Waiale project). It will have the greatest impact on the proposed HHL Homestead project, and vice-versa, it will be affected by this HHL Pu'unani Homestead project.

Response:

We acknowledge your comments. The analysis of impacts presented in the Draft EA carefully examines each impact parameter (e.g., environmental, public services, infrastructure) and presents a thorough analysis of the potential impacts and related mitigation measures associated with each parameter. In conducting the analysis and in preparing the technical studies which are used as a basis for analyzing key parameters (e.g., Traffic Impact Analysis Report (TIAR), Preliminary Engineering and Drainage Report (PEDR)), there are no assumptions made as to the locational origin of prospective residents, nor are there assumptions made regarding the relationship of prospective tenant's locational origins and resulting level of impacts.

The proposed DHHL Pu'unani Homestead Subdivision project is anticipated to be completed and occupied by the year 2024. The context for project need recognizes that other development projects are ongoing, including new housing developments in Kehalani and Maui Lani. Other development proposals, including A&B's Wai'ale project, or other proposed projects within the Central Maui region, will contribute to meeting the island's housing needs. Collectively, all projects, whether they be in Central Maui, South Maui, or West Maui, are considered complementary to addressing Maui's housing shortage. Although the proposed project will benefit Native Hawaiian beneficiaries of the HHCA and DHHL specifically, the DHHL believes that all providers of new housing share the common goal of improving life quality on Maui.

Comment Related to Schools:

• 5. <u>Schools</u> (Draft EA pages 41 + 42) which will service the Homestead Project's many families are all significantly <u>over capacity NOW</u>. In fact, the Draft-EA does not even estimate the potential number of students. Nor does the Draft-EA indicate how the neighboring schools are <u>already at or over capacity!</u>

Pu'u Kukui Elementary School is currently over capacity by approximately 100 students and this over capacity condition is expected to remain or increase over the next five (5) years. **Maui Waena Intermediate School** is over capacity by approximately 250 students. **Maui High School** is over capacity by approximately 300 students.

The small school impact fee to be paid by the State to the State (less than \$1 million) will not begin to satisfy the DOE's ability to build the additional classrooms or improve school capacities. And the State does not have adequate funding for any additional school. So, where will the many students attend school?? A Full-EIS is needed to address these impacts and concerns. An EA and AFNSI are not enough.

Response:

The DHHL recognizes the current enrollment and capacity issues facing Central Maui schools, and is willing and ready to support and comply with the mitigation protocols that have been adopted by the Department of Education (DOE). The DHHL also recognizes that school capacity

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concerns are community-wide issues which must be addressed in the context of broader educational facilities capital improvements planning. As stated in the Draft EA, the DHHL will comply with the requirement for DOE school impact fees totaling approximately \$870,000.00.

Comment Related to Parks:

• Play Areas and Parks: This project will have 161 units and approximately 500-600 residents. There will be many children in a project catering to families who do not have the income to purchase a home in a regular sub-division that provides needed amenities. That is great.

A great impact will fall on the toddlers and many children of school age. These children will need to get to parks and playing fields along streets lacking bicycle routes and with minimum sidewalks and by crossing very busy and dangerous high traffic avenues, including Honopiilani Highway.

Residential subdivisions in the County of Maui are required to dedicate land for park/playground purposes, improvements to a park in the same community plan area, or make payment of an in lieu fee to the County. However, since the DHHL has the authority to use its lands at its discretion for providing residences for its beneficiaries, the Draft-EA states that DHHL will be exempting the project from this requirement. So no parks or recreation area for children. None in the project and none nearby!

The Draft-EA states that most residents are anticipated to relocate from other areas on Maui. As such, adverse impacts to recreational resources are just not anticipated; that is incorrect.

Response:

We acknowledge your comment. An analysis was undertaken to determine if a park could be accommodated within the proposed subdivision. However, the inclusion of a park would result in the loss of developable homestead lots available for DHHL beneficiaries. As the waiting lists for DHHL homestead lots are currently at 3,819 beneficiaries on the Residential Waiting List and 272 beneficiaries on the Waiohuli Undivided Interest Waiting List, the DHHL determined that the inclusion of a park is not feasible as the mission and purpose of both the HHCA and DHHL, is to provide as many homestead opportunities to beneficiaries as

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possible.

Comment Related to Pedestrian Safety:

7. Pedestrian Safety: This DEA has limited safety features for pedestrians and cyclists: sidewalks only on one side of the streets; no mention of crosswalks across Honopiilani Highway for pedestrians or cyclists to get to schools, parks, Foodland and Longs. Most significantly, there are no sidewalks along Honopiilani Highway or along Waiale Road. That will be a very dangerous trip for residents of the Pu'unani Homestead project to get to schools. A Full-EIS is needed to address these parks and stores. impacts and concerns. An EA and AFNSI are not enough.

Response: We acknowledge your comment. Sidewalks are being provided along interior streets of the proposed subdivision. As Honoapi'ilani Highway is a State highway, the DHHL will provide paved shoulders to be consistent with the rest of the Honoapi'ilani Highway in the Waikapū area where the majority of the section between the Waiolani Mauka Subdivision to the Maui Tropical Plantation do not have sidewalks. As noted in the Draft EA. there are existing signalized intersections with crosswalks across Honoapiilani Highway available at Pilikana Street as well as at Ku'ikahi Drive. In addition, the proposed road widening lot will maintain the existing shoulder bike route along Honoapi'ilani Highway fronting the project and thus bikes and pedestrians will continue to use the paved shoulder fronting the site.

Comment Related to Water:

8. Water: The Draft-EA assumes that the County Water system has existing adequate capacity for potable uses and fire flow. What impact will the use of this water for this project have on not only Central Maui developments (many of which have sizeable affordable units), but also those planned in South Maui (again with many affordable units) while drawing on the same Na Wai Eha Water Management Area? A Full-EIS is needed to address these impacts and concerns. An EA and AFNSI are not enough.

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Response: The DHHL is working with the Department of Water Supply to ensure that sufficient water source will be available to serve the project, while ensuring that other affordable projects will have the same opportunity to access water. We note that reservations of water for DHHL homesteading is a protected public trust use of water per the State Water Code.

Comment Related to Agricultural Lands:

9. Prime Agricultural Land (Draft EA Page 14 + Page 15 Map) The homestead project site is located within the ALISH's "Prime" agricultural land area. The Draft- EA goes on to state incorrectly and arrogantly, "As the lands are not currently actively cultivated, there are no adverse impacts to agriculturally productive lands as a result of the proposed action".

For the long-term sustainability of Maui and Hawaii the impacts must be analyzed and not dismissed. A Full-EIS is needed to address these impacts and concerns. An EA and AFNSI are not enough.

Response:

Thank you for your comment. We note, as stated in the Draft EA, that the lands on which the proposed subdivision will be developed have not been in active agricultural production for over 20 years. On the island of Maui, approximately 70,714 acres of the total land area of the island are within the Agricultural Lands of Importance to the State of Hawai'i "Prime" Designation. As such, the use of 47.4 acres or approximately 0.07 percent of the "Prime" designated 70,714 acres on Maui for much needed residential housing in an existing urbanized area with other similar residential subdivisions is not considered a substantial adverse impact in the context of the amount of overall Prime designated lands on Maui.

Comment Related to Drainage:

10. <u>Drainage Issues</u> (Draft EA Page 55) The Draft-EA makes the absurd statement that there will be no drainage issues, even though the land has a 7-8% slope and has an affordable housing project immediately below this project. It bases its assessment on a short, one-hour storm, as if it never rains for more than an hour! What happens if it rains for two hours? or three hours? Where will the water go? How will it be handled on that moderate slope? A Full-EIS is needed to address these impacts and concerns. An

EA and AFNSI are not enough.

Response:

Thank you for your comment. We note that the Draft EA acknowledges the existing slope of the site of the proposed DHHL subdivision as being approximately 7 to 8 percent. The adopted flood control strategy described in the Draft EA is a conventional, time-tested one in which storm runoff is collected using an underground storm drainage system to render it non-destructive, then conveyed to a capacious basin where the stormwater is safely held while it is released slowly to avoid causing downstream flooding. This method of stormwater disposal is commonly employed by contemporary urban developments in Maui County and cities and towns throughout the United States where actual storm events have proven it an effective means of flood prevention.

Comments Related to Traffic:

- 12. <u>Traffic</u>: (Draft EA Pages 43-53 +Appendix "K") Major Draft-EA omissions relate to traffic.
 - **12.A.** The Draft-EA TIAR traffic analysis has selectively <u>underestimated</u> the future impacts from several large, well-known, nearby housing and commercial developments. Specifically: A&B's 545 acre, already partially completely entitled 2,550 unit Waiale project; and the nearby, fully entitled 1,450 unit Waikapu Town Center.

Those other projects in their own Full-EIS have already-approved EIS documents with comprehensive TIAR information, but they did not include this Homestead Housing project in their TIAR analysis. Both of these projects have already received entitlements, and it is likely that they will soon be impacting this project's traffic in a very significant manner. And the HHL Homestead project will affect them. A full EIS with a proper, complete TIAR is needed to evaluate and mitigate these cumulative impacts.

• 12.B. The TIAR has used an early, premature date of 2024 as its analytical "Base Year." It thus avoids having to examine the great increase in traffic from the neighboring projects. It avoids looking clearly at the cumulative traffic impacts from the nearby projects that will soon be built and which will greatly impact all the intersections described in the TIAR. A year 2028 would be more

appropriate as the base year.

- 12.C. Since there is the cumulative future traffic being generated from all of these nearby projects which could significantly affect the already very limited roads in the area, I request that the Hawaiian Homes Commission and the Maui Planning Organization (MPO) require:
 - i) that, along with the other developers, all the projects be required to provide a "fair share" of the cost of: a comprehensive traffic study of the Central Maui region which will examine the cumulative effects/impacts from all the projects and indicate the necessary costs to mitigate regional traffic problems; and
 - (ii) that, along with the other major developments, the HHL Homestead project be required to pay its "fair share" to upgrade the highways, roads and intersections in this area.

Response:

The TIAR considered trip generation from other projects having reasonable probability of being completed by the Base Year of 2024, which is the anticipated build-out of the development. The study used traffic engineering methodology and assumptions which are considered reasonable and appropriate. Importantly, the TIAR recognizes regional improvements which may address existing peak hour congestion issues. Such regional improvement needs are best addressed through a comprehensive traffic impact fee system which can be equitably applied to projects without adversely affecting the equally important goal of providing affordable housing to local families.

It is noted that based on the CIP items from the County's fiscal year 2021 budget, the County is proposing to acquire the land for the Wai'ale development project from A&B in fiscal year 2021 and develop the Central Maui Regional Wastewater Reclamation Facility to service it in fiscal year 2025. Therefore, the Wai'ale project is not anticipated to be constructed by the DHHL Pu'unani Homestead Subdivision's forecasted build-out year of 2024.

The DHHL will be installing the proper deceleration lanes and turn lanes so vehicles turning into the subdivision will not adversely impact the flow of traffic heading north and south on Honoapi'ilani Highway at its main project access. Similarly, for vehicles turning left out of the subdivision, a

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> median refuge lane will be provided that allows a two-stage approach to minimize potential impacts. A traffic signal was not warranted at either of the two (2) accesses.

> The DHHL is generally supportive of governmental efforts to create a reasonable nexus-based traffic impact fee system which can be equitably applied to all developments, and which will help implement regional traffic improvements. However, at the same time, the DHHL's position is unique from other larger scale master planned development projects, as it seeks to target affordable housing needs specifically for its Native Hawaiian beneficiaries and their families.

Comment Related to Segmentation:

13. Segmentation and Avoidance of Cumulative Impacts (Draft EA Page 1)

On several maps at the beginning of the draft EA it shows a large parcel and then shows a portion of that parcel as being the homestead project. There is no description about what is going to be happening on the smaller remainder of that larger parcel.

This seems to be a "segmentation" that avoids all the needed discussion of the impacts of the project. In fact it is not even made clear as to who owns the remainder of the parcel. And weather HHL will be developing that part of the parcel in the future.

The 47.4-acre portion of Parcel 2 to be developed as the proposed subdivision is Lot 1 of the "Pu'unani Ag Subdivision" application which is currently being processed by the County of Maui, Department of Public Works as Development Services Administration (DSA) Subdivision No. 3.2405. The remainder of Parcel 2 will not be developed as part of the proposed project.

Response: We acknowledge your comment and note that the proposed Pu'unani Homestead Subdivision project will be developed on a 47.4-acre portion of TMK (2)3-5-002:002. As stated in the Draft EA, the agriculture zoned remainder of the parcel is not owned by the DHHL, and as such, will not be developed as part of the proposed project. Furthermore, we note that the timing or plan for any future development of this other portion of the TMK parcel by others is unknown.

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Comments Related to Open Space:

• 14. <u>Separation of Each Community</u> Although this is the last item on the list, it is visually the most important of all the many impacts, and should not be taken lightly.

I was the Vice-Chair of the 25-member GPAC (citizen advisory committee) for the Maui Island Plan. We spent several years putting together our recommendations for the plan. One of the concerns which we heard over and over again from the community was the need to separate our traditional communities with open space, agriculture, parks, etc.

The idea was that we should not allow the spaces and land between communities such as Wailuku and Waikapu to become one contiguous urbanized area. The proposed project will go directly against the Maui Island Plan by closing off the last remaining open space between the traditional towns of Wailuku and Waikapu.

• This project makes only the very tiniest recognition of this filling in of the remaining open space with a token 25-foot strip of land along the highway. It further exacerbates the closing off of the open space by having housing built right up against Honopiilani Highway, thus blocking the beautiful views of the West Maui Mountains. The impacts will be most dramatic to every resident who drives along that highway.

Response:

We appreciate your comments providing background into the Maui Island Plan's (MIP) policies of not allowing spaces and land between communities such as Wailuku and Waikapū to become one contiguous urbanized area. We note that with implementation of the proposed project, there will still remain a swath of open, undeveloped agricultural zoned land to the north of the proposed project area providing separation between Wailuku and Waikapū. Also, the existing drainageway and the project's drainage detention basin at the north side of the project will also provide a buffer to the north.

We note that the MIP calls for a 200-foot buffer along the Honoapi'ilani Highway right-of-way and a 500-foot buffer along the Waiolani Mauka

Subdivision. As previously mentioned, a buffer of this size would result in a loss of over 42 percent of the developable homestead lots for DHHL beneficiaries, as such, this is not considered feasible. The sloped frontage along Honoapi'ilani Highway is proposed to be maintained by DHHL as a landscaped lot to set back the houses and provide a green buffer and open space relief between the right-of-way (ROW) and the houselots, which would be an improvement when compared to the multiple tiered retaining walls built up against the Honoapi'ilani Highway ROW by the adjacent subdivision with no green space buffer.

Comment:

- **SUMMARY** Multiple affordable housing projects are needed on Maui, ones that will meet our local residents' housing needs. **HOWEVER**, this project includes:
 - several severe impacts (some disclosed and others not described); and
 - unknown exemptions from Maui County's Maui Island Plan, and the Wailuku-Kahului Community Plan. though DHHL has an authority to over-ride local plans, that does not mean that the potential impacts can be ignored in the Environmental Review process, as is seemingly being done here. It could cost the residents and the broader community dearly.

Response: We acknowledge your comment and appreciate your support for this affordable housing project aimed at providing housing opportunities for Native Hawaiian beneficiaries of the HHCA and DHHL. As discussed in the above responses, where applicable, additional information will be provided in the Final EA to address the comments noted in your letter.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

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Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori, Engineering, Inc. K\DATA\DDC\PuunaniHomestead\Applications\Draft EA\Draft EA Response\Mayer Dick.doc

Subject: FW: Comments re DHHL Pu'unani Subdivision - Waikapū (Hokuao Pellegrino) **Attachments:** Draft EA Comments re DHHL Pu'unani Subdivision (HP-2020).pdf

From: Hokuao Pellegrino < hokuao.pellegrino@gmail.com>

Sent: Monday, June 22, 2020 10:51 PM

To: stewart.t.matsunaga@hawaii.gov; General eMail planning@munekiyohiraga.com;

Michele.McLean@co.maui.hi.us

Subject: Comments re DHHL Pu'unani Subdivision - Waikapū

Aloha,

please find my comments regarding the Draft EA for the Proposed DHHL Pu'unani Subdivision in Waikapū. Mahalo nui!

na, Hōkūao Pellegrino Date: June 21, 2020

To: Department of Hawaiian Homelands c/o Stewart T. Matsunaga and Munekiyo & Hiraga Inc. c/o

Bryan Esmeralda

From: Hōkūao Pellegrino (Recognized Lineal & Cultural Descendant of Waikapū and Wailuku)

Subject: Draft Environmental Assessment Comments re Pu'unani Homestead Subdivision

Aloha,

My name is Hōkūao Pellegrino and I am submitting comments in response to the Draft Environmental Assessment for the proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision.

The 'ili 'āina of Pōhakuloa, Pū'alina'apau/Pū'aliwa'apau, Awakamanu/Awa'akamanu and Pōhāko'i which are the names of the wahi pana within this project area are culturally significant to myself and my 'ohana. Being born and raised in Waikapū on kuleana land adjacent to the current Waikō Road and Old Government Road, I have seen drastic changes even within the short period of my life, most of which have not been good for our community unfortunately. I have in-depth knowledge from my kūpuna on the cultural landscape and history of Waikapū in addition to having spent over 20 years conducting extensive research of the traditional land tenure and cultural practices of Waikapū. I am a cultural practitioner on my family's kuleana land in the 'ili of Noho'ana and Pilipili and throughout the ahupua'a of Waikapū. I spent a lot of my childhood in the Waikapū valley, in the Waikapū stream and 'auwai, as well as riding my bike with my friends within the sugarcane and pineapple fields and around the Waihe'e Ditch and Reservoirs. I was always told about the history of proposed projects site as supported extensive 'auwai (traditional irrigation ditches) and lo'i kalo systems (wetland taro). Furthermore, to the north and within or adjacent to this project site, in the 'ili (subdivision) of Pōhāko'i, was a very important cultural relic called Pōhāko'i. Pōhāko'i was a hoana (grinding stone) used for polishing ko'i (adze) by the kūpuna of both Waikapū and Wailuku.

The pre-western land-use of the proposed Pu'unani Homestead Subdivision area was well documented during the time of the Māhele via Land Commission Awards and Government Grants. Providing the genealogy of this land is important to my 'ohana and I. It is the way in which we honor and respect the original hoa'āina (tenants) of this 'āina, the cultural and historical land-use, as well as our ancestral connections to these lands and structures. As a family who continues to live on kuleana land and practices our traditional way of life, we will always stand up for the protection of our community, the cultural landscape and historic character of Waikapū, especially when there is potential threats by outside interests, even if they are associated with a Native Hawaiian organization such as DHHL.

There are a number of concerns and potential impacts that I am submitting for review and requesting detailed mitigated measures. As a Native Hawaiian, I support housing efforts that allow our lāhui to thrive sustainably and ensure that there are minimal impacts to our cultural and natural resources, as our ancestors once practiced. I would like to extend my support for this project under the condition that the following concerns below provided by my 'ohana and many others in Waikapū who are unable to speak up, are addressed and mitigated accordingly. I initially thought that having a DHHL housing project in Waikapū was a bit odd due to the fact that DHHL already has a multitude of vacant and undeveloped lands on Maui. I also felt and continue to feel uneasy as to the developer of this project. Although he is someone who can be acknowledged for "building homes for Hawaiians on DHHL lands", the true impetus that is occurring over this project is to ensure he benefits by obtaining housing/development credits for future projects elsewhere on Maui, which is likely not to benefit Native Hawaiians nor locals. It's a harsh reality

but is the truth. That is something that a Native Hawaiian organization such as DHHL has to live with and understand the broader implications this project may have beyond their metes and bounds.

My detailed comments below are representative of my extensive background knowledge of the proposed development project area and is not for or against the DHHL Pu'unani Homestead project. They are however intended to highlight the many deficiencies in the Draft Environmental Assessment, potential impacts to the existing community of Waikapū and Native Hawaiian lineal descendants such as myself and others and the need to develop more robust mitigation measures as outlined in each section below.

Drainage Related to Streams and Wetlands:

While the proposed project is not adjacent to the Waikapū Stream, it may have the potential to impact it along with the wetlands of Keālia which is where Waikapū Stream culminates. I would like to request that this section be further studied as it relates to my comments. I am concerned about runoff whether it be from normal rainfall occurrences or 50-100 year storm events of which we have had much more frequently over the last 4 years. The proposed project site has the potential to dump into Kalapaokaʻīlio Gulch and/or specific drainage ditches that exit into the current Waiʻale Drainage Pond. This drainage pond when full, enters into Waikapū Stream and ultimately ends at Keālia Wetlands and Māʻalaea Bay. There should be further studies conducted to show each scenario from normal rainfall data to torrential rain/flooding events, feasibility of the drainage ditches and retention basins, and the impacts to the Waikapū Stream and Keālia Wetlands if the basins are breached.

Ag Productivity Considerations:

This project proposes to take viable lands out of agriculture for urban use. These lands were historically cultivated in kalo as specified in my preface. Native Hawaiians were also productive and experienced mahi'ai (farmers). While it is important to construct homes for our lāhui to live in, DHHL has the opportunity to be innovative and incorporate agricultural components within this high density residential plan. 7,500 lots is a sizable lot and has the potential for māla 'ai (garden) spaces to be incorporated into them. Since this project will be eliminating any future agricultural use of these lands in addition to displacing those farmers that are currently on the land, I would request that either 5 raised garden beds with irrigation be constructed alongside the building of each home or that 1 lot be set aside for a community farm with onsite irrigation infrastructure in place for the entire project community to utilize.

Flora and Fauna:

While there was brief reference to the potential migration and or flight path of the endangered 'ōpe'ape'a (Hawaiian hoary bat), 'ua'u (petrel) and 'ua'u kani (shearwater), it is important to notate that with the restoration of streamflow in all Nā Wai 'Ehā Streams, continual use of plantation era reservoirs, along with urban development that requires drainage basins for their projects, I have observed on countless occasions an increase in the presence and permanent habitat of the endangered ae'o (Hawaiian stilt) and nēnē (Hawaiian goose) throughout the Waikapū and Wailuku ahupua'a. I have seen these native aviary species around the proposed project area, even along the Waihe'e Ditch to the west, south and north of the proposed project. I would like to request that this be addressed and/or notated within the Flora and Fauna Study to ensure that these endangered species and their habitat are not impacted.

Archaeology:

The AIS that was conducted 15 years ago in 2005 by the former developer and land owner. An AA was conducted in 2017 and approved by SHPD. SHPD has also approved the continued use of the AIS by the current developer of this proposed project. I would urge a completely new AIS be conducted which could incorporate more 21st century technology such as GPR. Secondly I would like to recommend that an archaeological monitoring and burial treatment plan be required for this project. Archaeological monitoring should be required for the entire duration of the project development which should include but limited to all grubbing, grading, underground utilities, sewage, water and other ground disturbances. While these lands were previously disturbed by both the sugarcane and plantation industry, prior to that, Native Hawaiians of Waikapū lived and engaged in numerous cultural practices on these lands. Therefore, it is highly probable that the developer will encounter archaeological features and the possibility of burials. I would like to ensure that a more detailed and more current AIS be drafted for this project to ensure that any and all cultural resources be identified, protected and preserved.

CIA:

As a participant of the CIA, I was generally pleased with the process. I am however disappointed that there were very few Native Hawaiian informants of Waikapū that were interviewed. I understand the challenges that one may encounter when conducting a CIA, however, it is critical that the consultant go above and beyond to seek knowledgeable individuals of this area, of which there are many. I appreciate that the consultant is continuing to conduct additional interviews as i believe this study is a very important component of the overall proposed project, especially knowing that it is being developed by a Native Hawaiian organization to benefit Native Hawaiians.

I would like to reiterate once more that this project would have devastating impacts to the kuleana lands and unique cultural resources utilized by Native Hawaiian lineal descendants such as myself and my family who live along Waikō Road, if there is any traffic that is allowed to enter or exit this project via the Old Waikapū Road. My comments within the CIA are more specific and can be referenced as it relates to this particular impact. I would like to see a commitment in writing by DHHL, that as a Native Hawaiian organization, building homes for the benefit of Native Hawaiians, will not destroy the existing community of Native Hawaiian lineal descendants of Waikapū who have been in this ahupua'a for generations.

Development Design:

It would be nice if DHHL could select a house plan that incorporates a more "plantation" or historical design style, something that resembles the older housing areas within the Waikapū Community. A great project and one that was recently completed that incorporated these elements can be found in the affordable housing development on Mokuhau Road in Wailuku just behind the old T.J. Market Building. Furthermore, I would like to see that DHHL commit to incorporating only Native Hawaiian plants in and around the proposed development project landscape. This includes but not limited to, sidewalks, open spaces, communal spaces and within each home site. The valleys of Waikapū continue to have an abundance of native plants, trees and shrubs such as koai'a, alahe'e, wiliwili, 'ōhi'a, lama, 'a'ali'i, ko'oko'olau, ko'oloa 'ula, ma'o hao hele, ilie'e, 'ilima, 'āhinahina, pili and many others. It would be great to develop a landscaping plan for the proposed project that includes native species found within the Waikapū ahupua'a. Both of these recommendations don't only add a unique character and sense of place,

but will be a great educational highlight for those future Native Hawaiian families and their ability to connect with the ahupua'a of Waikapū, of which they will be calling home.

Water:

The water resources for this proposed project derive from the underground 'lao Aquifer. Although the well water used for this project is in the historical boundary of the Waikapū ahupua'a, the well that will be used for this proposed project is within the hydrologic area of the Wailuku aquifer. The Wailuku aquifer is under the jurisdiction and protection of the State since it was designated in 2010 as a Ground and Surface Water Management Area. This means that there is an added layer of protection for these water resources. The 'lao aquifer has been in distress for decades and as the President of Hui o Nā Wai 'Ehā, i would like to ensure that this project does not degrade the ground water aquifer lens which has the potential for impacting surface water in both Wailuku and Waikapū. I would like to reiterate and support Mr. Jeff Pearson's (DWS Director) request that BMP's be adhered to for this proposed project and that a wellhead protection plan be developed to ensure the longevity of water resources in the area. It is also important follow his recommendations because there may also be impacts to traditional and customary rights and practices of Native Hawaiians in the Waikapū and Wailuku ahupua'a as it relates to surface and ground water resources.

Scenic, Open Spaces and Buffer Zones:

The Maui Island Plan as it related to the original development plan for these lands (Pu'unani Subdivision) required that there be a 200 foot greenbelt along the eastern edge and adjacent to Honoapi'ilani Highway as well as a 500 foot greenbelt along the areas to the southern extent. I was the Vice President of the Waikapū Community Association when the Maui Island Plan was developed and these specific greenbelt requirements put into place. The purpose of these setbacks and greenbelts were to ensure that there is a visual and cultural relief by creating a separation between the Waikapū and Wailuku ahupua'a. Over the last decade, developments in both Waikapū and Wailuku have been converging more and more so towards each other at the traditional ahupua'a boundary of Pōhāko'i which is now Ku'ikahi Drive and Honapi'ilani Highway. We see this happening on both the mauka and makai side of Honoapi'ilani Highway. The Waikapū Community Association under my tenure created the Statement of Values http://waikapumaui.org/wp-content/uploads/2012/02/WCA-Statement-of-Values.pdf which references the following;

- Maintain a physical and visual separation of communities by establishing a 'Green Belt' open space buffer zone around Waikapū that physically identifies Waikapū as a separate and unique community.
- Preserve the public view corridors of Waikapū Valley, West Maui Mountains, the ocean, the plains
 of Central Maui, and Haleakalā from public highways (Waikō Road, Wai'ale Road, and
 Honoapi'ilani Highway). Establish generous building setbacks and building height limits along
 these view corridors.
- Aspire to the 'Garden Town' concept with more vegetated open space and the planting of trees in all the common areas.

While I stand strongly in support of having both the 200 and 500 foot buffer zones, I also understand the importance of this proposed development project area especially since it benefits Native Hawaiians. Therefore I am recommending the following changes be made as it relates to the scenic and view plains, open spaces and buffer zones. Maintaining and protecting view plains is an important part of our

traditional Hawaiian practice of kilo 'āina (land observations). I believe there can be a compromise on the above plans outlined in the Maui Island Plan as it relates to this proposed project. They are specified below.

- 1. A required buffer zone and greenspace of a minimum of 200 feet from Honapi'ilani Highway to the first house lot. This is to ensure that the mauka view plains of Kapilau, Kalapaoka'īlio, Pu'upi'o, Hana'ula, and other ridges, valleys and peaks are undisturbed from Honoapi'ilani Highway. A prime example of a negative impact to the aforementioned is the neighboring Waiolani subdivision, which built up the grade of the house lots at the edge of Honoapi'ilani Highway upwards of 20 feet and eliminated any and all ability to view the mountains, that are important cultural resources. I would recommend that either the existing berm along Honoapi'ilani Highway be maintained or if eliminated, that a manicured native plant landscape be established within the 200 foot buffer zone between highway and first house lot.
- 2. A required buffer zone and greenspace of 50-75 feet from the western or mauka boundary along the historic Old Waikapū Road and the rear boundary of proposed house lots.
- 3. The natural topography shall be maintained and untouched. This proposed project **not** be allowed to modify or change the current and historic grade of the property which includes all house lots and roads. This also shall include all house lots and roads.

Regarding Removal and Replacement of Monkey Pod Trees:

It was also notated within the EA that a number of the old Monkey Pod trees will be removed along Honoapi'ilani Highway and replaced following the completion of the proposed project. I would like to ensure that this commitment is followed through upon. While Monkey Pod trees are not endemic or indigenous to Hawai'i, plants of I prefer to be cultivated, they do serve as an important role within the community. They are important natural features that the people of Maui identify with when they drive within the Waikapū-Wailuku corridor. Please ensure that mature trees of significant size and height be planted immediately upon the completion of this project.

Mahalo nui for taking the time address each and every one of my comments as well as mitigation measures. Please let me know if you have any further questions.

Na,

Mokrao Pelleguno

Hōkūao Pellegrino 213 West Waikō Road Wailuku, Hawaiʻi, 96793 Hokuao.pellegrino@gmail.com



Michael T. Munekiyo CHAIRMAN

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng VICE PRESIDENT

September 22, 2020

Via email: hokuao.pellegrino@gmail.com

Hōkūao Pellegrino

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui, Hawai'i

Dear Mr. Pellegrino:

Thank you for your email dated June 21, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

Comments Related to Purpose of Letter:

The ʻili ʻāina of Pōhakuloa, Pū'alina'apau/Pū'aliwa'apau, Awakamanu/Awa'akamanu and Pōhāko'i which are the names of the wahi pana within this project area are culturally significant to myself and my 'ohana. Being born and raised in Waikapū on kuleana land adjacent to the current Waikō Road and Old Government Road, I have seen drastic changes even within the short period of my life, most of which have not been good for our community unfortunately. I have in-depth knowledge from my kūpuna on the cultural landscape and history of Waikapū in addition to having spent over 20 years conducting extensive research of the traditional land tenure and cultural practices of Waikapū. I am a cultural practitioner on my family's kuleana land in the 'ili of Noho'ana and Pilipili and throughout the ahupua'a of Waikapū. I spent a lot of my childhood in the Waikapū valley, in the Waikapū stream and 'auwai, as well as riding my bike with my friends within the sugarcane and pineapple fields and around the Waihe'e Ditch and Reservoirs. I was always told about the history of proposed projects site as supported extensive 'auwai (traditional irrigation

ditches) and lo'i kalo systems (wetland taro).

- The pre-western land-use of the proposed Pu'unani Homestead Subdivision area was well documented during the time of the Māhele via Land Commission Awards and Government Grants. Providing the genealogy of this land is important to my 'ohana and I. It is the way in which we honor and respect the original hoa'āina (tenants) of this 'āina, the cultural and historical land-use, as well as our ancestral connections to these lands and structures. As a family who continues to live on kuleana land and practices our traditional way of life, we will always stand up for the protection of our community, the cultural landscape and historic character of Waikapū, especially when there is potential threats by outside interests, even if they are associated with a Native Hawaiian organization such as DHHL.
- There are a number of concerns and potential impacts that I am submitting for review and requesting detailed mitigated measures. As a Native Hawaiian, I support housing efforts that allow our l\(\bar{a}\)hui to thrive sustainably and ensure that there are minimal impacts to our cultural and natural resources, as our ancestors once practiced. I would like to extend my support for this project under the condition that the following concerns below provided by my 'ohana and many others in Waikap\(\bar{u}\) who are unable to speak up, are addressed and mitigated accordingly.
- My detailed comments below are representative of my extensive background knowledge of the proposed development project area and is not for or against the DHHL Pu'unani Homestead project. They are however intended to highlight the many deficiencies in the Draft Environmental Assessment, potential impacts to the existing community of Waikapū and Native Hawaiian lineal descendants such as myself and others and the need to develop more robust mitigation measures as outlined in each section below.

Response:

We acknowledge you and your family's lineal ties to the Waikapū area, and appreciate you taking time to provide your input on the proposed DHHL Pu'unani Homestead Subdivision project.

We appreciate you and your family's efforts to honor and respect the traditional uses of land in the Waikapū area. We agree that to understand

the past is to ensure its survival into the future. We appreciate your efforts to ensure that the proposed development, as well as others that may occur in Waikapū, are carried out respectfully to both the history of the area, as well as to its current residents.

Furthermore we appreciate your support of the proposed project as it aims to provide affordable housing opportunities for Native Hawaiian beneficiaries of the Hawaiian Homes Commission Act (HHCA) and DHHL. The concerns noted in your letter will be carefully considered by the DHHL.

Comments Related to Archaeological and Cultural Resources:

- Furthermore, to the north and within or adjacent to this project site, in the 'ili (subdivision) of Pōhāko'i, was a very important cultural relic called Pōhāko'i. Pōhāko'i was a hoana (grinding stone) used for polishing ko'i (adze) by the kūpuna of both Waikapū and Wailuku.
- The AIS that was conducted 15 years ago in 2005 by the former developer and land owner. An AA was conducted in 2017 and approved by SHPD. SHPD has also approved the continued use of the AIS by the current developer of this proposed project. I would urge a completely new AIS be conducted which could incorporate more 21st century technology such as GPR.
- Secondly I would like to recommend that an archaeological monitoring and burial treatment plan be required for this project. Archaeological monitoring should be required for the entire duration of the project development which should include but limited to all grubbing, grading, underground utilities, sewage, water and other ground disturbances. While these lands were previously disturbed by both the sugarcane and plantation industry, prior to that, Native Hawaiians of Waikapū lived and engaged in numerous cultural practices on these lands. Therefore, it is highly probable that the developer will encounter archaeological features and the possibility of burials. I would like to ensure that a more detailed and more current AIS be drafted for this project to ensure that any and all cultural resources be identified, protected and preserved.

As a participant of the CIA, I was generally pleased with the process. I am however disappointed that there were very few Native Hawaiian informants of Waikapū that were interviewed. I understand the challenges that one may encounter when conducting a CIA, however, it is critical that the consultant go above and beyond to seek knowledgeable individuals of this area, of which there are many. I appreciate that the consultant is continuing to conduct additional interviews as i believe this study is a very important component of the overall proposed project, especially knowing that it is being developed by a Native Hawaiian organization to benefit Native Hawaiians.

Response:

DHHL understands the importance of cultural sites such as Pōhāko'i. As stated in your comment letter and Cultural Impact Assessment (CIA) interview, the exact location of this resource is unknown and it is unknown if Pōhāko'i remains in situ or if it has been relocated. However based on the helpful information you provided and the CIA research, DHHL understands that it is believed to be near the northwestern corner of the proposed subdivision. Based on the recommendations in the CIA. DHHL and the developer will have the project archaeologist perform an archaeological field inspection in an effort to locate this feature prior to the commencement of any construction related ground altering activities. If Pōhāko'i is located within the proposed project and it is determined to be a significant historic property, then DHHL will work with State Historic Preservation Division (SHPD) on mitigation measures. We note that although the SHPD did not recommend any further archaeological work for the area of the proposed subdivision via letter dated March 27, 2020 (Appendix G of the Draft EA), the DHHL has elected to conduct archaeological monitoring during all ground disturbance activities. As such, an Archaeological Monitoring Plan (AMP) will be prepared and the contractor, once selected, will be required to follow the provisions of the AMP. Should any historical sites or artifacts be inadvertently discovered, work in the immediate vicinity of the find will stop, and the SHPD will be contacted for further guidance. An end-of-field work Archaeological Monitoring Report (AMR) will be submitted to SHPD documenting any significant cultural deposits or burials encountered.

As stated in the Draft EA, in accordance with State historic preservation laws, the DHHL submitted a Hawai'i Revised Statutes (HRS) Chapter 6E submittal form for the project, and referenced the 2005 Archaeological Inventory Survey (AIS) completed for the project area as well as additional

lands in proximity to the site, and the SHPD's acceptance of that AIS and their previous determination that no further archaeological mitigation was necessary for the proposed subdivision site. Via letter dated March 27, 2020, the SHPD maintained their determination. However, as previously noted, the DHHL has elected to conduct archaeological monitoring during all ground disturbance activities at the site of the proposed subdivision.

Furthermore, we note that during the CIA process, twenty-five (25) individuals and organizations were contacted during the consultation process and they provided written responses or expressed interest in being interviewed based on their own personal preference. The consultation process was extended by DHHL and the developer to accommodate additional outreach for potential interviews with cultural informants familiar with the area following publication of the Draft EA. We note that although the COVID-19 pandemic affected the scheduling of and ability to reach out and conduct in-person interviews, these potential interviews by telephone or virtual means are in the process of being finalized and will be included in the updated CIA which will be included as an appendix to and discussed in the Final EA.

Comments Related to Project Background:

- I initially thought that having a DHHL housing project in Waikapū was a bit odd due to the fact that DHHL already has a multitude of vacant and undeveloped lands on Maui.
- I also felt and continue to feel uneasy as to the developer of this project. Although he is someone who can be acknowledged for "building homes for Hawaiians on DHHL lands", the true impetus that is occurring over this project is to ensure he benefits by obtaining housing/development credits for future projects elsewhere on Maui, which is likely not to benefit Native Hawaiians nor locals. It's a harsh reality but is the truth. That is something that a Native Hawaiian organization such as DHHL has to live with and understand the broader implications this project may have beyond their metes and bounds.

Response:

As noted in the Draft EA, the selection of the property for development of the proposed project is in-line with DHHL beneficiaries' preference for homestead opportunities in Central Maui and in accordance with the residential goals of the DHHL Maui Island Plan to acquire additional lands in Central Maui to meet the Native Hawaiian beneficiary demand for residential homesteads. We add that DHHL is also currently planning for additional homestead opportunities to be developed on their lands in the Upcountry and West Maui regions in the foreseeable future.

One of the major barriers to DHHL homestead development is the financial cost of development for the Department. The intended outcome of Act 141, 2009 was to encourage private developers to partner with and invest in DHHL homesteading projects in the hopes of accelerating and enhancing the development of Hawaiian Home Lands for DHHL beneficiaries on the waiting list. Act 141, 2009, which provides affordable housing credits to DHHL, gives DHHL another tool in its development tool chest to speed-up the development of Hawaiian Home Lands for those on the waiting list. DHHL has been blessed with public-private partnerships through Act 141, 2009, particularly in Maui County which has resulted in attracting development of new homesteads with this developer in Wai'ehu Kou in Central Maui and Villages of Leiali'i in Lahaina, developer financed interim house construction financing where no DHHL funds were required, acquisition of real property, and payment of cash to be placed directly into homestead development in Maui County. With this project, the developer at its risk will have worked with DHHL to provide funding resulting in 533 homes for Native Hawaiian beneficiaries to live and raise their families. Had it not been for this public-private partnership, the beneficiaries on the Maui Residential Waiting list would have to wait years longer for their homesteads.

It should also be noted that a meaningful percentage of Native Hawaiians work in the construction industry, including many DHHL beneficiaries. These individuals rely on construction jobs both off and on DHHL lands to support their families.

Comment Related to Drainage, Streams and Wetlands:

• While the proposed project is not adjacent to the Waikapū Stream, it may have the potential to impact it along with the wetlands of Keālia which is where Waikapū Stream culminates. I would like to request that this section be further studied as it relates to my comments. I am concerned about runoff whether it be from normal rainfall occurrences or 50-100 year storm events of which we have had much more frequently over the last 4 years. The proposed project site has the potential to dump into Kalapaoka'īlio

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Gulch and/or specific drainage ditches that exit into the current Wai'ale Drainage Pond. This drainage pond when full, enters into Waikapū Stream and ultimately ends at Keālia Wetlands and Mā'alaea Bay. There should be further studies conducted to show each scenario from normal rainfall data to torrential rain/flooding events, feasibility of the drainage ditches and retention basins, and the impacts to the Waikapū Stream and Keālia Wetlands if the basins are breached.

Response:

We acknowledge your comment. As stated in the Draft EA, every effort will be made by DHHL to ensure that the stormwater runoff generated by the project will not adversely impact the existing natural drainageway located to the north of the proposed subdivision, Waikapū Stream, or any other waterbody in the region. The drainage system for the project will be designed such that stormwater will be directed to drain inlets within the internal streets, conveyed by underground pipes to a proposed drainage detention basin, which will mitigate expected increases in peak stormwater flow rate while also providing storm water pollution control. The drainage basin will have an outlet structure that will allow for controlled release of the runoff into the existing drainageway and eventually to the Wai'ale Reservoir, as it is currently doing per the existing drainage pattern. As stated in the Draft EA, the proposed drainage detention basin, whose capacity will be sized for a 50 year-1 hour design storm, will mitigate expected increases in peak stormwater flows by limiting the downstream release of stormwater to a flow rate that does not exceed pre-development levels while also providing water pollution control, that is in compliance with Maui County drainage standards and storm water treatment rules.

Comments Related to Agricultural Productivity:

- This project proposes to take viable lands out of agriculture for urban use. These lands were historically cultivated in kalo as specified in my preface. Native Hawaiians were also productive and experienced mahi'ai (farmers). While it is important to construct homes for our lāhui to live in, DHHL has the opportunity to be innovative and incorporate agricultural components within this high density residential plan. 7,500 lots is a sizable lot and has the potential for māla 'ai (garden) spaces to be incorporated into them.
- Since this project will be eliminating any future agricultural use of these lands in addition to displacing those farmers that are currently

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on the land, I would request that either 5 raised garden beds with irrigation be constructed alongside the building of each home or that 1 lot be set aside for a community farm with onsite irrigation infrastructure in place for the entire project community to utilize.

Response:

We acknowledge your comment. It is the DHHL's intent to utilize the subject property for residential homesteading purposes in accordance with the Hawaiian Homes Commission Act given the property's location within the developed area of Waikapū, adjacent to residential neighborhoods of a similar character. While we understand that traditional agricultural practices are important to uphold, we note that the DHHL has other lands on Maui which are designated for agriculture and subsistence agriculture use which may be better suited for this purpose. We note further that Native Hawaiian lessees would be able to utilize their respective lots for home gardening if desired.

Comment Related to Flora and Fauna:

• While there was brief reference to the potential migration and or flight path of the endangered 'ōpe'ape'a (Hawaiian hoary bat), 'ua'u (petrel) and 'ua'u kani (shearwater), it is important to notate that with the restoration of streamflow in all Nā Wai 'Ehā Streams, continual use of plantation era reservoirs, along with urban development that requires drainage basins for their projects, I have observed on countless occasions an increase in the presence and permanent habitat of the endangered ae'o (Hawaiian stilt) and nēnē (Hawaiian goose) throughout the Waikapū and Wailuku ahupua'a. I have seen these native aviary species around the proposed project area, even along the Waihe'e Ditch to the west, south and north of the proposed project. I would like to request that this be addressed and/or notated within the Flora and Fauna Study to ensure that these endangered species and their habitat are not impacted.

Response:

We appreciate your comment. During the early consultation period for the proposed project, the U.S. Fish and Wildlife Service (USFWS), in their letter dated August 30, 2019, noted that the nene can be predominately found on Maui among other islands, and that the ae'o can be found wherever ephemeral or persistent standing water may occur, such as the proposed detention basin. In light of this, the USFWS provided conservation measures to minimize risks to these species. As stated in our response letter to USFWS, dated May 18, 2020, these conservation

measures were forwarded to the DHHL and the project design team for consideration and incorporation into the proposed project. recommended by USFWS, DHHL will work with their office in developing and incorporating measures to avoid or minimize potential project-related impacts to the ae'o and nene. Both the USFWS letter and our response letter can be found in Chapter IX of the Draft EA. In addition, the State Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW) noted in their letter dated June 19, 2020 that it is against State law to harm or harass the ae'o and nene. DHHL will comply with the comments in DOFAW's letter that if these species are present during construction activities then all activities within 100 feet should cease, and the bird should not be approached. Work may continue after the bird leaves the area of its own accord. Also, if a nest is discovered, then the Maui DOFAW office will be contacted for implementation of appropriate protocol.

Comment Related to Old Waikapū Road:

I would like to reiterate once more that this project would have devastating impacts to the kuleana lands and unique cultural resources utilized by Native Hawaiian lineal descendants such as myself and my family who live along Waikō Road, if there is any traffic that is allowed to enter or exit this project via the Old Waikapū Road. My comments within the CIA are more specific and can be referenced as it relates to this particular impact. I would like to see a commitment in writing by DHHL, that as a Native Hawaiian organization, building homes for the benefit of Native Hawaiians, will not destroy the existing community of Native Hawaiian lineal descendants of Waikapū who have been in this ahupua'a for generations.

Response: We acknowledge your comment. The Final EA reflects that DHHL has no plans to improve Old Waikapū Road or to use it to provide access to the proposed DHHL Pu'unani Homestead Subdivision project.

Comment Related to Development Design:

It would be nice if DHHL could select a house plan that incorporates a more "plantation" or historical design style, something that resembles the older housing areas within the Waikapū Community. A great project and one that was recently

Hōkūao Pellegrino September 22, 2020 Page 10

> completed that incorporated these elements can be found in the affordable housing development on Mokuhau Road in Wailuku just behind the old T.J. Market Building.

Response: We acknowledge your comment and note that the proposed housing design is similar to that of the existing DHHL homesteads at Wai'ehu Kou and Leiali'i, and complimentary to the surrounding Waikapū residential subdivisions of Waiolani and Waikapū Gardens. The proposed design uses features and materials reminiscent of plantation design, such as wood paneling and hip and dutch gable roofs, while utilizing contemporary building techniques and materials to provide residents with modern comforts.

Comments Related to Landscaping:

- Furthermore, I would like to see that DHHL commit to incorporating only Native Hawaiian plants in and around the proposed development project landscape. This includes but not limited to, sidewalks, open spaces, communal spaces and within each home site. The valleys of Waikapū continue to have an abundance of native plants, trees and shrubs such as koai'a, alahe'e, wiliwili, 'ōhi'a, lama, 'a'ali'i, ko'oko'olau, ko'oloa 'ula, ma'o hao hele, ilie'e, 'ilima, 'āhinahina, pili and many others. It would be great to develop a landscaping plan for the proposed project that includes native species found within the Waikapū ahupua'a. Both of these recommendations don't only add a unique character and sense of place, but will be a great educational highlight for those future Native Hawaiian families and their ability to connect with the ahupua'a of Waikapū, of which they will be calling home.
- It was also notated within the EA that a number of the old Monkey Pod trees will be removed along Honoapi'ilani Highway and replaced following the completion of the proposed project. I would like to ensure that this commitment is followed through upon. While Monkey Pod trees are not endemic or indigenous to Hawai'i, plants of I prefer to be cultivated, they do serve as an important role within the community. They are important natural features that the people of Maui identify with when they drive within the Waikapū-Wailuku corridor. Please ensure that mature trees of significant size and height be planted immediately upon the completion of this project.

Response: We appreciate your comments that the use of native plants would add both a unique character and sense of place for the proposed project, as well as an educational feature for future Native Hawaiian families who would be residing in the proposed subdivision. To the extent practicable in the context of maintenance needs and availability, native plants will be the preferred choice for use in the DHHL owned and maintained landscape lot along the Honoapi'ilani Highway frontage.

> We acknowledge your comment stating that Monkeypod, although not endemic or indigenous to Hawai'i, is your preferred choice of tree to replace the Monkeypod trees that are proposed to be removed along the project frontage on Honoapi'ilani Highway as they are an identifiable feature when driving into Waikapū from Wailuku. However, we note that through consultation with the State Department of Transportation (DOT), Monkeypod is not a desirable replacement tree due to the maintenance required as well as the tendency of their roots to undermine the roadway surface, as is the case with some of the existing Monkeypod trees. Nonetheless, an acceptable replacement tree will be selected and DHHL will coordinate with the Maui County Arborist Committee and State DOT.

Comment Related to Water:

The water resources for this proposed project derive from the underground 'Jao Aguifer. Although the well water used for this project is in the historical boundary of the Waikapū ahupua'a, the well that will be used for this proposed project is within the hydrologic area of the Wailuku aguifer. The Wailuku aguifer is under the jurisdiction and protection of the State since it was designated in 2010 as a Ground and Surface Water Management Area. This means that there is an added layer of protection for these water resources. The 'lao aquifer has been in distress for decades and as the President of Hui o Nā Wai 'Ehā, i would like to ensure that this project does not degrade the ground water aquifer lens which has the potential for impacting surface water in both Wailuku and Waikapū. I would like to reiterate and support Mr. Jeff Pearson's (DWS Director) request that BMP's be adhered to for this proposed project and that a wellhead protection plan be developed to ensure the longevity of water resources in the area. It is also important follow his recommendations because there may also be impacts to traditional and customary rights and practices of Native Hawaiians in the Waikapū and Wailuku ahupua'a as it relates to

surface and ground water resources.

Response:

The DHHL is working with the Department of Water Supply (DWS) to ensure that sufficient water source will be available to serve the project, while ensuring that other areas will have the same opportunity to access water without significant impacts to ground and surface water resources. As stated in our response letter to the DWS's early consultation comments on the proposed project, we understand that the project may be subject to design guidelines as established by the "Bill for An Ordinance Amending Title 19, Maui County Code, To Establish a Wellhead Protection Overlay District", dated July 24, 2018. We note that per the Preliminary Site Plan (Figure 3 of the Draft EA), the proposed stormwater detention basin for the project lies outside of the wellhead protection area. Furthermore, we understand the importance of water resources as it relates to traditional and customary rights and practices and note that reservations of water for DHHL homesteading is a protected public trust use of water per the State Please note that if the project site stayed in active Water Code. agriculture, then the average daily water demand would be 5,000 gpd/acre per the County DWS standards and could use up to 237,000 gpd, which is more than double the estimated average daily water demand for the proposed residential subdivision.

Comments Related to Scenic, Open Space and Buffer Zones:

The Maui Island Plan as it related to the original development plan for these lands (Pu'unani Subdivision) required that there be a 200 foot greenbelt along the eastern edge and adjacent to Honoapi'ilani Highway as well as a 500 foot greenbelt along the areas to the southern extent. I was the Vice President of the Waikapū Community Association when the Maui Island Plan was developed and these specific greenbelt requirements put into place. The purpose of these setbacks and greenbelts were to ensure that there is a visual and cultural relief by creating a separation between the and Wailuku ahupua'a. Over the last decade, developments in both Waikapū and Wailuku have been converging more and more so towards each other at the traditional ahupua'a boundary of Pōhāko'i which is now Ku'ikahi Drive and Honapi'ilani Highway. We see this happening on both the mauka and makai of Honoapi'ilani Highway. The Waikapū Community Association under my tenure created the Statement of Values http://waikapumaui.org/wp-content/uploads/2012/02/WCA-

Statement-of-Values.pdf which references the following;

- Maintain a physical and visual separation of communities by establishing a 'Green Belt' open space buffer zone around Waikapū that physically identifies Waikapū as a separate and unique community.
- Preserve the public view corridors of Waikapū Valley, West Maui Mountains, the ocean, the plains of Central Maui, and Haleakalā from public highways (Waikō Road, Wai'ale Road, and Honoapi'ilani Highway). Establish generous building setbacks and building height limits along these view corridors.
- Aspire to the 'Garden Town' concept with more vegetated open space and the planting of trees in all the common areas.
- While I stand strongly in support of having both the 200 and 500 foot buffer zones, I also understand the importance of this proposed development project area especially since it benefits Native Hawaiians. Therefore I am recommending the following changes be made as it relates to the scenic and view plains, open spaces and buffer zones. Maintaining and protecting view plains is an important part of our traditional Hawaiian practice of kilo 'āina (land observations). I believe there can be a compromise on the above plans outlined in the Maui Island Plan as it relates to this proposed project. They are specified below.
 - 1. A required buffer zone and greenspace of a minimum of 200 feet from Honapi'ilani Highway to the first house lot. This is to ensure that the mauka view plains of Kapilau, Kalapaoka'īlio, Pu'upi'o, Hana'ula, and other ridges, valleys and peaks are undisturbed from Honoapi'ilani Highway. A prime example of a negative impact to the aforementioned is the neighboring Waiolani subdivision, which built up the grade of the house lots at the edge of Honoapi'ilani Highway upwards of 20 feet and eliminated any and all ability to view the mountains, that are important cultural resources. I would recommend that either the existing berm along Honoapi'ilani Highway be maintained or if eliminated, that a manicured native plant landscape be established within the 200 foot buffer zone between highway and first house lot.

- 2. A required buffer zone and greenspace of 50-75 feet from the western or mauka boundary along the historic Old Waikapū Road and the rear boundary of proposed house lots.
- 3. The natural topography shall be maintained and untouched. This proposed project not be allowed to modify or change the current and historic grade of the property which includes all house lots and roads. This also shall include all house lots and roads.

Response:

We appreciate your comments providing background into the Maui Island Plan's (MIP) greenbelts along Honoapi'ilani Highway, as well as the Waikapū Community Association's Statement of Values, which also call for a greenbelt and preservation of Waikapū as its own community. An analysis was undertaken by the DHHL to determine if the MIP 200-foot greenbelt along Honoapi'ilani Highway and 500-foot greenbelt along the project's boundary with the existing Waiolani Mauka subdivision could be accommodated. Based on this analysis, the inclusion of these two (2) greenbelts would result in the loss of approximately 68 out of the total 161 developable lots available for DHHL beneficiaries. As the waiting lists for DHHL homestead lots are currently at 3,819 beneficiaries on the Residential Waiting List and 272 beneficiaries on the Waiohuli Undivided Interest Waiting List, the DHHL determined that the inclusion of these two (2) greenbelts and losing over 42 percent of the possible homes is not feasible and goes against the mission and purpose of both the HHCA and DHHL, which are to provide as many homestead opportunities to their native Hawaiian beneficiaries as possible. Furthermore, we note that these MIP greenbelts were required as part of a former planned Pu'unani development project, by others, which exceeded the size and scale of the currently proposed 161-lot residential subdivision. As such, the DHHL will be providing a proposed landscaped lot along Honoapi'ilani Highway and a buffer along the project's northern boundary, abutting vacant lands. The sloped frontage along Honoapi'ilani Highway is proposed to be maintained by DHHL as a landscaped lot to set back the houses from the highway and provide a green buffer and open space relief from the right-of-way (ROW), which would be an improvement when compared to the multiple tiered retaining walls built up against the Honoapi'ilani Highway ROW by the adjacent subdivision with no green space buffer, as noted in your comment. In addition, the project's proposed drainage basin is located at the northeast corner of the property and will provide a buffer (average width of over 200 ft) along approximately one-third of the project's frontage along Honoapi'ilani Highway. Furthermore, we note that there will still

Hōkūao Pellegrino September 22, 2020 Page 15

remain a swath of open, undeveloped land between the project's northern boundary and Kuikahi Drive, providing separation between Wailuku and Waikapū.

DHHL shares the same desire to maintain the natural beauty of the mountainside and intends to grade the site in a way which complements it and accommodates the practical needs of local families. Although some leveling of the ground will have to occur to accommodate roads and house foundations, the grading of Pu'unani Homestead will largely follow the natural slope of the terrain between Waihe'e Ditch and Honoapi'ilani Highway without the need to construct excessively high slopes or visually-objectionable retaining walls along the highway.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP Senior Associate

BKE:tn

CC:

Stewart Matsunaga, Department of Hawaiian Home Lands Darren Okimoto, DDC LLC

Darren Unemori, Warren S. Unemori, Engineering, Inc.

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July 3, 2020 [7:25 p.m.—AMENDED VERSION]

TO: Mr. Stewart Matsunaga (808) 620-9500, stewart.t.matsunaga@hawaii.gov Department of Hawaiian Homelands, State of Hawai'i 91-5420 Kapolei Parkway, Kapolei, HI 96707

TO: Mr. Bryan Esmeralda (808) 983-1233, planning@munekiyohiraga.com
Munekiyo Hiraga; 305 High Street, Suite 104, Wailuku, HI 96793

TO: Ms. Michele McLean, Planning Director 808-270-1735 Michele.McLean@co.maui.hi.us Maui County Planning Department, Wailuku, Maui, HI 96793

TO: Mr. Travis Polido trpolido@gmail.com; waikapuca@gmail.com President, Waikapū Community Association

FROM: Wallette Garcia Pellegrino
wpellegrino808@gmail.com
Waikapū Resident, P.O. Box 967, Wailuku, HI 96793

RE: Pu'unani Homestead Subdivision--Draft EA (AFNSI)

Aloha,

Based on information provided, the Department of Hawaiian Homelands will develop a new residential subdivision for its beneficiaries on a 47.4-acre portion of land owned by the DHHL, identified by TMK (2)3-5-002:002, in Waikapū, Maui, mauka of Honoapi'ilani Highway. The project will feature a maximum of 161 single-family lots (137 turn-key homes and 24 vacant lots). Each of the lots will be approximately 7500 square feet in area and will be improved with graded pads and stubbed utility connections. Related improvements will also be developed including roadways, sidewalks, drainage basins, etc.

INTRODUCTION:

As we welcome our new neighbors in the Pu`unani Homestead project, we must also consider how to balance their needs with those of the families whose community ties to Waikapū are

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deep-rooted. We hope our new DHHL neighbors will learn and appreciate the unique history of Waikapū as a vibrant kalo-growing area which evolved into a plantation town and to see this as an opportunity to enhance our community overall. Social studies show that when there is a connection between people and the history of their physical neighborhoods, they will take better care of each other because of what they share in common and because they have a vested interest in their surroundings.

Many new subdivisions do not provide opportunities for people to learn about and thus appreciate their surroundings. Home is just a place to go to bed at night. Not so in Waikapū. Community people are actively involved in what is and will be happening. They play a part in the security of the area; new home owners or renters become active members of the WCA; and they help businesses and services to thrive as well.

How do we balance the need for housing to meet our community's needs? It is important to recognize the need for new residents to be integrated into the Waikapū community with a 100+ year history with many original families and descendants still residing there. This concept should be encouraged and strengthened as the project moves forward.

There is no doubt that there will be impacts of varying importance both now and in the future (e.g., schools, population growth, traffic, water, environment). Static point-in-time studies have limited predictability. There is also a lack of information and clarity about how the remainder of the parcel will be developed and utilized. This may have significant bearing as well as impacts on the proposed current smaller segment of the project. Ideally a more complete EIS would examine the many possible and significant cumulative and secondary impacts and push developers to be more visionary in how those will be addressed and mitigated.

The following items are those which I would like to call specific attention to:

1. Retaining the Geographic Uniqueness of Waikapū Town:

I served on the General Plan Advisory Committee (GPAC) for the Maui Island Plan in the early 2000s, representing the Wailuku-Kahului etc. areas. Besides the many issues which were raised about the direction Maui Island was moving, we also discussed consistently the need to let our traditional communities retain their physical distinctness with open space, agriculture, parks, etc. I am currently a member of the Waikapū Community Association and chair the WCA history committee; I refer you to our WCA website which includes vintage photos of

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Waikapū and its surroundings. (FYI: I am writing this as a Waikapū resident, not as a WCA representative)

The Maui Island Plan recommended a **greenbelt buffer** mauka-side of Honoapi`ilani Highway as well as a buffer between Waiolani Mauka and the project so that the development does not close off the last remaining open space between the traditional towns of Wailuku and Waikapū. We would like the developer to re-visit this concept and give it more than lipservice with only a manini landscape buffer by the highway. Waikapū is not a suburb of Wailuku. It is its own entity. In addition, the viewplane up to the West Maui Mountains (Mauna Kahalawai) as well as into the Central Valley and Haleakala is important because it grounds us to our precious surroundings.

2. Utilizing Old Government Road (connecting to West Waiko Road) to access Honoapi`ilani Highway:

We do not want Old Government Road and its West Waiko Road terminus to become an automobile access road for the Pu`unani Homesteads subdivision (and the rest of the undefined property) down to the signaled Honoapi`ilani Highway intersection. At this point, the plans do not show any of the internal Pu`unani roads on that trajectory. However, we do know that plans change, etc. unbeknownst to interested parties until after the change becomes permanent.

Instead, I would like to suggest that the unimproved Old Government Road where it is adjacent to the new Pu`unani Homesteads (as well as whatever is planned for the westernmost part of the land parcel) and the neighboring Waiolani communities toward the West Waiko Road junction become a collaborative and accessible bikepath/walking path/parkway which will encourage exercise; give people a sense of friendliness; provide children with a safe space to ride their trikes and kupuna to stroll; and to demonstrate that developers can be creative and progressive in designing interconnected communities with people, not only cars, in mind.

To those of us who have resided in Waikapū for 50+ years, including families whose histories span more than a century, we believe it is important to share these mo`olelo with our new neighbors. Many descendants of old-time families still reside in the vicinity: Rogers, Gomes, Teruya, Arzaga, Dodd, Oshiro, Shimizu, Bueno, Riyu, Chou, Rosario, Nakashima, Soong, Bell. In addition, many actually still live in their family homes. So the connection is real.

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We have seen our Waikapū community grow and change, and there are many special parts we would like retained for generations to come. When one traverses up and down West Waiko Road (especially in its narrowest sections) and Old Government Road, you will see heritage trees, dry stack rock walls, the `auwai off the Waikapū Stream (part of Na Wai Eha) which winds above ground and underground to nourish lo`l kalo and other food-bearing mala; a remnant wartime triangle; remnants of churches (Protestant church which served as a World War II hospital); family burial plots; a home which housed a store and school; and identifiable century-old homes. For many of us, the Waikapū "pictures" are in our heads (e.g., open-air theatre; terraced taro patches; service stations; grandpa's liquor store; luau at old church; Wailuku Sugar dispensary; stables, Japanese school; Boy Scout hall; pig and cattle farms). The Waikapū River is a living stream now since residents encouraged by Uncle Skippy Hau have refreshed streams with `o`opu, hihiwai, and `opae. Children from the neighborhoods and others come for educational programs.

We trust that the project developers will appreciate this information and will see the value of preserving many of these landmark locations and structures which give Waikapū its unique cultural history and ambiance.

CONCLUSION:

Finally, we thank you for inviting us to comment on the Pu`unani Homesteads project which gives our Hawaiian families a wonderful opportunity to become part of our Waikapū community. Our family is grateful to be Waikapū residents (more than 50 years ourselves plus our earlier ancestors) and we are happy to share it with others. Mahalo nui loa.

/s/ Wallette Garcia Pellegrino



Michael T. Munekiyo

Karlynn K. Fukuda PRESIDENT

Mark Alexander Roy

Tessa Munekiyo Ng

September 22, 2020

Via email: wpellegrino808@gmail.com

Wallette Garcia Pellegrino P. O. Box 967 Walluku, Hawai'i 96793

SUBJECT:

Comments on Chapter 343, Hawai'i Revised Statutes Draft Environmental Assessment for the Proposed Department of Hawaiian Home Lands Pu'unani Homestead Subdivision Project; TMK Nos. (2)3-5-002:002(por.) and (2)3-5-001:064(por.); Waikapū, Maui. Hawai'i

Dear Ms. Pellegrino:

Thank you for your letter dated July 3, 2020, providing comments on the Draft Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Pu'unani Homestead Subdivision Project. We offer the following information in response to your comments.

Comment No. 1:

As we welcome our new neighbors in the Pu'unani Homestead project, we must also consider how to balance their needs with those of the families whose community ties to Waikapū are deep-rooted. We hope our new DHHL neighbors will learn and appreciate the unique history of Waikapū as a vibrant kalo-growing area which evolved into a plantation town and to see this as an opportunity to enhance our community overall. Social studies show that when there is a connection between people and the history of their physical neighborhoods, they will take better care of each other because of what they share in common and because they have a vested interest in their surroundings.

Many new subdivisions do not provide opportunities for people to learn about and thus appreciate their surroundings. Home is just a place to go to bed at night. Not so in Waikapū. Community people are actively involved in what is and will be happening. They play a part in the security of the area; new home owners or renters become active members of the

Wallette Garcia Pellegrino September 22, 2020 Page 2

WCA; and they help businesses and services to thrive as well.

How do we balance the need for housing to meet our community's needs? It is important to recognize the need for new residents to be integrated into the Waikapū community with a 100+ year history with many original families and descendants still residing there. This concept should be encouraged and strengthened as the project moves forward.

Response: We acknowledge your deep-rooted knowledge of the Waikapū area, and appreciate you taking time to provide your input on the proposed DHHL Pu'unani Homestead Subdivision project to ensure that the proposed development, as well as others that may occur in Waikapū, is carried out respectfully to both the history of the area, as well as to its current residents.

Comment No. 2:

There is no doubt that there will be impacts of varying importance both now and in the future (e.g., schools, population growth, traffic, water, Static point-in-time studies have limited predictability. There is also a lack of information and clarity about how the remainder of the parcel will be developed and utilized. This may have significant bearing as well as impacts on the proposed current smaller segment of the project. Ideally a more complete EIS would examine the many possible and significant cumulative and secondary impacts and push developers to be more visionary in how those will be addressed and mitigated.

Response: The project's technical characteristics and related impact considerations were thoroughly evaluated by the DHHL and the Hawaiian Homes Commission (HHC). In accordance with Hawai'i Administrative Rules (HAR), Section 11-200.1-13, "Significance Criteria" every phase of the proposed action, the anticipated impacts, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action were considered. The analysis contained in the Draft EA was supported through in-depth technical studies that were prepared by qualified professionals, and which were then reviewed by agencies having jurisdiction and expertise in their respective fields of authority.

> Each section of the Draft EA included a discussion and analysis of the impacts related to the respective environmental, infrastructural, public

service and socio-economic parameters. The assessment of each significance criteria set forth in Section 11-200.1-13, HAR is included as Chapter VIII of the Draft EA. This chapter will be carried forward to the Final EA. While this project may cause impacts, based on the analysis conducted in the Draft EA, the potential adverse impacts are not anticipated to be significant. Where mitigation measures are required due to potential impacts attributed to the project, DHHL will implement those applicable measures to reduce potential adverse impacts. As a disclosure document, the Draft EA has allowed Federal, State, and County agencies having jurisdiction and expertise in their respective fields of authority to comment on the proposed project scope and identified mitigation measures. If more specific mitigation measures are raised by agencies as the project advances. DHHL will continue dialogue with the applicable agencies to define how such measures can be addressed as part of the engineering and design phases of work. Furthermore, the project will also result in positive impacts for DHHL beneficiaries, many of whom are longtime Maui residents seeking affordable housing opportunities for themselves and their families.

In light of the foregoing, the need for a full Environmental Impact Statement is not deemed warranted. The decision on the Final EA rests solely with the HHC in the context of the level of impacts, analysis and mitigation measures documented in the EA document.

In addition, we note that the remainder of the parcel on which the 47.4-acre Pu'unani Homestead Subdivision is being proposed is not owned by the DHHL. As such, this agriculture zoned portion of the property will not be developed as part of the subject project. Furthermore, we note that the timing or plan for any future development of this other portion of the TMK parcel by others is unknown.

Comment No. 3:

1. Retaining the Geographic Uniqueness of Waikapū Town:

I served on the General Plan Advisory Committee (GPAC) for the Maui Island Plan in the early 2000s, representing the Wailuku-Kahului etc. areas. Besides the many issues which were raised about the direction Maui Island was moving, we also discussed consistently the need to let our traditional communities retain their physical distinctness with open space, agriculture, parks, etc. I am currently a member of the Waikapū

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> Community Association and chair the WCA history committee; I refer you to our WCA website which includes vintage photos of Waikapū and its surroundings. (FYI: I am writing this as a Waikapū resident, not as a WCA representative)

> The Maui Island Plan recommended a greenbelt buffer mauka-side of Honoapi'ilani Highway as well as a buffer between Waiolani Mauka and the project so that the development does not close off the last remaining open space between the traditional towns of Wailuku and Waikapū. We would like the developer to re-visit this concept and give it more than lipservice with only a manini landscape buffer by the highway. Waikapū is not a suburb of Wailuku. It is its own entity. In addition, the viewplane up to the West Maui Mountains (Mauna Kahalawai) as well as into the Central Valley and Haleakala is important because it grounds us to our precious surroundings.

Response: We appreciate your comments providing background into the Maui Island Plan's (MIP) greenbelts along Honoapi'ilani Highway. An analysis was undertaken by the DHHL to determine if the MIP 200-foot greenbelt along Honoapi'ilani Highway and 500-foot greenbelt along the project's boundary with the existing Waiolani Mauka subdivision could be accommodated. Based on this analysis, the inclusion of these two (2) greenbelts would result in the loss of approximately 68 out of the total 161 developable lots available for DHHL beneficiaries. As the waiting lists for DHHL homestead lots are currently at 3,819 beneficiaries on the Residential Waiting List and 272 beneficiaries on the Waiohuli Undivided Interest Waiting List, the DHHL determined that the inclusion of these two (2) greenbelts and losing over 42 percent of the possible developable lots is not feasible and goes against the mission and purpose of both the Hawaiian Homes Commission Act (HHCA) and DHHL, which are to provide as many homestead opportunities to their Native Hawaiian beneficiaries as possible. Furthermore, we note that these MIP greenbelts were required as part of a former planned Pu'unani development project, by others, which exceeded the size and scale of the currently proposed 161-lot residential subdivision. As such, the DHHL will be providing a proposed landscaped lot along Honoapi'ilani Highway and a buffer along the project's northern boundary, abutting vacant lands. In addition, the project's proposed drainage basin is located at the northeast corner of the property and will provide a buffer (average width of over 200 feet) along approximately one-third of the project's frontage along Honoapi'ilani Highway. Furthermore, we note that there will still remain a swath of Wallette Garcia Pellegrino September 22, 2020 Page 5

open, undeveloped land between the project's northern boundary and Ku'ikahi Drive, providing separation between Wailuku and Waikapū.

Comment No. 4:

2. Utilizing Old Government Road (connecting to West Waiko Road) to access Honoapi'ilani Highway:

We do not want Old Government Road and its West Waiko Road terminus to become an automobile access road for the Pu'unani Homesteads subdivision (and the rest of the undefined property) down to the signaled Honoapi'ilani Highway intersection. At this point, the plans do not show any of the internal Pu'unani roads on that trajectory. However, we do know that plans change, etc. unbeknownst to interested parties until after the change becomes permanent.

Response: We acknowledge your comment. DHHL has no plans to improve Old Waikapū Road or to use it to provide access to the proposed DHHL Pu'unani Homestead Subdivision project.

Comment No. 5:

Instead, I would like to suggest that the unimproved Old Government Road where it is adjacent to the new Pu'unani Homesteads (as well as whatever is planned for the westernmost part of the land parcel) and the neighboring Waiolani communities toward the West Waiko Road junction become a collaborative and accessible bikepath/walking path/parkway which will encourage exercise; give people a sense of friendliness; provide children with a safe space to ride their trikes and kupuna to stroll; and to demonstrate that developers can be creative and progressive in designing interconnected communities with people, not only cars, in mind.

Response: We appreciate your comment and acknowledge your suggestion that the Old Waikapū Road be developed into an accessible multi-use path for passive recreation and community building. However, we note that the ownership of the Old Waikapū Road does not lie with the DHHL, and is therefore, not part of the proposed project.

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Comment No. 6:

To those of us who have resided in Waikapū for 50+ years, including families whose histories span more than a century, we believe it is important to share these moʻolelo with our new neighbors. Many descendants of old-time families still reside in the vicinity: Rogers, Gomes, Teruya, Arzaga, Dodd, Oshiro, Shimizu, Bueno, Riyu, Chou, Rosario, Nakashima, Soong, Bell. In addition, many actually still live in their family homes. So the connection is real.

We have seen our Waikapū community grow and change, and there are many special parts we would like retained for generations to come. When one traverses up and down West Waiko Road (especially in its narrowest sections) and Old Government Road, you will see heritage trees, dry stack rock walls, the 'auwai off the Waikapū Stream (part of Na Wai Eha) which winds above ground and underground to nourish lo'i kalo and other foodbearing mala: a remnant wartime triangle; remnants of churches (Protestant church which served as a World War II hospital); family burial plots; a home which housed a store and school; and identifiable centuryold homes. For many of us, the Waikapū "pictures" are in our heads (e.g., open-air theatre; terraced taro patches; service stations; grandpa's liquor store; luau at old church; Wailuku Sugar dispensary; stables, Japanese school; Boy Scout hall; pig and cattle farms). The Waikapū River is a living stream now since residents encouraged by Uncle Skippy Hau have refreshed streams with 'o'opu, hihiwai, and 'opae. Children from the neighborhoods and others come for educational programs.

We trust that the project developers will appreciate this information and will see the value of preserving many of these landmark locations and structures which give Waikapū its unique cultural history and ambiance.

Response: We appreciate you taking time to provide your input on the proposed DHHL Pu'unani Homestead Subdivision project to ensure that the proposed development, as well as others that may occur in Waikapū, is carried out respectfully and is of the highest quality. The comments and information provided in your letter will be carefully considered by the DHHL.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your comment letter and this response will be included in the Final EA for the project.

Wallette Garcia Pellegrino September 22, 2020 Page 7

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233 or via email at planning@munekiyohiraga.com.

Very truly yours,

Bryan K. Esmeralda, AICP

Senior Associate

BKE:tn

Stewart Matsunaga, Department of Hawaiian Home Lands CC:

Darren Okimoto, DDC LLC
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COMMUNITY OUTREACH

XI. COMMUNITY OUTREACH

The project planning process has included a number of opportunities for public awareness, education, and participation through the Environmental Assessment (EA) process. In addition to the statutorily required comment periods, opportunities for public input were also afforded through the following meetings:

Meeting Date	Organization	Meeting Premise
December 9, 2019	Waikapū Community Association	Project briefing and accept feedback to be considered in preparation of Draft EA.
February 10, 2020	Department of Hawaiian Home Lands Maui Beneficiary Leaders	Project briefing and accept feedback to be considered in preparation of Draft EA.
February 12, 2020	Maui County Arborist Committee	Request de-listing of 34 monkeypod trees fronting site from County Exceptional Trees list.
February 18, 2020	Hawaiian Homes Commission	Project briefing and accept feedback to be considered in preparation of Draft EA.
July 8, 2020	Department of Hawaiian Home Lands Maui Beneficiary Leaders	Provide updates on project and EA process and accept feedback to be considered in preparation of Final EA.
July 9, 2020	Maui County Council, Healthy Families and Communities Committee	Request de-listing of 34 monkeypod trees fronting site from County Exceptional Trees list.
July 13, 2020	Waikapū Community Association	Provide updates on project and EA process and accept feedback to be considered in preparation of Final EA.
July 21, 2020	Kehalani Community Association Board of Directors	Project briefing and accept feedback to be considered in preparation of Final EA.
July 24, 2020	Maui County Council	First reading of Ordinance to de-list monkeypod trees fronting the project site from the County Exceptional Trees List.
July 24, 2020	Wailuku Apartment Rental Housing Project	Project briefing and accept feedback to be considered in preparation of Final EA.
August 18, 2020	Maui County Council	Adoption of Ordinance de-listing monkeypod trees from County Exceptional Trees list.

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XII. REFERENCES

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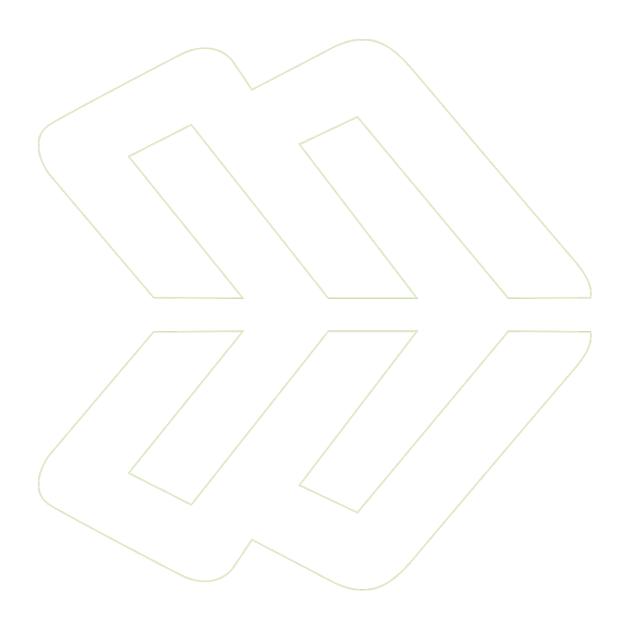
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VOLUME II OF II

Final Environmental Assessment

PU'UNANI HOMESTEAD SUBDIVISION

(TMK NOs. (2)3-5-002:002(por.) and (2)3-5-001:064 (por.))

Prepared for:
State of Hawai'i,
Department of Hawaiian Home Lands

Approving Agency:
Hawaiian Homes Commission

November 2020

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VOLUME II OF II

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APPENDIX

HOUSE PLANS



PLUMERIA

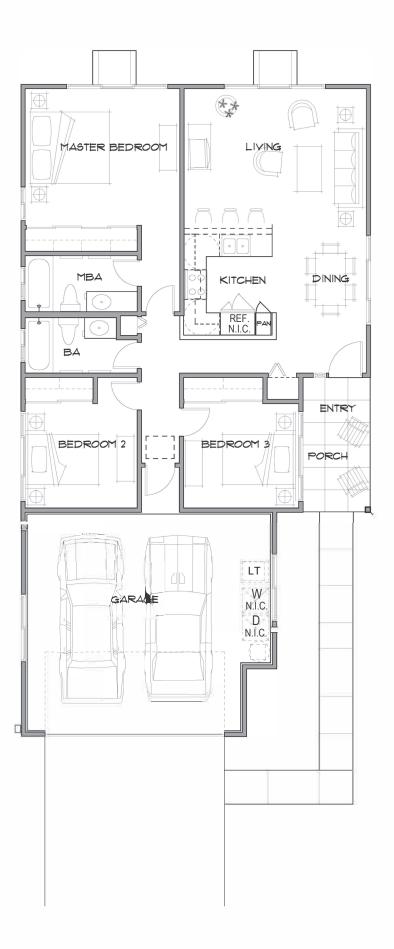
3 BEDROOM / 2 BATH

LIVING 1,088SF

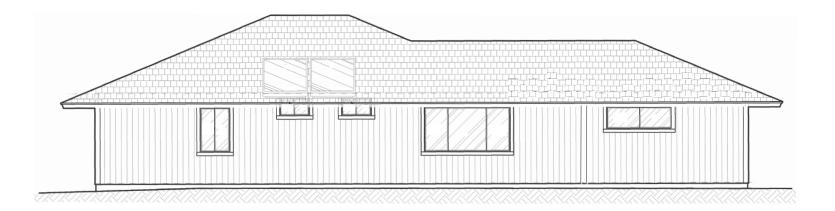
LANAI/PORCH 72SF

GARAGE 456SF

TOTAL AREA 1,616SF



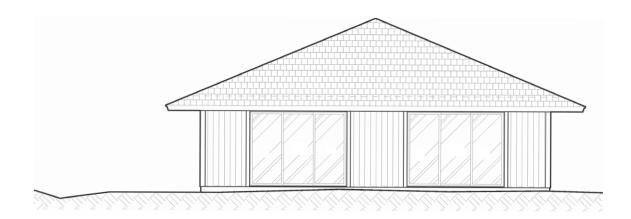
PLUMERIA 3 BEDROOM / 2 BATH

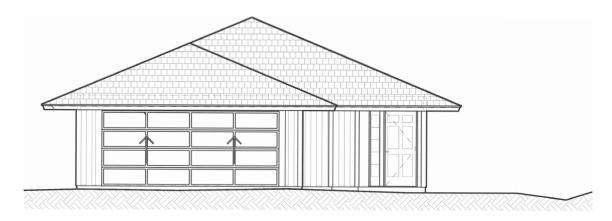


LEFT ELEVATION



RIGHT ELEVATION





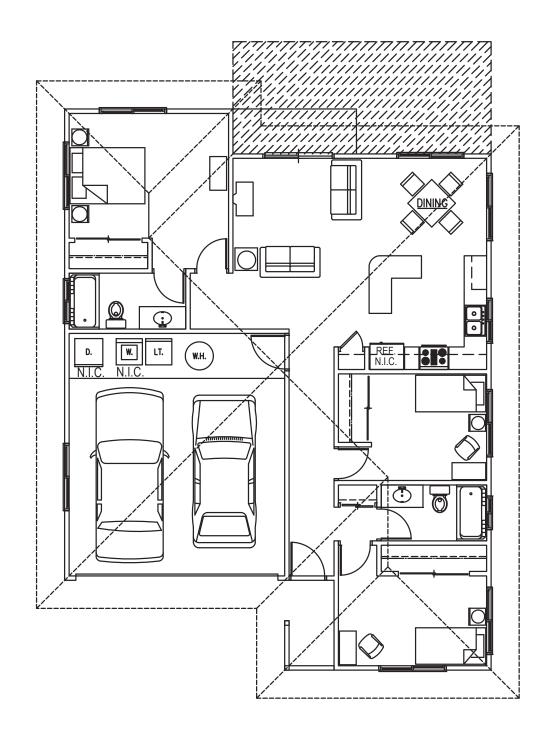
Not to scale. Subject to change. The developer, its agents, associate companies and suppliers reserve the right to modify plans, building elevations, roof design, specifications, features and sales price without prior notice or obligation. Plan does not reflect final construction. Does not include furniture or vehicles.

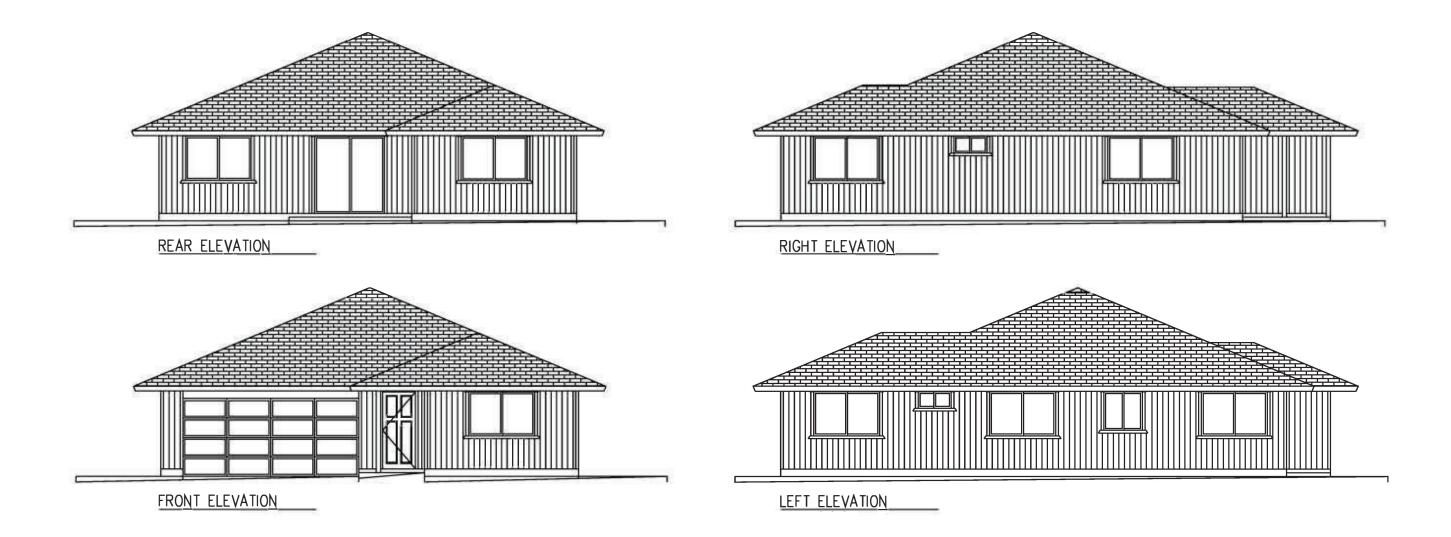
REAR ELEVATION FRONT ELEVATION

KAMANI

3 BEDROOM / 2 BATH

LIVING I,193sF
LANAI/PORCH 26SF
GARAGE 470sF
TOTAL AREA I,689SF



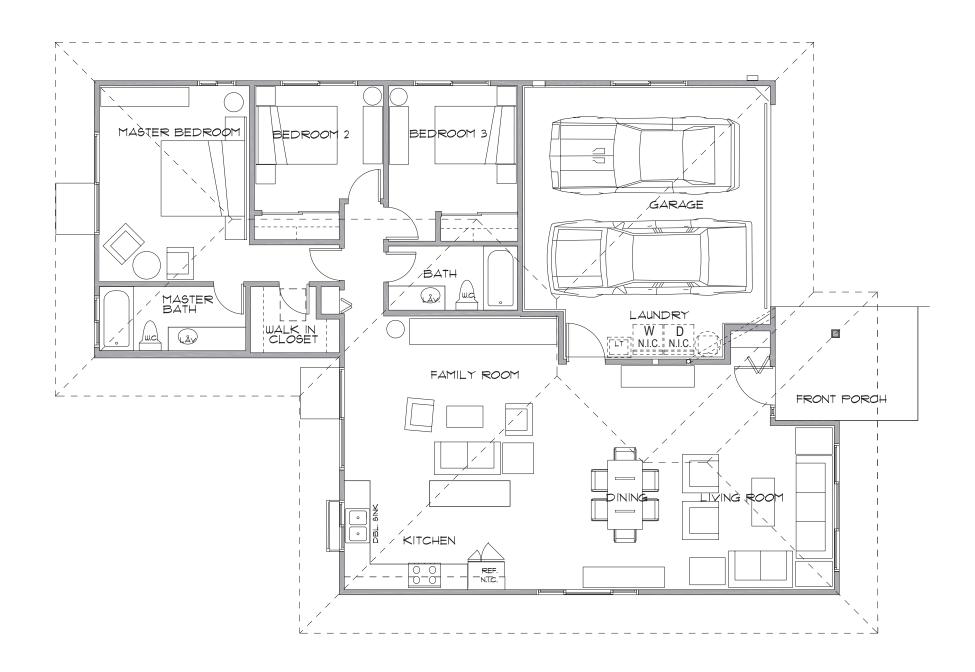


KAMANI 3 BEDROOM / 2 BATH

MAILE

3 BEDROOM / 2 BATH

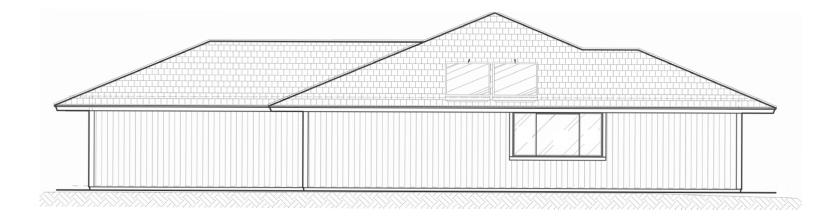
LIVING 1,462sF LANAI/PORCH 30sF GARAGE 409sF TOTAL AREA 1,865sF



MAILE 3 BEDROOM / 2 BATH



RIGHT ELEVATION



LEFT ELEVATION

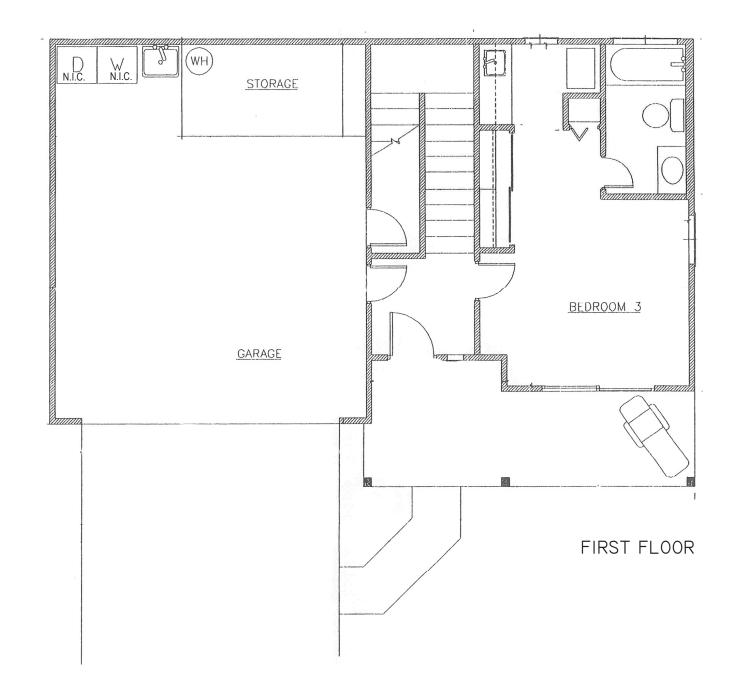


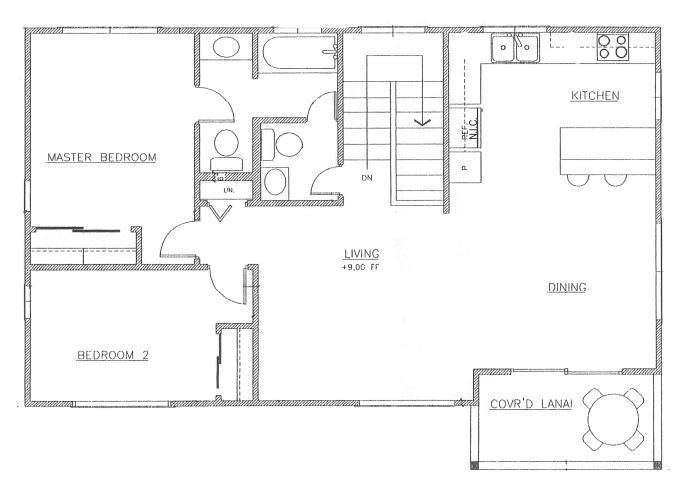


Not to scale. Subject to change. The developer, its agents, associate companies and suppliers reserve the right to modify plans, building elevations, roof design, specifications, features and sales price without prior notice or obligation. Plan does not reflect final construction. Does not include furniture or vehicles.

REAR ELEVATION

FRONT ELEVATION





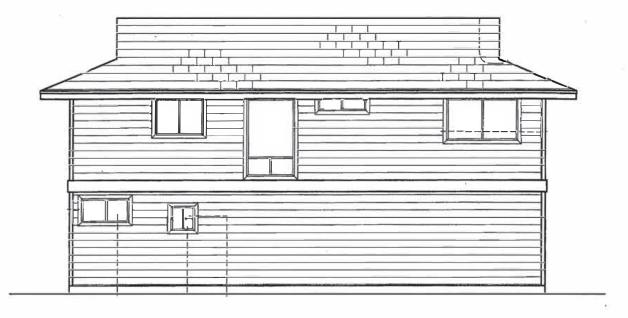
SECOND FLOOR

LAWAI'A

3 BEDROOM / 2.5 BATH

LIVING 1,280sF LANAI/PORCH 192sF GARAGE 451sF TOTAL AREA 1,691sF





BACK

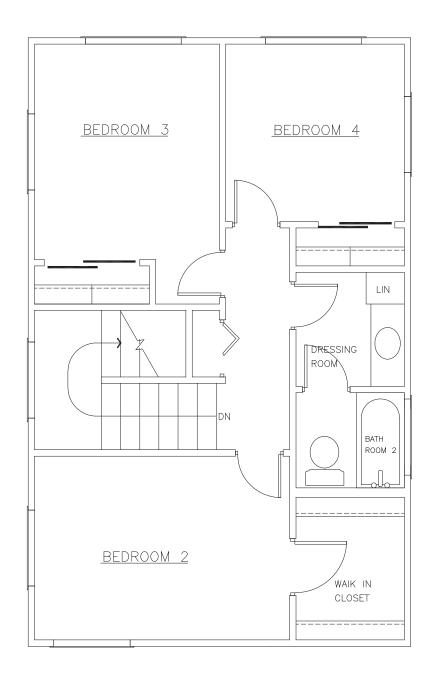
EXTERIOR ELEVATION





<u>RIGHT</u>

LAWAI'A 3 BEDROOM / 2.5 BATH

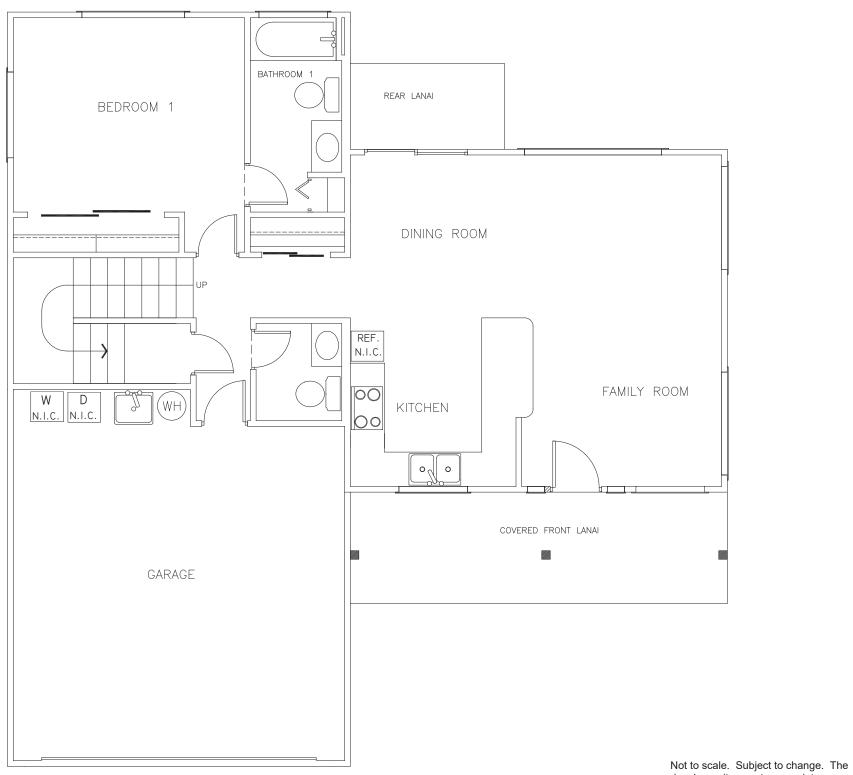


SECOND FLOOR PLAN

WAILELE

4 BEDROOM / 2.5 BATH

LIVING 1,646SF
LANAI/PORCH 143SF
GARAGE 400SF
TOTAL AREA 2,189SF



FIRST FLOOR PLAN



<u>FRONT</u>



<u>BACK</u>

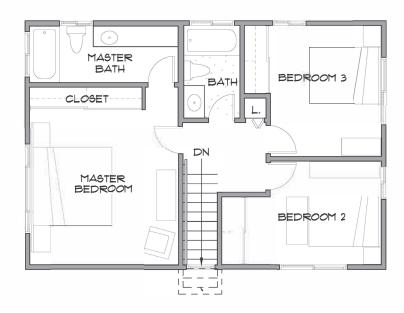




<u>LEFT</u>

EXTERIOR ELEVATION

WAILELE 4 BEDROOM / 2.5 BATH TWO STORY



UPPER LEVEL FLOOR PLAN

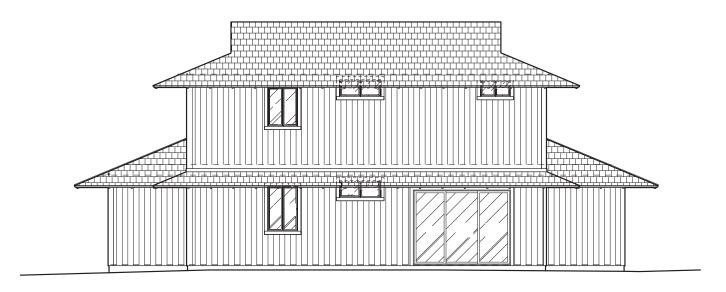


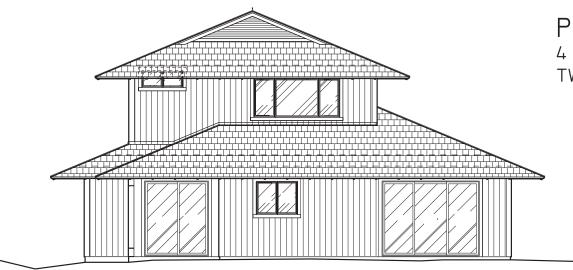
GROUND FLOOR PLAN

Not to scale. Subject to change. The developer, its agents, associate companies and suppliers reserve the right to modify plans, building elevations, roof design, specifications, features and sales price without prior notice or obligation. Plan does not reflect final construction. Does not include furniture or vehicles.

PIKAKE 4 BEDROOM / 3 BATH

LIVING 1,674 SF
LANAI/PORCH 110 SF
GARAGE 434 SF
TOTAL AREA 2,218 SF





PIKAKE
4 BEDROOM / 3 BATH
TWO STORY

SIDE 2 ELEVATION





BACK ELEVATION

Not to scale. Subject to change. The developer, its agents, associate companies and suppliers reserve the right to modify plans, building elevations, roof design, specifications, features and sales price without prior notice or obligation. Plan does not reflect final construction. Does not include furniture or vehicles.

SIDE I ELEVATION FRONT ELEVATION

FLORA AND FAUNA
SURVEY REPORT

APPENDIX

B

FLORA AND FAUNA SURVEY
PUUNANI HOMESTEAD PROJECT
WAIKAPŪ, MAUI

By

ROBERT W. HOBDY Environmental Consultant Kokomo, Maui June 2019

> Prepared for: DDC LLC

FLORA AND FAUNA SURVEY AND ASSESSMENT FOR THE PUUNANI HOMESTEAD PROJECT WAIKAPŪ, MAUI

INTRODUCTION

The Puunani Homestead project is located in northern Waikapū, West Maui on 60.09 acres of former sugar cane land (TMK (2) 3-5-02:002). It lies above Honoapi'ilani Highway and below the old Waikapū County Road and is adjacent to a residential community to the south (see Figures 1&2). This biological survey and assessment was initiated by the owner in fulfillment of environmental requirements of the planning process.

SITE DESCRIPTION

The project area lies on gently sloping land between the elevations of 380 and 510 feet above sea level. The vegetation is somewhat sparse, due to the present grazing of livestock. A few small trees are scattered throughout the area among closely cropped grasses and shrubs. Soils are characterized as Iao clay, 3-7% slopes (IcB) and Iao Cobbly Silty Clay, 3-7% slopes (IbB), which are deep, well-drained alluvial soils (Foote et al, 1972). Rainfall averages between 25 and 30 inches per year, with most occurring during the winter months. A portion of the Waihe'e Ditch runs through the property.

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the Puunani Homestead Project which was conducted in June 2019. The objectives of the survey were to:

- 1. Document what plant and animal species occur on the property.
- 2. Document the status and abundance of each species.
- 3. Determine the presence of any native flora and fauna particularly any that are Federally listed as Threatened or Endangered (USFWS, 2019). If such occur, identify what features of the habitat may be essential for these species.
- 4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.

BOTANICAL SURVEY REPORT

A walk-through botanical survey was conducted covering all parts of the project area and habitats. Notes were made on all plant species present, their abundance and their status. Results were compiled in a complete flora inventory for analysis and assessment.

DESCRIPTION OF THE VEGETATION

The vegetation was dominated by one non-native grass species, the hardy Guinea grass (Megathyrsus maximus) which was found throughout all parts of the area. Four other species were common, the koa haole (Leucaena leucocephala), sourgrass (Digitaria insularis), balloon plant (Asclepias physocarpa) and glycine (Neonotonia wightii). A total of 65 plant species were recorded. Sixty-two of these were not native to Hawaii and are considered to be pasture grasses or agricultural weeds. Two species were Polynesian plants brought to Hawaii by the Hawaiians centuries ago. These were the kukui (Aleurites molucccana) and the niu or coconut (Cocos nucifera), both of which had been recently planted.

The only native species recorded was the 'uhaloa (Waltheria indica) which is common throughout drier habitats in Hawaii and is also native to many other Pacific islands as well.

DISCUSSION AND RECOMMENDATIONS

The Puunani Homestead project is largely overrun with non-native grasses, shrubs and trees. The one native plant species that does occur here is widespread in Hawaii. No Endangered or Threatened species (USFWS, 2019) were found and none of the species here are candidates for such status. The disturbed environment was not found to include any special habitats of plant species or ecosystems.

The development of this project area is not expected to result in any significant negative impacts on native plant communities in this part of Maui.

PLANT SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within two groups: Monocots and Dicots. Taxonomy and nomenclature of the Monocots and Dicots are in accordance with Wagner et al. (1999).

For each species, the following information is provided:

- 1. Scientific name with author citation.
- 2. Common English or Hawaiian name.
- 3. Bio-geographical status. The following symbols are used:

Endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.

Indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

Polynesian introduction = plants introduced to Hawaii in the course of the Polynesian migrations and prior to western contact.

Non-native = all those plants brought to the islands intentionally or accidentally after western contact.

4. Abundance of each species within the project area:

Abundant = forming a major part of the vegetation within the project area.

Common = widely scattered throughout the area or locally abundant within a portion of it.

Uncommon = scattered sparsely throughout the area or occurring in a few small patches.

Rare = only a few isolated individuals within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MONOCOTS			
ARECACEAE (Palm Family)			
Cocos nucifera L.	niu, coconut	Polynesian	rare
Washingtonia filifera (Andre) S. Watson	California washingtonia	non-native	rare
MUSACEAE (Banana Family)	cumerina washingtonia	non name	1410
Musa acuminata x balbisiana Colla	banana	non-native	rare
POACEAE (Grass Family)	Outline	non name	1410
Cenchrus ciliaris L.	buffelgrass	non-native	rare
Chloris barbata (L.) Sw.	swollen fingergrass	non-native	
Cynodon dactylon (L.) Pers.	Bermuda grass	non-native	
Digitaria insularis (L.) Mez ex Ekman	sourgrass	non-native	
Eleusine indica (L.) Gaertn.	wire grass	non-native	
Megathyrsus maximus (Jacq.) Simon & Jacobs	Guinea grass	non-native	
Melinis repens (Willd.) Zizka	Natal redtop	non-native	
POTAMOGETONACEAE (Pondweed Family)	- · · · · · · · · · · · · · · · · · · ·		
Potamogeton foliosus Raff.	pondweed	indigenous	rare
DICOTS	F	8	
ACANTHACEAE (Acanthus Family)			
Thunbergia fragrans Roxb.	white thunbergia	indigenous	rare
AMARANTHACEAE (Amaranth Family)	Ü	Ü	
Alternanthera pungens Kunth	khaki weed	non-native	rare
Amaranthus spinosus L.	spiny amaranth	non-native	uncommon
ANACARDIACEAE (Mango Family)	1 2		
Schinus terebinthifolius Raddi	Christmas berry	non-native	rare
APOCYNACEAE (Dogbane Family)	•		
Asclepias physocarpa (E. Mey.) Schlect.	balloon plant	non-native	common
Calotropis procera (Aiton) W.T.Aiton	small crown flower	non-native	uncommon
ASTERACEAE (Sunflower Family)			
Ageratina riparia (Regel) R. King & H. Robinson	Hāmākua pāmakani	non-native	rare
Conyza bonariensis (L.) Cronq.	hairy horseweed	non-native	uncommon
Emilia fosbergii Nicolson	red pualele	non-native	rare
Heterotheca grandiflora Nutt.	telegraph weed	non-native	uncommon
Pluchea carolinensis (Jacq.) G. Don	sourbush	non-native	rare
Senecio madagascariensis Poir.	Madagascar fireweed	non-native	uncommon
Tridax procumbens L.	coat buttons	non-native	rare
Verbesina encelioides (Cav.) Benth & Hook.	golden crown-beard	non-native	rare
Xanthium strumarium L.	kīkānia	non-native	rare
BIGNONIACEAE (Bignonia Family)			
Spathodea campanulata P. Beauv.	African tulip tree	non-native	rare
BORAGINACEAE (Borage Family)			
Heliotropium amplexicaule Vahl	summer heliotrope	non-native	rare
Heliotropium procumbens Mill.	fourspike heliotrope	non-native	rare
BRASSICACEAE (Mustard Family)			
Lepidium virginicum L.	pepperwort	non-native	rare

COUNTIFIC NAME	COMMONINAME	CT A TI IC	A DUND ANCE
SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
CARICACEAE (Papaya Family)		non-native	rare
Carica papaya L.	papaya	non-native	rare
CASUARINACEAE (She-oak Family)	common ironwood	non-native	
Casuarina equisetifolia L. CONVOLVULACEAE (Morning Glory Family)	common fromwood	non-native	rare
Ipomoea obscura (L.) Ker-Gawl.	obscure morning glory	non-native	rare
Ipomoea triloba L.	little bell	non-native	rare
CUCURBITACEAE (Gourd Family)	nuic ben	non-native	Tare
Momordica charantia L.	bitter melon	non-native	rare
EUPHORBIACEAE (Spurge Family)	otter meion	non-native	Tare
Aleurites mollucana (L.) Willd.	kukui	Polynesian	rare
Euphorbia heterophylla L.	kaliko	non-native	
Euphorbia hirta L.	hairy spurge	non-native	
Euphorbia hypericifolia L.	graceful spurge	non-native	
Macaranga tanarius (L.) Mull. Arg.	parasol leaf tree	non-native	rare
Ricinus communis L.	Castor bean	non-native	uncommon
FABACEAE (Pea Family)	Custor ocuir	non nauve	uncommon
Acacia confusa Merr.	Formosa koa	non-native	uncommon
Canavalia cathartica Thouars	mauna loa	non-native	uncommon
Chamaecrista nictitans (L.) Moench	partridge pea	non-native	rare
Crotalaria retusa L.	rattle pod	non-native	uncommon
Desmanthus pernambucanus (L.) Thellung	slender mimosa	non-native	uncommon
Indigofera spicata Forssk.	creeping indigo	non-native	uncommon
Indigofera suffruticosa Mill.	inikō	non-native	rare
Leucaena leucocephala (Lam.) de Wit	koa haole	non-native	common
Macroptilium atropurpureum (DC.) Urb.	glycine	non-native	common
Pithecellobium dulce (Roxb.) Benth.	'opiuma	non-native	uncommon
Prosopis pallida (Humb. & Bonpl. ex Willd) Kunth	kiawe	non-native	rare
Samanea saman (Jacq.) Merr.	monkeypod	non-native	rare
LAMIACEAE (Mint Family)			
Leonotis nepetifolia (L.) R. Br.	lion's ear	non-native	rare
MALVACEAE (Mallow Family)			
Malvastrum coromandelianum (L.) Garcke	false mallow	non-native	uncommon
Sida ciliaris L.	bracted fanpetals	non-native	rare
Sida spinosa L.	prickly sida	non-native	uncommon
Waltheria indica L.	'uhaloa	indigenous	rare
MORACEAE (Fig Family)			
Ficus microcarpa L. fil.	Chinese banyan	non-native	rare
MYRTACEAE (Myrtle Family)			
Syzygium cumini (L.) Skeels	Java plum	non-native	rare
NYCTAGINACEAE (Four-o'clock Family)			
Boerhavia coccinea Mill.	scarlet spiderling	non-native	uncommon
Mirabilis jalapa L.	four o'clock	non-native	rare

SCIENTIFIC NAME
PAPAVERACEAE (Poppy Family)
Argemone mexicana L.
VERBENACEAE (Verbena Family)
Lantana camara L.

COMMON NAME

STATUS ABUNDANCE

Mexican poppy

non-native rare

lantana

non-native rare

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through fauna survey method was conducted in conjunction with the botanical survey. All parts of the project area were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities and locations as well as observations of trails, tracks, scat and signs of feeding. In addition, an evening visit was made in the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*).

RESULTS

MAMMALS

Six non-native species of mammals were seen during three site visits in the area. Taxonomy and nomenclature follow Tomich (1986). These species included cattle (*Bos Taurus*), pigs (*Sus scrofa*), dogs (*Canis familiaris*), horses (*Equus caballus*), mongoose (*Herpestes auropunctatus*) and axis deer (*Axis axis*). While not seen, one would expect to find mice (*Mus domesticus*), rats (*Rattus* spp.) and perhaps domestic cats (*Felis catus*).

A special effort was made to look for the Endangered 'ōpe'ape'a or Hawaiian hoary bat by making an evening survey in the middle of the project area. When present in an area these bats can be easily identified as they forage for insects, their distinctive flight patterns clearly visible in the glow of twilight. No evidence of such activity was observed though visibility was excellent. In addition, a bat detecting device (Batbox IIID) was used, set to the frequency of 27,000 Hertz, which is the frequency these bats are known to use for echolocation. No bats were detected with the use of this device.

BIRDLIFE

Birdlife was modest in both species diversity and in total numbers. A total of ten non-native species were observed during three site visits. Taxonomy and nomenclature follow American Ornithologists' Union (2019). Four species were common, the zebra dove (*Geopelia striata*), spotted dove (*Streptopelia chinensis*), common myna (*Acridotheres tristis*) and black francolin (*Francolinus francolinus*). Five other species were uncommon, and one was rare. No native birds were seen.

INSECTS

Insects were modest in numbers. A total of twelve species were observed during three site visits. Taxonomy and nomenclature follow Nishida et al (1992). Three species were common throughout the project area, the monarch butterfly (*Danaus plexippus*), the globe skimmer dragonfly (*Pantala flavescens*) and dung fly (*Musca sorbens*). Another three species were uncommon, the house fly (*Musca domestica*), the sleepy orange butterfly (*Eurema niccipe*) and the pinao or green darner dragonfly (*Anax junius*). Six other insect species were rare. The two dragonfly species, the pinao and the globe skimmer, are indigenous Hawaiian species that are native here, but which also occur naturally in other parts of the world.

DISCUSSION AND RECOMMENDATIONS

The fauna on this property is strongly represented by non-native species. Just two indigenous dragonflies, the pinao and the globe skimmer, were found here. These dragonflies are common in many habitats in Hawaii and are also native in other parts of the world.

While no Endangered bats were detected during the evening survey, the 'ōpe'ape'a is known to occur in many habitats in Hawaii. These bats are highly mobile and appear to migrate around in response to flushes in insect activity, wherever it may occur. There is likelihood that these bats may utilize the habitat on this property at some times of the year. It is recommended, should these bats show up here, that the U.S. Fish and Wildlife Service be consulted on how to proceed so that these bats are not harmed or killed.

Additionally, there are two native seabirds, the Endangered Hawaiian petrel (*Pterodroma sanwichensis*) and the Threatened Newell's shearwater (*Puffinus newelli*), that fly over these lowlands during the evenings on their way to their burrows high in the mountains and then fly out to the ocean early in the morning during the summer and fall months. These seabirds, and especially their young fledglings, are attracted to bright lights and can be disoriented and crash. They are then vulnerable to injury, vehicle strikes or predators. It is recommended that any significant outdoor lighting in any proposed development on this property be shielded to direct the light downward to minimize any disorientation of these protected birds.

In summary, no Endangered or Threatened animal species (USFWS, 2019) were found on the property in the course of this survey, nor were any found that are candidates for such status. The development of this project should not result in a significant negative impact on native fauna or habitats in this part of Maui.

ANIMAL SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within three groups: Mammals, Birds and Insects. For each species the following information is provided:

- 1. Common name.
- Scientific name.
- 3. Bio-geographical status. The following symbols are used:

Endemic = native only to Hawaii; not naturally occurring anywhere else in the world.

Indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

Non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.

Migratory = spending a portion of the year in Hawaii and a portion elsewhere. In Hawaii the migratory birds are usually in the overwintering/non-breeding phase of their life cycle.

4. Abundance of each species within the project area:

Abundant = many flocks or individuals seen throughout the area at all times of day.

Common = a few flocks or well scattered individuals throughout the area.

Uncommon = only one flock or several individuals seen within the project area.

Rare = only one or two seen within the project area.

SCIENTIFIC NAME MAMMALS	COMMON NAME	STATUS	ABUNDANCE
CANIDAE (Dog Family) Canis familiaris L. VIVERRIDAE (Mongoose Family)	domestic dog	non-native	uncommon
Herpestes auropunctatus Hodgson EQUIDAE (Horse Family)	small Indian mongoose	non-native	rare
Equus caballus L. SUIDAE (Swine Family)	domestic horse	non-native	rare
Sus scrofa L. BOVIDAE (Cattle Family)	domestic pig	non-native	uncommon
Bos taurus L. CERVIDAE (Deer Family)	domestic cattle	non-native	uncommon
Axis axis Erxleben	axis deer	non-native	rare
BIRDS			
CARDINALIDAE (Cardinal Family) Cardinalis cardinalis L. COLUMBIDAE (Dove Family)	northern cardinal	non-native	uncommon
Geopelia striata L.	zebra dove	non-native	common
Streptopelia chinensis Scopoli ESTRILDIDAE (Estrildid Finch Family)	spotted dove	non-native	common
Lonchura punctulata L. FRINGILLIDAE (Carduelin Finch Family)	nutmeg mannikin	non-native	rare
Carpodacus mexicanus Muller PASSERIDAE (Sparrow Family)	house finch	non-native	uncommon
Passer domesticus L. PHASIANIDAE (Pheasant Family)	house sparrow	non-native	uncommon
Francolinus francolinus L.	black francolin	non-native	common
Gallus gallus L.	chicken	non-native	uncommon
STURNIDAE (Starling Family)			
Acridotheres tristis L. THRAUPIDAE (Tanager Family)	common myna	non-native	common
Paroaria coronata Miller	Red-crested cardinal	non-native	uncommon

SCIENTIFIC NAME INSECTS Order ARANEAE - true spiders	COMMON NAME	STATUS	ABUNDANCE
ARANEIDAE (Orb Weaver Family) Argiope appensa Walkenaer Gasteracantha mammosa Koch	common garden spider Asian spiny-backed spider	non-native	rare
	1 2 1		
CULICIDAE (Mosquito Family)			
Culex quinquefasciatus Say	southern house mosquito	non-native	rare
Order DIPTERA - flies			
MUSCIDAE (House Fly Family)			
Musca domestica L.	house fly	non-native	uncommon
Musca sorbens Wiedemann	dung fly	non-native	common
Order LEPIDOPTERA - butterflies and moths			
GEOMETRIDAE (Geometer Moth Family)			
Cyclophora nanaria Walker	dwarf tawny wave	non-native	******
LYCAENIDAE (Gossamer-winged Butterfly Family)	•	non-nauve	rare
Lampides boeticus L.	long-tailed blue butterfly	non-native	uncommon
NYMPHALIDAE (Brush-footed Butterfly Family)	long-tailed blue butterity	non-nauve	uncommon
Danaus plexippus L.	monarch butterfly	non-native	common
PIERIDAE (White & Sulphur Butterfly Family)	monarch butterny	non-nauve	Common
Eurema niccipe Cramer	sleepy orange butterfly	non-native	uncommon
Pieris rapae L.	cabbage butterfly	non-native	
Tieris rapae L.	cabbage butteriny	Hon-hauve	Tale
Order ODONATA - dragonflies, damselflies			
AESHNIDAE (Hawker Dragonfly Family)			
Anax junius Drury	green darner dragonfly	indigenous	uncommon
LIBELLULIDAE (Skimmer Dragonfly Family)	green darner dragonnry	margenous	uncommon
Pantala flavescens Fabricius	globe skimmer	indigenous	common
2 arrange just esterin 1 deliving	Sicol Skilliner	aigeileas	Common
Order ORTHOPTERA - grasshoppers and crickets			
TETTIGONIIDAE (Katydid Family)			
Elimaea punctifera Walker	katydid	non-native	rare
	•		

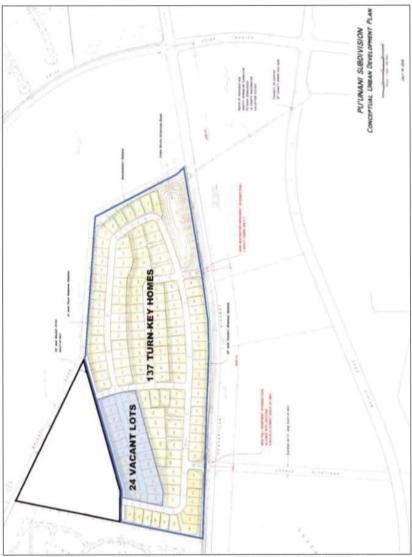


Figure 1. Project Area - Waikapū, West Maui. TMK (2) 3-5-02:002 60.09 acres

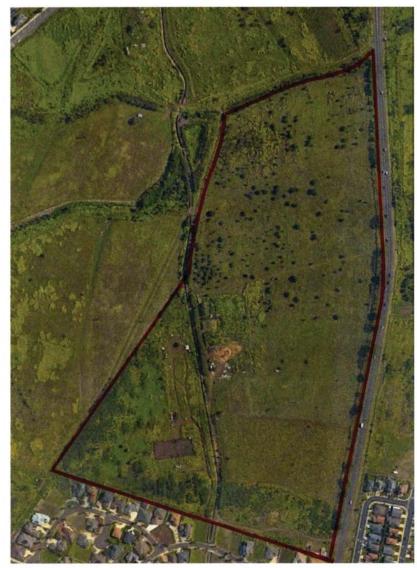


Figure 2. Project Area – Waikapū, West Maui. TMK (2) 3-5-02:002 60.09 acres



Figure 3. Project Area – heavily grazed pasture.



Figure 4. Project Area – showing sparse vegetation.

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BIOLOGICAL RESOURCES SURVEY FOR THE WAILUKU APARTMENT RENTAL HOUSING PROJECT

APPENDIX



BIOLOGICAL RESOURCES SURVEY

for the

KEHALANI 201-H AFFORDABLE HOUSING PROJECT

WAILUKU, MAUI, HAWAII

by

ROBERT W. HOBDY ENVIRONMENTAL CONSULTANT Kokomo, Maui February 2017

Prepared for: Pier Management Hawaii, LLC

FLORA AND FAUNA SURVEY KEHALANI 201-H AFFORDABLE HOUSING PROJECT WAILUKU, MAUI, HAWAII

INTRODUCTION

The Kehalani 201-H Affordable Housing project consists of 14.416 acres located between Wailuku and Waikapu in central Maui. It lies between Honoapiilani Highway and Waiale Road, adjacent to the south edge of East Kuikahi Drive, TMK (2) 3-5-01:064, (see Figures 1 & 2). This biological resources study was initiated by the owners in fulfillment of environmental requirements of the planning process.

SITE DESCRIPTION

The project area lies on gently sloping land on the lower eastern slopes of the West Maui Mountains. The vegetation consists of dense grassland with scattered shrubs and small trees. Elevations range between 320 and 380 feet above sea level. The soils are characterized as Iao silty clay, 0-3% slopes (IaA,), and Iao clay, 3-7% slopes (IcB), which are deep, dark brown alluvial soils (Foote et al, 1972). Rainfall averages 20 inches per year with winter maximums.

BIOLOGICAL HISTORY

The original vegetation in this area consisted of a dense low statured native forest and shrubland with such components as 'ōhi'a (Metrosideros polymorpha), 'a'ali'i (Dodonaea viscosa), olopua (Nestegis sandwicensis), lama (Diospyros sandwicensis), halapepe (Chrysodracon auwahiensis), and a variety of ferns, vines and herbaceous plants.

Hawaiians lived in the area for several centuries, farming in the valley bottoms and lowlands and utilizing forest plants for food, construction materials, tools, fiber and medicines. They altered the landscape somewhat through cultivation and burning. This area is situated on farming lands that were irrigated with waters from the ancient Kama Ditch.

During the mid-1800's this area was cleared for sugar cane agriculture and the area was plowed, planted, burned and harvested in continuous cycles for over 100 years. Native ecosystems were replaced by sugar cane and increasing numbers of agricultural weeds.

When sugar production here ended in the 1990s this area became fallow. All of these practices have resulted in an environment that is now nearly totally lacking in native plants and animal species.

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the proposed Kehalani 201-H Affordable Housing project which was conducted in February 2017. The objectives of the survey were to:

- Document what plant, and animal species occur on the property or may likely occur in the existing habitat.
- 2. Document the status and abundance of each species.
- Determine the presence or likely occurrence of any native flora and fauna, particularly any that are federally listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential for these species.
- Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.

BOTANICAL SURVEY REPORT

SURVEY METHODS

A walk-through botanical survey method was used covering the entire project area. Notes were made on plant species, distribution and abundance as well as on terrain and substrate.

A special focus was made to identify any native plants and ascertain if there were any Endangered or Threatened species (USFWS, 2017) that would require special focus. A complete plant species list is presented herein.

DESCRIPTION OF THE VEGETATION

The vegetation within the project area was dominated by two non-native species, Guinea grass (Megathyrsus maximus) and glycine (Neontonia wightii). These two species form a tall dense grassland that is smothered by a tangle of vines. Also common were koa haole (Leucaena leucocephala) and Castor bean (Ricinus communis).

A total of 63 plant species were recorded during two site visits to the project area. Four of these were common native plant species, 'uhaloa (*Waltheria indica*), kou (*Cordia subcordata*), (*Cyperus polystachyos*) no common name, and koali kua hulu (*Merremia aegyptia*) which are all widespread in Hawaii as well as in many other tropical countries. The remaining 59 species were non-native grasses or agricultural weeds.

DISCUSSION AND RECOMMENDATIONS

The vegetation throughout the project area is dominated by non-native species that are of no particular environmental interest or concern. Just four common indigenous plants, 'uhaloa, kou, koali kua hulu and (*Cyperus polystachyos*) were found. No federally listed Endangered or Threatened plant species (USFWS, 2017) were found, nor do any plants that are candidates for such status occur on the project area. No special plant habitats occur on or near the project and no potential wetlands occur in this dry upland site.

This project is not expected to have any significant negative impacts on the botanical resources in this part of Central Maui. No recommendations regarding botanical resources are deemed necessary or appropriate.

PLANT SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within each of two groups: Monocots and Dicots. Taxonomy and nomenclature of the flowering plants (Monocots and Dicots) are in accordance with Wagner et al. (1999).

For each species, the following information is provided:

- 1. Scientific name with author citation
- 2. Common English or Hawaiian name.
- 3. Bio-geographical status. The following symbols are used: endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world. indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s). Polynesian = all those plants brought to Hawaii during the course of Polynesian migrations non-native = all those plants brought to the islands intentionally or accidentally after western contact.
- 4. Abundance of each species within the project area: abundant = forming a major part of the vegetation within the project area. common = widely scattered throughout the area or locally abundant within a portion of it. uncommon = scattered sparsely throughout the area or occurring in a few small patches.

rare = only a few isolated individuals within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCI
MONOCOTS			
CYPERACEAE (Sedge Family)			
Cyperus polystachyos Rottb.		indigenous	rare
Cyperus rotundus L.	nut sedge	non-native	rare
POACEAE (Grass Family)			
Cenchrus ciliaris L.	buffelgrass	non-native	rare
Cenchrus echinatus L.	common sandbur	non-native	rare
Chloris barbata (L.) Sw.	swollen fingergrass	non-native	uncommon
Cynodon dactylon (L.) Pers.	Bermuda grass	non-native	rare
Digitaria ciliaris (Retz.) Koeler	Henry's crabgrass	non-native	rare
Digitaria fuscescens (K. Presl) Henr.	creeping crabgrass	non-native	rare
Digitaria insularis (L.) Mez ex Ekman	sourgrass	non-native	rare
Eleusine indica (L.) Gaertn.	wiregrass	non-native	rare
Eragrostis amabilis (L.) Wight & Arnott	Japanese lovegrass	non-native	rare
Eragrostis pectinacea (Michx.) Nees	Carolina lovegrass	non-native	rare
Megathyrsus maximus (Jacq.) Simon & Jacobs	Guinea grass	non-native	abundant
Melinis repens (Willd.) Zizka	Natal redtop	non-native	
Saccharum officinarum L.	sugar cane	non-native	rare
DICOTS		A TALENT PROPERTY OF	*****
AMARANTHACEAE (Amaranth Family)			
Alternanthera pungens Kunth	khaki weed	non-native	rare
Amaranthus spinosus L.	spiny amaranth	non-native	uncommon
Amaranthus viridis L.	slender amaranth	non-native	rare
APOCYNACEAE (Dogbane Family)	Sicilate animanni	non-nauve	rare
Asclepias physocarpa (E. Meyen) Schlect.	baloon plant	non-native	rare
Calotropis procera (Aiton) Aiton	small crown flower	non-native	rare
Plumeria rubra L.	plumeria	non-native	rare
ASTERACEAE (Sunflower Family)	prumeria	non-native	raic
Bidens pilosa L.	Spanish needle	non-native	uncommon
Conyza bonariensis (L.) Crong.	hairy horseweed	non-native	
Emilia fosbergii Nicolson	red pualele	non-native	rare
Senecio madagascariensis Poir.	fireweed	non-native	7377.E
Sonchus oleraceus L.	pualele		rare
		non-native	uncommon
Tridax procumbens L.	coat buttons	non-native	uncommon
Verbesina encelioides (Cav.) Benth. & Hook.	golden crown-beard	non-native	rare
BORAGINACEAE (Borage Family)			
Cordia subcordata Lam.	kou	indigenous	
Heliotropium procumbens Mill.	fourspike heliotrope	non-native	rare
BRASSICACEAE (Mustard Family)	water the control of	ALCONOMIC CONTRACTOR	
Lepidium virginicum L.	Virginia pepperwort	non-native	rare
CONVOLVULACEAE (Morning Glory Family)			
Ipomoea triloba L.	little bell	non-native	uncommon
Merremia aegyptia (L.) Urb.	hairy merremia	indigenous	rare

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SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
CUCURBITACEAE (Gourd Family)			
Cucumis dipsaceus Ehrenb. ex Spach	hedgehog gourd	non-native	rare
Momordica charantia L.	bitter melon	non-native	uncommon
EUPHORBIACEAE (Spurge Family)			
Euphorbia hirta L.	hairy spurge	non-native	rare
Euphorbia hypericifolia L.	graceful spurge	non-native	rare
Ricinus communis L.	Castor bean	non-native	common
FABACEAE (Pea Family)			
Chamaecrista nictitans (L.) Moench	partridge pea	non-native	rare
Crotalaria pallida Aiton	smooth rattlepod	non-native	uncommon
Crotalaria retusa L.	rattlepod	non-native	uncommon
Desmanthus pernambucanus (L.) Thellung	slender mimosa	non-native	rare
Desmodium tortuosum (Sw.) DC.	Florida beggarweed	non-native	uncommon
Indigofera spicata Forssk.	creeping indigo	non-native	rare
Indigofera suffruticosa Mill.	inikō	non-native	rare
Leucaena leucocephala (Lam.) de Wit	koa haole	non-native	common
Macroptilium atropurpureum (DC.) Urb.	siratro	non-native	uncommon
Neonotonia wightii (Wight & Arnott) Lackey	glycine	non-native	abundant
Pithecellobium dulce (Roxb.) Benth.	ōpiuma	non-native	uncommon
Samanea saman (Jacq.) Merr.	monkeypod	non-native	rare
Sesbania grandiflora (L.) Poir.	sesban	non-native	rare
LAMIACEAE (Mint Family)			
Leonotis nepetifolia (L.) R. Br.	lion's ear	non-native	rare
MALVACEAE (Mallow Family)			
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	non-native	rare
Malva parviflora L.	cheese weed	non-native	rare
Malvastrum coromandelianum (L.) Garcke	false mallow	non-native	uncommon
Sida rhombifolia L.	arrowleaf sida	non-native	uncommon
Sida spinosa L.	prickly sida	non-native	rare
Waltheria indica L.	'uhaloa	indigenous	rare
MORINGACEAE (Drumstick Tree Family)			
Moringa oleifera Lamarck	marunggay, horeradish tree	non-native	uncommon
NYCTAGINACEAE (Four-o'clock Family)			
Boerhavia coccinea Mill.	scarlet spiderling	non-native	rare
SOLANACEAE (Nightshade Family)	7 C. M. S. C.		
Solanum lycopersicum L.	cherry tomato	non-native	uncommon
Solanum torvum Sw.	pea aubergine	non-native	rare
VERBENACEAE (Verbena Family)	#100 S000 S		
Stachytarpheta jamaicensis (L.) Vahl	Jamaica vervain	non-native	rare
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FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through survey method was conducted in conjunction with the botanical survey. All parts of the project area were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities and location as well as observations of trails, tracks scat and signs of feeding. In addition an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (Lasiurus cinereus semotus) in the area.

RESULTS

MAMMALS

Just two non-native mammals the mongoose (Herpestes auropunctatus) and the axis deer (Axis axis) were observed during two site visits. Several common non-native mammal species, however, could be occasionally expected to utilize this habitat. These include cats (Felis catus), domestic dogs (Canis familiaris), rats (Rattus spp.) and mice (Mus domesticus). These species can be difficult to detect because of the dense vegetation. Taxonomy and nomenclature follow Tomich (1986).

A special effort was made to look for the native Hawaiian hoary bat by making an evening survey of the area. When present in an area these bats can be easily identified as they forage for insects, their distinctive flight patterns clearly visible in the glow of twilight. No evidence of such activity was observed though visibility was excellent. In addition, a bat detecting device (Batbox IIID) was used at two locations, set to the frequency of 27,000 to 28,000 hertz which is the typical range within which these bats are known to echolocate for flying insect prey. No activity was detected using this device.

BIRDS

Birdlife was somewhat sparse within the project area due to the lack of habitat diversity. Just six species of non-native birds were recorded during two site visits. Taxonomy and nomenclature follow American Ornithologists' Union (2017). One species was common, the zebra dove (*Geopelia striata*). Three other species were uncommon, the common myna (*Acridotheres tristis*), the spotted dove (*Streptopelia chinensis*) and the nutmeg mannikin (*Lonchura punctulata*). Two other species were rare, the gray francolin (*Francolinus pondicerianus*) and the red-crested cardinal (*Paroaria coronata*).

A few other non-native bird species may occasionally occur in this habitat such as the northern cardinal (Cardinalis cardinalis), the Japanese white-eye (Zosterops japonicus), the house finch (Carpodacus mexicanus) and the chestnut mannikin (Lonchura malacca), but the habitat is unsuitable for Hawaii's native forest birds that are presently restricted to higher elevation native forests beyond the range of mosquitoes and the avian diseases they carry and transmit.

INSECTS

Insect life was moderate in both species diversity and in total numbers. Eighteen species were recorded during two site visits, representing seven insect Orders. Taxonomy and nomenclature follow Nishida et al (1992).

Two species were of common occurrence, the long-tailed blue butterfly (*Lampides boeticus*) and the large Sulphur butterfly (*Phoebis agarithe*). Eleven species were uncommon and four species were rare (see the insect inventory).

Just two native dragonfly species were observed, the green darner (*Anax junius*) and the globe skimmer (*Pantala flavescens*). These two dragonflies are both indigenous in Hawaii and common here, and both also naturally occur in other countries as well. The other 16 species were all non-native insects that are of no special conservation concern.

MOLLUSKS

Just one non-native mollusk species, the giant East African snail (Achatina fulica) was found during the survey.

DISCUSSION AND RECOMMENDATIONS

The wildlife within the project area were nearly all non-native species that have come into Hawaii either accidentally or as intentional introductions since first Western contact. The two indigenous dragonflies are both widespread and common in Hawaii and are rated as "of least concern" in conservation status.

No Endangered Hawaiian hoary bats were detected during the evening survey. These bats, however, are wide-ranging and are opportunistic in taking advantage of spikes in nocturnal insect populations wherever they may occur. They may utilize this project area occasionally or seasonally. These bats also breed and raise their young between the months of April and mid-September, and during that time they utilize trees larger than 15 feet in height to place their young when they are too immature to fly. The U.S. Fish and Wildlife service usually recommends not removing these larger trees during the breeding and pupping season to prevent potentially injuring or killing any juvenile bats.

No Endangered Blackburn's sphinx moths or their eggs or larvae were found during the survey and none of their specific obligate host plants were found growing in the project area either. As a result these moths are not currently likely to occur here and no specific recommendations are offered.

While no protected seabirds were found on the property, the Endangered ua'u (*Pterodrama sanwichensis*) and Threatened 'a'o (*Puffimus newelli*) are known to overfly the area at dawn and dusk to their burrows high in the mountains between the months of March and November. In late fall young birds fledge from their burrows to take their first tentative flights out to sea. These inexperienced birds are easily confused and distracted by bright lights and often crash to the ground where they are particularly vulnerable to being run over by vehicles or killed by predators.

It is recommended that any significant outdoor lighting such as street lights or flood lights that are incorporated into the project design be shielded to direct the light downward so that it is not visible from above.

As a result of these findings, it is determined that there is little of environmental concern with regard to animal life within the project area. With the above recommendations, the development of the project is not expected to have a significant negative effect on the native animal resources int his part of central Maui.

ANIMAL SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within three groups: Mammals, Birds, Insects and Mollusks. For each species the following information is provided:

- 1. Common name
- 2. Scientific name
- 3. Bio-geographical status. The following symbols are used:

endemic = native only to Hawaii; not naturally occurring anywhere else in the world.

indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.

migratory = spending a portion of the year in Hawaii and a portion elsewhere. In Hawaii the migratory birds are usually in the overwintering/non-breeding phase of their life cycle.

4. Abundance of each species within the project area:

abundant = many flocks or individuals seen throughout the area at all times of day.

common = a few flocks or well scattered individuals throughout the area.

uncommon = only one flock or several individuals seen within the project area.

rare = only one or two seen within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MAMMALS			
Axis axis Erxleben	axis deer	non-native	rare
Herpestes auropunctatus Hodgson	mongoose	non-native	rare
BIRDS			
Geopelia striata L.	zebra dove	non-native	common
Acridotheres tristis L.	common myna	non-native	uncommon
Streptopelia chinensis Scopoli	spotted dove	non-native	uncommon
Lonchura punctulata L.	nutmeg mannikin	non-native	uncommon
Francolinus pondicerianus Gmelin	gray francolin	non-native	rare
Paroaria coronata Miller	red-crested cardinal	non-native	rare
MOLLUSKS			
Achatina fulica Bowdich	giant East African snail	non-native	rare

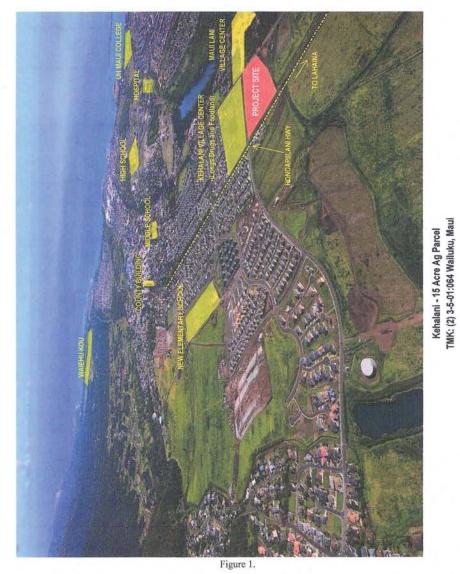
SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
INSECTS	Common mans	DITTOO	TIDOTADITACE
Order ARANAE - true spiders			
ARANEIDAE (Orb Weaver Family)			
Araneus diadematus Clerck	European garden spider	non-native	rare
Order COLEOPTERA - beetles			
COCCINELLIDAE (Lady Beetle Family)			
Coccinella septempunctata brucki Multsant	seven-spot lady beetle	non-native	rare
SCARABAEIDAE (Scarab Beetle Family)			
Protaetia orientalis Burmeister	Asian flower beetle	non-native	uncommon
Order DIPTERA - flies			
MUSCIDAE (Housefly Family)			
Musca sorbens Wiedemann	dung fly	non-native	uncommon
SYRPHIDAE (Hoverfly Family)	•		
Ornidia obesa Fabricius	drone fly	non-native	rare
Order HYMENOPTERA - bees, wasps, ants			
APIDAE (Honey Bee Family)			
Apis mellifera L.	honeybee	non-native	uncommon
Xylocopa sonorina Smith	Sonoran carpenter bee	non-native	uncommon
FORMICIDAE (Ant Family)			
Pheidole megacephala Fabricius	big-headed ant	non-native	uncommon
Order LEPIDOPTERA - butterflies, moths			
CRAMBIDAE (Grass Moth Family)			
Spoladea recurvalis Fabricius	beet webworm moth	non-native	uncommon
LYCAENIDAE (Gossamer-winged Butterfly Family)			
Lampides boeticus L.	long-tailed blue butterfly	non-native	common
NOCTUIDAE (Owlet Moth Family)			
Melipotis indomita Walker	indomitable melipotis	non-native	rare
NYMPHALIDAE (Brush-footed Butterfly Family)			
Danaus plexippus L.	monarch butterfly	non-native	uncommon
PIERIDAE (White and Sulphur Butterfly Family)			
Eurema nicippe Cramer	sleepy orange butterfly	non-native	uncommon
Phoebis agarithe Boisduval	large sulphur butterfly	non-native	common
Pieris rapae L.	cabbage butterfly	non-native	uncommon
Order ODONATA - dragonflies, damselflies			
AESHNIDAE (Hawker Dragonfly Family)			
Anax junius Drury	green darner dragonfly	indigenous	uncommon
LIBELLULIDAE (Skimmer Dragonfly Family)			
Pantala flavescens Fabricius	globe skimmer dragonfly	indigenous	uncommon
i umata jiarescens i doricius	grove skilling aragonary	mai Berrono	

SCIENTIFIC NAME COMMON NAME STATUS ABUNDANCE

Order ORTHOPTERA - grasshoppers, crickets ACRIDIDAE (Grasshopper Family) Schistocercis nitens Thunberg

histocercis nitens Thunberg gray bird grasshopper non-native uncommon

14



138N1

Figure 2. Kehalani 201-H Affordable Housing Project



Figure 3. View west across project area toward Honoapiilani Highway and the West Maui Mountains.



Figure 4. View north across the project area toward Wailuku.

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ARCHAEOLOGICAL INVENTORY SURVEY (AIS)

APPENDIX



SCS Project Number 607-1

ARCHAEOLOGICAL INVENTORY SURVEY REPORT ON 215.800 ACRES LOCATED IN WAIKAPU AHUPUA'A, WAILUKU DISTRICT, MAUI ISLAND, HAWAI'I [TMK (2) 3-5-02: 02 and 03]

Prepared by: Jon Wilson, B.A. and Michael F. Dega, Ph.D. October 2005

Prepared for:
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and
Endurance Investors, LLC
and
Association of II Wai Hui, LP

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ABSTRACT

Scientific Consultant Services, Inc. (SCS) conducted Archaeological Inventory Survey on two parcels totaling 215.800 acres, which form one large land tract within Waikapu (and partially Wailuku) Ahupua'a, Wailuku District, Maui Island, Hawai'i [TMK (2) 3-5-02: 02 and 03]. Towne Development of Hawaii is developing the "Pu'unani" project in conjunction with Endurance Investors, LLC and the Association of II Wai Hui, LP.

Seven historic sites were documented during this Inventory Survey, two of which were previously recorded in the State Index of Historic Places (SIHP). All seven sites relate to historic sugarcane agriculture; the project area is 100 percent covered by abandoned cane land. Sites include two major concrete irrigation ditches; two lesser, more localized ditches; a reservoir; erosion-control earthen berms; and a cane-haul dirt road.

State Site Number 50-50-04-5197 represents the previously recorded Waihee Ditch, and State Site Number 50-50-04-5493 represents the previously recorded Waikapu Ditch. Five new sites were added to the SIHP during Inventory Survey. State Site Number 50-50-04-5729 represents a lesser, un-named, rock and mortar ditch. Likewise, State Site Number 50-50-04-5726 represents a second lesser, un-named, earthen ditch/drainage. Site 50-50-04-5727 is a large, un-named reservoir—the terminus of Waikapu Ditch. State Site Number 50-50-04-5728 is a sugar field erosion-control site comprised of 14 cross-slope, earthen berms of varying length that are positioned regularly throughout the project area. Finally, State Site Number 50-50-04-5730 represents "Old Waikapu Road", a cane-haul transport, dirt road that spans the border of parcels 02 and 03.

Excavation consisted of twenty-one backhoe-dug stratigraphic trenches evenly spread across the project area. Extensive pedestrian survey and this representative subsurface testing did not yield artifacts or cultural deposits.

All seven sites (all representing historic period sugarcane agriculture activities) were assessed as significant under Criterion D of Hawai'i's State Historic Preservation criteria. Based on the results of this project and depth of documentation, all seven sites have yielded all potential information important to this historic period and no additional archaeological mitigation is recommended within this project area.

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INTRODUCTION

Scientific Consultant Services, Inc. (SCS) conducted Archaeological Inventory Survey on two parcels totaling 215.800 acres, which form one large land tract within Waikapu (and partially Wailuku) Ahupua'a, Wailuku District, Maui Island, Hawai'i [TMK (2) 3-5-02: 02 and 03]. Towne Development of Hawaii is developing the "Pu'unani" project in conjunction with Endurance Investors, LLC and the Association of II Wai Hui, LP. The Inventory Survey included historic background research and settlement pattern analysis prior to fieldwork, a complete pedestrian survey of the project area, representative subsurface testing via backhoe, and reporting (Figures 1 and 2).

Fieldwork, primarily consisting of systematic pedestrian survey, recordation, and representative subsurface backhoe testing, was conducted between August 16, 2005 and August 25, 2005 by SCS personnel Ian Bassford, B.A.; Randolph Ogg, B.A.; and Jon Wilson, B.A. The Principle Investigator for this project was Michael Dega, Ph.D.

Archaeological Inventory Survey of the project area was conducted to determine the presence/absence of archaeological deposits in surface and subsurface contexts through complete systematic survey and representative subsurface testing. The ultimate goals were to determine if historically significant archaeological sites occurred on the parcel and to provide recommendations to the State Historic Preservation Division (SHPD) concerning site mitigation during future land use of the project area.

ENVIRONMENTAL SETTING

LOCATION

The large survey area lies between coastal flats to the east and more mountainous terrain to the west along the medial reaches of the Maui isthmus between Wailuku and Mā'alaea (Figure 3). The project area is located between Wailuku (2 km north) and Waikapu to the south. Roughly ten percent of the project area (the northeast corner) lies within Wailuku Ahupua'a; the remainder is in the *ahupua'a* to the south—Waikapu (see Figure 1). The project area is composed of two adjacent parcels: TMK parcel 02 is located in the southeast quadrant of the project area and is less than half the size of parcel 03. The eastern perimeter of the project area abuts Honoapi'ilani Highway as it traverses from Wailuku toward Waikapu across the central Maui isthmus. The western border is defined by Wailuku Heights, an existing residential neighborhood. The northern boundary of the survey area is the curving Kuikahi Drive; the southern boundary is an arbitrary TMK line through abandoned cane lands (Figure 4).

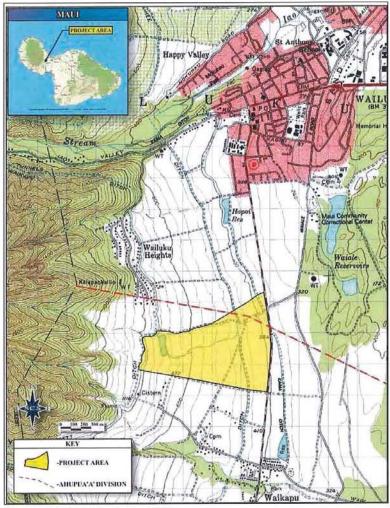
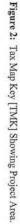
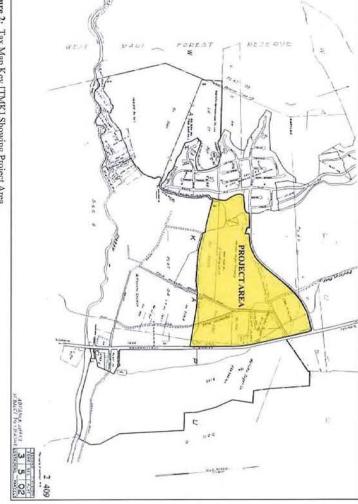


Figure 1: USGS Wailuku Quadrangle Map.

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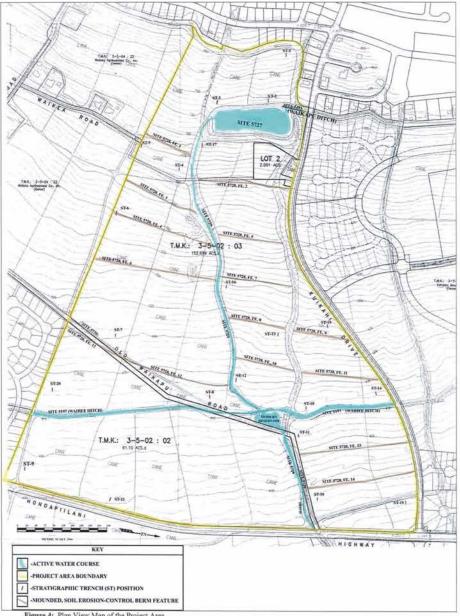


Figure 4: Plan View Map of the Project Area.

PROJECT AREA LANDFORM

Both archeological field survey and a review of geotechnical reports for the parcel reveal that the slightly sloping project area lies in locations previously utilized for the cultivation of now-abandoned sugar cane. According to Cavanaugh (1995:2), who conducted geotechnical studies on the 450-acre Kehalani Mauka Subdivision (the parcel that borders Kuikahi Drive to the north), "site topography slopes down moderately toward the east at a gradient of 10 percent." This accurately describes the slope of the current project area, which is steeper at its western (mauka) perimeter, and relatively flat near Honoapi'ilani Highway (Figure 5). Ground elevations range from approximately 115 meters (380 feet) above mean sea level (amsl) to 200 meters (660 feet) amsl. Various historic and modern dirt roads transect the surveyed area. As is discussed more below, project area exclusively consists of tilled zone, fill, and alluvial sediments. To the east, near the Maui Lani development, sandy matrices were identified. Sandy matrices were not identified in the current study area. Likewise, neither archaeological nor geotechnical subsurface testing detected any sandy matrices in areas immediately to the east of Honoapi'ilani Highway (Monahan 2003) or north of Kuikahi Drive during the Kehalani Mauka Subdivision (Dega 2004).



Figure 5: Distant Photograph of Project Area (lighter colored grass at center roughly defines boundaries). View to West.

Hydrology within the relatively dry project area is mostly in the form of historic irrigation modifications. Some of these modifications were the creation of a larger web of water conduits, drainages, and reservoirs, some built as early as 1905. No perennial streams run directly through the project area, and thus artificial ones had to be created for proper irrigation. By comparison, 'Iao Stream runs west-east to the north of the proposed development while Waikapu Stream runs west-east to the south of the project area. Being located near these two major streams appears to have been beneficial for cultivation on the present parcel, at least during historic times. Several still-utilized irrigation ditches (i.e., Waihee Ditch, Site -5197) transect the project area, and a still-active larger reservoir is linked to one of these ditches. The remnant irrigation ditches and reservoir not only point to massive landscape modification in the area during historic times but also strongly infer the aridness of the area, which required large-scale water importation. The water table was not encountered in any of the 21 stratigraphic trenches excavated within the project area (maximum depth of 2.60 meters). Soil borings conducted during geotechnical analyses in a nearby project area failed to reveal the presence of the area's water table to at least 25 feet below the surface (Shimamoto 1995;4).

The project area has seen significant modern activity. A 25 meter high cinder/ soil pile has been consistently mined (or imported) via truck traffic into the western half of the project area from a dirt road linking Kuikahi Drive. Modern rubbish is scattered over the surface of each quadrant; nearly a dozen abandoned cars are located in the southeast quadrant. Land owners have a construction trailer and small, dirt parking lot at the northeast corner of parcel 03. Consistent, daily vehicle traffic across the parcel indicates the modern maintenance efforts related to the irrigation systems (necessary to serve locations outside of the project area).

VEGETATION AND SOILS

Vegetation in the project area is dominated by the presence abandoned cane that has been overtaken by non-native secondary growth shrubs and various introduced grasses (Figure 6). Several ironwood trees (Casuarina glauca) dot the landscape. Haole koa (Leucaena leucocephala) are fairly common especially bordering the eastern highway perimeter and near irrigation conduits. Native vegetation was not documented within the project area.

According to Foote et al. (1972:46–47, 100), soils in the project area fall into four subclassifications of the 'Iao soil series. These soils consist of well-drained soils on valley fill and alluvial fans that have developed from igneous rock and are nearly level to moderately sloping. The 'Iao Series derivatives are similar to each other, yet primarily differ by the slope of the surface layer and inclusions of a higher content of cobblestones, such as in 'Iao cobbly silty clay



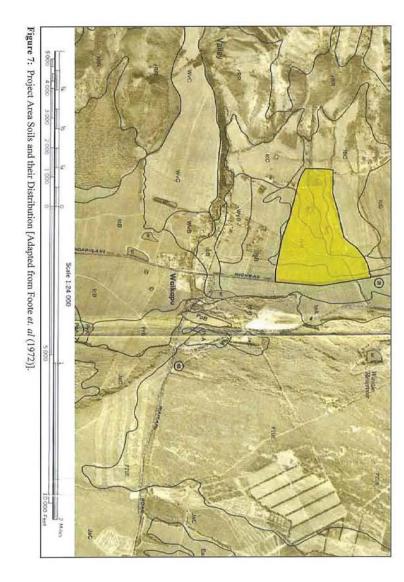
Figure 6: Project Area Vegetation and Topography. View to Northeast.

(classified as both IbB and IbC). The IbC soil (7 to 15 percent slopes) is distributed along the Kuikahi Drive area; whereas the IbB soil forms the central region. Also occurring within the project area (in roughly equal percentages) are `Īao clay, on lesser slopes (IcB), and `Īao clay on steeper slopes (IcC). Figure 7 shows the project area distribution of these derivatives.

The presence of these soil types was confirmed through geotechnical studies in bordering parcels and archaeological testing during the current project. Important to emphasize again, no sandy sediment was identified in the project area. Sandy sediment (sand dunes) and mixed coastal-terrigenous sediments occur to the east of the current parcel (i.e., Maui Lani).

The fairly homogenous nature of soils in the project area does provide contrast to soil regimes occurring more to the east (coastal-terrigenous and coastal) and to the north and south (dynamic stream valleys). The current project area occurs in a medial or intermediate environmental zone, both on a north-south and east-west axis. Along a north-south axis, the property lies in a very dry, open area between two perennial streams ('Iao and Waikapu). On an east-west axis, the project parcel lies above the influence of the coastal plain and below the wetter uplands. The current parcel thus lies in a fairly non-dynamic environmental zone that is practically surrounded on all sides by contrastingly vibrant areas (see Figure 5). That this

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intermediate area, occurring between more dynamic zones, required artificial controls is wellobserved throughout the project area in the form of irrigation ditches and reservoirs.

CLIMATE

Rainfall in this intermediate environment is very modest. The project area receives an average annual rainfall of only 33 to 44 centimeters (Price 1983:63), with much of this rainfall occurring during the winter months (November–April). Seasonal variation in rainfall amount follows normal orographic patterns for leeward-type areas of Maui. The project area occurs just to the south of what may be considered the leeward-windward boundary. At higher elevations within Wailuku Ahupua'a, the amount of rainfall doubles and triples that of the project area. To the north, from 'Iao Stream Valley area toward Waihee Valley, rainfall is much more intensive, with combined rainfall and geographic patterns being more conducive to traditional types of agricultural cultivation (i.e., lo'i, sweet potato). The rainfall in this gently sloping project area drains downhill to the east and provides an additional water source for traditional Hawaiian agriculture in the lowland flats to the east of the project area (see Handy and Handy 1972).

TRADITIONAL AND HISTORIC SETTING

Wailuku District inhabits the eastern side of the West Maui Mountains (Mauna Kahalawai) and occupies the isthmus through the center of the island to coastal reaches in Kahukui and Mā'alaea. Wailuku, together with Waikapū, Waihee, and Waiehu, is one of the Na Wai 'Ehā, or "the four waters," known for the occupancy of chiefly individuals (Kame'eleihiwa 1992; Pukui and Elbert 1992; and Creed 1993). Wailuku District and Wailuku Ahupua'a are frequently mentioned in historical texts and oral traditional accounts as being politically, ceremonially, and geographically important areas during traditional times (Cordy 1981, 1996; Kirch 1985). Wailuku was considered a "chiefly center" (Sterling 1998:90) with many of the chiefs and much of the area's population residing near or within portions of 'Iao Valley and lower Wailuku. The many heiau constructed in the Wailuku area point to its ceremonial and religious importance during pre-Contact times. During historic times, after numerous battles in the area, the large concentration of Land Commission Awards granted in Wailuku, particularly in lower 'Tao Valley, also attest to a sizeable population base and the importance of the lands for cultivation through time. More recent land use in the area included sugar cane cultivation and use of the land for pasture.

THE TRADITIONAL SETTING OF WAILUKU

Archaeological settlement data indicates that initial colonization and occupation of the Hawaiian Islands first occurred on the windward sides of the main islands, with populations eventually settling into drier leeward areas at later periods (Kirch 1985). Archaeological dates for initial occupation of the Hawaiian Islands far pre-dates accepted ranges gleaned from palynological data. A more secure estimate for initial occupation of the islands is the A.D. 9th century (Athens 1997), if one is to lay more credibility with the pollen record than the archaeological record. In the Waihee and Waiehu areas of Wailuku, Kirch (1985:87) notes that "a number of coastal dune midden sites have been reported, and at least one of these contained pearl-shell fishhooks similar to those from the Bellows Site, eroding from the wave-cut midden." (The Bellows site, located on the windward coast of O'ahu, has yielded dates of occupation, albeit controversial, from A.D. 300 to 600 [Pearson et al. 1971], one of the earliest dated sites in the Hawaiian Islands. For the most part, these dates have now been diagnosed as very problematical and are no longer valid.) More recent research within Wailuku Ahupua'a indicates that the area was likely settled between c. A.D. 1100 (Kirch 1985:142) and A.D. 1200 (Fredericksen and Fredericksen 1996).

To the north of the current project area lies 'Īao Valley, one of the most important locations in the area for prehistoric activity. Connolly (1974:5) states that the pre-Contact valley ['Īao] had a large population base with "most people residing in a settlement near 'Īao Needle," just north of the project area. Supposedly, the subsistence base of this population consisted of fish and taro, with Kahului Harbor and the coast close by and lo'i systems lining 'Ĩao Valley's stream banks. Prehistoric ditches or 'auwai were utilized in taro cultivation (Connolly 1974:5). Sterling (1998:86) adds that two 'auwai within the valley:

have existed immemorially and were evidently constructed for the purpose of irrigating *kalo* on the plains which stretch away to the northward and southward of the ['Iao] river. Several minor 'auwai have, since ancient times, tapped the river at different points lower down and spread the water through the lands in the gulch on either side of the river bed.

Handy in Sterling (1998:63) further notes that "From Waihee and Wailuku Valley, in ancient times, was the largest continuous area of wet taro cultivation in the islands." Cheever (1851:124) writes: "the whole valley of Wailuku, cultivated terrace after terrace, gleaming with running waters and standing pools, is a spectacle of uncommon beauty to one that has a position a little above it."

Recent archaeological research (Fredericksen and Fredericksen 1996:52) has revealed that habitation sites along what is now Lower Main Street in Wailuku, "are associated with the rich taro producing lands in the Lower 'Iao River flood plain, and the extensive cultivation systems present in 'Iao Valley." These habitation sites have been dated to the A.D. 15th through 17th centuries. The 'Iao Valley area was not only renowned for its agricultural base during prehistoric times but its ceremonial and political base as well (see also Cordy 1996; Donham 1996).

No discussion of Wailuku is complete without mentioning the important heiau complex above 'Iao Valley near its seaward terminus. During the mid to late 18th century, the Halekii-Pihana heiau complex was supposedly designed by a Hawaiian named Kiha (Sterling 1998:89). These monuments, designated as State Site Number 50-50-04-522 and occurring along the northwest flank of the current project area, are described as very important heiau within Hawaiian history. Yent (1983:7) notes the life cycle of the ali'i was represented here. It was the place where Kamehameha I's wife was born, Kahekili lived, and Kekaulike died. Thrum (1909:46) reported that Kamehameha I evoked his war god at Pihana Heiau after his warriors defeated Kalanikupuli's forces during the Battle of 'Jao in 1790. The two heiau are primarily associated with Kahekili, who is connected with the Halekii-Pihana complex between c. A.D. 1765 and 1790, and Kamehameha, during his conquering of Maui in 1792 (Yent 1983:18). Halekii and Pihana Heiau are the only remaining pre-Contact Hawaiian structures of religious and historical importance in the Wailuku-Kahului area that are easily accessible to the public (Estioko-Griffin and Yent 1986:3). As stated, the area within and adjacent to the current project is known not only for its religious and/or ceremonial significance, but for its political prominence as well.

The Fredericksens' (1996:52) report states that politically, Wailuku [village] was known as a central settlement for high ranking chiefs and their retinue. The Wailuku area was also witness to many battles, from the Battles of 'Iao and Sand Hills to the Battles of Kepaniwai and Kakanilua. The most famous battle was that of Kepaniwai where Kamehameha I, in July 1790, finally wrested control of Maui Island. Kamehameha I and his warriors landed at the Kawela portion of Kahului Bay and proceeded up 'Iao and other valleys to score a decisive victory. Wailuku, meaning water of destruction, succinctly describes the area in which many of these major battles occurred. Of additional note is that in the Kauahea area of 'Iao Valley (southeast of 'Iao Stream below Pihana Heiau-supposedly within the current project area), warriors apparently dwelt and were "trained in war skills and there was a boxing site in the time of Kahckili" (Sterling 1998:89).

TRADITIONAL SETTING OF THE PROJECT AREA

Creed (1993) has written extensively on the traditional background of the Waikapu area, much of which directly applies to the open landscape of the current project area just to the north of Waikapu. Many classes of sites are found or may have existed in the Waikapu-Wailuku area during traditional times. Creed (1993:19–21) provides an extensive list, including some site types that would not apply to the current parcel due to its distance from major drainages, the coastline, and its open land classification. Traditional sites that would apply include agricultural sites (kula lands, wauke patches, hala trees, pigs, and potato patches), boundary walls, burials (sometimes located in habitation terraces), feather gathering areas (particularly in the mountains to the west), habitation loci, and pohaku (an adze stone marks the border between Wailuku and Waikapu). While populations were predominantly centered in 'Tao Valley and Waikapu Valley, there was agricultural and habitation activity in the open grasslands of the current project area above the coastal flats. Much evidence for such activities has not yet been found through archaeological means, a situation that places much culpability on historic land use that may have erased or scattered this evidence. As such, there is much more evidence for historic activities occurring in the area.

HISTORIC SETTING OF THE PROJECT AREA

Current project area lands were first assigned to the district formerly known as Kula. Taken literally, Kula refers to open land or plains (Pukui and Elbert 1992:70). Kula District is known for its dry, arid lands being vacant of perennial streams. Kula was always an arid region, throughout its long, low seashore, vast stony kula lands, and broad uplands. There are exceptions in Wailuku as one proceeds along Iao Stream Valley and further to the west/northwest past Waihee and Waiehu. However, even the vast stony kula lands were utilized during traditional and historic times. Most evidence for such land utilization has come in the form historic records.

THE GREAT MāHELE

In 1848, during the late historic period, commissioners of the Great Mähele instigated an extreme modification to traditional land tenure on all islands that resulted in a division of lands and a system of private ownership. The Mähele was based upon the principles of western law. While a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kauikeaouli (Kamehameha III) was forced to establish laws changing the traditional Hawaiian society to that of a market economy (Kuykendall Vol. I 1938:145 footnote 47 et passim; Daws 1968:111; Kame'eleihiwa 1992:169–170, 176). The dramatic shift from a redistributive economy to a market economy resulted in drastic changes to land tenure, among

Once lands were made available and private ownership was instituted, native Hawaiians, including the *maka 'āinana* (commoners), were able to claim land plots upon which they had been cultivating and living. Oftentimes, foreigners were simply just given lands by the *ali'i*. However, in the case of commoners, they would only make claims only if they had first been made aware of the foreign procedures (*kuleana* lands, land commission awards). These claims could not include any previously cultivated or currently fallow land, *okipu*, stream fisheries, or many other natural resources necessary for traditional survival (Kame' eleihiwa 1992;295; Kirch and Sahlins 1992). Awarded parcels were labeled as Land Commission Awards (LCAs). If occupation could be established through the testimony of witnesses, the petitioners were issued a Royal Patent number and could then take possession of the property. Commoners claiming houselots in Honolulu, Hilo, and Lāhianā were required to pay commutation to the government before obtaining a Royal Patent for their awards (Chinen 1961:16).

Wailuku District was declared Crown Land during the Great Māhele and numerous Land Commission Awards, approximately 180, were awarded within Wailuku Ahupua'a while approximately 100 were awarded for Waikapu Ahupua'a (Creed 1993). A handful of foreigners (i.e., Anthony Catalena, James Louzada, E. Bailey) gained control of large parcels of lands that would later be used for mass cultivation of sugarcane. Significantly, the majority of LCAs were awarded to Hawaiians, a gauge that can be used to measure pre-Contact settlement, since there was little overall change in traditional land use among Hawaiians prior to 1853 (Creed 1993:38).

During the Great M\u00e4hele of 1848, a total of three land claims were awarded in the current project area (Waihona 'Aina 2005): LCA 433, 3201, and 3525—all of which are located in parcel 02, in the central area of the eastern border near Honoapi'ilani Highway (Figure 8). Table 1 summarizes archival research of these three LCAs.

Table 1: LCA and Land Grant Data for [TMK:(2) 3-5-02: 021.1

LCA No.	Awardee	Land Use	Comments
00433	William Crowningburgh and wife Maile	loʻi – 21 ʻapana – 4	Stream also on property. Crowningburgh surrounded this land with a fence and raised animals on the property. Plot of land was referred to as Pill Pill at the time.
03201	Wm. A. McLane	`apana – 2	One ditch on piece of land. Plot of land was referred to as Awakamanu at the time,
03525	Keliiolelo	lo'l-3 'apana-3 House lot-1	Stream on property. Plot of land was referred to as Awakamanu at the time.

Source: Waihona Aina website (www.waihona.com), information obtained in September, 2005.

Figure 8: RESEARCHED LCA PROJECT AREA Adapted 1992 Tax Map Key with Researched LCAs Highlighted FOREST PROJECT ARE

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This LCA record keeps with the overall LCA pattern of the Waikapu-Wailuku area intimating taro cultivation in association with permanent residences. Such a pattern is historically documented from 1848, but likely extended deeper into the past. Lo'i (irrigated taro patches or planted terraces) and evidence of smaller, private land plot divisions, 'apana, are no longer detectable within this surface or subsurface landscape.

Similarly, the Wailuku Ahupua'a parcel north of Kuikahi Drive predominantly lists among its LCA records 'property for raising cattle' and 'pasture grounds for cattle' (Dega 2004). There also is some mention of stone walls, *kalo* patches, and *lauhala* trees on the landscape. Perhaps the most significant structures on this adjacent land were built by the American Board of Commissioners for Foreign Missions (A.B.C.F.M.) which consisted of two house lots with adobe walls. The lots occurred "near pasture land," a common theme for the area (Waihona 'Aina 2005). In Waikapu, to the south, the LCAs reflect *lo'i* cultivation, *kula* lands, and house sites. However, much or all of the evidence related to such settlement of the Waikapu area has been effaced by late-historic and modern cultivation. The current project area is a prime example of this trend.

Land use in Wailuku and Waikapu Ahupua'a in the mid 19th and early 20th century was largely devoted to the sugar industry. During the 1860s, the sugar business was growing, with plantations and mills at Wailuku, Waihe'e, Waikapu, and Haiku. Many of the plantation camps associated with these mills were centered in the Pu'unene, Kahului, and Wailuku area (see Denham et al. 1992:16). Historic utilization of the Waikapu-Wailuku landscape within and near the project area focused on industrial-levels of cultivating sugar cane and pineapple. Water was channeled from traditional sources (e.g., Waikapū Stream, western aquifers or springs) through plantation lands. Both local and imported workers operated on these plantation lands and the area maintained fair population density. Evidence for expansive landscape modifications to accommodate the industrial-level of production is very evident across the current subject parcel in the form of the north-south oriented known historic ditches. The significant amount of plastic and tubing and sheeting found within Layer I of excavations attests to even more recent utilization of the open landscape for cultivation. These former sugarcane lands are now being reclaimed through residential developments.

PREVIOUS ARCHAEOLOGY

IMMEDIATE VICINITY OF PROJECT AREA

Intensive research within the State Historic Preservation Division (SHPD) archives concluded that no previous archaeological study was conducted within the present project area. However, of primary importance for the present study are the results from three projects recently conducted within and bordering the 348-acre subdivision to the north (Figure 9). First, Archaeological Inventory Survey was conducted on approximately 100 acres of land that included five separate lots and a proposed road corridor in the Kehalani Mauka Subdivision (Dega 2003). Three historic sites were documented during this Inventory Survey. State Site Number 50-50-04-5473 has been assigned to Hopoi Reservoir. This reservoir predates Hopoi Camp and was present at least by 1922 (see Dega 2003). Occurring to the immediate east of Hopoi Reservoir and running north-south to Waikapu is Kama Ditch (State Site No. 50-50-04-5474), a water conduit carrying the precious commodity to dry southern lands. A single basalt adze (Site 50-50-04-5478) was recovered from the northern flank of Lot 21 along the eastern flank of the parcel. Extensive survey and testing in the area of the isolated find failed to produce additional artifacts or cultural deposits. Representative subsurface testing (18 trenches) on the lots only revealed highly homogenous soil matrices across the open, barren intermediate area.

A second SCS Inventory Survey Report dealing with these same Kehalani Mauka lands (Dega 2004) documented lots not surveyed in the first study. This survey recorded six additional sites, all historic. Similar to the present project area, a series of un-named, lesser ditches was found within Kehalani Mauka, represented by State Site Numbers 50-50-04-5490 and 50-50-04-5493. Waihee Ditch (Site -5197) flows from this former SCS project area into the present project area. Historic-modern roadways (50-50-04-5489), a historic surface artifact scatter (50-50-04-5491), and several plantation-cra clearing mounds (50-50-04-5492).

In summary, the results of the Kehalani Mauka Subdivision Inventory Survey roughly duplicate the present project area's findings. Aside from a lone traditional artifact (an adze)—which could remain despite a century of cultivation—larger traditional sites were destroyed during the sugar-era.

An Archaeological Assessment Report was published based on a negative results survey on Kehalani lands just to the east of Honoapi'ilani Highway (Monahan 2003). This survey did not produce any structures or artifact scatters. Trench excavation demonstrated a fairly consistent subsurface stratigraphy with a thick layer of dark brown silt (Layer II) inclusive of historical

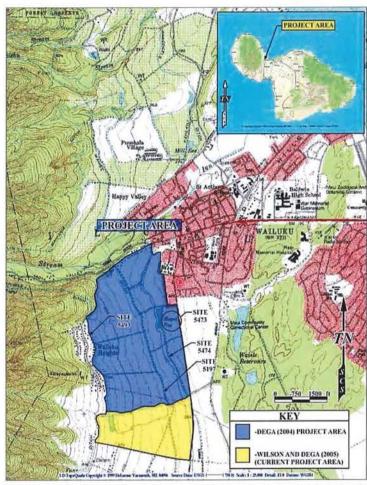


Figure 9: USGS Wailuku Quadrangle Map Showing Adjacent Areas of Archaeological Study.

garbage (i.e., black plastic and rubber tubing, white plastic irrigation pipes, and black plastic sheeting) over an undisturbed very dark grayish-brown silty clay subsurface (Layer III). A dark brown, silty root mat-layer (Layer I) was present in some units. No undisturbed sandy deposits were encountered, although a few trenches close to the eastern boundary of the project area did contain thin lenses of yellowish-brown sand. These sand lenses were clearly introduced as recent fill.

GENERAL WAIKAPU AREA

In terms of general projects in the Wailuku-Waikapu environs, the earliest archaeological endeavors on Maui were undertaken by Thrum (1909), Stokes (1918), Emory (1921), and Walker (1931). None of their archaeological finds directly pertain to the current project area; however, their data allows for a deeper understanding of the traditional use of the Wailuku-Waikapu area.

In an area south of the project area, within open lands similar to what is being researched herein, Thrum mentions that two *heiau* may have possibly existed within the *ahupua* 'a of Waikapū, but evidence of the two sites no longer remains (1909–1918:59). A group of approximately 45 house and shelter sites (State Sites 50-50-09-1441, the McGregor Point C-shaped structures, and 50-50-09-1287, the Mā 'alaea Complex) was identified by Walker (1931) to the west of Mā 'alaea. Chronology for these sites has yet to be determined (Creed 1993). Walker (1931:58) also described a *koa*, or fishing shrine, and two petroglyph fields with an associated *heiau* (State Site numbers 50-50-09-1169 and -1199) at Mā 'alaea. The *koa* was not assigned a State Site number, nor has it been relocated.

Recent archaeological work in Waikapū Ahupua'a (Kennedy 1988, 1989; Folk and Hammatt 1989; Haun 1989; Brisbin et al. 1991; Donham 1991; Titchenal 1996) has revealed a low density of sites ranging in function from habitation to agriculture. Radiocarbon dating results in these studies have produced dates ranging from the A.D. 1100s to modern times. Together, their collective data suggests a "general trend toward development of large, densely settled populations between A.D. 1200 and about 1800, and the expansion and intensification of dryland field systems, particularly during the latter two centuries of this period" (Creed 1993:33).

Other recent archaeological work just to the south and/ or east of the current project area has been limited to two field inspections (Donham 1991, 1995) and near the eastern boundary line of the current project location, two archaeological Inventory Survey-level investigations

(Kennedy 1988, 1989; Buffum and Dega 2001). The conclusions offered by these few projects primarily indicate that any surface and/or subsurface features of cultural value that were once present within the area have most likely since been destroyed by intensive agricultural use of the land (i.e., sugar cane and/or pineapple cultivation); this pattern was also confirmed by subsurface examination. As such, a broader background for Wailuku District is offered herein (see below).

WAILUKU DISTRICT OVERVIEW

The following section provides a brief overview of archaeological research in Wailuku District itself and is presented in two arbitrary sections: Upper Wailuku and Lower Wailuku District. Upper Wailuku is considered to be the lands above Kuihelani Highway while Lower Wailuku encompasses the lands below Kuihelani Highway and extends to Mā'alaea Bay in Waikapu Ahupua'a. The following district-specific research appears in its entirely as first published in Dega (2004).

UPPER WAILUKU DISTRICT

The majority of archaeological work is associated with the Pu'u One region in the northern most section of Wailuku District. Prior archaeological work in the Pu' One region indicates an emerging pre-Contact settlement pattern for this region. SCS (Dunn and Spear 1995) conducted research at the intersection of Naniloa and Waiale Roads where habitation features and a cultural layer interspersed with hearth and pit features were identified during a monitoring project. These features all occurred in sandy substrate. Radiocarbon dates submitted from these features yielded dates ranging from A.D. 1434 to A.D. 1807, dates suggesting pre-Contact sites and early historic land use. SCS (Burgett and Spear 1995) conducted Archaeological Inventory Survey in the sand hills along lower Main Street. One habitation site (50-50-04-4004) located in a remnant of a once larger cultural deposit was identified. Radiocarbon samples dated the site to A.D. 1420 and A.D. 1640, or to the early to midprehistoric time range.

SCS (Morawski and Spear 2001) conducted Archaeological Monitoring during the installation of a water pipeline and fire hydrants on Naniloa, Helenani, Leilani, Kainani, Naniluna, and Ka'ahumanu Highway roads with the town of Wailuku. During the research, a historic refuse dump was discovered, as were the remains of previously disturbed human burials. SCS (Buffum and Spear 2001; Zachman and Spear 2002) conducted Archaeological Monitoring at the Maui Medical Center. Due to extensive landscape modifications, no archaeological or traditional materials were identified during excavation.

Pantaleo and Sinoto (1996) conducted archaeological work at the Maui Lani
Development to the east of the present project area. As of the 1996 publication, only one
concentration of multiple burials was discovered while the remainder were isolated individual
burials at the tip of the dune (at the highest elevations). A more contemporary report
documenting additional burial finds at Maui Lani should aid in clarifying the overall results of
that project. Research conducted by Fredericksen and Fredericksen (1997) indicated that this
section of dunes was primarily used during prehistoric times as an interment area, a contention
easily supported by the previous year's study. Habitation sites (several with associated burials)
have been found mostly in the dune area associated with the Lower Main Street/Waiale Road
Corridor. Conversely, studies east of this corridor have yielded only human burials
(Fredericksen and Fredericksen 1998). Fredericksen and Fredericksen (1998) lists many of the
archaeological studies conducted in the Lower Main Street/Waiale Road Corridor and Central
Maui area.

LOWER WAILUKU DISTRICT

A limited number of archaeological projects have been conducted in this particular land section, much of which was disturbed during the massive sugar cane cultivation. The fair amount of archaeological work conducted along Lower Main Street is summarized elsewhere (see Morawski and Dega 2003). In comparison, Sinoto and Pantaleo (1992) conducted Archaeological Inventory Survey of a proposed location for the Kihei Gateway complex, on the *makai* side of the Piilani-Mokulele Highway junction. One historic site, the remains of concrete footings from a bridge across Waiakoa stream, was identified (Site 50-50-09-31).

SCS (Burgett and Spear 1997) conducted large-scale Archaeological Inventory Survey of the Puunene Bypass/Mokulele Highway improvements stretching across the majority of Wailuku District. Although no sites were identified, this absence may account for the lack of archaeological remains: extensive disturbance associated with prior sugar cane cultivation, highway and private construction activities, and little or no prehistoric occupation of the area. However, lo'i cultivation was reported to be intensively cultivated in this area (Handy and Handy 1972). The replacement of lo'i with sugar cane during historic times would be the most likely cause for the destruction of all traditional sites related to prehistoric cultivation in the area.

Fredericksen and Federicksen (1998) conducted archaeological research on 232 acres northeast of Puunene Avenue stretching to Haleakala Highway. No formalized traditional or prehistoric sites were discovered. Several sites consisting of volcanic-glass surface scatters were identified in the former sugar cane fields along with a historic irrigation ditch.

SETTLEMENT PATTERN

Archaeological investigations within the currently studied portion of Wailuku-Waikapū have revealed relatively little regarding traditional settlement patterns due to the dearth of supporting empirical evidence. Archival research and analyses of the generalized settlement pattern for Wailuku District have been the foremost sources for discerning an established settlement pattern for the current project area.

Archaeological evidence suggests that early settlement in the Hawaiian Islands occurred along windward shoreline areas between the A.D. 4^{th} and 11^{th} centuries. Pollen evidence suggests a settlement date of the A.D. 9^{th} century (see Athens 1997). For the most part, these populations used local resources and seldom ventured into upland valleys. Cordy (in Creed 1993) suggests, however, that upper valley areas on windward coasts were likely populated before the A.D. 1100s. Coastal settlement was still dominant, but populations began exploiting and living in more upland kula zones. Greater population expansion to inland areas did not occur until the c. A.D. 12^{th} century but continued through the 16^{th} century. Large scale or intensive agricultural endeavors were implemented in association with habitation. Coastal lands were used for settlement and taro was cultivated in near-coastal reaches and in the uplands. Upland areas of Maui such as the Waiohuli-Kula area contained large garden enclosures, ceremonial structures, and permanent habitation sites by c. A.D. 1600.

Nearer the coast in intermediate lands such as the current project area (c. 60–85 meters amsl), taro was cultivated along stream courses, dryland taro was grown on kula lands such as the project area, and populations were settled. It is possible that the kalo patches described in the aforementioned LCA accounts originated during the "Expansion Period" of A.D. 1400 to 1600, perpetuating through historic times (Kirch 1985). However, most of the LCAs for the area describe almost no cultivation occurring in the area during the 1850s as pasture land and sugar cane cultivation were already dominating the use of the land (Creed 1993:74). Primary settlement and resource zones lay outside the current medial environmental zone in Wailuku proper, near perennial water sources (Tao Valley, Waihee, Waiehu). The only substantial settlement along this medial isthmus zone between 300 and 600 feet amsl was at Waikapu, to the south of the current project area, near the base of Waikapu Stream Valley (see Creed 1993). As the current project area does not contain a perennial water source and is primarily open grassland, the area is considered to lie at the periphery of the more resource-rich zones in Wailuku.

Historic utilization of the Wailuku-Waikapu landscape was dominated by the cash cropping of sugar cane and pineapple, made possible by water channeled from traditional sources (e.g., Waikapu Stream) through plantation lands. Historic features associated with this period are represented as water features in the form of reservoirs (Hopoi Reservoir) and water channels (Waikapu Ditch, Waihee Ditch). This area was also an important transportation corridor linking both the south and north flanks of the Maui isthmus, with Honoapi ilani Highway having been demarcated as a Government Road on area maps by 1882 (Creed 1993:20).

PROJECT AREA EXPECTATIONS

Prior to commencing archaeological fieldwork, a review of archival resources and the results of previous archaeological work conducted in the area was undertaken to assess possible findings during fieldwork. Based on previous archaeological work—primarily north and east of this intermediate landscape—and on LCA information, site patterns prior to intensive historic land alteration activities show systematic use of the terrain as taro planting areas, limited habitation, and divisions of pastureland. Previous archaeological investigations within this portion of the Wailuku-Waikapū corridor have revealed very little data to confirm these patterns, this not surprising considering the impact that long and intensive agricultural exploitation has had on the surface of the area and subsurface strata. Traditional site components expected prior to these land-altering activities consist of dryland taro patches, associated agricultural components such as 'auwai and/or terracing, house sites, boundary walls, and pasture walls. Expectations for identifying such data sets were low, however, due to the aforementioned historic land uses.

Traditional sites that may once have been present within the current project area were not expected to remain unaltered. Given LCA testimony and general settlement patterns for this inland, intermediate area, land use patterns for the current project area were thought to be most obviously related to historic-period settlement and cultivation—but on a very limited scale. At present, an empirically-based chronology of this area has yet to be provided, given intensive historic land modifications and the lack of datable archaeological evidence. According to Creed (1993;77):

... we have no carbon dates to indicate the possible beginnings for this wetland agriculture in Waikapū Valley. Moreover, this area has been in constant use for crops and habitations at least since the time of the Māhele, if not long before and modern uses may have destroyed all traces of prehistoric uses. However, the LCA records and early maps document the extent of the lo i agriculture in the

1850s. The stream valley in its upper reaches may have some remnants of these Mähele period lo'i or 'auwai.

Expectations for this project area rested on several assumptions, some of which were proven valid at the end of fieldwork. First, the project area, lying in an open, intermediate zone containing hard soil composed of silty clay with cobbles was not intensively occupied during traditional times. Traditional and early historic-period populations were focused elsewhere in areas such as Waikapu, 'Iao Valley, Waihee Valley, and Waiehu Valley. Thus, there were low expectations for identifying larger, intact sites or deposits; they simply were not constructed in this area. Secondly, there was the possibility that sand sediment could be present along the eastern flank of the project area. The association of sand and traditional/historic burials and cultural deposits has been well documented (see Kirch 1985). Thus, if sandy deposits did occur along the eastern flank, cultural deposits could be present. Third, the area was heavily modified for industrial cultivation. Remnants of such modifications, such as fill strata, excavated areas, reservoirs, and earth mounds/ berms were expected throughout the project area. A cursory study of the USGS Wailuku Quadrangle Map showed that irrigation ditches crossed the current project area. Finally, based on the primarily negative results from other archaeological projects conducted along the intermediate Wailuku-Waikapu corridor, there were limited expectations for identifying intact traditional-period architectural structures or intact cultural deposits lying beneath the tilled surface. However, historic structures related to irrigation and were likely, considering they were previously documented near the parcel (see Dega 2003). In all, some of these expectations were met during the current study.

METHODOLOGY

FIELD METHODS

Fieldwork consisted of systematic pedestrian survey of the entire 215.800 acre parcel and mechanical subsurface testing across representative portions of the parcel. Written and photographic documentation occurred during each phase of research. First, 100 percent systematic pedestrian survey was conducted to assess the presence/absence of surface features and artifacts as well as to assess soil deposits amenable to testing. As visibility was moderate within fifty percent of the project area (makai half), and low-to-moderate in the mauka half, 100 percent surface survey was conducted by two to three crewmembers spaced closely together (5 meters apart), walking parallel along north-south transects. When any structures, artifacts, or intriguing topographical changes were identified, they were plotted on an overall site map and flagged. Surface artifact assemblages, surface features, or anomalies were assigned temporary

site numbers. Temporary site numbers were converted to State Site Numbers upon a cursory project review by SHPD following the completion of fieldwork.

After survey, the crew returned to each flagged location to fully investigate the area and assess excavation potential. Representative areas were demarcated for subsurface testing. All subsurface testing was done mechanically by backhoe. Following excavation each trench was thoroughly documented via stratigraphic layer profiles, soil analysis, photography, and location plotting on a project area map (see Figure 4). A vast area was tested with these intermittent trenches, however, excavation produced negative results in terms of subsurface cultural material of interest to the archaeological record.

While no cultural materials were collected from any trench, soil samples were taken from each trench and analyzed in the field. The results revealed a fairly homogenous soil matrix.

None of the excavated soil was screened, but all trench walls were thoroughly inspected.

Photographs were taken first of trench locations prior to excavation, secondly of at least one profile (or multiples) of each trench, and thirdly, overview shots were taken of the respective trench at the base of excavation. Representative photographs are offered in Appendix A.

LABORATORY METHODS

As the results of survey and excavation were negative in terms of collected artifact classes and samples, laboratory work was not necessary. Because none of the soils analyzed in the field were deemed to be associated with past habitation surfaces, traditional agricultural levels, or cultural deposits, no samples were submitted for specialized analysis (e.g., radiocarbon, pollen, phytolith analysis). Subsurface charcoal was an extremely rare commodity, and when found it was in association with modern debris from modern agricultural activity or dumping. Drafting of stratigraphic profiles, mapping illustration, and section drawings, were the primary components to laboratory work. All field notes, maps, photographs, and artifacts pertaining to this project are being curated at the SCS laboratory in Honolulu.

ARCHAEOLOGICAL INVENTORY SURVEY RESULTS

A 100-percent pedestrian survey of the project area revealed the presence of a network of historic-period surface structures that are represented as the seven sites described below. The previously documented (Dega 2004) Waikapu Ditch (State Site No. 50-50-04-5493) and Waikapu Ditch (State Site No. 50-50-04-5197) were subject to additional documentation during this survey. No traditional Hawaiian cultural material was found.

DITCHES

Four ditches are present within the project area. All four ditches originate outside of the project area and/ or extend beyond the project area's limits; no ditch exists as a segment contained strictly within the project area. Two of these ditches are of a larger historic context within Maui's sugarcane era. These are named ditches and some limited information regarding their construction and use appears within the historic record. It is important to note that up to as recently as 1983 (the publication of one series of USGS maps) two more of these significant, longer range water courses flowed into the project area. The Everett Ditch and Kama Ditch, however, have since been diverted or destroyed and no longer appear within the project area. Additionally, two lesser ditches served a more localized role within the project area. Only one lesser ditch, a possibly historic drainage from upslope, did not flow consistently at the time of survey.

State Site Number 50-50-04-5197 (Waihee Ditch)

FORM Concrete water-course FUNCTION: Sugarcane irrigation

AGE: Historic (1905–1907 construction)

DIMENSIONS: Length: 960.00 m; Width: 2.40m; Depth: 1.70 m (within P. Area)

CONDITION: Good SURFACE ARTIFACTS: None EXCAVATION: None

DESCRIPTION: The Waihee Ditch is a flowing, concrete water conduit. Within the project area, the ditch is U-shaped, having two vertical concrete sides, an open top, and a flat concrete bottom (Figure 10). Concrete cross-braces reinforce the relatively thin (0.10 m) concrete sides. The curving ditch flows into the project area from the north and roughly keeps a north-south orientation as it transects parcels 03 then 02 (see Figure 4). A smaller ditch (Site - 5729) that serviced only the locality of the project area, flows into the Waihee ditch from the west (pictured in Figure 10).

Modern alterations and maintenance to the Waihee Ditch are evidenced within the project area in the form of fortifications, a watergate near a modern reservoir, and foot and car bridges over the ditch. Additionally, nearby surface deposits of freshwater clam shells and *kukui* nuts are evidence of modern maintenance in the form of regular cleaning of the ditch. These finds are also a testament to the Waihee Ditches length and volume (Figure 11), as neither of these species exists within the project area; they traveled here via the ditch from environments north and *mauka*. In terms of historic information regarding a single project area site, the most available for



Figure 10: Waihee Ditch (50-50-04-5197). View to South.



Figure 11: Waihee Ditch (50-50-04-5197) paralleling Old Waikapu Road (50-50-04-5730). View to South.

the area pertains to Waihee Ditch. This history is worth noting in detail as it lends to an understanding of project area utilization around the turn of the century.

According to Wilcox's Sugar Water: Hawai'i's Plantation Ditches (1996:124), the Waihee "Canal" was started in June 1905 and was completed in May 1907. The entire canal cost \$160,000 to construct and was used by Wailuku Sugar Company (founded 1862) and HC&S. The Waihee Canal was built under the leadership of an engineer named James T. Taylor. The canal, or ditch as it is now known, represents a monumental effort to carry water to dry areas of Maui. Wilcox's research emphasizes this display of manpower for the purpose of sugar irrigation:

> this 50-mgd-capacity ditch tapped the Waihee stream at the 650 foot elevation, just below the Aliele falls. . . . Its 10.62 miles included twenty-two tunnels totaling 16,539 feet; thirty-nine flumes totaling 2764 feet; 35,549 feet of open, cement-lined ditch; and a 1253-foot-long, 3-foot-diameter siphon to cross Iao Valley. Ditch grade averaged 2/5 feet per 1000. The longest tunnel (2246 feet) was especially challenging, as much of it went through hard close-grained rock and it required compressed air and percussion drills. This tunnel took eighteen months to cut. The contract price for the labor ranged from 85 cents to \$5 per foot, depending on the material cut, the location, and the length of the tunnel. (1996:124)

The Waihee Ditch represents the oldest securely dated site on the project area landscape. Three other ditches are also located within the project area; two lesser, more localized ditches run from west to east; the Waikapu Ditch parallels the Waihee Ditch as it enters the project area from the north,

State Site Number 50-50-04-5493 (Waikapu Ditch)

FORM

Concrete water-course

FUNCTION: AGE:

Sugarcane irrigation Historic (in use by 1913)

DIMENSIONS:

Length: 61.00 m; Width: 1.70m; Depth: 1.00 m (within P. Area)

CONDITION: SURFACE ARTIFACTS:

EXCAVATION:

DESCRIPTION:

The Waikapu Ditch is a flowing, concrete water conduit that taps the Iao Stream at upper elevations within Iao Valley. Within the project area, the ditch is U-

shaped, having two vertical concrete sides, an open top, and a flat concrete bottom (Figure 12)



Figure 12: Waikapu Ditch (50-50-04-5493) at point where it enters Project Area. View to

-and is very similar in appearance to Waihee ditch. The concrete sides of the ditch measure 0.20 m thick. The curving ditch flows into the mauka fifth of the project area from the north and roughly keeps a north-south orientation. Unlike, the Waihee Ditch, the Waikapu Ditch does not transect the project area, rather it enters and then ceases.

The Waikapu Ditch flows into the Site -5727 reservoir where it terminates (although this may not have been the historic termination point of this ditch). The out-flow of this reservoir is a smaller, localized ditch that runs makai (Site -5729) and does not resemble the Waikapu ditch. Modern alterations and maintenance to the Waikapu Ditch are evidenced within the project area in the form of fortifications and a car bridge over the ditch. Wilcox (1996:124-125) notes that the ditch was in use prior to 1913 and was built by Wailuku Sugar Company.

State Site Number 50-50-04-5729 (un-named ditch)

FORM

Rock and concrete mortar water-course

FUNCTION:

Sugarcane irrigation Likely historic

AGE:

DIMENSIONS: Length: 1200.00 m; Width: 0.90m; Depth: 0.75 m (within P. Area)

CONDITION:

SURFACE ARTIFACTS: None EXCAVATION: None

DESCRIPTION: This un-named, flowing ditch was almost certainly built after Waihee and Waikapu Ditch construction. Site -5729 serves as a *mauka-makai* link between these two major sources of imported water. Site -5729 is constructed of basalt rock walls, specifically small boulders that are often welded together with concrete mortar (Figures 13 and 14). The walls of this U-shaped ditch are four to six courses high, and average 0.20 m thick. The bottom of the ditch is a concave, roughly-molded concrete basin. This construction material is an indicator of a localized irrigation effort, as the cost of labor and materials was a significantly smaller undertaking than the major ditches flowing in from the north. The origin of the Site -5729 ditch is the outflow of the Site -5727 reservoir (which gathers its water from the Waikapu Ditch terminus). Site -5929 then flows into the Waihee Ditch (Figure 15). The Site -5729 ditch is controlled by modern mechanisms in its flow into and out of the modern, smaller reservoir, and eventually downslope toward Honoapi ilani Highway and out of the project area.



Figure 13: Site 50-50-04-5729 Ditch, View to West.



Figure 14: Site 50-50-04-5729 Ditch, Showing Rock and Mortar Construction of Side Walls. View to Northwest.



Figure 15: Site 50-50-04-5729 Ditch (at center) flowing into Waihee Ditch (50-50-04-5197). View to West.

State Site Number 50-50-04-5726 (un-named ditch)

FORM Earthen berm ditch FUNCTION: Sugarcane irrigation AGE: Possibly historic

DIMENSIONS: Length: 215.00 m; Width: 7.00m; Depth: 2.50 m (within P. Area)

CONDITION: Fair SURFACE ARTIFACTS: None EXCAVATION:

DESCRIPTION: This un-named, intermittently flowing ditch was possibly constructed within the historic sugar era. It is a wider U-shape than the other ditches, and is choked with thick introduced grasses that stand over two meters tall. Like the Site -5729 ditch, this is a localized irrigation effort. The possibility exists that this is not a sugar cane agriculture feature, but a modern widening of a natural watershed drainage. However, its earthen berm sides resemble the historic, machine-created berms (Site -5728) constructed on the project area as erosion control during the sugar era. This ditch / drainage runs downslope, approximately west to east.

State Site Number 50-50-04-5727 (un-named reservoir)

FORM Rectangular reservoir FUNCTION: Sugarcane irrigation

Likely historic AGE:

DIMENSIONS: Length: 229.00 m; Width: 76.00m; Depth: undetermined

CONDITION: Excellent (currently maintained)

SURFACE ARTIFACTS: EXCAVATION: None

DESCRIPTION: This un-named, large reservoir is currently active and maintained by modern pumping equipment and fencing (Figure 16). It is surrounded by machine-created earthen berms of the same construction seen elsewhere on the project area in association with historic agriculture. Waikapu Ditch flows from the north and empties into Site -5727 (see Figure 12). Everett Ditch, flowing downslope from the mauka West Maui Mountains, also once terminated at this reservoir (however, this ditch no longer exists within the project area). The out-flow for Site -5727 is the Site -5729 localized, lesser ditch. The length of this reservoir is oriented north-south.

The size, construction, elevation, position, and shape of Site -5727 resembles that of Hopoi Reservoir (State Site 50-50-04-5473), a documented sugar era irrigation site. Hopoi Reservoir is located 1 kilometer northeast of the Site -5727 reservoir and the latter is likely of the same construction period as the former. Hopoi Reservoir, although empty and abandoned during



Figure 16: Site 50-50-04-5727 Reservoir. View to North.

initial recordation (see Dega 2004), also was a collection point of a known major water course (Kama Ditch, Site 50-50-04-5474).

Note: A smaller, modern reservoir is located within the makai third of the project area (Figure 17). A 1977 aerial map of the Kahului isthmus (see Figure 3) clearly shows the Site -5727 reservoir, and also shows that this smaller reservoir was not yet constructed.

State Site Number 50-50-04-5728 (erosion-control berms)

FORM Earthen berms (n = 14)FUNCTION: Sugarcane field erosion control

AGE: Likely historic

DIMENSION RANGE: Length: 132 to 456 m; Width: 5.0 to 17.0 m; Height: 1.0 to 1.8 m

CONDITION: Fair SURFACE ARTIFACTS: None EXCAVATION:

Fourteen soil berms comprise Site -5728 (Figure 18). This historic DESCRIPTION: method of machine-piled earthen mounds was used within cane fields to prevent topsoil erosion. As depicted by Figure 4, the positions of the fourteen berm segments vary slightly from a general north-south orientation. What is consistent, however, is that the position of each individual



Figure 17: Modern Reservoir at center of Project Area's Eastern Half.



Figure 18: Site 50-50-04-5728, Feature 13 (Erosion-control Berm). The contour of the berm running cross-slope can be seen as a mound in the dirt road. View to Northeast.

segment runs perpendicular to the sloping terrain within that specific locality of the project area. The mounded soil acted to block rainwater runoff, preserving both moisture and topsoil. To a lesser degree, it is possible that the berms also prevented some wind blown soil crosion, as some of the berms were mounded to a height of 1.80 m. State Site Number 50-50-04-5522 provides a documented case of such berms in the nearby former cane fields of Waichu, Maui (Wilson and Dega 2004).

Stratigraphic Trench 6

One stratigraphic trench (ST-6) was backhoe excavated through a single soil berm segment of Site -5728. The Feature 4 berm ran north-south at the center of the project area's south perimeter (see Figure 4). ST-6 perpendicularly transected the Feature 4 berm with the intent to explore its interior construction and subsurface depth. A cross sectional profile of ST-6 (Figures 19 and 20) indicates Site -5728 berms are 100 percent made up of naturally occurring soils that have been machine mounded in the past. No imported rock or other substance was used in the construction of these berms. The soil disturbance extends into Layer II (to a maximum depth of 50 cmbs) as evidenced by the mounded subsurface contour in shown in Figure 20. This simply means that the plow mechanism that created these berms cut deeper into the natural landscape in this berm building effort than was generally used when tilling the surrounding fields. (The surrounding fields consistently display an undisturbed Layer II.) Subsurface content is explored further under the heading "Subsurface Testing."

State Site Number 50-50-04-5730 (Old Waikapu Road)

FORM Dirt road

FUNCTION: Probable cane-haul route

AGE: Likely historic

DIMENSIONS: Length: 945.00 m; Width: 3.50m

CONDITION: Good SURFACE ARTIFACTS: None EXCAVATION: None

DESCRIPTION: A dirt road that enters the project area from the eastern perimeter (Honoapi`ilani Highway)—and then turns southwest before crossing the southern perimeter—forms the boundary between parcels 02 and 03. On a 1992 Tax Map Key the following words are printed in association with this road: "(Old Waikapu Road) County Road". At the time of survey, this road continued to see infrequent pedestrian and vehicle traffic—reserved for those transecting this undeveloped swath of land as a possible shortcut between paved roads. For this reason, this dirt road remains free of vegetation (Figure 21).



Figure 19: ST-6 (Photograph of North Wall) Profile Shows Subsurface Contour of Machine-mounded Site -5728, Feature 4 Berm. View to North.

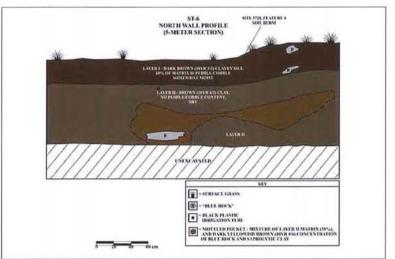


Figure 20: ST-6 Stratigraphic Profile.



Figure 21: "Old Waikapu Road" (50-50-04-5730). View to Southwest.

Exactly how old "Old" Waikapu Road is difficult to determine precisely. However it is safe to assume that this newly recorded State Site Number (50-50-04-5730) originated in the same sugar period as the other six sites within the project area. A Cultural Impact Assessment (CIA) within the same project area provides further detail backing a historic origin to the Old Waikapu Road. Author of the CIA, Kalei Tsuha, interviewed a local resident who, as a child in 1922, remembers traveling across the project area on this same road by horse (K. Tsuha, personal communication 9/25/05).

SUBSURFACE TESTING

Twenty-one stratigraphic trenches (STs) were mechanically excavated by backhoe to test for the presence/absence of subsurface cultural deposits in a variety of project area locations. Excavation took place over a three-day period, August 22–24, 2005. Of these trenches, only one (the previously described ST-6) revealed any kind of subsurface cultural material. ST-6 was placed through an existing soil berm in order to document construction technique of these historic agricultural features. ST-6 documented the subsurface extent of the Site -5728, Feature 4 soil berm (the base of which does extend into the otherwise undisturbed Layer II matrix) (see

Figure 20). None of the 21 trenches revealed any type of artifact, charcoal deposit, or midden deposit.

Testing was spread evenly across the project area with the intent of documenting soil stratigraphy trends by project area location. In total, 21 stratigraphic trenches (ST-1 through ST-21) were excavated and documented. The trenches averaged 7.86 m long, 0.70 m wide, and 1.58 m deep.

Calculating the above averages, an approximate area of 155 m² and volume of 183 m³ of soil was excavated during testing. These sampling figures are primarily indicative of the limited positive results achieved for each trench; if significant cultural resources were documented during the project, it is likely that less geographic space would have been excavated as documentation and sampling of such cultural resources would have been more time consuming. In the amount of time allowed for the project, testing was geared toward obtaining the most information available to assess the presence/absence of subsurface cultural deposits (as it was fairly quickly determined that all surface sites were historic).

STRATIGRAPHIC TRENCH LAYER ANALYSIS

As expected, excavation within the former sugarcane fields resulted in a consistent stratigraphy of culturally sterile soils. Trenching revealed no more or less than two distinct layers in each ST. The variation between trenches was even less than expected, as in each, Layer I represented soil that had been disturbed by historic and modern agricultural practices, and Layer II represented undisturbed soil. The minimal variation between trenches was threefold: the thickness of Layer I varied by 41 centimeters at most; the soil color and qualities variety slightly in among some trenches; and the pebble, cobble, and or saprolytic rock content within Layer II somewhat varied. Otherwise, the project area is extremely homogenous in subsurface content. This can be credited primarily the effects of decades of agricultural use, and also the fact that the Iao Series soils existing here show only minor variation. The following two examples, ST-7 and ST-9, display the typical slight range of stratigraphic variation within the project area (Figure 22).

ST-9 is the standard project area stratigraphy. Layer I has a surface cover of thick, dried grass. Layer I is 65 cm deep and consists of a moderately moist, very dark grayish-brown (10YR 3/2) clayey silt, of which less than ten percent is pebble/ cobble. Layer I contains evidence of the modern agricultural practices in the form of plastics. Only two of the 21 STs excavated did not

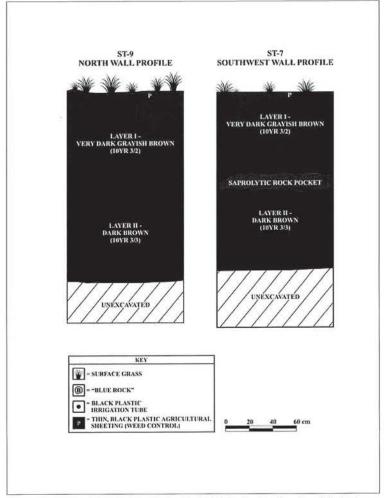


Figure 22: ST-9 and ST-7 Profiles Display Typical Subsurface Stratigraphy within Project Area.

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contain either drip line irrigation tubing or black plastic weed-control sheeting in Layer I (see Appendix A). In the majority of STs, Layer I contained both of these plastics at varying depths.

Layer II, as evidenced in ST-9, was often a very compact, moderately dry, dark brown (10YR 3/3) clay, of zero pebble or cobble content. Often, however, a pocket of saprolytic (decomposing) rock or "blue" rock could be found in Layer II (as shown in the ST-7 profile). Layer II thickness remains undetermined as this layer proved too deep to find bedrock, even with the reach of a large backhoe. ST-20 was excavated to a maximum depth of 2.60 m in an unsuccessful attempt to reach bedrock. It is safe to assume that Layer II of the project area is at least 2.00 m thick, but probably much thicker.

DISCUSSION AND CONCLUSIONS

Scientific Consultant Services, Inc. (SCS) conducted Archaeological Inventory Survey on two parcels totaling 215.800 acres, which form one large land tract within Waikapu (and partially Wailuku) Ahupua'a, Wailuku District, Maui Island, Hawai'i [TMK (2) 3-5-02: 02 and 03]. Inventory Survey included archival research, systematic pedestrian survey of the project area, and representative subsurface testing. While the landscape did not yield traditional Hawaiian archaeological sites, it did reveal a network of irrigation systems in the form of ditches and a reservoir, erosion-control berms, and a historic dirt road—forming seven sites. Five of these sites are new additions to the State's rich historic record of turn-of-the century sugar industry in Hawai'i.

WATER CIRCUITRY

In his 2004 Inventory Survey Report of the Kehalani Mauka Development lands Dr. M. Dega initiated three hypotheses regarding historic water circuitry within this Wailuku / Waikapu landscape. Aside from the small area of land covered by the pre-existing Kuikahi Drive that acts to separate the two surveys—the 348.613 acres in Dega's study and the 215.800 to the south (the present survey) may be viewed as 564.413 contiguous acres for the archaeological record. This is not an arbitrary relationship, as the *ahupua'a* division separating these fields did not individualize their historic utilization. The following text is from *An Intermediate Zone Archaeology Inventory Survey [TMK (2) 3-5-001:portion of 001]* (Dega 2004:41–42):

Several intriguing patterns emerge as one focuses upon the empirical, historicperiod evidence at hand. One of these patterns is the direction in which the historic ditches have been constructed and utilized across the parcel. Case in point: three main ditches or canals run north-south, or [perpendicular] to the slope, across the project area and beyond. Waihee Ditch, Kama Ditch, and the westernmost ditch of Site T-24 (Site -5493) [Waikapu Ditch] are the most well-constructed on the parcel. These ditches were water conduits across these dry zones. Typically they could be used to water areas along their course or would simply empty into large retention basins (reservoirs) at selected points.

However, there is also a network of ditches, mostly earthen berms and small channels, that run [parallel] to the slope on a west (upslope)-east (downslope) axis. These ditches are commonly non-formalized like the north-south ditches and tend to be more localized. Site T-16 (Site -5490), built on an east-west axis for instance, runs a total of 1,000 meters while the north-south Waihee Ditch runs for more than 16 kilometers. The important point is that there is a functional difference between the north-south oriented ditches and the east-west coursing ditches. The more formalized [and costly] north-south ditches are actually water conduits wherein water may be carried long distances to irrigate such water-poor locales as the present project area. The less conventional ditches situated on an east-west axis are simply drainages and do not fulfill an irrigation role on these dry parcels. These smaller ditches appear to be more naturally formed by erosion and were simply modified to accommodate excess water and sediment flow so as not to interfere with the main purpose of cultivation. This pattern appears valid for the present project area but requires additional information from other locales to be proven, negated, or amended.

Thus, we propose two hypotheses that remain to be examined:

- All north-south canals or ditches along central Maui that run [perpendicular] to the slope are water conduits and inherently contain an irrigation function.
- All east-west bearing canals or ditches along Central Maui that run [parallel] to the slope are only drainages that do not disseminate water for irrigation purposes but function to remove overflow so as not to curtail cultivation potential.

DISCUSSION POINTS

The current study provides a second example within the archaeological record confirming Dega's first hypothesis. Both the Waihee Ditch and Waikapu Ditch (numbered, but not named in Dega 2004) were identified as running north to south. These major irrigation conduits continue this flow direction into the current project area. These are large, long, costly, historic structures that were designed to carry stream waters great distances. These ditches run cross-slope within the project area.

The current project area findings expand upon, but do not necessarily confirm Dega's second hypothesis. Two lesser, localized ditches do indeed follow the same orientation as those in the Kehalani lands. Both of these lesser ditches run with the slope contour (perpendicularly linking the major ditches, at times). However, the hypothesis of a functional difference is not soundly reinforced. The Site -5726 ditch is a subtle, earthen feature that may have filled a drainage role rather than an irrigation role. But there is no proof that the more elaborately constructed Site -5729 ditch (stacked basalt boulders that are mortared with concrete) did not in fact serve as a mauka to makai irrigation artery. This ditch may have served as an outlet to the reservoir's (Site 5727) spill-over, however, this function should not exclude a dual purpose of localized irrigation.

Finally, like in Dega's (2004) study, four points contribute to the current project's lack of traditional Hawaiian cultural material. First, and most obviously for this location, historic impacts have dramatically altered the landscape so much as to erase larger archaeological traces of traditional-period activities. Second, the lack of traditional-period evidence suggests that these open lands were probably not intensively utilized during prehistoric times. The current project area may have not been selected as a habitation zone as it is an open area without perennial water resources—and more preferable lands were readily available. Third, the types of traditional activities conducted within and near the project area may not have left archaeological signatures. Fourth, as is the case for all archaeological projects, testing may have not coincided with the existing subsurface cultural materials. This is unlikely but always a possibility as 100 percent of any parcel is rarely ever fully excavated.

SIGNIFICANCE ASSESSMENT AND RECOMMENDATIONS

Seven archaeological sites were documented in the project area: Waihee Ditch (50-50-04-5197); Waikapu Ditch (50-50-04-5493); an un-named, lesser ditch (50-50-04-5729); a second un-named, lesser ditch (50-50-04-5726); a large, un-named reservoir (50-50-04-5727); a series of fourteen sugarcane-field erosion-control, soil berms (50-50-04-5728); and a County dirt road named "Old Waikapu Road" (50-50-04-5730).

These sites have been evaluated for significance according to the criteria established for the Hawai'i State Register of Historic Places. The five criteria are classified below:

Criterion A: Site is associated with events that have made a significant contribution to the broad patterns of our history Criterion B: Site is associated with the lives of persons significant to our past

Criterion C: Site is an excellent site type; embodies distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual construction

Criterion D: Site has yielded or has the potential to yield information important in prehistory or history

Criterion E: Site has cultural significance to an ethnic group; examples include religious structures, burials, major traditional trails, and traditional cultural places

All seven of these historic sites have been assessed as significant under Criterion D.

Based upon the results of this Inventory Survey and the results of archaeological work on adjacent parcels that have also produced primarily negative results (see Dega 2003, 2004; Monahan 2003; Buffum and Dega 2001), it appears as though additional archaeological research on the subject parcels would not contribute a significant volume of additional data to the interpretation of the area or region, or to Hawaiian prehistory/history. Archaeological Monitoring is not recommended during construction within the project area. The seven sites documented herein have yielded their information to the historical record and no additional archaeological work is recommended.

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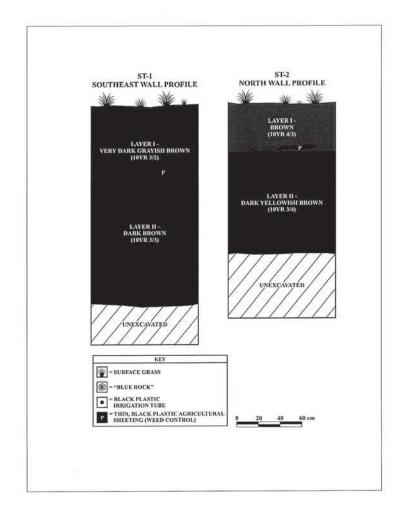
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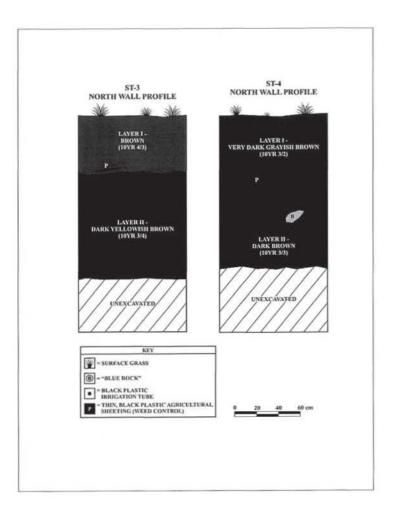
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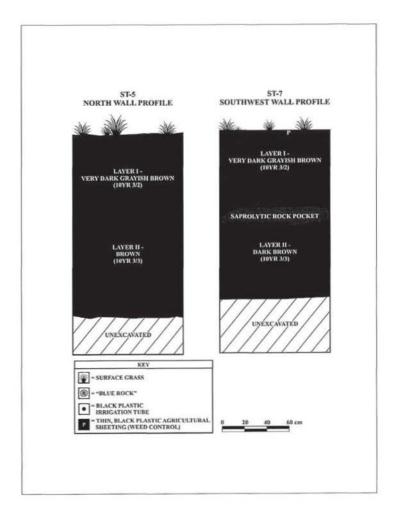
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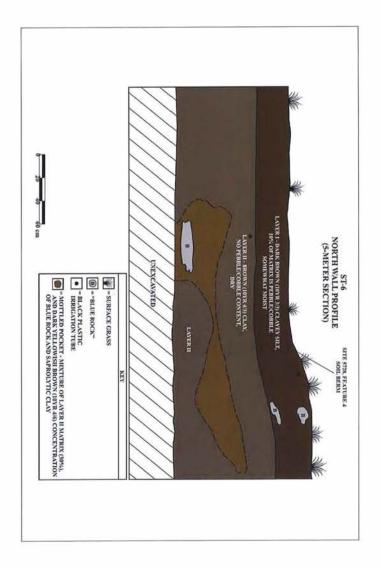
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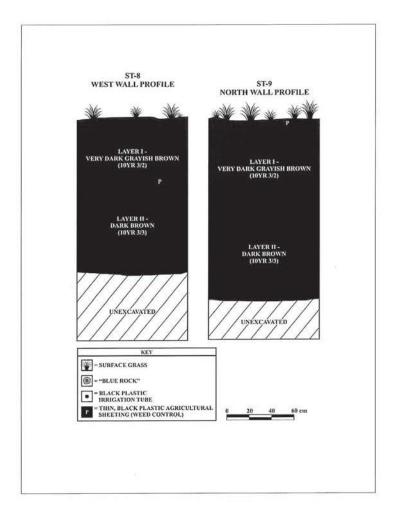
APPENDIX A: STRATIGRAPHIC PROFILES

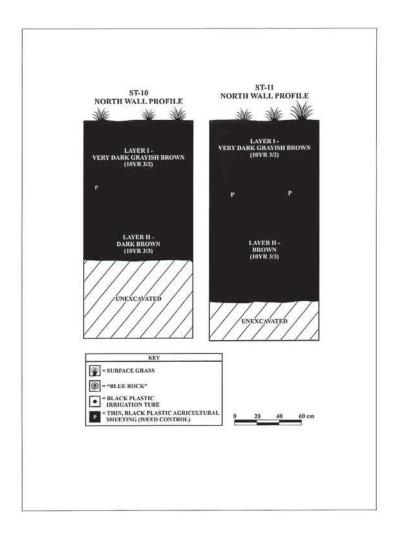


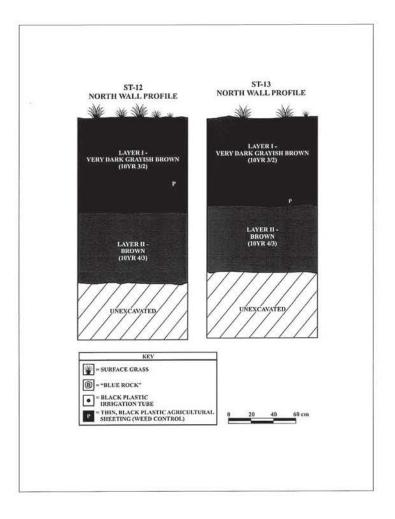


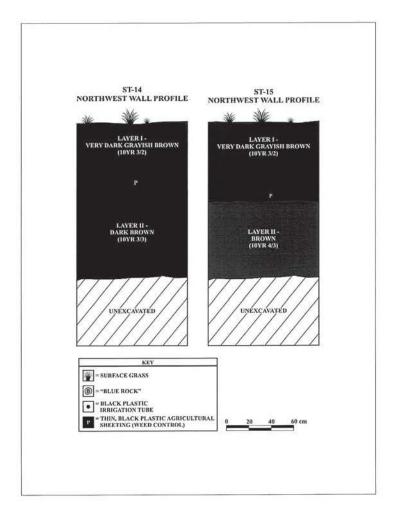


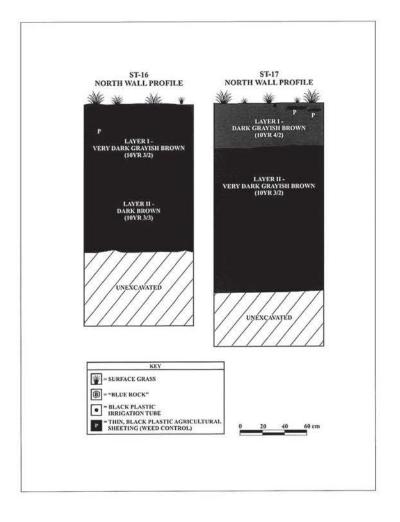


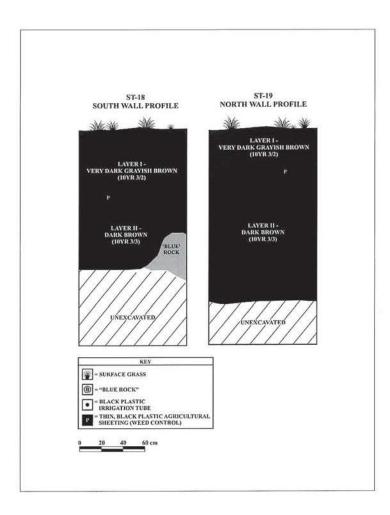




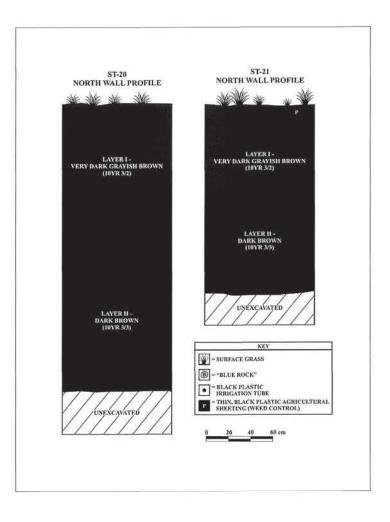








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A: 11

AIS ACCEPTANCE LETTER FROM THE STATE HISTORIC PRESERVATION DIVISION DATED NOVEMBER 18, 2005 **APPENDIX**

D-1

LINDA LINGLE





STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION 601 KAMOKILA BOULEVARD, ROOM 555 KAPOLEL HAWAII 96707

ROBERT K. MASUDA DEAN NAKAND

November 18, 2005

Michael Dega, Ph.D. Scientific Consultant Services 711 Kapiolani Blvd. Suite 975 Honolulu, HI 96813

LOG NO: 2005.2398 DOC NO: 0511MK22

Dear Dr. Dega:

SUBJECT: Historic Preservation Review - 6E-42 - Archaeological Inventory Survey On 215,800 Acres for Towne Development of Hawaii and Endurance

Investors, LLC

Waikapu Ahupua'a, Wailuku District, Maui

TMK (2) 3-5-002:002 and 003

Thank you for the opportunity to review this report which our staff received on October 14, 2005 (Wilson and Dega 2005, Archaeological Inventory Survey Report on 215.800 Acres Located in Waikapu Ahupua'a, Wailuku District, Maui Island, Hawai'i [TMK (2) 3-5-02: 02 and 031)... Scientific Consultant Services, Inc., ms.

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The historical information provided summarizes the history of the post-contact period land uses. The summary of previous archaeological work in the area provides a baseline for the current work. The subject parcel has formerly been utilized for commercial agriculture, and consists 100% of abandoned cane land. Three small Land Commission Awards are situated within the subject parcel, in an area through which a stream and/or ditch formally ran.

The survey has adequately covered the project area documenting five new historic properties in the project area, and re-identifying two previously identified historic properties. Previously identified sites, SIHP 50-50-04-5197 and -5493, consist of the Waihe'e and Waikapu Ditches. Newly identified SIHP sites 50-50-5729 and -5726 represent an unnamed rock and mortar ditch and an unnamed earthen ditch/drainage. A large unnamed reservoir. SIHP 50-50-04-5727, is situated at the terminus of the Waikapu Ditch (-5493). SIHP 50-50-04-5728 is a sugar field erosion control site, incorporating 14 earthen berms cross slope. These are clearly identified topographically. One additional site, SIHP 50-50-04-5730, the

Michael Dega Page 2

"Old Waikapu Road" was identified as spanning the border of Parcels 002 and 003. Subsurface testing (twenty-one backhoe trenches) were also negative for evidence of cultural deposits. These were distributed evenly across the project area.

We concur that all seven sites are significant under Criterion "D" and have the potential to yield information important to understanding the history of the region. The sites have been adequately documented.

We also agree that no further archaeological mitigation is necessary.

We find this report to be acceptable. The historic preservation review process is concluded. Development of the project areas will have "no effect" on significant historic sites. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169) as soon as possible to resolve these concerns.

Aloha,

MK: kf

MELANIE A. CHINEN, Administrator State Historic Preservation Division

Bert Ratte, DPWEM, County of Maui

Michael Foley, Director, Dept of Planning, 250 S. High Street, Wailuku, HI 96793 Maui Cultural Resources Commission, Dept. of Plng, 250 S. High St., Wailuku, HI 96793 ARCHAEOLOGICAL FIELD INSPECTION MEMORANDUM

APPENDIX

D-2



Darren Okimoto DDC, LLC. 2005 Main Street Wailuku, Hawaii 96793 September 9, 2020

Archaeological Field Inspection DHHL Pu`unani Homestead Waikapu, Maui Portions of TMK: (2) 3-5-002:002 & 003

Dear Mr. Okimoto:

Thank you again for contacting Scientific Consultant Services, Inc. (SCS) regarding an archaeological field inspection for portions of the above noted parcels in Waikapu, Maui. This field inspection follows an archaeological inventory survey (AIS) of 215-acres, inclusive of the current field inspection area, in 2005 (Wilson and Dega 2005). This field inspection expressly sought to address the presence/absence of a famous Pöhāko'i stone, noted by many kupuna of the area and more recently, by Mr. Hōkūao Pellegrino, a descendant of the area. DDC, LLC. contacted SCS to conduct field survey in an attempt to locate the stone. The following presents background on the stone and the results of the survey.

Ph: 808-597-1182 SCS... SERVING ALL YOUR <u>ARCHAEOLOGICAL</u> NEIDS Fax: 808-597-1193

Neighbor Island Offices • Hawa'i Island • Maul • Kaua'i

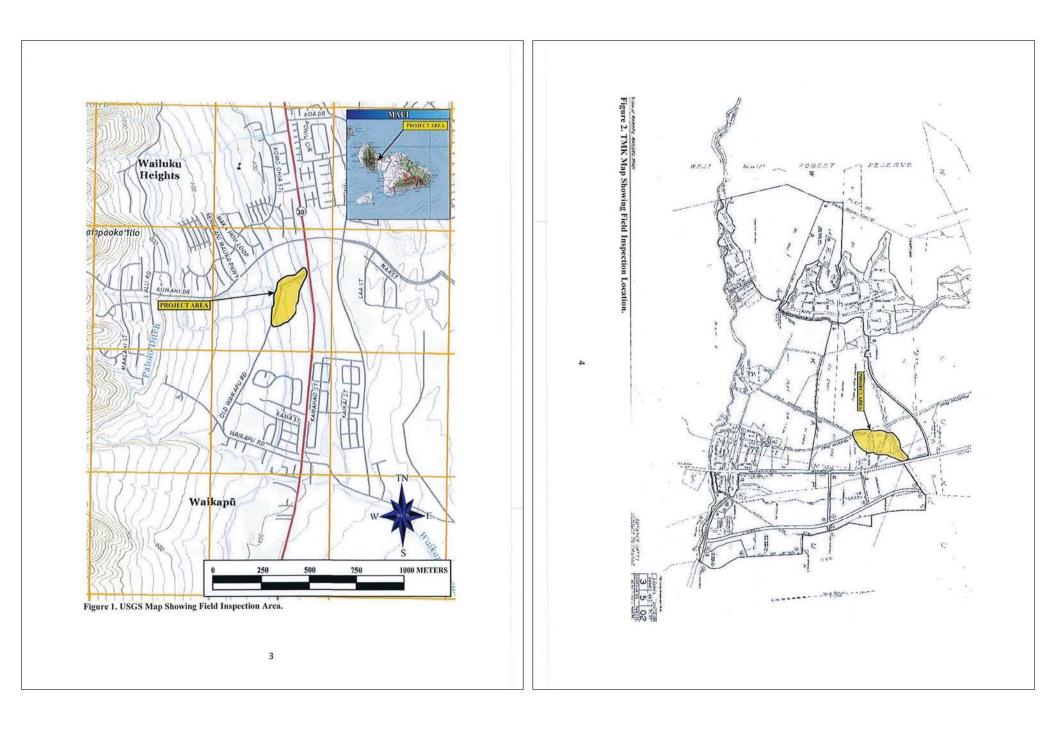
Mr. Pellegrino, a cultural practitioner and cultural descendent of Waikapu Ahupua'a, Wailuku Moku, was interviewed about Waikapu in general and also about this important stone for the Cultural Impact Assessment (CIA). His excerpted script from the CIA interview is presented here:

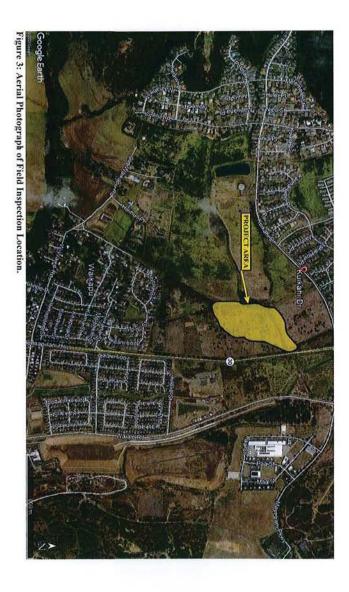
Near the Old Government Road that is adjacent to the western and northern boundaries of the project area, near the northwest corner of the current project area, there once was located a very important stone called Pôhāko'i. Pôhāko'i was first and foremost a hoana, or grinding stone used to file and finish ko'i (adzes – stone tool used for cutting and carving wood). Secondly, it was a commonly known palena 'āina (boundary marker) for the northern end of the Waikapū ahupua'a.

Mr. Pellegrino says that Pōhāko'i is shown on approximately 60 historic maps of Waikapū. Some maps reference that site as the location of Põhāko'i (the stone), but, adjacent to where the stone is located, there is reference to a Pōhāko'i as an 'ili also. However, Land Grant 2952, to David Crowningburg, and Land Commission Award 433, to William Crowningburg, both specified the ahupua'a boundary, as well as the 'ili, as Pōhāko'i. So, it was an important cultural site, not just for being a boundary marker and a grinding stone, but also for being a place name (i.e., the name of an 'ili). Pōhāko'i is such a significant site; it has been mentioned in mele [songs], in oli [chants], and historical mo'olelo [legends]. The exact location of Pōhāko'i (the stone) is not known and it is not known if Pöhāko'i remains in situ, or if it has been relocated. Pöhāko'i (the stone) is shown on almost every historic map of Waikapū [see Figure 8]. Põhāko'i (the stone) is shown on most maps as on the Waikapū Ahupua'a boundary and sometimes it is shown more within Waikapū Ahupua'a, more along that William Crowningburg property boundary in the 'Ili of Pōhāko'i. So, if there is any archaeological work conducted in the, that would be a critical thing to look for in addition to former agricultural and irrigation sites.

ARCHAEOLOGICAL FIELD INSPECTION

Fieldwork was conducted on August 24, 2020 by SCS archaeologist Ian Bassford, B.A. and yourself, under the direction of project principal investigator Dr. Michael Dega. Fieldwork occurred over a large swath of the landscape to assess the presence/absence of the Pöhäko'i. The approximate surveyepd area is shown in Figures 1, 2, and 3.





Currently, the survey area is being utilized for small scale cattle ranching activities. Prior to current times, the area was subject to industrial-level sugar cane cultivation. Extensive modern agricultural clearing of this area has drastically altered the composition of the landscape. Clearing berms with rock stockpiles were apparent and various throughout the northern and central portions of the parcel. Rocks had been mechanically stockpiled from this entire area, thus creating a highly modified surface. Photographs provided at the end of this letter show the current state of the project area.

The survey area was entered from the south access point and proceeded along the west boundary of the property adjacent to an existing, active historic ditch (Waikapu Ditch. As the survey progressed to the north, more rock stockpiles were readily apparent. As the survey approached the northwest corner of the property, a retention basin was observed as well as a large, modern diversion ditch drainageway running mauka/makai. It was apparent that the area has been grubbed and graded several times in the past and historic mechanized clearing was extremely prevalent.

Inspection of the various rock embedded mounds associated with both the retention basin and well as diversion ditch failed to produce any evidence for the Pōhāko'i. There was no evidence for the rock among the rock piles or anywhere on the ground surface.

CONCLUSION

Both the AIS conducted of this survey area (2005; Wilson and Dega) and resurvey of this area in August 2020 did not reveal the presence of the Pōhāko'i stone. This is not surprising considered the massive landscape modifications that previously occurred in the survey area and surrounding environment. If the Pōhāko'i is present in this general area, it may have been previously relocated from its original position as noted by Mr. Pellegrino.

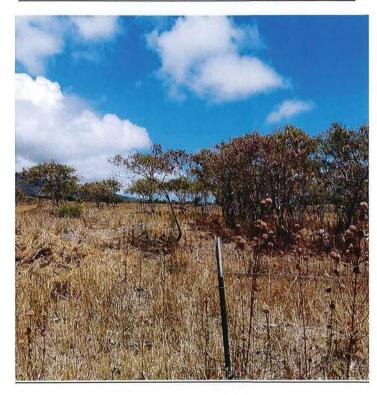
Future efforts at locating this important stone will occur during archaeological monitoring of the project area during any future ground altering activities associated with proposed development. Monitoring provides another avenue in hopes of potentially relocating, recovering, and preserving this potentially lost valuable cultural feature.

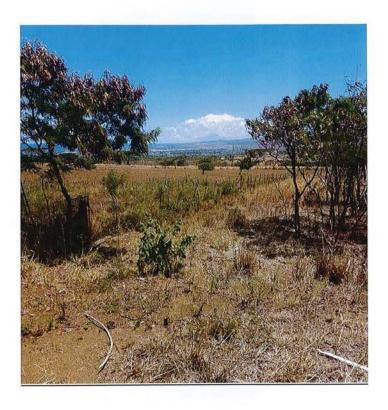
Thank you again for the opportunity to provide archaeological consultation on your project. Please feel free to contact me at (808) 597-1182 (mike@scshawaii.com) if you have any questions about this field inspection or the recommendations forwarded herein.

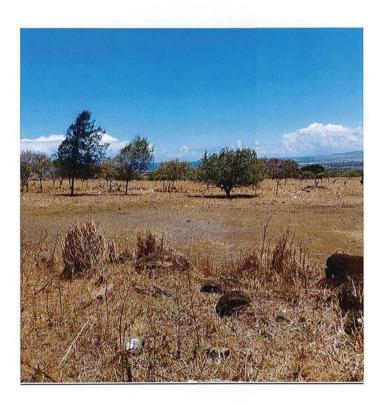
Best Regards,

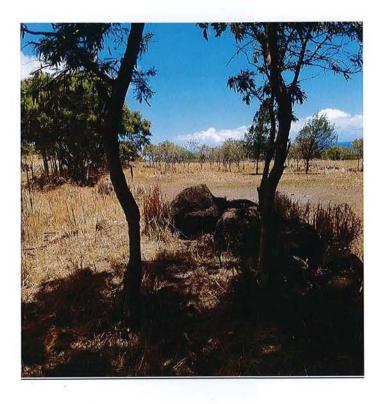
Michael Dega, Ph.D.
Senior Archaeologist
Scientific Consultant Services, Inc.
1347 Kapiolani Blvd, Suite 408
Honolulu, HI 96814

PHOTOGRAPHS SHOWING FIELD INSPECTION SURVEY AREA

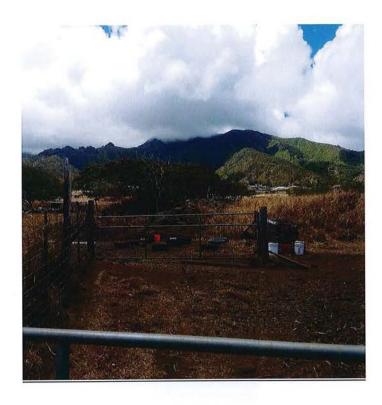














ARCHAEOLOGICAL ASSESSMENT (AA) FOR THE WAILUKU APARTMENT RENTAL HOUSING PROJECT

APPENDIX



FINAL ARCHAEOLOGICAL ASSESSMENT REPORT FOR A 15.0 ACRE PARCEL LOCATED ALONG WAIALE ROAD IN WAILUKU AHUPUA'A AND DISTRICT PŪ'ALI KOMOHANA MOKU ISLAND OF MAUI TMK: (2) 3-5-001:064

FOR: Pier Management-Hawaii, LLC

vbagoyo-devgroup@hawaii.rr.com and lindaschatz@shatzcollaborative.com

BY: Jenny O'Claray-Nu (B.A.), Lisa J. Rotunno-Hazuka (B.A.)

and Jeffrey Pantaleo (M.A.)

REVISED FEBRUARY 2018

MAY 2017



ARCHAEOLOGICAL SERVICES HAWAII, LLC.
POB 1015; PU'UNĒNĒ, HI 96784

"Protecting, Preserving, Interpreting the Past, While Planning the Future"

EXECUTIVE SUMMARY

Under contract to Pier Management-Hawaii, LLC of 3401 E. Kentucky Avenue, Denver CO, 80209 and pursuant to recommendations by the State Historic Preservation Division (SHPD); Archaeological Services Hawaii, LLC (ASH) performed an archaeological assessment (archaeological inventory survey with negative findings) for a 15.0 acre parcel located along Waiale Road within Wailuku ahupua'a and District, Pū'ali Komohana Moku, Island of Maui at TMK: (2) 3-5-001:064.

The current investigation was conducted to determine the presence absence, extent and significance of surface historic properties (if present) and the potential for buried cultural remains. The subject parcel is located along the culturally sensitive Waiale Road/Lower Main Corridor which is known to contain numerous traditional burials and extensive habitation sites.

The proposed development plans comprise an affordable residential housing project and will be processed according to the 201H permit process. It will include residential structures, access roads and associated infrastructural improvements. The subject area has been previously disturbed by prior grubbing, grading and stockpiling of material from sugar cane cultivation and the construction of a retention ditch in the western half of the parcel which continues south outside the project area.

The archaeological assessment was comprised of a 100% pedestrian survey with mechanical test excavations and these procedures were performed from 17-22 March 2018 by archaeological supervisor, Ms. Jenny O'Claray-Nu (B.A.) and archaeologist, Mr. Cody Sheets (B.A.). A total of 40 field hours were expended during the course of this project. Overall coordination and supervision was undertaken by Ms. Lisa Rotunno-Hazuka (B.A.) and Mr. Jeffrey Pantaleo (M.A.) was the Principal Investigator.

A review of the USDA web soil survey indicated that the project area was comprised of the 'Tao soil series. 'Tao silty clay soil was noted on the east and 'Tao clay to the west, although remnant sand dune deposits from the Pu'uone series (PZUE) were known to exist to the east along Waiale Road. A total of 11 mechanical test trenches were conducted at the project area, where the majority were placed in the eastern portion to ascertain the presence/absence of subsurface historic properties and remnant sand dune deposits. The trenches were negative for buried cultural remains, intact sand dune matrices and exemplified disturbances from 0.60 m below surface (bs) to 1.85 mbs, with bedrock encountered from 1.6 mbs (TR8) to 2.30 mbs (TR3).

No historic properties were identified during the subsurface investigations, and these negative results may be due to the compounded disturbances across the parcel. Pursuant to HAR §13-284-7, the overall development plan for the parcel will have no effect on significant historic properties. However, given that the subject parcel is in close proximity to known, unmarked traditional sand burials (east of the project area), the proposed mitigation pursuant to HAR §13-284-8 (1) (A) will comprise data recovery in the form of archaeological monitoring. Prior to the commencement of construction activities, an archaeological monitoring plan (AMP) will be prepared and submitted to SHPD for review and approval.

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INTRODUCTION

Under contract to Pier Management-Hawaii, LLC of 3401 E. Kentucky Avenue, Denver CO, 80209 and pursuant to recommendations by the State Historic Preservation Division (SHPD); Archaeological Services Hawaii (ASH) has prepared this Archaeological Assessment (AA) report according to the standards set forth in the Hawaii Administrative Rules (HAR) §13-284-5 (5) (A) and 276-5 (a) and (c) for a parcel located along Waiale Road within Wailuku *ahupua'a* and District, Island of Maui, TMK: (2) 3-5-001:064 (Figures 1-3).

The current investigation was conducted to determine the presence absence, extent and significance of surface historic properties (if present) and the potential for buried cultural remains. The subject parcel is located along the culturally sensitive Waiale Road/Lower Main Corridor which is known to contain numerous traditional burials and extensive habitation sites.

The proposed development plans comprise an affordable residential housing project and will be processed under a 201H permit application. The planned improvements will include residential structures, access roads and associated infrastructural improvements. The subject area has been previously disturbed by prior grubbing, grading and stockpiling of material from sugar cane cultivation and the construction of a retention ditch within the western half of the parcel which extends further south outside the project area. The retention ditch extends along the *mauka* and *makai* (west and east) sides of Waiale Road to a retention basin to the south near Waiko Road. These drainage improvements underwent prior archaeological studies comprised of archaeological assessment and monitoring program (Sinoto and Titchenal 2005 and Morawski, Shefcheck, and Dega 2006).

PROJECT AREA

The project area, comprised of 15.0 acres is located along the base of the West Maui Mountains within the northwestern portion of the isthmus (see Figures 1 and 2). It situated adjacent and on the west side of Waiale Road, centrally located between Waikapu and Wailuku Towns. Specifically, it is bounded to the north by Kuikahi Drive, to the south by an un-named gulch and partially developed lands of Emanuel Lutheran Church, to the east by Waiale Road and to the west by Honoa'pi'ilani Highway (Figures 1-3).

ENVIRONMENT

The parcel has undergone extensive compounded disturbances comprised of grubbing and grading for prior sugar cane cultivation, sand mining and recent construction activities for the drainage ditch, parking lot, access roads and existing drainage ditch. Due to these prior activities, the parcel is open (few trees), with stockpiles and densely covered of low grasses and weeds. Vegetation in the project area is dominated by fallow sugar cane (saccharum officinarum) with various koa haole (Leucaena glauca), cane

grass (<u>Setaria sp.</u>), 'ilima (<u>Sida fallax</u>), 'uhaloa (<u>Waltheria americana</u>), Ki or ti (Cordyline fruticosa) and various grasses and weeds.

Rainfall for the area averages between 20-30 inches a year, predominantly occurring during the winter months between November and February (Giambelluca et. al. 2013) (Armstrong 1973). The subject parcel slopes west to east from 310 ft. to 360 ft. AMSL and according to the web soil survey, contains two soils from the 'Iao soil series; however past experience in the area has shown that the Pu'uone Sand (PZUE) is extent within the eastern portion of the parcel. The 'Iao silty clay (IaA) comprises 30% of the parcel along the eastern third and occurs on 0-3% slopes, is well-drained and good farmland when irrigated. The remaining portion of the parcel contains 'Iao clay 3 to 7% slopes and is also well drained, prime farmland if irrigated. As previously discussed, the eastern section is known to contain Pu'uone Sand, which likely overlies the 'Iao silty clay.

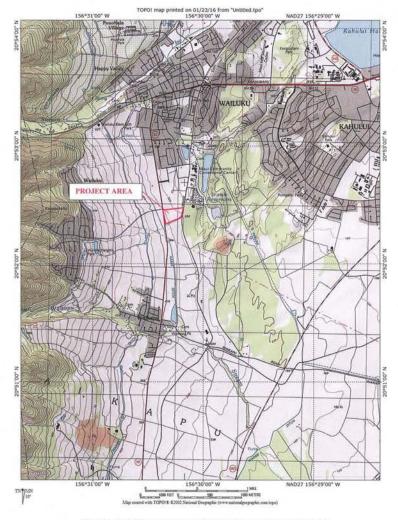


Figure 1. Map Showing Location of Project Area on USGS Quadrangle

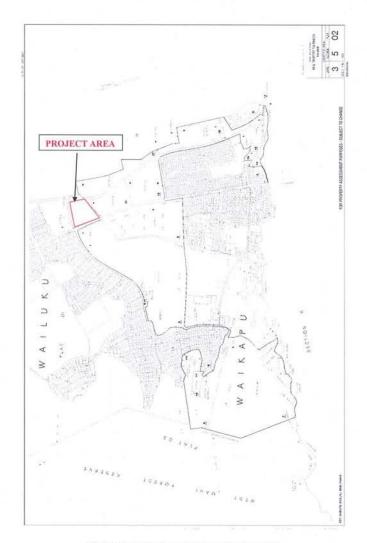


Figure 2. TMK Map Showing Location of Project Area



Figure 3. Aerial Photograph of Project Area Showing Existing Conditions

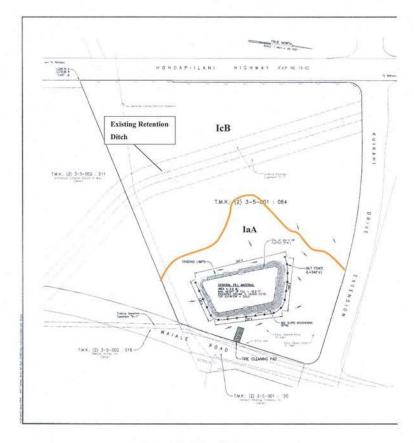


Figure 4. BMP Map of Project Area

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HISTORIC BACKGROUND

Since this is an Archaeological Assessment report, only pertinent information regarding traditional and historic events, land use, previous archaeology and site expectations will be provided below as stated in Chapter §13-284-5(5)(A).

Chapter §13-284-5 (5) (A) an archaeological assessment shall include information on the property and the survey methods set forth in §13-276-5 (a) and (c). Chapter §13-276-5 (a) (1)-(3) includes the information on the property, and (c) (1)-(8) is the methodology section.

Chapter §13-276-5(b) is not required for the Archaeological Assessment Report. This subsection provides detailed background research (archival research, previous archaeological studies, LCA and Grant research) to predict the kinds and distributions of historic properties that may be extant and to provide a context for evaluating significance of these historic properties.

Legendary and Traditional History

The project area is located within the traditional *Moku* (district) of Pū'ali Komohana, the modern District of Wailuku and Wailuku *ahupua'a* (Figure 5). Wailuku District is comprised of the following *ahupua'a*: Waihe'e, Waiehu, Waikapū, Wailuku and Pūlehu Nui, and has been referred to as Nā Wai'ehā (the four waters) due to the four inland associated streams and valleys inland; Waihe'e, Waiehu, Wailuku (Wailuku River and 'Īaō Valley), and Waikapu (Pukui and Elbert 1986: 377) (Figure 5). Due to this geologic landscape, Wailuku District was extremely fertile with an abundance of water; thus, enabling large scale cultivation of *kalo* (taro). Agricultural terraces spilled over onto the slopes at the entrances of valleys...and taro was fed by mountain rains (Handy and Handy 1940:108). Other accounts note that the coastal regions of Wailuku *ahupua'a* contained lesser areas of cultivated sweet potato and an abundance of marine resources.

As exemplified on Figure 6, Wailuku <u>ahupua'a</u> occupies almost half of Wailuku District comprising the northern portion of the isthmus closest to the coast. It extends from Paukūkalo to the west, Kahului Bay and Kapukaulua, which is where Kailua Gulch empties into the ocean and is the eastern boundary for both Wailuku District and Wailuku *ahupua'a*. Ethno-historic accounts indicate that a battle occurred in 1738 at Pu'unene between Ka'uhi and Peleio'holani (Oahu) chief against Kamehameha-nui and Alapa'i warriors. The battle at Pu'unene was considered one of the fiercest, hardest fighting wars where "Pele'io'holani was surrounded on all sides, *mauka* and *makai*, by the forces of Alapa'i led by Kalaniopu'u and Keoua. The two ruling Chiefs met there again, face to face to end the war and became friends again, so great had the slaughter been on both sides..." (Kamakau 1961:74).

A number of battles took place in the neighboring Waikapū region, including Fornander's (1969:153) account of the battle of the Waikapū Commons or the Battle of Kakanilua. The following account describes the battle on the sand hills southeast of Wailuku:

...The detachment or regiment known as the Alapa, mustering 800 men, was selected for this hazardous expedition, and with high courage they started across the isthmus of Kamaomao, now known as the Waikapū common, as the legend says, "to drink the waters of Wailuku that day. "...Little did this gallant troop apprehend the terrible fate that awaited them...Kahekili distributed his forces in various directions on the Wailuku side of the common, and fell upon the Hawaii corps d'armee as it was entering among the sandhills southeast of Kalua, near Wailuku. After one of the most sanguinary battles recorded in Hawaiian legends,...the gallant and devoted alapa was literally annihilated; only two out of the 800 escaped alive to tell Kalaniopuu of this Hawaiian Balaclava (Fornander 1969:153).

Historic Period

In 1778, with the appearance of Captain James Cook in Kahului Bay on Maui, the post-contact documentation of the indigenous populace on Maui began. A comprehensive account of history of the Hawaiian Kingdom commencing from contact (1778) is provided in Kuykendall (1938). There were additional voyagers to Hawai'i subsequent to the arrival of Cook - including La Perouse and Vancouver. By the early 1800s, whaling ships, merchants, and missionaries had arrived. The arrival of foreigners severely impacted the life style and demographics of the Hawaiian people and caused a significant depopulation of the native people due to the introduction of Western diseases, in combination with the populace beginning to cluster around growing port towns. According to Kuykendall (1938:336), an early estimate of the population (made by missionaries) in 1823 was 142,050 and decreased to 86,593 by 1850.

In 1845, land reform legislation, which developed into 'The Great Māhele in 1848 was established. During the Māhele, crown lands were divided between the Government, Royalty, and commoners. It was during this time that the maka 'ainana and foreigners could apply for land ownership by stating their kuleana claim to the Board of Commissioners to Quiet Land Titles. As part of claim process, the maka 'ainana described the land and its contents, ownership on adjoining parcels, and discussed how the land was being utilized (i.e. house lot, taro, lo'i, fishpond and etc.). Once the claim was validated, a Land Claim Award (LCA) was awarded and following payment, a Royal Patent (R.P.) was issued.

Unfortunately, the Mähele movement and or private land ownership, like several other historic events (missionaries, whaling ships and etc.) drastically altered the Native Hawaiian way of life with deleterious effects to socio-political relationships. The concept of the traditional ahupua'a, a communal piece of land containing various ecosystems to be utilized, nurtured and cultivated by its inhabitants began to shift towards private ownership. The sharing of land was so interconnected with everyday life that again, it severely affected the Native Hawaiian populace.

In 1848, there were approximately 88,000 Hawaiians, but only 14,195 applications were made...of the 14,195 kuleana claims, only 8,421 were actually awarded. The

Maka'ainana received less than 1% of the land. Countless Native Hawaiians lost their land use rights as a result of the Great Māhele of 1848, with the establishment of a system of private land ownership. Many landless Native Hawaiians signed on as laborers in the emerging sugar industry, which began on Maui in the 1820s. Within a short time, large tracts of land were turned over to commercial agriculture, primarily sugarcane cultivation (Kame'eleihiwa 1992:295). In many cases, the purchases or leases to non-Hawaiians included entire 'ili or ahupua'a.

Thus, by the end of the Māhele, naturalized foreign citizens were given the right to purchase land in Hawai'i. The ultimate result of this decision placed more land in the hands of non-Hawaiians than native Hawaiians between the years of 1850 and 1865 (Moffatt and Fitzpatrick 1995:51).

LAND USE

The project area is positioned within Grant 3343 to Claus Spreckels, which historically has been utilized for sugarcane cultivation and further discussed below (Figure 5 and Table I). In 1848, the entire Wailuku Ahupua'a (L. C. A. 7713:23) was designated as Government Lands and or Crown Lands. The Native Register (1846-1848) documents King Kamehameha I's great granddaughter, Ruth Ke'elikolani, and the sister of Kamehameha IV and V, Victoria Kamamalu, as the only persons of royal heritage that are designated as land owners. On September 30th, 1882, King Kalakaua signed over 24,000 acres in the Wailuku Ahupua'a (eastern portion) to Claus Spreckels in a fee-simple title "Grant 3343".

The earliest commercial sugar production on Maui Island began in Wailuku in 1823 when Hungtai Sugar Works was founded by Chinese merchants (Morrow n.d.:51-51). Wailuku Sugar Company was started in November of 1862 by James Robinson and company, Thomas Cumming, J. Fuller, and C. Brewer and Company. In 1865, C. Brewer and company acquired controlling interest, with Robinson and Company and Cumming as the minority stockholders.

In 1876, when the Reciprocal Trade Treaty was signed in Washington D.C., this caused an increase in the price and demand for sugar, creating a boom in the sugar cane industry. In 1878, Alexander and Baldwin purchased land east of Kahului for sugar cane production and founded the Pā'ia Plantation and incorporated the Haiku Plantation the following year (Best 1978:13). In 1882, Princess Ruth sold one-half of the Crown Lands of Hawai'i to Claus Spreckels in order to settle her debts with him. Spreckels already held a lease (purchased from Henry Cornwell) for 16,000 acres of Wailuku ahupua'a (Waikapū Commons), dating from 1878 (R.P. 3152) and as stated above King Kalakaua gave him (Grant 3343) in 1882, a 24,000 acre portion of the southeastern section of Wailuku ahupua'a, in return for the surrender of his claim to Crown Lands and established Hawaiian Commercial & Sugar (HC&S). In 1898, control of HC&S passed from Claus Spreckels to that of S.T. Alexander and H.P. Baldwin (Figure 7). In 1926,

Alexander and Baldwin bought Spreckel's Hawaiian Commercial and Sugar Company, which resulted in the intensification of the sugar industry in Wailuku.

The escalation of the sugar industry on Maui brought with it the need for water (irrigation ditches) and imported labor. Immigrants from around the world (Scandanavian, Scottish, Italian, German, Russian, Spanish, Hawaiian, Chinese, Portuguese, and Japanese) arrived on Maui to work on the sugar plantations; and hence the establishment of several plantation camps and railroad spur lines in the Wailuku and Waikapu areas. As shown on Figure 8, no plantation camps were in the vicinity of the subject parcel (Figure 8).

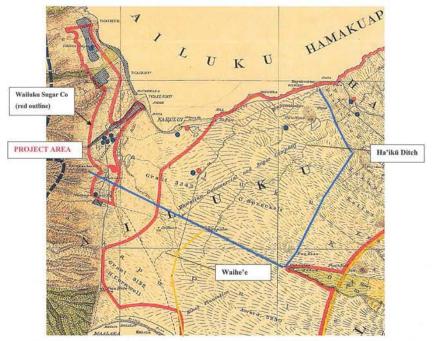


Figure 5. Portion of Hawaiian Government Survey Registered Map (1268) Showing Portions of Wailuku Ahupua'a (blue line), Waikapu and Pülehu Nui ahupua'a (either side of gold line) Project Area within HC&S Landholdings and Grant 3343 to C. Spreckels (Dodge 1885 updated by Donn 1903)

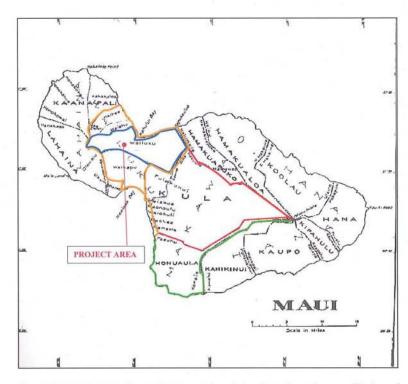


Figure 6. Island of Maui Map Showing Districts and Ahupua'a Boundaries (from a Gazetteer of Territory of Hawai'i, John Wesley Coulter-1935)

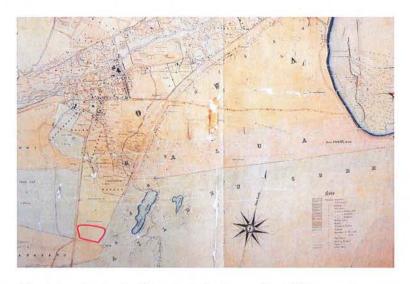


Figure 7. Approximate Location of Project Area (red) on Monserrat Map of 1882 (note name above project area exemplifies name of Alexander)

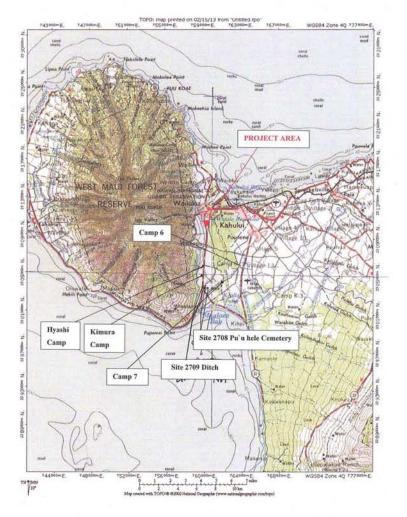


Figure 8. USGS Map Showing the Location of Closest Plantation Camps to the Subject Project Area (red)

Table I. Summary of LCA's and Grants Adjacent to Project Area (Source: Waihona 'Aina Corp. 2004)

NAME	L.C.A.	R.P.	GRANT	COMMENTS	ACREAGE
H. Cornwell			3152	Present project area within awarded land	256.113
Wm. McLane	3201			Land given in 1822 by Puupahoehoe	3.85
Keliolelo	3525			Taro land and houselot	
Wm. Crowningburg	433			Houselot; 14 patches (son- in-law of konohiki Puupahoehoe	1.77
			*	No land use indicated	5.93
C. Louzada / H. Cornwell			2951		17
Spreckles		3343		Waikapū Commons PROJECT AREA	16,000

PREVIOUS ARCHAEOLOGY

As discussed in the aforementioned Historic Background section, since this is an archaeological assessment, only those studies performed in close proximity to the subject parcel will be discussed below. The early archaeological studies conducted on Maui consisted of recording *heiau* (religious structures) sites along the coastline. These studies were carried out by Thrum (1909) and Stokes (1916). An island-wide survey was executed in 1928 by Winslow Walker (1931) though the Bishop Museum, where numerous *heiau* sites were recorded primarily in the west, central portion of Wailuku District and many of these have been damaged and or destroyed. As exhibited on Figure 10, no sites were recorded in the vicinity of the subject parcel (Figure 10).

Within the project area, the western portion underwent an archaeological survey (Titchenal 1996) and monitoring procedures (Morawski et. al. 2006) for the existing retention ditch in the west, central portion (see Figures 3 and 10). Aki Sinoto Consulting conducted an archaeological inventory survey of the proposed retention basin and adjoining lands in Waikapū and Wailuku ahupua'a, Wailuku District, Maui Island (TMK 3-5-01:17 por: 3-5-02:1, por.), located within and south of the current project area. No surface cultural remains were located during the surface survey, and no subsurface cultural remains or deposits were identified in the thirteen backhoe trenches excavated in selected localities throughout the project area.

Site 50-50-04-2916 comprised of human skeletal remains were identified at the Maui Home Affordable Living Shelter by Donham in 1992.

Xamanek Researches (Fredericksen 2004) recently conducted an archaeological inventory survey for the Waikapū affordable housing subdivision (TMK 3-5-02:001 por and 3-8-07:101), located adjacent to; south of the present project area (see Figure 10). One previously identified historic property was noted during the inventory survey. State Site 50-50-04-5474 consists of an approximate 2000- foot portion of the Kama Ditch and a substantial reservoir (Reservoir No. 6). No other cultural remains were identified during the survey, it was estimated that approximately 40% of the project area was previously impacted by sand mining activities in the last 20 or so years and that much of the remainder of the 100-acre study area was most recently planted in pineapple. Determination by the SHPD architecture branch that sufficient information was collected at Site 5474 Kama Ditch to document the site and that the proposed demolition of the bulk of Site 5474 for proposed development was approved.

Scientific Consultants (Dega 2004) conducted an archaeological inventory survey of approximately 348 acres in Wailuku for the Kehalani Mauka Subdivision, Wailuku *ahupua* a and District just northwest of the project area (TMK 3-5-001:001 por) (see Figure 10). Eight historic sites were documented during the

survey, two of which were recorded during a previous project. State Site 50-50-04-5473 represents Hopoi Reservoir, this reservoir predates Hopoi Camp and was present at least by 1922. Hopoi camp was not identified during the survey. State Site 50-50-04-5474, the Kama Ditch, was identified east of the Hopoi reservoir running in a north-south direction to Waikapū. State Site 50-50-04-5493 was designated for another unnamed ditch running in a north-south direction occurring along the western flank of the parcel. State Site 50-50-04-5197 represents the Waihe'e Ditch, constructed between 1905 and 1907. The four other sites consist of a combination of historic-modern roadways (Site 5489), a system of smaller historic ditches (Site 5490), a historic artifact scatter on the surface (Site 5491), and several clearing mounds likely created during the plantation era (Site 5492). Twenty-seven subsurface testing trenches revealed homogenous soil matrices across the project area.

Archaeological monitoring was implemented for the Kehalani Subdivision and off-site improvements along the Waiale Road by Scientific Consultant Services (Morawski, Shefcheck, and Dega 2006) (see Figure 10) and Archaeological Services Hawaii (ASH). Five sites were recorded and consisted of a historic road bed (50-50-04-5963), a sugarcane flume (50-50-04-5964), an *in situ* burial (50-50-04-5680), and two areas of isolated human remains (50-50-04-5965 and -5966). Remains associated with the isolated finds were encountered in a previously disturbed soil matrix that was most likely associated with the initial construction of the Waiale Road.

Archaeological Services Hawaii, LLC performed an archaeological inventory survey (AIS) within a 50-acre parcel of land in Wailuku and Waikapū ahupua'a, Wailuku District, Maui Island, TMK: (2) 3-5-002:001 portion, for the proposed development of the Emmanuel Lutheran Church (ELC) adjacent and south of the subject parcel, and the Valley Isle Fellowship (VIF) (see Figure 10). The parcels were subsequently subdivided into two approximate 25.0 acre parcels and assigned TMK's [2] 3-5-002:011 for the north and [2] 3-5-002:012 for the south. The AIS included a pedestrian survey with subsurface backhoe testing of a total of 25 backhoe trenches (TR1-25). Results of the pedestrian survey identified one historic property, a disturbed segment of State Site 50-50-04-5474, the Kama Ditch, situated within the southwestern portion of the project area. Also noted was a metal sluice gate, designated Feature 1 of Site 5474. The ditch, also known as kamaauwai was constructed around 1905 to 1907 and provided water to irrigate the sugar cane fields surrounding the project area. Site 5474 was assessed as significant under Criterion "a" because of its association with the plantation era and Criterion "d" for its information content under the Federal and State historic preservation guidelines (Guerriero et. al. 2004 revised 2016).

The closest known burial sites to the project area are Site 50-50-04-5965 (secondarily deposited human remains in disturbed soils) identified during the monitoring procedures for the retention basin and trench, as well as Sites Site 50-50-04-6573 and 6261 situated along Kuikahi Drive at the current Walgreens Pharmacy (Site 50-50-04-6573), and along the north and south sides of Kuikahi Drive just near the entrance to Maui Lani (see Figure 10). An AIS (2005) and AMP (2007) were conducted of the Kuikahi Drive Extension and a portion of Maui Lani Parkway corridor which intersects with Kuikahi Drive (Rotunno-Hazuka et, al. 2007). Site 6573 is comprised of a primary traditional burial designated Feature 1 which was preserved in place, and disturbed human skeletal remains (Feature 2), which were reinterred adjacent to the preservation area established around Feature 1. The second Native Hawaiian burial area is Site 50-50-04-6261 comprised of primary burials and secondary deposits of human remains designated Features 1a-1c and 2-12. Site 6261 was identified during monitoring and data recovery procedures and was subsequently preserved along the north and south sides of Kuikahi Drive (ibid).

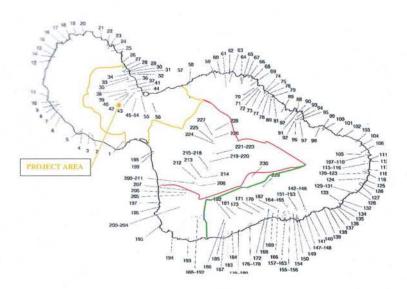


Figure 9. Walker's Site Map Showing Recorded *Heiau*, Project Area and approximate Wailuku (blue), Kula (red) and Honua`ula *Moku* (Traditional) Boundaries (green) (map adapted from Sterling 1998)

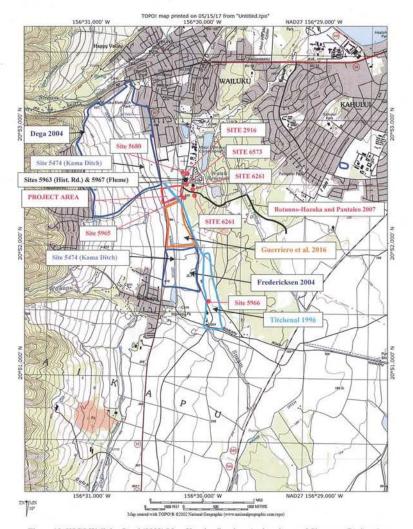


Figure 10. USGS Wailuku Quad (2002) Map Showing Previous Archaeology and Sites near Project Area

SETTLEMENT PATTERNS

The settlement patterns of an indigenous population are surmised from a variety of information and research. Previous archaeological findings and archival research (such as information retrieved during the Great Mähele and etc.) are two of the main determining factors. Another important factor is the existing geology or landforms in the area, be it a harsh or hospitable environment. The proximity to fresh water or marine resources, rain fall, the presence of basaltic ridges and or a'a lava flows and etc. As previously discussed, the project area is between Wailuku and Waikapū Towns along Waiale Road which was actively settled during the pre-historic and historic periods. During the pre-Contact era, permanent habitation sites with extensive agricultural complexes would be located in the lower and upper valleys due to the numerous streams and valleys of Nā Wai 'Eha; however based on the close proximity of the coast and results of studies in these shoreline areas, dual permanent settlement of the uplands with a focus on agriculture and the coastline with an emphasis on marine exploitation. The Wailuku Sand Hills appear to be more intensively occupied closer to the shore, and less settled more inland but extensively utilized for the interment of Native Hawaiian burials.

SITE EXPECTABILITY

The presumed settlement patterns, coupled with the prior investigations assist in determining the types of historic properties to be expected. However due to the compounded disturbances across the project area from sugar cane cultivation, sand mining and the construction of the retention ditch, the likelihood that historic properties have survived is low but would comprise Native Hawaiian burial features with remnant agricultural (terraces) and or habitation (cultural layers) sites. Since no LCA were present within the subject parcel, historic period sites may comprise agricultural features and refuse sites and or remnant features from WWII.

METHODS AND PROCEDURES

A review of previous archaeological investigations was conducted at the ASH and SHPD libraries in Ma'alaea and Pu'unënë prior to and during the initiation of the testing strategy. Archaeological investigations included a pedestrian survey and backhoe test trenching which were performed from 17-22 March 2017 under the supervision of Ms. Jenny O'Claray-Nu (B.A.) and archaeologist, Mr. Cody Sheets (B.A.). A total of 40 field hours were expended during the course of this project. Mechanical excavations were undertaken with an excavator provided by T.J. Gomes. Overall coordination and supervision was performed by Ms. Lisa Rotunno-Hazuka (B.A.), drafting by Mr. Nico Fuentes (M.A.) and Mr. Jeffrey Pantaleo (M.A.) was the Principal Investigator.

FIELD METHODS

Initial investigations consisted of a pedestrian survey to determine the presence of surface historic properties, disturbances and or basalt outcrop which would aide in establishing the location of test excavations. No surface sites were noted during the survey; thus subsurface explorations were undertaken in the form of mechanical test trenches. All excavations were undertaken with the supervision of the archaeologist and terminated when sterile subsoil was reached. The testing method employed was systematic random sampling where the areas to be analyzed are chosen at random with a subsequent predetermined strategy (Hester et. al. 2009). "Use of this sample technique guarantees more uniform coverage of an area than would likely occur with simple random sampling" (Hester et. al. 2009:29) and therefore allows the investigator to obtain information about the subsurface conditions across the project area. The backhoe trenches ranged from 4.0 m to 6.0 m long by 1.2 m wide by 1.4 to 2.3 m deep.

Each trench was recorded using scaled stratigraphic profiles, photographs, dimensions and soil descriptions. The location of the trenches was plotted utilizing known points from the aerial photographs and tape and compass from boundary corners. During the course of this project, all accepted standard archaeological procedures and practices were followed.

LABORATORY PROCEDURES

Soil samples collected during the excavations were stored in bags and labeled with provenience data and date collected. The <u>dry</u> soil color was recorded utilizing the Munsell color system, and soil texture using USDA soil terminology.

RESULTS OF SURVEY

A total of 11 backhoe test trenches were executed across the parcel and were negative for buried cultural remains (Figure 11 and Table II). The trenches exhibited extensive disturbances from 0.65 m (TR5) to 1.85 (TR5), where bedrock was recorded from 1.6 m (TR8) to 2.30 mbs (TR3), imported sand was noted in Layer I (TR2) and within Layer III (0.70 mbs) in TR9 and a rocky lens, possible alluvial deposition was recorded in TR6 at 1.85 mbs. Trenches 1-3 were positioned in the central portion, TR4 along the northern perimeter in the eastern half, TR's 5-9 were placed in the eastern section around the proposed detention basin for future construction activities and to ascertain if remnant sand dune deposits were extant closer to Waiale Road, and TR's 10-11 were situated in the western portion. The test trenches are described and presented below.

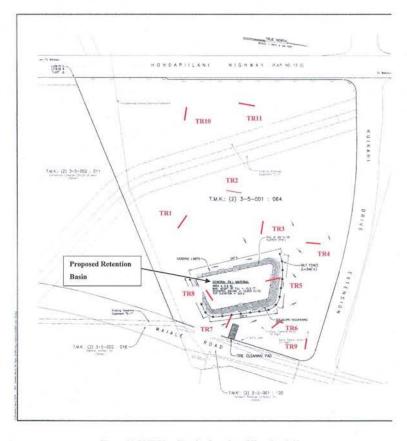


Figure 11. BMP Map Showing Location of Trenches 1-11

Table II. Summary of Trench Testing at Project area

TR	Length (m)	Width (m)	Depth (m)	Orient TN°	Disturbed	Cultural	Assessment
1	6.0	1.2	1.9/2.0	133/313	I/II	none	agricultural
2	7.0	1.2	2.0/2.2	180/360	VII/III	none	drainage way
3	6.7	1.4	2.6	354/154	I/II	none	agricultural
4	6.5	1.2	2.5	180/360	I/II	none	agricultural
5	5.6	1.1	2.6	359/179	I/II	none	agricultural
6	6.6	1.2	2.4/2.45	349/169	I/II/III	none	ag/alluvial
7	6.2	1.2	2.3	286//106	I	none	construction
8	6.0	1.2	2.0/2.2	251/71	I/II/III	none	agricultural
9	4.3	1.3	1.7/1.8	90/270	I/II/III	none	construction
10	5.5	1.3	1.7/1.8	90/280	1	none	agricultural
11	6.0	1.1	1.7/1.8	360/160	1	none	agricultural

Trench 1 was placed in the south central portion of the project area and measured 6.0 m long by 1.2 m wide by 1.9/2.0 m deep and oriented 133/313 $^{\circ}$ (see Figure 11 and Table II). The excavations revealed five stratigraphic layers which were negative for subsurface cultural remains (Figures 12-14). Layers I and II were previously disturbed by agricultural and existing drainage trench development

Layer I 0 –0.15/20 mbs; (7.5YR2.5/2, 2.5/3) agricultural fill zone, dry color very dark brown gravelly very fine silty loam; few sand pockets, common inclusions of rootlets and scattered angular pebbles and cobbles (50%); very abrupt wavy boundary, no cultural remains observed. Layer II 0.15/0.20-0.80 mbs; (10YR3/2, 3/3) dry color dark grayish brown silt loam; intermix with large and small sub-angular to angular pebble and cobble scatter (30%); abrupt wavy boundary; no cultural remains observed.

Layer III 0.80-1.20/1.30 mbs; (10YR3/3,3/4) dry color very dark brown mottled dark brown stony silt clay; very few rootlet and common layers of sub-angular and angular pebble and cobble inclusions (50%); very abrupt wavy boundary. No cultural remains observed.

Layer IV 1.20/1.30-1.90/2.0 mbs; (7.5YR2.5/3) dry color very dark brown stony silt clay; prismatic of sub-angular and angular blocky inclusions intermix with common layers of sub-angular and angular boulder and cobble inclusions (50%); very abrupt wavy boundary. No cultural remains observed.

Layer V 1.9/2.0mbs; a basal layer; gray mottled grayish brown decomposing to hard bedrock.

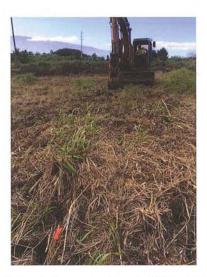


Figure 12. Overview Photograph of Proposed TR1 (View to Southwest)



Figure 13. Photograph of Trench 1 (left) (View to South); Photograph of East Wall at TR1

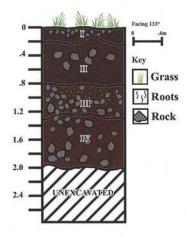


Figure 14. Stratigraphic Profile of East Wall at TR1

Trench 2 was located in the central portion of the project area east of the existing retention ditch (see Figure 11 and Table II). It measured 7.0 m long by 1.20 m wide by 2.0/2.2 m deep and oriented 180/360°. The excavations revealed three stratigraphic layers which were negative for subsurface cultural remains (Figures 15 and 16). Layers I and II observed to be previously disturbed by the drainage way development. Layer I appear to be a portion of an access road that comprised of compact gravel and pockets of sand.

Layer I 0-0.22/0.30 mbs; (10YR,3/1, 3/2,5/6) gravel fill with imported sand pockets, dry color dark grayish brown to dark brown very fine silt mottled brown fine sand pockets; intermix with common sub-angular to angular pebble (50%) very abrupt wavy boundary, no cultural remains observed.

Layer II 0.22/0.30-0.60/0.70 mbs; (7.5YR2.5/3, 2.5/2) color very dark brown stony silt; few rootlets intermix with common sub-angular to angular pebble and cobble inclusions (40%); very abrupt wavy boundary; no cultural remains observed.

Layer III 0.60/0.70-2.0/2.10 mbs; (7.5YR3/3, 2.5/3) dry color dark brown mottled very dark brown stony silt clay and few scattered of sub-angular and angular cobble inclusions (20%). No cultural remains observed.



Figure 15. Overview Photograph of TR2 (left) (View to North); Photograph of West Wall at TR2

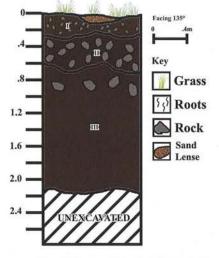


Figure 16. Stratigraphic Profile of West Wall at Trench 2

Trench 3 was placed in the east central portion of the parcel and measured 6.7 m long by 1.40 m wide by 2,5/2.6 m deep and oriented 354/174° (see Figure 11 and Table II). The excavations revealed three stratigraphic layers overlying decomposing bedrock which were negative for subsurface remains (Figures 17-19).

> Layer I 0-0.20/0.35 mbs; (7.5YR2.5/2, 2.5/3) agricultural zone, dry color very dark brown gravelly very fine sity loam; common inclusions of rootlets and scattered angular pebbles and cobbles (50%); agricultural material observed intermixed; very abrupt wavy boundary, no cultural

Layer II 0.20/0.35-0.60/0.70 mbs; (10YR3/2, 3/3) dry color dark grayish brown silt loam; intermix with large and small sub-angular to angular pebble and cobble scatter(30%); abrupt wavy boundary; no cultural remains observed.

Layer III 0.60/0.70-2.30/2.40 mbs; (10YR3/3,3/4) dry color very dark brown mottled dark brown stony silt clay; very few rootlet and common layers of sub-angular and angular pebble and cobble inclusions (20%); very abrupt wavy boundary. No cultural remains observed.

Layer IV2.30/2.40 mbs; a basal layer; gray mottled grayish brown decomposing to hard bedrock.



Figure 17. Overview Photograph of the Central Portion of Project Area for TR3



Figure 18. Photograph of East Wall at Trench 3

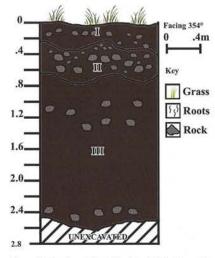


Figure 19. Stratigraphic Profile of East Wall at Trench 3

Trench 4 was located in the northeast portion of the parcel and measured 6.5 m long by 1.20 m wide by 2.50 m deep and oriented 180/360° (see Figure 11 and Table II). The excavations revealed three stratigraphic layers overlying bedrock and were negative for buried remains (Figures 20-21).

Layer I 0 – 0.30/0.40 mbs; (7.5YR2.5/2, 2.5/3) agricultural zone, dry color very dark brown gravelly very fine silty loam; common inclusions of rootlets and scattered angular pebbles and cobbles (50%); very abrupt wavy boundary, agricultural black plastic and irrigation material observed intermixed: no cultural remains observed.

observed intermixed; no cultural remains observed. Layer II 0.30/0.40-1.30/1.40 mbs; (10YR3/2, 3/3) upper portion is disturbed and comprised of dark grayish brown silt loam; intermix with large and small sub-angular to angular pebble and cobble scatter (30%); abrupt wavy boundary; no cultural remains observed.

Layer III1.30/1.40-2.30/2.40 mbs; (10YR3/3, 3/4) dry color very dark brown mottled dark brown stony silt clay; very few rootlet and common layers of sub-angular and angular pebble and cobble inclusions (50%); very abrupt wavy boundary. No cultural remains observed.

Layer IV 2.50 mbs; a basal layer; gray mottled grayish brown decomposing to hard bedrock.



Figure 20. Overview Photograph of TR4 (left); Photograph of East wall at Trench 4

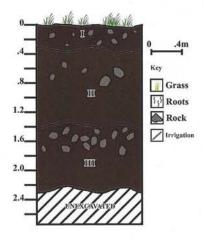


Figure 21. Stratigraphic Profile of East Wall at Trench 4

Trench 5 was positioned in the proposed retention basin in the northeast quadrant (see Figure 11 and Table II). It measured 5.6 m long by 1.10 m wide by 2.6 m deep and oriented 180/360°. The excavations revealed four negative stratigraphic layers (Figures 22-24).

Layer I 0 –0.25/0.30 mbs; (10YR,4/2, 3/2) agricultural zone, dark grayish brown gravelly fine silty loam and sand pockets; strong, medium, granular; common rootlet, sub-angular cobble and pebble inclusions (50%); very abrupt boundary, observe agricultural irrigation lines, glass and plastic fragments no; very abrupt wavy boundary.

Layer II 0.25/0.30-0.60/0.65 mbs; (7.5YR3/3, 2.5/3) dark brown mottled very dark brown stony silt loam; well formed, sub-angular blocky peds intermix with sub-angular to angular pebble and cobble inclusions (60%); very abrupt wavy boundary; no cultural remains observed.

Layer III 0.60/0.65-2.15/2.20 mbs; (10YR4/3, 3/3) very dark brown mottled dark brown silt clay; soft, massive poorly formed sub-angular blocks; sub-angular and angular cobble scatter (20%); very abrupt boundary. No cultural remains observed.

Layer IV 2.15/2.20-2.60 mbs; (10YR 3/6, 3/4) dark yellowish brown mottled brown silt clay; weakly, massive medium blocky poorly formed peds; no cultural remains observed.



Figure 22. Overview Photograph of Northeast Portion for TR's 4 and 5



Figure 23. Overview Photograph of Trench 5 (left) (View to South); Photograph of East Wall at TR5

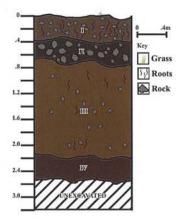


Figure 24. Stratigraphic Profile of East Wall at TR5

Trench 6 was located near the northeast corner of the subject area and measured 6.60 m long by 1.20 m wide by 2.40/2.45 m deep and oriented 349/169° (see Figure 11 and Table II). The excavations revealed five stratigraphic layers which were negative for significant subsurface cultural remains (Figures 25-26). Layers I and II revealed previously disturbed layers of agricultural activities, and Layer III appeared to contain an alluvial lens at the interface of Layers II and III.

Layer I 0 –0.60/0.75 mbs; (7.5YR,2.5/2, 2.5/3) fill zone, dry color very dark brown gravelly fine silt loam; well-formed coarse sub-angular block, peds; common rootlet, sub-angular cobble and pebble inclusions (50%); very abrupt boundary, observe agricultural irrigation lines, glass and plastic fragment; very abrupt wavy boundary.

Layer II 0.60/0.75-1.35/1.40 mbs; (7.5YR3/3, 2.5/3) dry color dark brown mottled very dark brown stony silt loam; well formed, sub-angular blocky peds intermix with sub-angular to angular pebble and cobble inclusions (20%); very abrupt wavy boundary; 0.60 mbs PVC water line observed along southeast corner.

Layer III 1.35/1.40-2.0/2.10 mbs; (10YR4/3, 3/3) dry color very dark brown mottled dark brown silt clay; soft, sub-angular and cobble and pebble inclusions (50%); very abrupt boundary. No cultural remains observed.

Layer IV 2.15/2.20-2.40/2.45 mbs; (10YR 3/6, 3/4) dark yellowish brown mottled brown silt clay; weakly, massive medium blocky poorly formed peds; no cultural remains observed. Layer V 2.40/2.45 mbs; a basal layer; gray hard and decomposing bedrock.



Figure 25. Overview Photograph of TR6 (left) (View to North); Photograph of East Wall at Trench 6

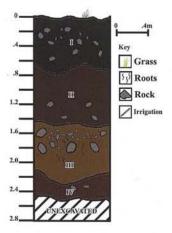


Figure 26. Stratigraphic Profile of East Wall at TR6

Trench 7 is located along the southeast portion of the project area and measured 6.2 m long by 1.20 m wide by 2.30 m deep and oriented 286/106° (see Figure 11 and Table II). The excavations revealed two stratigraphic layers which were negative for subsurface cultural remains (Figures 27-29).

Layer 1 0-0.30/0.34 mbs; (7.5YR3/4, 3/3) very dark brown gravelly very fine silt; durable sub-angular blocky peds; few inclusions of rootlet intermix with scattered sub-angular and angular pebbles (50%); very abrupt plane boundary, recent historic material of glass, plastic metal fragments observed.

Layer II 0.30/0.34-2.30 mbs; (7.5YR4/1, 3/1) dark brown mottled very dark gray stony silt clay; slightly hard, poorly formed sub-angular block intermix with very few rootlet, no cultural remains observed.



Figure 27. Overview Photograph of the Southeast Corner and Proposed Trench 7



Figure 28. Photograph of North Wall at Trench 7

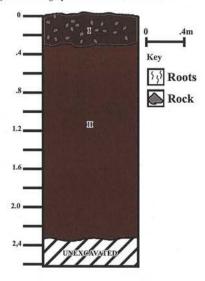


Figure 29. Stratigraphic Profile of West Wall at TR7

Trench 8 is located in the southeast corner of the parcel and measured 6.0 m long by 1.20 m wide by 2.20 m deep and oriented 251/71° (see Figure 11 and Table II). The excavations revealed four stratigraphic layers overlying bedrock (Figures 30 and 31).

Layer 1 0 – 0.15/0.20 mbs; (10YR/4/2, 3/2) agricultural zone, dark grayish brown gravelly fine silty loam; strong, medium, granular; common rootlet, sub-angular cobble and pebble inclusions (40%); very abrupt boundary, observe agricultural irrigation lines, glass and plastic fragments; very abrupt wavy boundary.

Layer II 0.15/0.20-0.40/0.50 mbs; (10YR5/1, 5/2) dry color gray mottled grayish brown stony silt loam; well formed, sub-angular blocky peds intermix with sub-angular to angular pebble and cobble inclusions (50%); very abrupt wavy boundary; no cultural remains observed.

Layer III 0.40/0.50-1.10/1.20 mbs; (7.5YR3/2, 2.5/3) dry color dark brown mottled very dark brown silt clay; soft, massive poorly formed sub-angular blocks; sub-angular and angular pebble scatter (15%); very abrupt boundary. No cultural remains observed.

Layer IV 1.10/1.20-2.20 mbs; (10YR 4/3, 3/3) brown mottled dark brown silt clay; weakly, massive medium blocky poorly formed peds; no cultural remains observed.

Layer V (2.10/2.20 mbs) (10YR5/1, 4/2) gray mottled grayish brown and saprolytic/decomposing bedrock.





Figure 30. Overview Photograph of TR 8 (left) (View to West); Photograph of North Wall at TR 8 (right)

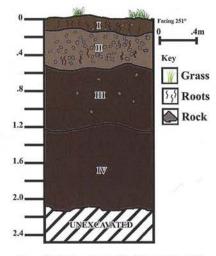


Figure 31. Stratigraphic Profile of North Wall at TR8

TRENCH 9

Trench 9 is located within the parking area of temporary offices along the northeast corner of project area (see Figure 11 and Table II). It measured 4.30 m long by 1.30 m wide by 1.55/1.80 m deep, oriented 90/270° and was negative for cultural remains. The excavations revealed four strata where Layers I and II were previously disturbed by recent developmental activities and a sand lens at Layer III (Figures 32 and 33).

Layer I 0 –0.30/0.35 mbs; (10YR/5/2) gravel fill zone, dark grayish brown gravelly fine silt loam; strong, medium, granular; few rootlet, common sub-angular gravel and pebble inclusions (50%); very abrupt boundary, observe water and electrical lines with sparse sand, very abrupt wavy boundary.

Layer II 0.30/0.35-0.55/0.60 mbs; (7.2YR4/3, 4/4) brown gravelly silt loam; well formed, sub-angular blocky peds few rootlet inclusions intermix with scattered sub-angular to angular pebble and gravel (30%); very abrupt wavy boundary; no cultural remains observed.

Layer III 0.55/0.60-0.70/0.75 mbs; (10YR5/6, 6/6) yellowish brown mottled brown fine sand; structureless fine to coarse single grain; very abrupt wavy irregular boundary; No cultural remains observed.

Layer IV 0.70/0.75-1.60/1.70 mbs; (7.5YR 4/3, 3/3) brown mottled dark brown stony silt clay; weakly, massive medium blocky well formed peds; sub-angular boulder and cobble scatter (30%); very abrupt clear boundary. no cultural remains observed.



Figure 32. Overview Photograph of TR9 with Water line in Foreground (View to West) (left); Photograph of South Wall at TR9 (after utility line was removed, note thin sand lens (red arrows)

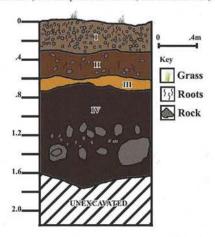


Figure 33. Stratigraphic Profile of South Wall at TR9

Trench 10 is located in the southwest quadrant of the subject parcel and measured 5.5 m long by 1.30 m wide by 1.70/1.80 m deep and oriented 90/270° (see Figure 11 and Table II). The excavations revealed three stratigraphic layers overlying saprolytic bedrock and all were negative (Figures 34-36).

Layer I 0 –0.30/0.40 mbs; (7.5YR3/2,3/3) fill zone, dry color dark brown gravelly fine silt loam; strong, medium, gramular; common rootlet, common sub-angular gravel and pebble inclusions (40%); very abrupt boundary, observe irrigation lines, very abrupt wavy boundary.

Layer II 0.30/0.40-1.35/1.40 mbs; (7.2YR4/3,3/3) dry color dark brown mottled brown stony silt loam; well formed, sub-angular blocky peds few rootlet inclusions intermix with scattered sub-angular to angular pebble and gravel (40%); very abrupt wavy boundary; no cultural remains observed.

Layer III 1.35/1.40-1.71/1.75 mbs; (5YR4/4, 4/6) dry color reddish brown mottled yellowish red; prismatic sub-angular blocky peds; very abrupt boundary; No cultural remains observed.

Layer IV 1.70/1.75 mbs; (10YR5/1, 4/2) gray mottled grayish brown decomposing bedrock.



Figure 34. Overview Photograph of Southwest Area Showing Location for TR10



Figure 35. Photograph of North Wall at TR10

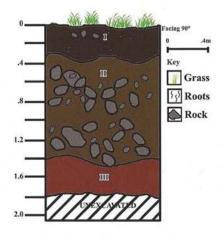


Figure 36. Stratigraphic Profile of North Wall at Trench 10

Trench 11 is located along the west, central boundary and measured 6.0 m long by 1.10 m wide by 1.70/1.80 m deep and was oriented 180/360° (see Figure 11 and Table II). The excavations revealed two stratigraphic layers that were negative for subsurface cultural remains (Figures 37 and 38).

Layer I 0 –0.30/0.40 mbs; (7.5YR3/2, 3/3) fill zone, dark brown gravelly fine silt loam; strong, medium, granular; common rootlet, common sub-angular gravel and pebble inclusions (40%); very abrupt boundary, observe irrigation lines, very abrupt wavy boundary.

Layer II 0.30/0.40-1.35/1.40 mbs; (7.2YR4/3, 3/3) dry color dark brown mottled brown stony silt loam; well formed, sub-angular blocky peds few rootlet inclusions intermix with scattered sub-angular to angular pebble and gravel (50%); very abrupt wavy boundary; no cultural remains observed.



Figure 37. Overview Photograph of TR11 (View to North) (left); Photograph of West Wall at Trench 11

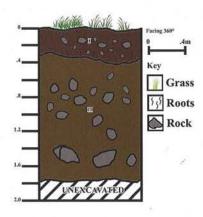


Figure 38. Stratigraphic Profile of West Wall at Trench 11

DISCUSSION AND RECOMMENDATIONS

An archaeological assessment was performed of a 15.0 acre parcel proposed for affordable residential development under the 201H permit process. The subject area has been extensively altered through the construction of a wide drainage trench on the western, sugar cane cultivation and past sand mining activities, where no evidence of traditional occupation and/or inland sand dune deposits appear to be extant. Despite these alterations, the subject parcel is positioned within a culturally sensitive area, and in close proximity to traditional burial features designated Sites 50-50-04-2916, 5965, 5966, 5680, 6261 and 6573; and a few historic period sites consisting of an historic road bed-Site 5963, a sugar cane flume-Site 5967 and Kama Ditch-Site 5474; thus subsurface testing was implemented.

A total of 11 mechanical test trenches were conducted at the project area, where the majority were placed in the eastern portion to ascertain the presence/absence of subsurface historic properties and remnant sand dune deposits. The trenches exhibited disturbances from 0.60 mbs to 1.85 mbs with bedrock encountered from 1.6 mbs to 2.30 mbs and all were negative for buried cultural remains and intact sand dune matrices.

No historic properties were identified during the subsurface investigations, and these negative results may be due to the compounded disturbances across the parcel. Pursuant to HAR §13-284-7, the overall development plan for the parcel will have no effect on significant historic properties. However, given that the subject parcel is in close proximity to known, unmarked traditional sand burials (east of the project area), the proposed mitigation pursuant to HAR §13-284-8 (1) (A) will comprise data recovery in the form of archaeological monitoring. Prior to the commencement of construction activities, an archaeological monitoring plan (AMP) will be prepared and submitted to SHPD for review and approval.

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E-1





STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION KAKUHIHEWA BUILDING 601 KAMOKILA BLVD, STE 555

October 18, 2017

Bagoyo Development Consulting Group 1500 Kilinoe Place Wailuku, Maui, Hawaii 96793 vbagoyo-devgroup@hawaii.rr.com

IN REPLY REFER TO: Log No. 2017.02039 Doc No. 1710MBF07 Archaeology History & Culture

SUZANNE D. CASIL

ROBERT IC MASUDA

FFREY T. PEARSON, P.E.

Dear Mr. Bagoyo,

SUBJECT: Chapter 6E-42 Historic Preservation Review -Archaeological Assessment Report for a 15.0 Acre Parcel Located Along Waiale Road Wailuku Ahupua'a, Wailuku District, Island of Maui TMK: (2) 3-5-001:064

Thank you for the opportunity to review the subject submittal titled, Draft Archaeological Assessment Report for a 15.0 Acre Parcel Located Along Waiale Road in Wailuku Ahupua'a and District Pü'Ali Komohana Moku Island of Maui; TMK: [2] 3-5-001:064 (O'Claray-Nu et al., May 2017). The draft archaeological inventory survey (AIS) reported as an archaeological assessment (AA) was received by the State Historic Preservation Division (SHPD) as part of a draft environmental assessment (EA) on September 15, 2017. An associated archaeological monitoring plan (AMP) was submitted concurrently in advance of SHPD review of the subject project. This submittal for historic preservation review does not follow Hawaii Administrative Rules (HAR) §13-284-3.

An AIS was conducted on a 15.0-acre parcel proposed for affordable residential development. Reportedly, the entire project area has been extensively altered, including a retention trench for drainage improvements on the western portion of the parcel; as well as, sugar cane cultivation and past sand mining activities, where no inland sand dunes are presently extant. A pedestrian survey was conducted over 100 percent of the project area and a total of 11 backhoe trenches were excavated across the parcel. All subsurface testing produced negative results. Evidenced by the random trenches, the subsurface in some areas of the project area is disturbed from 0.60 meters below surface (mbs) to 1.85 mbs. Bedrock was encountered from 1.6 mbs to 2.30 mbs.

The project area is in a culturally-sensitive area. In proximity to the area there are: burial features, including Sites 50-50-04-2916, 50-50-04-5965, 50-50-04-5966, 50-50-04-5680, 50-50-04-6561 and 50-50-04-6573; Historic period sites included a road bed, Site 50-50-04-5963, a sugarcane flume, Site 50-50-04-5967, and Kama Ditch, Site 50-50-

An effect determination is not presented in the subject documentation or the associated BA. However, based on available information, SHPD's determination is no historic properties affected pursuant to HAR §13-284-7; no historic properties have been identified within the project area. The SHPD does not concur with the recommendation of no further archaeological work. Due to the inherent imprecision of random mechanical trenching over large culturally-sensitive areas, there is a high probability of encountering cultural resources during the proposed largescale earthmoving activities associated with the subject project. Therefore, SHPD recommends archaeological monitoring for identification purposes.

In the future, please include the agency point of contact (POC) on all correspondence with the SHPD, and do not submit unsolicited historic preservation review materials to the SHPD, including monitoring plans, they will

Mr. Vince Bagoyo October 18, 2017 Page 2

You may contact Dr. Matthew Barker Fariss at matthew.b.fariss@hawaii.gov, or by phone at (808) 243-4626, for questions regarding this letter.

Aloha.

Alan S. Downer, PhD Administrator, State Historic Preservation Division Deputy State Historic Preservation Officer

County of Maui Planning Planning@co.maui.hi.us

Jeff Pantaleo, Principal Investigator Archaeological Services Hawaii (ASH) ipanta4149@aol.com

County of Maui Cultural Resources Commission Annalise.Kehler@co.maui.hi.us

County of Maui Public Works public.works@mauicounty.gov

DLNR Land Division Russell.Y.Tsuji@hawaii.gov SECTION 6E, HAWAI'I REVISED STATUTES FORM **APPENDIX**



State Historic Preservation Division HRS 6E Submittal Form

Per §6E, Hawai'i Revised Statutes, if the Project requires review by the State Historic Preservation Division (SHPD), please review and fill out this form and submit all requested information to SHPD. Please submit this form and project documentation electronically to:

dlnr.intake.shpd@hawaii.gov

If you are unable to submit electronically, please contact SHPD at (808) 692-8015. Mahalo.

The submission date of this fo	orm is:	
1. APPLICANT (select one)		
☐ Property Owner	☑ Government Agency	
2. AGENCY (select one)		
☐ Planning Department	☐ Department of Public Work	s ② Other (specify): DHHL
Type of Permit Applied Fo	or:	
, APPLICANT CONTACT	r	
3.1) Name: Stewart Ma	tsunaga 3.2) Title: Maste	r-Planned Community Development Manager
3.3) Street Address: P.C	D. Box 1879	
3.4) County: Honolulu	3.5) State: HI	3.6) Zip Code: 96805
3.7) Phone: 808-620-92	283 3.8) Email: Stew	art.T.Matsunaga@hawaii.gov
. PROJECT DATA		
4.1) Permit Number (if	applicable);	
4.2) TMK [e.g. (3) 1-2-0	003:004]: (2) 3-5-002:002	
4.3) Street Address: Ho	noapiilani Highway	
4.4) County: Wailuku	4.5) State: HI	4.6) Zip Code: 96793
4.7) Total Property Acre	eage: 60.087 acres	
4.8) Project Area (acrea	ge, square feet): 48.72 acres	
4.9) List any previous S	HPD correspondence (LOG Nur	nber & DOC Number, if applicable):
	398	DOC NO. 0511MK22

5.1) Does the Project involve a Historic Property? A Historic Property is any building, structure, object,

district, area, or site, including heiau and underwater site, which is over 50 years old (HRS §6E-2). ☑ Yes ☐ No 5.2) The date(s) of construction for the historic property (building, structure, object, district, area, or site, including heiau and underwater site) is Historic period-Sugar Cane Cultivation 5.3) Is the Property listed on the Hawai'i and or National Register of Historic Places? To check: http://dlnr.hawaii.gov/shpd/ ☐ Yes ☑ No 5.4) Detailed Project Description and Scope of Work: Houses and related roadway and utility infrastructure for 161 Department of Hawaiian Home Lands residential lots. 5.5) Description of previous ground disturbance (e.g. previous grading and grubbing): Sugar cane cultivation; trenching during archaeological inventory survey (Wilson and Dega 2005) 5.6) Description of proposed ground disturbance (e.g. # of trenches, Length x Width x Depth): Main ground disturbances include: grubbing and grading for roadways, lots, and storm water detention basin; excavation and trenching for utilities and related appurtenances; and excavation for house footings. 5.7) The Agency shall ensure whether historic properties are present in the project area, and, if so, it shall ensure that these properties are properly identified and inventoried. Identify all known historic properties: Previously identified Sites: 50-50-04-5197, -5493, -5729, -5726, -5727, -5728, -5730. No further work recommended and accepted by SHPD (see Section 4.9 above). 5.8) Once a historic property is identified, then an assessment of significance shall occur. Integrity (check all that apply): ☐ Location ☐ Design ☐ Setting ☐ Materials ☐ Workmanship ☐ Feeling ☐ Association Criteria (check all that apply): a - associated with events that have made an important contribution to the broad patterns of our ☐ b – associated with the lives of persons important in our past □ c - embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value ☐ d – have yielded, or is likely to yield, information important for research on prehistory or history ☐ e - have an important value to the Native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out or still carried out, at the property or due to associations with traditional beliefs, events, or oral accounts - - these associations being important

to the group's history and cultural identity

5.9) The effects of imp	acts of a project on significant his	toric properties shall be determined by the agency.
Effect Determinat	ion (select one):	
☐ Effect, with A	roperties Affected agreed Upon Mitigation Commitm roposed Mitigation Commitments	
5.10) This project is (c	heck all that apply, if applicable):	
	program funded in whole or in pa ding those carried out by or on bel	art under the direct or indirect jurisdiction of a Federal half of a Federal agency;
☐ carried out wi	th Federal financial assistance; an	d or
☐ requiring a Fe	deral permit, license or approval.	
	oxes are checked, then the Project foric Preservation Act (NHPA).	may also be subject to compliance with Section 106 of
PROJECT SUBMITTA	iLS	
6.1) Please submit a co	py of the Tax Map Key (TMK) m	ар
6.2) Please submit a co smaller than the pro		ne project area and indicate if the project area is
	rmit set of drawings. A permit set er and is at least 65% complete.	is a set of drawings prepared and signed by a licensed
6.4) Are you submitting	g a survey?	
☐ Yes ☑ No		
Specify Survey:		
6.5) Did SHPD request	the survey?	
☐ Yes ☑ No		
If 'Yes', then pleas	e provide the date, SHPD LOG No	O, and DOC NO:
Date:	LOG NO.	DOC NO.
		orts and Plans (§§13-275-4 and 284-4). A filing fee our office for review. Please go to:
http	o://dlnr.hawaii.gov/shpd/about/bra	nches/archaeology/filing-fee-schedule/
A check payable to submitted.	the Hawaii Historic Preservation	Special Fund should accompany all reports or plans

6.7) Please submit color photos/images of the Historic Property (any building, structure, object, district, area, or site, including heiau and underwater site) that will be affected by the Project.

The following are the minimum number and type of color photographs required:

Quantity	Description
1-2	Street view(s) of the resource and surrounding area
1-2	Over view of exterior work area
1	exterior photo of the North elevation (if applicable)
1	exterior photo of the South elevation (if applicable)
1	exterior photo of the East elevation (if applicable)
1	exterior photo of the West elevation (if applicable)
1-2	interior photos(s) of areas affected (if applicable)

1	IECKLIST
7]	SHPD FORM 6E (this form)
1	PROJECT SUBMITTALS (any requested documentation for items 6.1 - 6.7 of this form)
3	FILING FEE FORM (if applicable)

ARCHAEOLOGICAL
DETERMINATION
RECONFIRMATION
LETTER DATED
MARCH 27, 2020

APPENDIX

G

DAVID Y. IGE GOVERNOR STATE OF RAWAII



WILLIAM J. AILA, JR CHARMAN HAWAHAN IKIMES COMMISSED

TYLER I. GOMES

RECEIVED

APR-8

AM 9: 47

JOSH GREEN LT. GOVERNOR STATE OF NAWAR

STATE OF HAWAII DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879 HONOLULU, HAWAII 96805

March 27, 2020

Ms. Suzanne D. Case, Chairperson Department of Land and Natural Resources 1151 Punchbowl St. Honolulu, Hawaii 96813

Dear Chairperson Case:

Subject:

Pu'unani Homestead Subdivision

TMK: (2) 3-5-002:002(por.) and (2) 3-5-001:064(por.)

SHPD acceptance of Archaeological Inventory Survey Report on 215.800 acres located in Waikapu Ahupua'a Wailuku District, Maui Island, Hawai'i [TMK (2) 3-5-002: 02 and 03] (Wilson and Dega, October 2005) with SHPD Letter dated November 18, 2005, (SHPD Log Number 2005.2398) and Archaeological Assessment Report for a 15.0 acre parcel located along Waiale Road in Wailuku Ahupua'a and District, Pū'ali Komohana Moku, Island of Maui [TMK (2) 3-5-001:064] (O'Claray-Nu et al., May 2017) with SHPD Letter dated October 18, 2017 (SHPD Log No. 2017.02039)

TMK: (2) 3-5-002:002(por.)

The Department of Hawaiian Home Lands (DHHL) acknowledges State Historic Preservation Division's (SHPD) November 18, 2005, letter regarding SHPD's review of the report entitled Archaeological Inventory Survey Report on 215.800 acres located in Waikapu Ahupua'a Wailuku District, Maui Island, Hawai'i [TMK (2) 3-5-002: 02 and 03] (Wilson and Dega, October 2005). This AIS covered both the parcel for DHHL's Pu'unani Homestead Subdivision and the 148 acre mauka parcel, owned by others. DHHL concurs with SHPD's previous project effect determination under the HRS 6E jurisdiction as described below:

The AIS documented 7 historic properties within the project area/area of potential
effect (APE), as confirmed in the November 18, 2005 SHPD Letter. In accordance
with HAR§13-275-6, all 7 sites are significant under Criterion d. No further work
is recommended for the 7 sites as these sites have been adequately documented.

Chairperson Case March 27, 2020 Page 2

- DHHL's HRS 6E project effect determination is "No Historic Properties Affected" pursuant to HAR §13-275-7(a)(1). The proposed project will have no effect on significant historic properties.
- Based on SHPD's November 18, 2005, letter, SHPD has accepted the AIS (Wilson and Dega, October 2005), the historic preservation review process is concluded, and no further archaeological mitigation is necessary.
- DHHL requests SHPD's updated concurrence with DHHL's HRS 6E project effect determination of "No Historic Properties Affected."
- A Native Hawaiian organization may enter into an agreement with SHPD. DHHL
 acknowledges that the development of a memorandum of agreement (MOA) with
 SHPD and other signatories could be mutually beneficial to the parties involved.
 DHHL will work with SHPD upon updated acceptance of the AIS and concurrence
 with 6E project effect determinations to assess if a MOA should be developed.

TMK: (2) 3-5-001:064(por.)

DHHL acknowledges SHPD's October 18, 2017, letter regarding SHPD's review of the report entitled Archaeological Assessment Report for a 15.0 acre parcel located along Waiale Road in Wailuku Ahupua'a and District, Pū'ali Komohana Moku, Island of Maui [TMK (2) 3-5-001:064] (O'Claray-Nu et al., May 2017). DHHL's work within the portion of TMK (2) 3-5-001:064 will be limited to only sewerline improvements. DHHL concurs with SHPD's previous project effect determination under the HRS 6E jurisdiction as described below:

- SHPD's determination is no historic properties affected pursuant to HAR§13-284-7 and no historic properties have been identified within the project area. However, SHPD recommends archaeological monitoring for identification purposes.
- SHPD anticipates receiving for review and acceptance an archaeological monitoring plan that satisfies the requirements of HAR§13-279-4.
- DHHL's HRS 6E proposed commitment is archaeological monitoring for identification purposes during all DHHL project-related ground disturbances within the portion of TMK (2) 3-5-001:064.
- DHHL requests SHPD's concurrence with DHHL's HRS 6E project effect determination of "No Historic Properties Affected."

Chairperson Case March 27, 2020 Page 3

Mahalo for the opportunity to provide comments. Should you have any questions, please call me at (808) 620-9501 or Stewart Matsunaga, Acting Administrator, Land Development Division at (808) 620-9283.

Aloha,

William J. Aila, Jr., Chairman Hawaiian Homes Commission

CONCUR – The HRS 6E project effect determination is described herein. Alan Downer	"No Historic Properties Affected" as
Suzanne D. Case, Chairperson	

Enclosures - November 18, 2005, SHPD Letter (DOC NO: 0511MK22) and October 18, 2017, SHPD Letter (DOC NO: 1710MBF07)

Dr. Alan Downer, Administrator C: State Historic Preservation Division

> Dr. Susan Lebo, Archaeology Branch Chief State Historic Preservation Division

County of Maui Planning Dept. DHHL Planning Office DHHL Maui District Office

LINDA LINGLE





STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION 601 KAMOKILA BOULEVARD, ROOM 555 KAPOLEI, HAWAII 96707

ROBERT K. MASUDA

November 18, 2005

Michael Dega, Ph.D. Scientific Consultant Services 711 Kapiolani Blvd. Suite 975 Honolulu, HI 96813

LOG NO: 2005,2398 DOC NO: 0511MK22

Dear Dr. Dega:

SUBJECT: Historic Preservation Review - 6E-42 - Archaeological Inventory Survey On 215.800 Acres for Towne Development of Hawaii and Endurance

Investors, LLC

Waikapu Ahupua'a, Wailuku District, Maui

TMK (2) 3-5-002:002 and 003

Thank you for the opportunity to review this report which our staff received on October 14, 2005 (Wilson and Dega 2005, Archaeological Inventory Survey Report on 215.800 Acres Located in Waikapu Ahupua'a, Wailuku District, Maui Island, Hawai'i [TMK (2) 3-5-02: 02 . and 037)... Scientific Consultant Services, Inc., ms.

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The historical information provided summarizes the history of the post-contact period land uses. The summary of previous archaeological work in the area provides a baseline for the current work. The subject parcel has formerly been utilized for commercial agriculture, and consists 100% of abandoned cane land. Three small Land Commission Awards are situated within the subject parcel, in an area through which a stream and/or ditch formally ran.

The survey has adequately covered the project area documenting five new historic properties in the project area, and re-identifying two previously identified historic properties. Previously identified sites, SIHP 50-50-04-5197 and -5493, consist of the Waihe'e and Waikapu Ditches. Newly identified SIHP sites 50-50-5729 and -5726 represent an unnamed rock and mortar ditch and an unnamed earthen ditch/drainage. A large unnamed reservoir, SIHP 50-50-04-5727, is situated at the terminus of the Waikapu Ditch (-5493). SIHP 50-50-04-5728 is a sugar field erosion control site, incorporating 14 earthen berms cross slope. These are clearly identified topographically. One additional site, SIHP 50-50-04-5730, the

Michael Dega Page 2

"Old Waikapu Road" was identified as spanning the border of Parcels 002 and 003. Subsurface testing (twenty-one backhoe trenches) were also negative for evidence of cultural deposits. These were distributed evenly across the project area.

We concur that all seven sites are significant under Criterion "D" and have the potential to yield information important to understanding the history of the region. The sites have been adequately documented.

We also agree that no further archaeological mitigation is necessary.

We find this report to be acceptable. The historic preservation review process is concluded. Development of the project areas will have "no effect" on significant historic sites. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169) as soon as possible to resolve these concerns.

MELANIE A. CHINEN, Administrator State Historic Preservation Division

MK: kf

Bert Ratte, DPWEM, County of Maui Michael Foley, Director, Dept of Planning, 250 S. High Street, Wailuku, HI 96793 Maui Cultural Resources Commission, Dept. of Plng, 250 S. High St., Wailuku, HI 96793





STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION

KAKUHIHEWA BUILDING 601 KAMOKILA BLVD STE 555

ROBERT N. MASUR

JEFFREY T. PEARSON, P.E.

October 18, 2017

Bagoyo Development Consulting Group 1500 Kilinoe Place Wailuku, Maui, Hawaii 96793 vbagoyo-devgroup@hawaii.rr.com

Log No. 2017.02039 Doc No. 1710MBF07 Archaeology History & Culture

IN REPLY REFER TO:

Dear Mr. Bagovo.

Chapter 6E-42 Historic Preservation Review -Archaeological Assessment Report for a 15.0 Acre Parcel Located Along Waiale Road Walluku Ahupua'a, Walluku District, Island of Maui TMK: (2) 3-5-001:064

Thank you for the opportunity to review the subject submittal titled, Draft Archaeological Assessment Report for a 15.0 Acre Parcel Located Along Waiale Road in Wailuku Ahupua'a and District Pū'Ali Komohana Moku Island of Maui; TMK: [2] 3-5-001:064 (O'Claray-Nu et al., May 2017). The draft archaeological inventory survey (AIS) reported as an archaeological assessment (AA) was received by the State Historic Preservation Division (SHPD) as part of a draft environmental assessment (EA) on September 15, 2017. An associated archaeological monitoring plan (AMP) was submitted concurrently in advance of SHPD review of the subject project. This submittal for historic preservation review does not follow Hawaii Administrative Rules (HAR) \$13-284-3.

An AIS was conducted on a 15.0-acre parcel proposed for affordable residential development. Reportedly, the entire project area has been extensively altered, including a retention trench for drainage improvements on the western portion of the parcel; as well as, sugar cane cultivation and past sand mining activities, where no inland sand dunes are presently extant. A pedestrian survey was conducted over 100 percent of the project area and a total of 11 backhoe trenches were excavated across the parcel. All subsurface testing produced negative results. Evidenced by the random trenches, the subsurface in some areas of the project area is disturbed from 0.60 meters below surface (mbs) to 1.85 mbs. Bedrock was encountered from 1.6 mbs to 2.30 mbs.

The project area is in a culturally-sensitive area. In proximity to the area there are: burial features, including Sites 50-50-04-2916, 50-50-04-5965, 50-50-04-5680, 50-50-04-651 and 50-50-04-6573; Historic period sites included a road bed, Site 50-50-04-5963, a sugarcane flume, Site 50-50-04-5967, and Kama Ditch, Site 50-50-

An effect determination is not presented in the subject documentation or the associated EA. However, based on available information, SHPD's determination is no historic properties affected pursuant to HAR §13-284-7; no historic properties have been identified within the project area. The SHPD does not concur with the recommendation of no further archaeological work. Due to the inherent imprecision of random mechanical trenching over large culturally-sensitive areas, there is a high probability of encountering cultural resources during the proposed largescale earthmoving activities associated with the subject project. Therefore, SHPD recommends archaeological monitoring for identification purposes.

In the future, please include the agency point of contact (POC) on all correspondence with the SHPD, and do not submit unsolicited historic preservation review materials to the SHPD, including monitoring plans, they will not be reviewed.

Mr. Vince Bagoyo October 18, 2017 Page 2

You may contact Dr. Matthew Barker Pariss at matthew.b.fariss@hawaii.gov, or by phone at (808) 243-4626, for questions regarding this letter.

Aloha,

Alan S. Downer, PhD Administrator, State Historic Preservation Division Deputy State Historic Preservation Officer

cc: County of Maui Planning Planning@co.msui.hi.us

> Jeff Pantaleo, Principal Investigator Archaeological Services Hawaii (ASH) jpanta4149@aol.com

County of Maui Cultural Resources Commission Annalise.Kehler@co.maui.hi.us County of Maui Public Works public.works@mauicounty.gov

DLNR Land Division Russell Y Tsuji@hawaji.gov

Pu'unani Homestead Subdivision

Final Audit Report

2020-04-21

Created:

2020-04-08

Ву:

Kimberly Higashi (kimberly.a.higashi@hawaii.gov)

Status:

Signed

Transaction ID:

CBJCHBCAABAAmL0PX8rs-eruLmi4heEUFNpSDmn8seD7

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 2020-04-21 4:02:50 AM GMT



CULTURAL IMPACT ASSESSMENT

APPENDIX



SCS PROJECT NO. 2357-FINAL CIA

A CULTURAL IMPACT ASSESSMENT REPORT IN ADVANCE OF THE PROPOSED PU'UNANI HOMESTEAD PROJECT

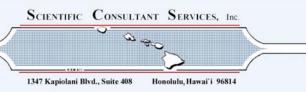
WAIKAPŪ AHUPUA'A, WAILUKU DISTRICT ISLAND OF MAUI HAWAI'I

TMK: (2) 3-5-002:002 and 3-5-001:064 (por.)

Prepared by: **Cathleen A. Dagher, B.A.** September 2020

FINAL

Prepared for: DDC LLC 2005 Main Street| Wailuku, Maui Hawaii 96793



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INTRODUCTION

At the request of DDC LLC, Scientific Consultant Services, Inc. (SCS) has prepared a Cultural Impact Assessment (CIA) in advance of the proposed Pu'unani Homestead project. The proposed project will consist of the development of a Department of Hawaiian Home Lands (DHHL) residential subdivision comprised of a total of 161 lots (approximately 137 turn-key single-family residences and 24 vacant single-family improved lots) within the 47.4-acre project area. The Department of Hawaiian Home Lands Subdivision will be located in Waikapū Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-5-002:002 (Figures 1 through 3). The subject property is owned by the State of Hawaii, Department of Hawaiian Home Lands. Please note that DHHL, through coordination with Dowling Company, Inc., has graciously allowed the consultation reach out timeline to be extended to include the additional individuals suggested by Mr. Pellegrino (see Interview section) and that these potential interviews were going to be handled by telephone or virtual means for everyone's health and safety due to the COVID-19 pandemic.

Sewer line improvements within a portion of TMK: (2) 3-5-001:064 will be undertaken as part of the currently proposed DHHL Pu'unani Homestead project. A separate CIA report (Dagher2018) was prepared in advance of the proposed Wailuku Affordable Housing project, which was located in Wailuku and Waikapū Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-5-001:064]. Thus, the results of the Dagher (2018) consultation process are included in the Consultation section of the current CIA report.

The Hawaii State Office of Environmental Quality Control (OEQC 1997:11) states that "an environmental assessment of cultural impacts" gathers information about cultural practices and cultural features that may be affected by significant environmental effects:

Cultural impacts differ from other types of impacts assessed in environmental assessments or environmental impact statements. A cultural impact assessment includes information relating to the practices and beliefs of a particular cultural or ethnic group or groups.

The purpose of a CIA is to identify the possibility of on-going cultural activities and resources within a project area, or its vicinity, and then assess the potential for impacts on these cultural resources. The CIA is not intended to be a document of in depth archival-historical land research, or a record of oral family histories, unless these records contain information about specific cultural resources that might be impacted by a proposed project.

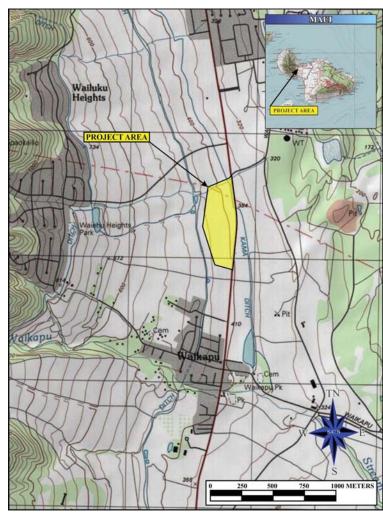
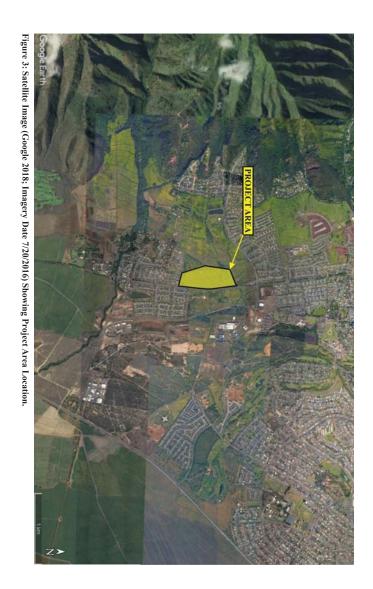
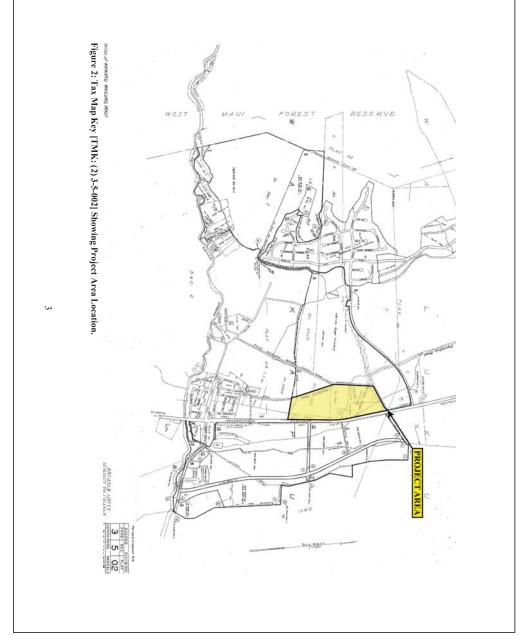


Figure 1: USGS Quadrangle (Wailuku, HI 1997; 1:24,000) Showing Project Area Location.





CULTURAL IMPACT ASSESSMENT METHODOLOGY

The Constitution of the State of Hawai'i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of native Hawaiians. Article XII, Section 7 (2000) requires the State to "protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua* a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778." Additionally, Article IX and XII, of the state constitution, other state laws, and the courts of the State, impose on government agencies a duty to promote and protect cultural beliefs and practices, and resources of native Hawaiians as well as other ethnic groups.

Kamehameha III (Kauikeaouli) preserved the peoples traditional right to subsistence. As a result, in 1850, the Hawaiian Government confirmed the traditional access rights to native Hawaiian ahupua'a tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai'i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, "native Hawaiian rights...may extend beyond the *ahupua'a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner" [Pele Defense Fund v. Paty, 73 Haw.578, 620, 837 P.2d 1247, 1272 (1992)].

Act 50, enacted by the Legislature of the State of Hawai'i (2000) with House Bill (HB) 2895, relating to Environmental Impact Statements, proposes that:

there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii's culture, and traditional and customary rights... [H.B. NO. 2895].

Act 50 also requires state agencies and other developers to assess the effects of proposed land use or shoreline developments on the "cultural practices of the community and State" as part of the HRS Chapter 343 (2001) environmental review process. It also re-defined the definition of "significant effect" to include "the sum of effects on the quality of the environment including actions that impact a natural resource, limit the range of beneficial uses of the environment, that are contrary to the State's environmental policies, or adversely affect the economic welfare, social welfare or cultural practices of the community and State." Cultural resources can include a broad range of often overlapping categories, including places, behaviors, values, beliefs, objects, records, stories, etc. (H.B. 2895, Act 50, 2000).

GEOGRAPHICAL EXTENT

As defined by the Hawaii State Office of Environmental Quality Control (OEQC 2012:11), the geographical extent should be greater than the area over which the proposed project will take place in order to ensure that cultural practices that occur outside of the project area, but which may still be affected, are included in the assessment. For example, a project that may not itself physically impact traditional gathering practices but may block access to those locations would be included within the assessment. The concept of geographical expansion is recognized by using, as an example, "the broad geographical area, e.g. district or ahupua'a." In some cases, the geographical extent could extend beyond the ahupua'a if cultural practices do so as well.

OEOC GUIDELINES FOR ASSESSING CULTURAL IMPACTS

According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC 2012:12):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural, which support such cultural beliefs.

The meaning of "traditional" was explained by in National Register Bulletin 38:

"Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations', usually orally or through practice. The traditional cultural significance of a historic property then is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. . . [Parker and King 1998:1]

This CIA was prepared as much as possible in accordance with the suggested methodology and content protocol in the Guidelines for Assessing Cultural Impacts (OEQC 2012:11-13). In outlining the "Cultural Impact Assessment Methodology," the OEQC (2012:11) states that:

...information may be obtained through scoping community meetings, ethnographic interviews and oral histories...

This Cultural Impact Assessment was prepared in accordance with the Guidelines for Assessing Cultural Impacts (OEQC 2012:11-13). The Guidelines recommend that preparers of assessments analyzing cultural impacts adopt the following protocol:

- Identify and consult with individuals and organizations with expertise concerning the
 types of cultural resources, practices and beliefs found within the broad geographical
 area, e.g., district or ahupua area, e.g.,
- Identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
- Receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
- Conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research;
- Identify and describe the cultural resources, practices and beliefs located within the
 potentially affected area; and
- Assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified.

CULTURAL IMPACT ASSESSMENT CONTENTS

The OEQC Guidelines state that an assessment of cultural impacts should address, but not be limited to the following:

- Discussion of the methods applied and results of consultation with individuals and
 organizations identified by the preparer as being familiar with cultural practices and
 features associated with the project area, including any constraints or limitations which
 might have affected the quality of the information obtained.
- Description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.
- Ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained.
- Biographical information concerning the individuals and organizations consulted their
 particular expertise and their historical and genealogical relationship to the project area,
 as well as information concerning the persons submitting information or interviewed their
 particular knowledge and cultural expertise, if any, and their historical and genealogical
 relationship to the project area.
- Discussion concerning historical and cultural source materials consulted, the institutions
 and repositories searched and the level of effort undertaken. This discussion should
 include, if appropriate, the particular perspective of the authors, any opposing views, and
 any other relevant constraints, limitations or biases.
- Discussion concerning the cultural resources, practices and beliefs identified, and, for resources and practices, their location within the broad geographical area in which the

proposed action is located, as well as their direct or indirect significance or connection to the project site.

- Discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area affected directly or indirectly by the proposed project.
- Explanation of confidential information that has been withheld from public disclosure in the assessment
- Discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs.
- Analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.
- A bibliography of references and attached records of interviews which were allowed to be disclosed.

If on-going cultural activities and/or resources are identified within the project area, assessments of the potential effects on the cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

PROJECT METHODOLOGY

This report contains archival and documentary research, as well as communication with organizations and individuals having knowledge of the project area, its cultural resources, and its practices and beliefs. An example of the initial letter of inquiry is presented in Appendix A, copies of the posted newspaper notice and affidavit are presented in Appendix B, and an example of the follow up letter is presented in Appendix C. Signed information release forms are presented in Appendix D. This Cultural Impact Assessment was prepared in accordance with the suggested methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 2012:13), whenever possible. The assessment concerning cultural impacts may include, but not be limited to the following items discussed below.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps, land records, such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological reports.

Historical and cultural source materials were extensively used and can be found listed in the References Cited portion of this report. Such scholars as Samuel Kamakau, Martha Beckwith, Jon J. Chinen, Lilikalā Kame'eleihiwa, R. S. Kuykendall, Marion Kelly, E. S. C. Handy and E.G. Handy, John Papa 'Ī'ī, Gavin Daws, A. Grove Day, and Elspeth P. Sterling, and Mary Kawena Puku'i and Samuel H. Elbert continue to contribute to our knowledge and understanding of Hawai'i, past and present.

The works of these and other authors were consulted and incorporated in this report where appropriate. Historic land use document research was supplied by the Waihona 'Aina (2019) Database, the Office of Hawaiian Affairs Kipuka Database (2016), and the County of Maui County Real Property Assessment Division Database (2019).

INTERVIEWS

In general, interviews are conducted in accordance with Federal and State laws and guidelines when knowledgeable individuals are able to identify traditional cultural practices and/or resources procured in the project area or in the environs. If they have knowledge of traditional stories, practices and beliefs, and resources associated with a project area or if they know of historical properties within the project area, they are sought out for additional consultation and interviews. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information concerning particular cultural resources. Often people are recommended for their expertise, and indeed, organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs (OHA), historical societies, Island Trail clubs, and Planning Commissions are depended upon for their recommendations of suitable informants. These groups are invited to contribute their input and suggest further avenues of inquiry, as well as specific individuals to interview. It should be stressed again that this process does not include formal or in-depth ethnographic interviews or oral histories as described in the OEQC's Guidelines for Assessing Cultural Impacts (2012). The assessments are intended to identify potential impacts to ongoing cultural practices, or resources, within a project area or in its close vicinity.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then summarized. These draft summaries are returned to each of the participants for their review and comments. After corrections are made, each individual is to sign an information release form, making the interview available for this study. When telephone interviews occur, a summary of the information is also sent for correction and approval or dictated by the informant

and then incorporated into the document. If no cultural resource information is forthcoming and no knowledgeable informants are suggested for further inquiry, interviews are not conducted.

KA PA'A KAI O KA'AINA V. LAND USE COMM'N, STATE OF HAWAI'I

The Land Use Commission (LUC) is also required to apply the analytical framework set forth by the Hawaii Supreme Court in Ka Pa'akai O Ka'Aina v. Land Use Comm'n, State of Hawai'i, 94 Hawai'i 31, 7 P.3d 1068 (2000) (hereinafter, "Ka Pa'akai"). In this case, a coalition of native Hawaiian community organizations challenged an administrative decision by the Land Use Commission (the "LUC") to reclassify nearly 1,010 acres of land from conservation to urban use, to allow for the development of a luxury project including upscale homes, a golf course, and other amenities. The native Hawaiian community organizations appealed, arguing that their native Hawaiian members would be adversely affected by the LUC's decision because the proposed development would infringe upon the exercise of their traditional and customary rights. Noting that "[a]rticle XII, section 7 of the Hawaii Constitution obligates the LUC to protect the reasonable exercise of customarily and traditionally exercised rights of native Hawaiians to the extent feasible when granting a petition for reclassification of district boundaries," the Hawai'i Supreme Court held that the LUC did not provide a sufficient basis to determine "whether [the agency] fulfilled its obligation to preserve and protect customary and traditional rights of native Hawaiians" and, therefore, the LUC "failed to satisfy its statutory and constitutional obligations." Ka Pa'akai, 94 Hawai'i at 46, 53, 7 P.3d at 1083, 1090.

The Hawai'i Supreme Court in <u>Ka Pa'akai</u> provided an analytical framework in an effort to effectuate the State's obligation to protect native Hawaiian customary and traditional practices while reasonably accommodating competing private interests. In order to fulfill its duty to preserve and protect customary and traditional native Hawaiian rights to the extent feasible, the LUC must—at a minimum—make specific findings and conclusions as to the following:

- A. the identity and scope of "valued cultural, historical, or natural resources" in the
 petition area, including the extent to which traditional and customary native Hawaiian
 rights are exercised in the petition area;
- B. the extent to which those resources--including traditional and customary native Hawaiian rights--will be affected or impaired by the proposed action; and
- C. the feasible action, if any, to be taken by the LUC to reasonably protect native Hawaiian rights if they are found to exist.

See Ka Pa'akai, 94 Hawai'i at 47, 7 P.3d at 1084.

To fulfill these purposes outlined by <u>Ka Pa'akai</u>, the Cultural Impact Assessment has reviewed historical research and suggestions from contacts knowledgeable about traditional cultural practices which were conducted within the project area corridor and in the surrounding environs. The potential effect of the proposed project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place has been analyzed, as required by the OEQC (2012).

ENVIRONMENTAL SETTING

The Island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago (Stearns 1966:155, Handy and Handy 1972:485). Maui Island was formed by two volcanoes, Pu'u Kukui in the west and Haleakalā in the east. Pu'u Kukui stands 1,215 meters (m.) above mean sea level (amsl.) is composed of large, heavily eroded amphitheater valleys that contain well-developed permanent stream systems that watered fertile agricultural lands extending to the coast. The isthmus between the two volcanoes is primarily composed of alluvial fans made of out-washed silts and gravels overlain by coralline sands blown inland from the coast. Lower sand strata have become firmly lithified, forming a soft rock known as eolianite (Stearns 1966:10).

PROJECT AREA

The proposed project area lies between coastal flats to the east and more mountainous terrain to the west along the medial reaches of the Maui isthmus between Wailuku and Māʻalaea (Figure 4). The project area is positioned between Wailuku (2 km north) and abuts the village of Waikapū to the south. The northern boundary of the project area is approximately 4 km inland of Kahului Harbor, while the southern boundary is approximately 8 km inland of Māʻalaea Bay (see Figures 1 through 3). The eastern perimeter of the project area abuts Honoapiʻilani Highway as it traverses from Wailuku toward Waikapū across the central Maui isthmus. The northern boundary is formed by the Old Waikapu Road and western border is defined by the Waihee Ditch (State Site 50-80-04-5197) and an access road. The project area is currently being used for agricultural purposes such as grazing and raising cattle.

Figure 4: Distant Photograph of Project Area (lighter colored grass at center roughly defines boundaries). View to West

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PROJECT AREA LANDFORM

A review of geotechnical reports for the parcel reveal that the slightly sloping project area lies in locations previously utilized for the cultivation of now-abandoned sugar cane. According to Cavanaugh (1995:2), who conducted geotechnical studies on the 450-acre Kehalani Mauka Subdivision (the parcel that borders Kuikahi Drive to the north), "site topography slopes down moderately toward the east at a gradient of 10 percent." The current project area is similar to where the existing terrain slopes steadily downward across the project area from west to east at a typical grade of 7 to 8 percent. Ground elevations range from approximately 115 meters (380 feet) amsl. to 137 meters (450 feet) amsl. A number of dirt roads, possibly associated with the commercial cultivation of sugar cane production, transect the project area. As is discussed more below, project area exclusively consists of tilled zone, fill, and alluvial sediments. To the east, near the Maui Lani development, sandy matrices were identified. Sandy matrices were not identified in the current study area. Likewise, neither archaeological nor geotechnical subsurface testing detected any sandy matrices in areas immediately to the east of Honoapi'ilani Highway (Monahan 2003) or north of Kuikahi Drive during the Kehalani Mauka Subdivision (Dega 2004).

Hydrology within the relatively dry project area is mostly in the form of historic irrigation modifications. Some of these modifications were the creation of a larger web of water conduits, drainages, and reservoirs, some built as early as 1905. No perennial streams run directly through the project area, and thus artificial ones had to be created for proper irrigation. By comparison, 'Tao Stream runs west-east to the north of the proposed development while Waikapū Stream runs west-east to the south of the project area. Being located near these two major streams appears to have been beneficial for cultivation on the present parcel, at least during the Historic Period. As stated elsewhere in this report, several still-utilized irrigation ditches (i.e., Waihee Ditch, State Site 50-80-04-5197) are located in close proximity to the proposed project area, and a still-active larger reservoir, to the northeast of the project area, is linked to one of these ditches. The remnant irrigation ditches and reservoir not only point to massive landscape modification in the area during the Historic Period but also strongly infer the aridness of the area, which required large-scale water importation. Soil borings conducted during geotechnical analyses in a nearby project area failed to reveal the presence of the area's water table to at least 25 feet below the surface (Shimamoto 1995:4).

CLIMATE

Rainfall in this intermediate environment is very modest. The proposed project area receives an average annual rainfall of approximately 26 inches (660 mm) (Giambelluca et al. 2013), with much of this rainfall occurring during the winter months (November through April). Seasonal variation in rainfall amount follows normal orographic patterns for leeward-type areas of Maui.

Waikapū Ahupua'a is known for its wind and is referred to as "Waikapu I ka makani kokololio" (Waikapu of the gusty wind) (C.M Hyde cited in Sterling 1978:4-5). These strong winds and are also referred to in the ancient Chant of the Maui Winds as "The kokolio (gusty wind) is from Waikapu" (J.H Kanepuu 1867 cited in Sterling 1978:7).

SOILS

According to Foote et al. (1972: Sheet 100; Figure 5), the project area is comprised of soils of the Iao Series, specifically Iao clay, 3 to 7 percent slopes (IcB) and Iao silty clay, 3 to 7 percent slopes (IbB). Foote et al. (1972:46) describes soils of the Iao Series as well-drained volcanic soils which formed in alluvium. The Iao soils typically occur between 100 and 500 feet amsl. in areas receiving 25 to 40 inches of rainfall annually.

The eastern portion of the project area is comprised of IcB soils. A representative profile shows these deposits consisting of a 15 inch surface layer comprised of dark brown clay overlaying 45 inches of very dark brown, dark brown, and very dark brown clay and silty clay, which overlays a substratum comprised of clayey alluvium. In general, the IcB soils exhibit medium runoff, moderately slow permeability, and a slight to moderate erosion hazard. This type of soil is used for sugarcane cultivation and residential areas (Foote et al. 1972:46).

The western portion of the project area is comprised of the IbB soils, which exhibits a similar stratigraphic profile as the IcB soils. The IbB soils exhibiting a different soil texture in the surface layer and a different cobblestone content. Like the IcB soils, the IbB soils are utilized for the cultivation of sugarcane and residential developments (Foote et al. 1972:47).

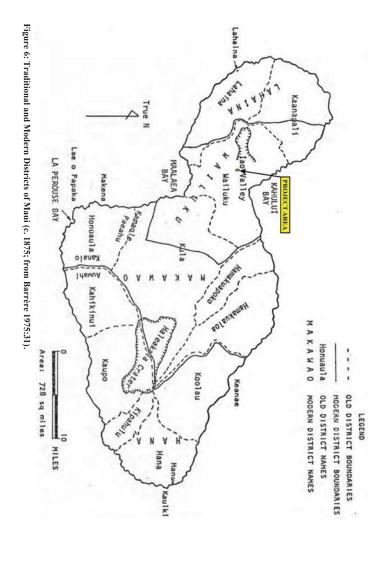
Figure 5: USDA Soil Survey (National Cooperative Soil Survey. Web Soil Survey.) Showing Soil Types within the Project Area and Surrounding Environs.

TRADITONAL AND HISTORICAL CULTURAL CONTEXT

Traditionally, the Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various ahupua'a. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo (Colocasia esculenta)* agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as kō (sugar cane, *Saccharum officinaruma*) and mai'a (banana, *Musa* sp.), were also grown and, where appropriate, such crops as 'uala (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985).

PAST POLITICAL BOUNDARIES

Approximately 600 years ago, the Hawaiian population had expanded throughout the Hawaiian Islands to a point where large, political districts could be formed (Lyons 1903; Kamakau 1991). During the pre-Contact Period, Maui was divided into twelve districts (moku) (Sterling 1998:3). Following the Civil Code of 1859, the twelve districts were consolidated into four districts: Lāhainā, Wailuku, Makawao, and Hāna (Sterling 1998:3). Approximately 600 vears ago, the Island of Maui was divided into twelve districts: Lāhainā, Kula, Honua'ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Koʻolau, Hāmākualoa, Hāmākuapoko, Wailuku, and Kā'anapali (Sterling 1998:3; Figure 6). The division of Maui Island lands into districts and subdistricts was performed by a kahuna (priest, expert) named Kalaiha ohia, during the time of the ali'i Kaka'alaneo (Beckwith 1979:383; Fornander [1919-20, Vol. 6:248] places Kaka'alaneo at the end of the 15th century or the beginning of the 16th century). Land was considered the property of the king or ali'i 'ai moku (the ali'i who eats the island/district), which he held in trust for the gods. The title of ali'i 'ai moku ensured rights and responsibilities to the land but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The maka'āinana (commoners) worked the individual plots of land.



In general, several terms, such as moku, ahupua'a, 'ili or 'ili 'āina were used to delineate various land sections. A moku contained smaller land divisions (ahupua'a), which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the ahupua'a were therefore, able to harvest from both the land and the sea. Ideally, this situation allowed each ahupua'a to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The 'ili 'āina or 'ili were smaller land divisions next to importance to the ahupua'a and were administered by the chief who controlled the ahupua'a in which it was located (Lyons 1875: 33; Lucas 1995:40). The mo'o'āina were narrow strips of land within an 'ili. The land holding of a tenant or hoa 'āina residing in an ahupua'a was called a kuleana (Lucas 1995:61).

TRADITIONAL SETTLEMENT PATTERNS

Archaeological settlement pattern data suggests that initial colonization and occupation of the Hawaiian Islands first occurred on the windward shoreline areas of the main islands between A. D. 850 and 1100, with populations eventually settling in drier leeward areas during later periods (Kirch 2011). Although coastal settlement was dominant, native Hawaiians began cultivating and living in the upland kula (plains) zones. Greater population expansion to inland areas began around the 14th century and continued through the 16th century. Large scale or intensive agriculture was implemented in association with habitation, religious, and ceremonial activities.

In Hawai'i, much of the coastal lands were preferred for chiefly residence. Easily accessible resources such as offshore and onshore fishponds, the sea with its fishing and surfing—known as the sports of kings, and some of the most extensive and fertile wet taro lands were located in the coastal areas (Kirch and Sahlins, 1992 Vol. 1:19). Inland resources necessary for subsistence could easily be brought to the ali'i residences on the coast from nearby inland plantations. The majority of farming was situated in the lower portions of stream valleys where there were broader alluvial flat lands or on bends in the streams where alluvial terraces could be modified to take advantage of the stream flow. Dry land cultivation occurred in colluvial areas at the base of gulch walls or on flat slopes (Kirch 1985; Kirch and Sahlins 1992, Vol. 2:59).

To the northwest of the current project area lies 'Īao Valley, one of the most important locations in the area for prehistoric activity. Connolly (1974:5) states that the pre-Contact valley ['Īao] had a large population base with "most people residing in a settlement near 'Īao Needle," just north of the project area. Supposedly, the subsistence base of this population consisted of fish and taro, with Kahului Harbor and the coast close by and lo'i systems lining 'Īao Valley's

stream banks. Pre-Contact irrigation ditches or 'auwai were utilized in taro cultivation (Connolly 1974:5). Sterling (1998:86) adds that two 'auwai within the valley:

...have existed immemorially and were evidently constructed for the purpose of irrigating kalo on the plains which stretch away to the northward and southward of the ['Īao] river. Several minor 'auwai have, since ancient times, tapped the river at different points lower down and spread the water through the lands in the gulch on either side of the river bed.

Handy in Sterling (1998:63) further notes that "... [f]rom Waihee and Wailuku Valley, in ancient times, was the largest continuous area of wet taro cultivation in the islands." Cheever (1851:124) writes, "[t]he whole valley of Wailuku, cultivated terrace after terrace, gleaming with running waters and standing pools, is a spectacle of uncommon beauty to one that has a position a little above it."

No discussion of Wailuku District is complete without mentioning the important heiau complex above 'Īao Valley near its seaward terminus. During the mid to late 18th century, the Halekii-Pihana heiau complex was supposedly designed by a Hawaiian named Kiha (Sterling 1998:89). These monuments designated as State Site 50-50-04-522 are described as very important heiau within Hawaiian history. Yent (1983:7) notes the life cycle of the ali'i was represented here. It was the place where Kamehameha I's wife (Keōpuolani) was born, Kahekili lived, and Kekaulike died. Thrum (1909:46) reported that Kamehameha I evoked his war god at Pihana Heiau after his warriors defeated Kalanikupuli's forces during the Battle of 'Īao in 1790. The two heiau are primarily associated with Kahekili, who is connected with the Halekii-Pihana complex between c. A.D. 1765 and 1790, and Kamehameha, during his conquering of Maui in 1792 (Yent 1983:18).

PRE-CONTACT PERIOD (PRE-1778)

The District of Wailuku inhabits the eastern side of the West Maui Mountains (Mauna Kahalawai) and occupies the isthmus through the center of the island to the coastal reaches in Kahului, on the north, and Mā'alaea, on the south. Wailuku District is frequently mentioned in historical texts and oral traditional accounts as being politically, ceremonially, and geographically important areas during the pre-Contact Period (Cordy 1981, 1996; Kirch 1985). The number of heiau constructed in the Wailuku area point to its ceremonial and religious importance during the pre-Contact Period (pre-1778).

The history of the ahupua'a of Waikapū, Waihe'e, Waiehu, are Wailuku are quite intertwined. These four ahupua'a are collectively known as the Nā Wai 'Ehā, or "the four waters" (Handy and Handy 1972:497, Kame'eleihiwa 1992; Pukui and Elbert 1986; and Creed 1993). This area is ... comprised the four great valleys [Waihe'e, Waiehu, Wailuku, and Waikapū] which cut far back into the slopes of West Maui and drain the eastward watershed of Pu'u Kukui and the ridges radiating northeastward, eastward, and southeastward from it" (Handy and Handy 1972:496). This area was the second of the traditional five major population centers on the Island of Maui (Handy and Handy 1972:272).

Traditionally, the lands of Waihe'e and Waiehu, now part of Wailuku District, "were independent of any of any *moku* and are listed in the *Book of the Mahele* as being in 'Puali Komohana,' i.e., West Isthmus" (R.D. King in J.W. Coulter 1935 cited in Sterling 1998:3). R.D. King in J.W. Coulter 1935 cited in Sterling 1998:3) further states that Wailuku and Waikapū Ahupua'a also were independent of any moku (district), and were referred to as Na Poko, with "...Na Poko in this case meaning a smaller division of land." W. D. Alexander (1891 cited in Sterling 1998:63) stated that the ahupua'a of Waihe'e, Waiehu, Wailuku, and Waikapū were grouped into a district in modern times. R.D. King (in J.W. Coulter 1935 cited in Sterling 1998:3) explains, "...with reference to the *ahupuaa* of Waihee, Waiehu, Wailuku, and Waikapu, on the map it was necessary to form a new district and call it Wailuku [because] Nawaiehu, 'the four waters,' [was] too cumbersome and ill understood."

Waikapū Ahupua'a once was renowned for "...its majesty and splendid living, whose native songs gather flowers in the dew and weave wreaths of ohelo berries" (S.W. Nailiili in Sterling 1998:93). Waikapū is landlocked. However, during the pre-Contact Period, the abundant waters of Waikapū Stream "were diverted into *lo'i* and its overflow was dissipated on the dry plains of the broad isthmus between West and East Maui" (Handy and Handy 1972:496).

Remnants of the vast expanse of lo'i systems once supported by Waikapū Stream could still be seen in the 1930s at the time of E.S. Craighill Handy's initial investigation of Hawaiian horticulture (Handy and Handy 1972:496). In the 1930s, many of these areas were subsequently used by the Japanese for truck farming, to cultivate Japanese dry taro, and as ponds "planted with lotus for their edible seed" (Handy and Handy 1972:497).

Sterling (1978:242) surmises that the fishermen from the region of Kula, which was too dry for the cultivation of taro, supplemented their dietary staple of sweet potato with poi, which was made from taro produced in Waikapū and Wailuku Ahupua'a and carried "across the plain" (Sterling (1978:242). In addition to taro, Waikapū Ahupua'a was also a favorable local for the

breadfruit tree ('ulu, *Artocarpus altilis*), which grew quite abundantly between Olowalu and Waikapū (Sterling (1978:17).

THE MĀHELE

During the mid-1800s, extreme modification to traditional land tenure occurred throughout all of the Hawaiian Islands. The transition from traditional Hawaiian communal land use to private ownership and division was commonly referred to as the Māhele (Division). The Māhele of 1848 set the stage for vast changes to land holdings within the islands as it introduced the foreign (western) concept of land ownership to the Islands. Although it remains a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kauikeaouli (Kamehameha III) established laws changing the traditional Hawaiian system of land tenue, which were intended to keep lands in the hands of the Hawaiians, but resulted in providing an opportunity for foreigners to obtain land (Kuykendall Vol. I, 1938:145 footnote 47, 152, 165–166, 170; Daws 1968:111; Kelly 1983:45; Kame'eleihiwa 1992:169–170, 176).

The Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were made available and private ownership was instituted, the maka āinana (commoners) were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1961:16).

Once Article IV of the Board of Commissioners to Quiet Land Titles was passed in December 1845, the legal process of private land ownership was begun. The land division, called the Māhele, began in 1848. As stated above, the lands of the kingdom of Hawai'i were divided among the king (crown lands), the ali'i and konohiki, and the government.

Once lands were made available and private ownership was instituted, native Hawaiians, including the maka'ainana (commoners), were able to claim land plots upon which they had been cultivating and living, through the Kuleana Act of 1850. The process for foreigners to acquire land was through the Alien Landownership Act of 1850.

Oftentimes, foreigners were simply just given lands by the ali'i. However, in the case of commoners, they would only make claims only if they had first been made aware of the foreign procedures (kuleana lands, land commission awards). These claims could not include any previously cultivated or currently fallow land, okipū, stream fisheries, or many other natural resources necessary for traditional survival (Kame'eleihiwa 1992:295; Kirch and Sahlins 1992). Awarded parcels were labeled as Land Commission Awards (LCAs). If occupation could be established through the testimony of witnesses, the petitioners were issued a Royal Patent number and could then take possession of the property. Commoners claiming house lots in Honolulu, Hilo, and Lāhainā were required to pay commutation to the government before obtaining a Royal Patent for their awards (Chinen 1961:16).

In January 1846, land was made available for eventual ownership to the commoners (maka'āinana). For native Hawaiians that had been cultivating and living on the lands, lengthy and costly procedures enabled them to possibly claim some of the plots. These claims could not include any previously cultivated or presently fallow land, stream fisheries or many other resources necessary for traditional survival (Kelly 1983; Kame'eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed Land Commission Award (LCA), issued a Royal Patent number (RP), and could then take possession of the property (Chinen 1961: 16).

LAND COMMISSION AWARDS (LCAS)

During the Māhele, Wailuku District was declared Crown Land and numerous Land Commission Awards, approximately 100 were awarded for Waikapū Ahupuaʻa (Creed 1993). A handful of foreigners (i.e., Anthony Catalena, James Louzada, and E. Bailey) gained control of large parcels of lands that would later be used for mass cultivation of sugar. Significantly, the majority of LCAs were awarded to Hawaiians, a gauge that can be used to measure pre-Contact settlement (Creed 1993:38). In Waikapū, the LCAs reflect loʻi cultivation, kula lands, and house sites. These keep with the overall LCA pattern of the Waikapū-Wailuku area intimating taro cultivation in association with permanent residences. Such a pattern is historically documented from 1848, but likely extended deeper into the past.

The Waihona 'Aina Database (2019) listed a total of 138 claimed LCAs in Waikapū Ahupua'a. The Office of Hawaiian Affairs Kipuka Database (2019) listed five (5) claimed LCAs with lands within the project area are listed in Table 1 (Figure 7).



Table 1: Land Commission Awards within the Project Area.

Claimant	LCA/RP	Year	Awarded	Acreage	'Āpana	ʻIli	Use
Crowningberg, William (Wilama)	433/1111	1852	Yes	5.93	1	Pohakoi	
Humphreys, William	326/7659	1883	Yes	131.3	1	Awikiwiki, and Puhiawaawa	
Keliiolelo	3525:2/3121	1856	Yes	1.66	1	Awakamanu	
Louzada, James	225/7658	1883	Yes	26.1	1	Pualinapao	Farmland
Manu	408/3540	1857	Yes	11.75	1	Pohakuloa	Taro loʻi
McLane, William	3201:2/2775	1856	Yes	5.45	2	Kapalaalaea and Awakamanu	
Mehao	3019:2/3353	1864	Yes	0.83	2	Ohia and Pilipili	Taro lo'i
Nowlein, Michael J.	71/4549	1863	Yes	303.5	3	Papakapu and Kapoi	
Pakele	2980:1/5356	1863	Yes	1.8	2	Kaaa and Olohe	moʻo, loʻi, hala trees, and houses.

LAND GRANTS

In some cases, the Hawaiian government sold lands to generate income for the Kingdom. These lands were referred to as land grants. According to the Waihona Aina Online Database (2019):

At the time of the Mahele, some of the land was the King's own land which later became known as Ceded Lands. Other lands in the possession of ali'i were returned to the King in exchange for Commutation of property the ali'i kept. Some of these returned lands became Government lands and were sold by the government to generate income for the Kingdom, since the King gave up his traditional right to collect taxes and goods following the Mahele.

The Office of Hawaiian Affairs Kipuka Database (2019) listed nine (9) Land Grants with lands within or adjacent to the project area are listed in Table 2 (Figure 8 and Figure 9).

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Table 2: Land Grants within and Adjacent to the Froject Area.	o the Project Area.			
Grantee	Land Grant	Year	Acreage	III,
Cockett, Mrs. Beke	2108:6	1856	7.73	Kaaa
Comwell, Henry	3152	1875		Ohia
Crowningberg, David	2952	1864	7.44	
Flores, Manuel	1680:1	1855	7.07	Pilipili
Louzada, Jas & H Cornwell	2951	1864	17.1	
Richardson, J	2070	1856	15.1	
Ross, John	2005	1856	9.1	Awakamanu
Spreckles, Claus	3343	1882	24,000	

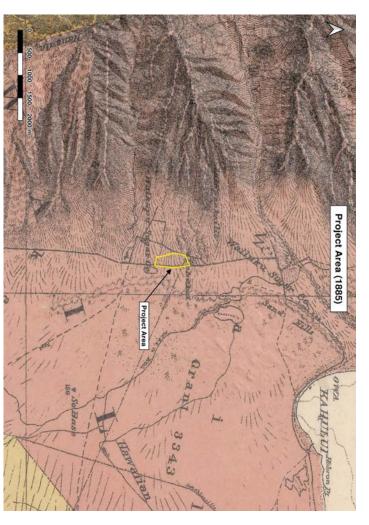
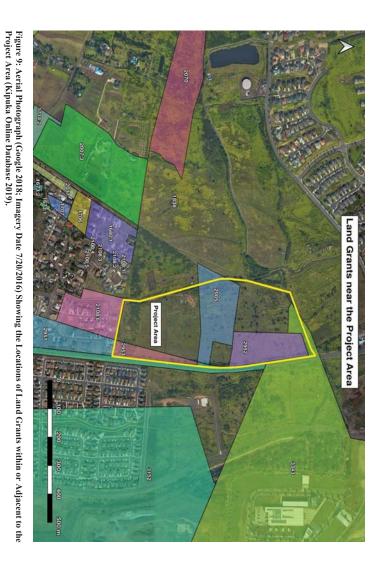


Figure 8: Historic (1885) Map Showing Land Grants within and Adjacent to the Project Area and Vicinity in the late 1800s (F.S. Dodge. Register Map No. 1779)



Historically, Waikapū Ahupua'a belonged to the government and was overseen by the Department of Education ((in J.W. Coulter 1935 cited in Sterling 19978:95). According to Sterling (1998:95):

In 1875 the Board of Education sold at auction the "Land known as the Ahupuaa of Waikapu, saving grants hitherto made within said ahupuaa, or sales by the Board of Education," to Henry Cornwell, the Government issuing a royal patent to the above terms without survey or statement of area. Mr. Cornwall afterward sold to Claus Spreckels and others the part known as Waikapu Commons.

HISTORIC PERIOD (POST-1778)

Contact with the western world occurred on January 18, 1778, with the arrival of Captain James Cook in the Hawaiian Islands during his third voyage into the Pacific Ocean (Daws 1968:1). This section discusses traditional life after Cook's arrival.

As the sugar industry developed in the mid-1800s, sugar cane took over the traditional taro lands (Handy and Handy 1972:272). During this period, more and more land was leased or purchased for what had become an intensely profitable endeavor. Water was an issue, but the water from Waikapū Stream was "utilized for irrigating a great acreage of sugar cane" (Handy and Handy 1972:496). In 1876, the Hamakua Ditch Company (Alexander and Baldwin) was formed and within two years was bringing water from the streams of Haleakalā to four plantations in East Maui (Dorrance and Morgan 2000).

Also in 1876, the Reciprocity Treaty's ratification notice arrived by steamer, along with Claus Spreckles, California's sugar magnate, who viewed the sugar situation and decided two years later to turn the dry plains of Maui into a garden of cultivated cane (Van Dyke 2008). By various questionable means, he was able to acquire half interest in 16,000 acres of land in Waikapū commons and was able to lease 24,000 acres of Crown Lands on the Wailuku plains in central Maui for \$1,000 (Van Dyke 2008).

Having seen the success of the recently completed Hamakua Ditch bringing mountain water to the otherwise dry, and unproductive East Maui fields, and having lost his battle to control this ditch water, Spreckles formed the Hawaiian Commercial Company and decided to construct a ditch system of his own on East Maui above the Hamakua Ditch, for his newly acquired land (Wilcox 1996). Spreckles' Haiku Ditch extended 30 miles, from Honomanū Stream to the Kīhei boundary and the water was used to irrigate his cane lands in the central Maui plains (Wilcox 1996).

In 1882, Spreckles reorganized his company into a California corporation, called Hawaiian Commercial and Sugar Company, or HC&S (Wilcox 1996). Later he constructed another water system known as the Waihee Ditch in West Maui. It brought water from 15 miles away, starting at an elevation of 435 feet, to Kalua where it emptied into HC&S Waiale Reservoir (Wilcox 1996).

The ensuing years brought trials and tribulations between Spreckles, his associates, and the Maui sugar planters, resulting finally in the 1898 sale of his HC&S stock, at an all-time low, to James Castle in partnership with Alexander and Baldwin, and the departure of Claus Spreckles from Hawai'i (Dorrance and Morgan 2000; Wilcox 1996).

Thomas Hogan built the first western building, a warehouse, near the shoreline of Kahului in 1863 (Clark 1980). The dredging of Kahului harbor through the years filled in large sections of the ponds, eventually blocking the outlet to the sea.

As the sugar industry developed, Kahului became a cluster of warehouses, stores, wheelwright, and blacksmith shops close to the harbor. A small landing was constructed in 1879 to serve the sugar company (Clark 1980). In the late 1800s, Kahului possessed a new custom house, a saloon, Chinese restaurants, a railroad and a small population of residents. Kahului's main focus was shipping. The 1900 bubonic plague outbreak destroyed much of the town as officials decided to burn down the Chinatown area in an effort to contain the epidemic. The Chinese, Japanese and Hawaiian residents were displaced by this action. To further ensure isolation, authorities encircled the entire town with corrugated iron rat-proof fences, which ended the spread of the plague (Bartholomew and Bailey 1994). The Kahului Railroad Company built a 1,800-foot long rubble-mound breakwater in 1910 and dredging of the harbor now allowed ships with a 25-foot draft to dock at the new 200-foot wharf (Clark 1980).

Henry Baldwin and Lorrin Thurston formed the Kihei Sugar Company in 1899, to grow cane on their ranch lands in south central Maui, which included the project area (Dorrance and Morgan 2000). It was sent to the mill at Pu'unēnē to be ground, but, although production was high, it was not enough to cover the costs (Dorrance and Morgan 2000).

After the annexation in 1898, some of the planters on Maui, including Alexander and Baldwin, had decided to combine plantations to reap maximum profit. They formed the Maui Agricultural Company, a co-partnership that initially encompassed seven plantations and two mills. In 1904, five new plantations became part of the Maui Agricultural Company, as Kula Plantation Company, Makawao Plantation Company, Pulehu Plantation Company, Kailua Plantation and Kalianui Plantation Company were newly formed by carving up the unprofitable

Kihei Plantation land (Dorrance and Morgan 2000). Maui Agricultural Company merged with HC&S in 1948 (Dorrance and Morgan 2000).

Land use in Wailuku and Waikapū Ahupua'a in the mid-19th and early 20th century was largely devoted to the sugar industry. During the 1860s, the sugar business was growing, with plantations and mills at Wailuku, Waihe'e, Waikapū, and Ha'ikū. Many of the plantation camps associated with these mills were centered in the Pu'unēnē, Kahului, and Wailuku area (see Denham et al. 1992:16). Hopoi Camp is said to have been located near Hopoi Reservoir. Hopoi Reservoir was constructed by at least by 1922, when references to Hopoi Camp occurred on an area map. Historic utilization of the Waikapū-Wailuku landscape near the project area focused on industrial-levels of cultivating sugar cane and pineapple. Water was channeled from traditional sources (e.g., Waikapū Stream, western aquifers or springs) through plantation lands. Both local and imported workers operated on these plantation lands and the area maintained fair population density. These former sugar cane and pineapple lands are now being reclaimed through residential developments and industrial baseyards.

HAWAIIAN HOMES COMMISSION ACT

The Hawaiian Homes Commission Act was created in 1920, by Prince Jonah Kūhiō Kalaniana' ole and ratified by the U.S. Congress in 1921. The Act established a government-sponsored homesteading program for Native Hawaiians (i.e., individuals having at least 50 percent Hawaiian blood). The Act called for 200,000 acres of Crown Lands to be set aside for lease, at a rate of \$1.00 per year, to native Hawaiian for residential and agricultural use. Initially, the Act provided for a 99 year lease. In 1990, the Act amended to extend the lease to 199 years.

In 1959, at the time Hawai'i was admitted to the United States as the 50th state, the Act was incorporated as a provision in the Hawai'i State Constitution. At that time, the Department of Hawaiian Home Lands was created and the State assumed the responsibility of overseeing and administering the lands.

WAHI PANA (LEGENDARY PLACES)

"Wahi Pana" can be defined as celebrated or noted places or locations (Pukui and Elbert 1986:313, 376), and refers to legendary places or landmarks of historical significance. These places of note have distinctive features (i.e., mountain peaks, streams, wind, rain, etc.) that are given specific names through which the history of an area is passed down from generation to generation through chants, legends, and songs.

There are several legends associated with the meaning of the name "Waikapū." According to several accounts (Handy and Handy 1972:497, Sterling 1998:93-94, and Pukui et al. 1976:223), the name "Waikapū" (Water of the Conch) refers to an ancient cave in the area where a famous conch shell (pū) was hidden until it was stolen by Puapua-lenalena (a supernatural dog).

According to W. K. Kaualililehua (*Ka Nupepa Kuokoa*, Sept 21, 1872 cited in Sterling 1998:93-94), the conch "sounded all the time, unseen by the public, but a prophet from Kauai listened for it" and came looking for it. On a cliff above the stream and opposite the cave was a dog named Puapualenalena who had also heard the conch and was searching for it. However, those that guarded the conch were very attentive and so far; the dog had not located it:

The owners of the conch did not believe, perhaps, that any supernatural being would succeed in taking it away, so they tried to be a little careless. It was not taken, but on the day that Pualenalena did get it away, they had been utterly careless. After he took it, it sounded no more to this day. It used to be heard everywhere in these islands and was annoying to some people. From this conch, the whole of the place was named Waikapū (Water of the conch). This is the legend of how it received its name and is a place much visited by strangers who wish to see it [W. K. Kaualililehua (Ka Nupepa Kuokoa, Sept 21, 1872 cited in Sterling 1998:93-941.

Pukui et al. (1974:223) state "Waikapū" literally translates to "water [of] the conch." (Pukui et al. 1974:223) further state that the meaning is associated with the following legend:

A conch in a cave here could be heard everywhere in the Hawaiian Islands until it was stolen by a supernatural dog, Puapua-Ienalena, yellow tail feathers

Sterling (1998:93) offers two alternative origins of the name "Waikapū." In one account, the area known as "Nā Wai Ehā" was renowned for the battles fought there; the name Waikapū (the water where the conch was blown) referred to a conch shell that was blown to announce the commencement of a battle (C. W. Stoddard 1894 in Sterling 1998). In another account (H. T Cheever 1851 in Sterling 1998:63), "Waikapū" (Forbidden Water) refers to the time Kamehameha I, the Conqueror, beached his canoes at Kalepolepo and placed a kapu (taboo, restriction) on the nearest stream (Stoddard in Sterling 1998:63). Although Waikapū Stream is not the closest stream to Kalepolepo, it does drain into Keālia Pond, and it may have been the closest stream with flowing water at the time of Kamehameha's landing (Sterling 1998:63).

Oral traditions preserved by Fornander (1969) and Kamakau (1963) contribute to our knowledge of Waikapū. According to Fornander (1969:153), the battle of Ahulau ka piipii i Kakanilua featuring the elite 'Ālapa warriors of Kalaniopu'u was fought in 1776 on the sand hills southeast of Wailuku:

Taking part of his forces around by water, Kalaniopuu landed again at Kiheipukoa, near the Kealia or salt marsh between Kalepolepo and Mā'alaea...The detachment or regiment known as the Alapa, mustering eight hundred men, was selected for this hazardous expedition, and with high courage they started across the isthmus of Kamaomao, now known as the Waikapu common, determined, as the legend says, "to drink the waters of the Wailuku that day." This regiment was considered the bravest and best of Kalaniopuu's army, every man in its ranks being a member of "la haute noblesse" of Hawaii. They are said to have all been of equal stature and their spears of equal length; and the legend represents their appearance-with their feather cloaks-reflecting the sunshine and the plumes of their helmets tossing in the wind-as a gorgeous and magnificent spectacle...Offering no resistance to the enemy while crossing the common, Kahekili distributed his forces in various directions on the Wailuku side of the common, and fell upon the Hawaii corps d'arnée as it was entering among the sandhills south-east of Kalua, near Wailuku. After one of the most sanguinary battles recorded in Hawaiian legends and deeds of valor ...the gallant and devoted Alapa were literally annihilated; only two out of the eight hundred escaped alive to tell Kalaniopuu of this Hawaiian Balaclava....

In a similar version, Kamakau (1963:65-86) recounts:

The Alapa were led by Inaina, Kua'ana, Kane-ha'i-lua, and Keawe-hano. There were 800 of them, all expert spear-point breakers, every one of whose spears went straight to the mark, like arrows shot from a bow, to drink the blood of a victim. Across the plains of Pu'u'ainako and Kama'oma'o shone the feather cloaks of the soldiers, woven in the ancient pattern and colored like the hues of the rainbow in red, yellow, and green, with helmets on their heads whose arcs shone like a night in summer when the crescent lies within the moon...Said Ka-leo-pu'upu'u to Kahekili, "the fish have entered the sluice; draw in the net." Like a dark cloud hovering over the Alapa, rose the destroying host of Ka-hekili seaward of the sandhills of Kahalu'u, the "smoke head" (po'ouahi) and the "red coconut" (niu'ula) divisions. They slew the Alapa on the sandhills at the southeast of Kalua. There the dead lay in heaps strewn like kukui branches; the corpses lay heaped in death; they were slain like fish enclosed in a net. This great slaughter was called Ahulau ka Pi'ipi'i Kakanilua.

Although it has been said that Waikapū Valley contained "many temples and sites", most of their locations were not recorded (Ashdown 1970:58). Thrum (1917) refers to a heiau that was reportedly located on Pu'u Hele, but he did not confirm this. Thrum (1917) also mentions two *heiau* located below the road but again, they were not investigated, and their name and function had been lost (1916). One mo'lelo recounting the origin of its name was published in *Ka Nupepa Kuokoa* in 1872:

The Wai-Ka-pū now being discussed was named by some of the ancients and it remains by this name to this day. This place, Waikapu, has a cave away up the stream, about a mile or more from the village. On the left side of the stream is a cave and in the cave was the conch. It sounded all the time, unseen by the public, but a prophet of Kauai listened for it and came to seek with the idea of finding it...

According to Manu Moses (in Sterling 1998:94), there is a legend associated with the ali'i Kihapi'ilani that refers to an "adze rock" which marked the boundary between Wailuku and Waikapū Ahupua'a:

As Kihapiilani and his wife traveled on, they saw many people filling the road. At the stream of Wailuku (Waikapu?) the people were innumerable. Said the wife to the chief, "What are the people doing who are congesting the road? Kihapiilani said, "It would seem it has something to do with adzes.

When they arrived at this place, they decided to go from the place where it was so crowded with people. There was a huge rock directly above the stream of Waikapu, mauka of the road which still passes at this time. This adze rock is the boundary between Wailuku and Waikapū Ahupuaa and it remains there to this day.

PREVIOUS ARCHAEOLOGY

Archaeological studies in the greater area began in the early 20th Century by T. Thrum (1909), J. Stokes (1909–1916), and W. M. Walker (1931), under the auspice of the Bernice Pauahi Bishop Museum. These studies are briefly discussed below, and the project locations are presented in Figure 10.

The earliest reported archaeological work conducted in the District of Lāhainā, was carried out by Winslow Walker (1931), under the auspices of the Bishop Museum, as part of an island-wide archaeological survey of Maui. Thrum (1909-1918:59) mentions that two heiau may have possibly existed within the ahupua'a of Waikapū, but evidence of the two sites no longer remains.

The Bernice Pauahi Bishop Museum (Rotunno-Hazuka et al. 1995) conducted archaeological subsurface testing at the Maui Lani Development Property which resulted in the identification of multiple traditional pre-Contact native Hawaiian burials, subsequently designated State Site 50-50-04-2797.

Aki Sinoto Consulting (Pantaleo and Sinoto 1996) conducted archaeological subsurface sampling at the Maui Lani Development. Findings included one concentration of multiple burials and isolated individual burials located at the tip of the dune (in the highest elevational locations).

Scientific Consultant Services, Inc. (Dega 2003) conducted an Archaeological Inventory Survey of 100 acres located in Wailuku Ahupua'a, Wailuku District, Maui Island, Hawai'i [TMK: (2) 3-5-001: portion of 001]. Three historic sites were documented during this Inventory Survey: State Site 50-50-04-5473, Hopoi Reservoir; State Site 50-50-04-5474, Kama Ditch; and State Site 50-50-04-5478, an isolated basalt adze. Subsurface testing yielded negative findings.

Scientific Consultant Services, Inc. (Monahan 2003) conducted an Archaeological Inventory Survey on two undeveloped lots totaling approximately 30 acres in Wailuku Ahupua'a, Wailuku District, Maui Island, Hawai'i [TMK: (2) 3-5-001:061, 063, and 066; formerly 017]. No historic properties were identified during the survey.

Archaeological Surveys Hawaii, LLC (Guerriero et al. 2004) conducted an Archaeological Inventory Survey of a 50-acre parcel of land in Wailuku and Waikapū ahupua'a, Wailuku District, Maui Island, Hawai'i [TMK: (2) 3-5-002: por. 001], located northeast of the current project area. During the survey, the Kama Ditch (State Site 50-50-04-5474) was documented. The Kama Ditch, constructed around 1905 to 1907, provided water to the sugarcane and subsequent pineapple fields.

Scientific Consultant Services, Inc. (Dega 2004) conducted Archaeological Inventory Survey on 348.613 acres of land composing the main land parcel of the Kehalani Mauka Subdivision, located northwest of the current project area, in Wailuku, Wailuku Ahupua'a, Wailuku District, Maui Island, Hawai'i [TMK:(2) 3-5-001:portion of 001]. Eight archaeological sites were documented in the project area: Kama Ditch (State Site 50-50-04-5474), the abandoned Hopoi Reservoir (State Site 50-50-04-5473), a north-south ditch (State Site 50-50-04-5493), Waihee Ditch (State Site 50-50-04-5197), road segments (State Site 50-50-04-5489), eastwest bearing drainages (State Site 50-50-04-5490), a historic artifact scatter (State Site 50-50-04-5491), and several clearing mounds/push piles (State Site 50-50-04-5492).

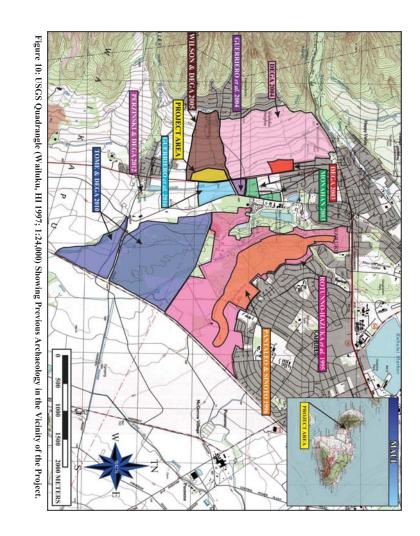
Scientific Consultant Services, Inc. (Wilson and Dega 2005) conducted an Archaeological Inventory Survey of 215.800 acres, Waikapū (and partially Wailuku) Ahupuaʻa, Wailuku District, Maui Island, Hawaiʻi [TMK: (2) 3-5-02: 02 and 03], which included the current project area. During the survey, seven historic properties were identified: State Site 50-50-04-5197, Waihee Ditch; State Site 50-50-04-5493, Waikapu Ditch; State Site 50-50-04-5729, a lesser, un-named, rock and mortar ditch; State Site 50-50-04-5726, a lesser, un-named, earthen

ditch/drainage; State Site 50-50-04-5727, a large, un-named reservoir—the terminus of Waikapu Ditch; State Site 50-50-04-5728, a sugar field erosion-control site comprised of 14 cross-slope, earthen berms of varying length that are positioned regularly throughout the project area; and State Site 50-50-04-5730, "Old Waikapu Road", a cane-haul transport, dirt road. All of the sites were interpreted as associated with the historic Plantation-Era.

Scientific Consultant Services, Inc. (Tome and Dega 2010) conducted an Archaeological Inventory Survey of approximately 607-acres of land in Wai'ale, Wailuku, and Waikapū Ahupua'a, Wailuku District Maui [TMK: (2) 3-8-005:23 (por.), 37 and (2) 3-8-007: 71, 101, 102, 104], located southeast of the current project area. During the survey, previously identified sites were relocated: State Site 50-50-04-3525, burials; State Site 50-50-04-4200, State Site 50-50-04-4201, a terrace; and State Site 50-50-04-4202, several Historic Period sites. State Site 50-50-04-6578, a subsurface firepit (imu) was newly identified. Mechanical test excavations yielded negative findings.

Scientific Consultant Services, Inc. (Perzinski and Dega 2012) conducted Archaeological Inventory Survey of 2.0 acres of arid land in Waikapū, Waikapū Ahupuaʻa, Wailuku District, Maui Island, Hawaiʻi [TMK:(2): 3-5-002:015]. Four Historic Period archaeological sites were documented during the Inventory Survey. State Site 50-50-04-6808 represents Waikapu Cemetery. The community cemetery, which is not a municipal cemetery, contains approximately 75 marked burials and 20 unmarked burials, and was used for interment from 1900 through 1961. State Site 50-50-04-6809 is a Historic Period cistern associated with a piggery. State Site 50-50-04-6810 represents an Historic Period overflow ditch, long since abandoned. State Site 50-50-04-6811 represents at least two traditional Native Hawaiian burials that have been identified through consultation as occurring makai or east of the historic cemetery. One Hawaiian burial is demarcated by a headstone and represents the resting place of Ernest Malai. A second burial, identified as that of Papia Nawaʻa, is unmarked and was designated by lineal descendants. Representative subsurface testing yielded negative results.

Archaeological Services Hawaii, LLC, (Guerriero et al. 2016) conducted an archaeological inventory survey within a 50-acre parcel of land in Wailuku and Waikapū Ahupua'a, Wailuku District, Maui Island [TMK: (2) 3-5-002:011 and 012], located west of the current project area and across Honoapiilani Highway. The survey resulted in the identification of State Site 50-50-04-5474, the Kama Ditch.



CONSULTATION

The consultation process is conducted via telephone, e-mail, the U.S. Postal Service, and in-person interviews, when possible. The initial letters of inquiry, an example of which is presented in Appendix A, were mailed between July 30, 2019 and March 31, 2020. Please note that DHHL, through coordination with Dowling Company, Inc., has graciously allowed the consultation reach out timeline to be extended to include the additional individuals suggested by Mr. Pellegrino (see Interview section below) and that these potential interviews were going to be handled by telephone or virtual means for everyone's health and safety due to the COVID-19 pandemic.

Information pertaining to cultural resources and traditional cultural practices conducted within the project area or within Waikapū Ahupua'a was sought from the following twenty-five (25) individuals and organizations:

- Hōkūao Pellegrino, cultural practitioner and cultural and lineal descendant of Waikapū and Wailuku Ahupuaʿa, Wailuku Moku, Maui Island, Hawaiʿi
- 2. Rose Duey, cultural practitioner
- Dr. Hokulani Holt-Padilla, cultural practitioner and Director, Ka Hikina O Ka Lā Hawai'i Papa o ke Ao, University of Hawaii Maui College
- Joyclynn Costa, cultural practitioner and Hāmākualoa Moku Representative, Aha Moku O Maui
- 5. Kīʻope Raymond, cultural practitioner and former University of Hawaii, Maui Campus Hawaiian Language faculty member
- 6. Kai Markell, Compliance Manager, Office of Hawaiian Affairs
- 7. Thelma Shimaoka, Community Outreach Coordinator III, Office of Hawaiian Affairs
- Leslie Kuloloio, Community member and former member Maui/Lāna'i Islands Burial Council
- 9. Chris "Ikaika" Nakahashi, Cultural Historian, State Historic Preservation Division
- 10. Andrew "Kealana" Phillips, Burial Sites Specialist, State Historic Preservation Division
- 11. Clifford Nae'ole, Hawaiian Cultural Advisor
- 12. Ke'eaumoku Kapu, CEO, Aha Moku O Maui Inc.
- 13. Clyde Kahalehau, Wailuku Moku Po'o, Aha Moku O Maui
- 14. Wally Rogers, life-long resident of Waikapū
- 15. Clayton Suzuki, Wailuku Sugar Company and now for the Wailuku Water Company
- Roger Yamaoka, family comes from Waikapū

- 17. Blossom Feiteira, Maui Mokupuni Council
- 18. Johanna Kamaunu, Wailuku District Representative, Maui/Lāna'i Islands Burial Council
- Foster Ampong, recognized cultural descendant of inadvertent discovered iwi kupuna of Wailuku Ahupua'a, a lineal and cultural descendant of o'iwi (native Hawaiian) ancestors that lived in the Wailuku Moku
- 20. Kaniloa Kamaunu, member of Wailuku District, Aha Moku O Maui
- Wallette Pellegrino, mother of Hōkūao Pellegrino, cultural practitioner, and a member of the Waikapū Community Association
- Travis Polido, President of the Waikapū Community Association and life-long resident of Waikapū Ahupua'a
- 23. Nicholas Harders, life-long resident of Waikapū Ahupua'a and cultural practitioner
- 24. Crystal Smythe, life-long resident of Waikapū Ahupua'a
- 25. 'Iliahi McLean, life-long resident of Waikapū Ahupua'a

The follow-up letters of inquiry (see Appendix C) were mailed via e-mail and USPS between August 30, 2019 and December 12, 2019. Follow-up letters were mailed to all the above listed individuals and organizations, with the exception of those individuals and organizations that submitted responses to SCS.

A Cultural Impact Assessment Notice was published in the September 2019 issue of the OHA newsletter, *Ka Wai Ola* (see Appendix B). This notice stated that Scientific Consultant Services, Inc. is seeking information on cultural resources and traditional cultural activities in the area of the proposed project and the surrounding ahupua'a, and provided locational information (i.e., the ahupua'a, traditional and modern names of the District, Island, State, and property Tax Map Key designations).

RESULTS

No responses were received as a result of posting a CIA notice in the OHA newsletter, *Ka Wai Ola*. The current consultation process for the Pu'unani Homestead Project resulted in SCS receiving responses from twelve (12) individuals via e-mail and conducting two telephone interviews. Based on these responses and interviews, assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

WRITTEN RESPONSES

Chris (Ikaika) Nakahashi, Cultural Historian, State Historic Preservation Division

Mr. Nakahashi responded via an e-mail dated September 3, 2019:

Aloha Cathy,

Mahalo for contacting me regarding the CIA for the proposed Pu'unani Homestead Project in the ahupua'a of Waikapū, in the Moku of Wailuku, Maui. I recommend CSH to utilize the media (ex. OHA's Ka Wai Ola, Maui News, etc.) to solicit additional information for this CIA.

I recommend CSH to meet with:

- Ke'eaumoku Kapu 'Aha Moku o Maui Inc.
- Hōkūao Pellegrino Hui o Nā Wai 'Eha

I recommend CSH to meet with the native tenants and people that currently live or previously lived in the ahupua'a of Paunau on Maui for information about the cultural resources and practices for this CIA.

Please let me know if I can assist with anything else.

A hui hou,

Christopher "Ikaika" Nakahashi, M.S. Cultural Historian Department of Land & Natural Resources State Historic Preservation Division

Concerns: No concerns were expressed during the CIA consultation process.

Note: Scientific Consultant Services, Inc. included Ke'eaumoku Kapu in the consultation process for this CIA, via emails dated July 30, 2019; August 31, 2019; October 1, 2019; and October 28, 2019 (see Mr. Kapu's written response below). Scientific Consultant Services, Inc. contacted Hōkūao Pellegrino via an email dated July 30, 2019 (see Mr. Pellegrino's written response below) and interviewed him December 23, 2019, via telephone. (see Interviews)

Hōkūao Pellegrino, cultural practitioner and cultural and lineal descendant of Waikapū and Wailuku Ahupua'a, Wailuku Moku, Maui Island, Hawai'i

Mr. Pellegrino responded via an email dated August 6, 2020, indicating he would like to participate in the consultation process for this project:

Mahalo nui e Cathy for your email and mahalo for your patience as i [sic] just returned from vacation. I would very much like to partake in providing key testimony on this project as a cultural and lineal descendant of the ahupua'a of Waikapū and Wailuku. I am also cc'ing my mother who would be another important person to be interviewed for this project. Hoping we could possibly coordinate something together. Furthermore, i [sic] would strongly recommend you reach out to many others in Waikapū and the Waikapū Community Association on this project. There are many NH lineal and cultural descendants in Waikapū who should be engaged with.

na,

Hōkūao

Mr. Pellegrino express the same sentiments in a subsequent email dated December 3, 2019:

Aloha e Cathy,

i [sic]would very much be interested in being a part of the CIA process for this project. When will you be coming to Maui to conduct your work. I would also like to add my mother Wallette Pellegrino as part of the process. Do you have other lineal descendants and or community members of Waikapū that you have reached out to? Mahalo nui!

Concerns: Mr. Pellegrino did not express any concerns about the project during either email. Please see Mr. Pellegrino's interview summary in the Interview section below.

Andrew "Kealana" Phillips, Burial Sites Specialist, State Historic Preservation Division Mr. Phillips, Burial Sites Specialist, State Historic Preservation Division, responded via an email dated Monday August 5, 2019:

Aloha Cathy,

I forwarded email to the 5 members of the MLIBC. Mahalo

Kealana

Concerns: No concerns were expressed during the CIA consultation process.

Blossom Feiteira, Maui Mokupuni Council

Ms. Blossom Feiteira responded via an email dated August 31, 2019:

Aloha Cathy,

Sorry for the delay in getting back to you.

I am not familiar with the project area or its history. Was hoping to find others who would be familiar with the Waikapu ahupua'a but have not been very successful.

As far as I know it was in sugar cultivation for about a century by Wailuku Sugar Company, and most of The Waikapu residents are former plantation workers.

If I find someone who has cultural knowledge of the area will pass on your contact information.

Aloha,

Blossom

Concerns: No concerns were expressed during the CIA consultation process.

Foster Ampong, recognized cultural descendant of inadvertent discovered iwi kupuna of Wailuku Ahupua'a, a lineal and cultural descendant of o'iwi (native Hawaiian) ancestors that lived in the Wailuku Moku

Mr. Ampong responded via an email dated October 31, 2019:

Aloha Kakahiaka e Cathy,

Mahalo for the Invite to participate in the proposed Pu'unani Homestead Project. Yes, I am interested in participating in this CIA. I'd like discuss scheduling a site visit/discussion with you prior to any interviews. The later week of November looks doable for me.

Mahalo nui loa ha'aha'a

Foster

Concerns: Mr. Ampong did not express any concerns in his email (see Interview section).

Wallette Pellegrino, mother of Hōkūao Pellegrino, cultural practitioner, and a member of the Waikapū Community Association

Mrs. Pellegrino responded via an email dated November 13, 2019 which stated:

Aloha e Cathy,

Please contact Travis Polido, president of the Waikapu Community Association and life-long resident of Waikapu. He is interested in being involved in the process of reviewing the Pu'unani Homestead Project CIA. Thank you.

Aloha,

Wallette Pellegrino

In a follow-up email dated July 9, 2020, Mrs. Pellegrino stated:

Mahalo e Cathy for the follow-up email regarding the DHHL Pu`unani Homestead project which will be built in Waikapu. I have already submitted information regarding the DRAFT EA, specifically with reference to the Old Government Road. Unless you have specific questions that require information, I think my comments should suffice at this time. Thank you for asking me again to participate.

Concerns: Mrs. Pellegrino did not express any concerns about the proposed project in her emails.

Note: Scientific Consultant Services, Inc. included Travis Polido in the consultation process for this CIA via an email dated November 13, 2019.

Dr. Hokulani Holt, cultural practitioner and Director, Ka Hikina O Ka Lā Hawaiʻi Papa o ke Ao, University of Hawaii Maui College

Dr. Holt responded via an email dated September 19, 2019:

Aloha and mahalo for checking in again. I don't know what other information I can offer that you would not be able to get from folks like Hōkūao Pellegrino and other natives of that area. I am hopeful that you already have researchers that are looking in the standard resource materials and Hawaiian language newspapers. If that is so, you will have as much as I can additionally share. Mahalo.

'O au iho nō, Hōkūlani

Hōkūlani Holt Director, Ka Hikina O Ka Lā Hawai'i Papa o ke Ao University of Hawaii Maui College Concerns: No concerns were expressed during the CIA consultation process.

Note: Scientific Consultant Services, Inc. contacted Hōkūao Pellegrino via an email dated July 30, 2019 and interviewed him December 23, 2019, via telephone.

Joyclynn Costa, cultural practitioner and Hāmākualoa Moku Representative, Aha Moku O

Joyclynn Costa responded via a series of emails:

On Jul 30, 2019, Joyclynn Costa wrote:

Mahalo for the information

I have, however forward this communication to the Wailuku Aha Moku Council and our Maui Aha Moku LLC.. as well as our Kiole.

Joyclynn Costa

July 30, 2019, at 9:59:

Would you happen to have older maps with kuleana names? The map provided is to general and hard to imagine.

Mahalo

Joyclynn

And, on Wed 7/31/2019 11:36 AM:

I will also check with the moku. I remember seeing older and more informed maps in the past.

Joyclynn

Concerns: No concerns were expressed during the CIA consultation process. Note: Scientific Consultant Services, Inc. provided Ms. Costa with maps of the project area via emails sent August 1, 2019; August 31, 2019; and November 6, 2019. Scientific Consultant Services, Inc. also sent Ms. Costa gentle reminders about the current CIA on August 30, 2019; September 25, 2019; October 15, 2019; and October 28, 2019. No further response was received from Ms. Costa.

Kīʻope Raymond, cultural practitioner and former University of Hawaii, Maui Campus Hawaiian Language faculty member

Dr. Raymond responded via an email dated August 31, 2019:

Aloha.

I have no comment at this time.

Mahalo,

Kī'ope

Concerns: No concerns were expressed during the CIA consultation process.

Ke'eaumoku Kapu, CEO, Aha Moku O Maui Inc.

Mr. Kapu responded via an email dated Aug 31, 2019:

Thank you for the information. I will arrange a date with Kupuna consultation and get back to you soon.

Concerns: No concerns were expressed during the CIA consultation process.

Nicholas Harders, life-long resident of Waikapū Ahupua'a and cultural practitioner Nicholas Harders provided the statement presented below via an email dated April 15, 2020:

Aloha Cathy,

Mahalo for reaching out and please excuse my procrastination in replying. To be quite frank it saddens my family to see the constant development around us, covering the soil with concrete and pavement. Nonetheless, it is inevitable, and the hand of time ticks on. My family has called Waikapu home for a long time. Our old family home which is still in use stands at 180 W Waiko Rd, it was built in 1904. To this day, five generations have been born and raised in that house, commuting and playing on W Waiko Rd.

Presently, we are fortunate enough to still have the traditional 'auwai , now known as the North Waikapu 'Auwai, to deliver water to our kuleana lands. The 'auwai splits in two directions as it meets W Waiko Rd, one flow runs alongside W Waiko with the other going under W Waiko in an aged culvert then to our property where we irrigate yards, gardens, fruit trees and most importantly our kalo.

Which brings me to my main point, traffic. We maintain this traditional water system as a family and neighborhood cultural practice. When we perform maintenance on the roadside sections of the 'auwai, both the flow going into

our property and the flow running alongside W Waiko, we are exposed to vehicles traveling in both directions. I understand there may be a possibility of using Old Waikapu Rd as a thru road or access road to the proposed development. I would like to state that my family is opposed to connecting the proposed development to Old Waikapu Rd (which then connects to W Waiko Rd). We have already seen an increase of road activity over the years due to the Kama St. development and the Hu'ihu'i Place development. The days of us knowing every car that travelled our road is gone. We believe the increase in traffic on W Waiko Rd that would result from connecting yet another subdivisions-worth of cars would have a severe negative impact on our already impacted cultural practice of 'auwai management/maintenance. Not to mention the possible impact of increased water and air pollution.

Mahalo for taking the time to read this and consider my 'ohana's thoughts. Please reply if you have any questions or comments.

Concerns: Mr. Harders expressed concern that the proposed DHHL project would include "using Old Waikapu Rd as a thru road or access road to the proposed development." Mr. Harders further states that the he and his family are opposed to connecting the proposed DHHL development to Old Waikapu Road, which then connects to W. Waiko Road, as this may cause an increase in traffic which has the potential to impacting traditional cultural practices (i.e., kalo cultivation and maintenance on the roadside sections of the 'auwai) currently conducted by him and his family.

Crystal Smythe, life-long resident of Waikapū Ahupua'a

Crystal Smythe, life-long resident of Waikapū Ahupua'a, provided her mana'o via two emails. The first email was received by SCS on March 31, 2020:

Aloha e Cathy, Please allow me a short time to discuss with 'Ohana Waikapu; and respond accordingly.

Peace Always, cs

The second email from Ms. Smythe was received by SCS on August 17, 2020:

Mahalo nui all your courtesies. I have no cultural comments to extend at this time. What's imperative; is that the land continue to be governed by Kingdom Laws, utilizing any pertinent HRS strictly for guide lines.

Mahalo Hou. Be well, stay safe. Peace, cs

Concerns: Ms. Smythe states that she has no cultural concerns. However, she believes that it is imperative "...that the land continue to be governed by Kingdom Laws, utilizing any pertinent HRS strictly for guide lines."

INTERVIEWS

Please note that DHHL, through coordination with Dowling Company, Inc., has graciously allowed the consultation reach out timeline to be extended to include the additional individuals suggested by Mr. Pellegrino and that these potential interviews were going to be handled by telephone or virtual means for everyone's health and safety due to the COVID-19 pandemic. Two interviews were conducted by SCS, via telephone, during the Pu'unani Homestead CIA consultation process. These interviews are summarized below.

Hōkūao Pellegrino, cultural practitioner and cultural and lineal descendant of Waikapū and Wailuku Ahupua'a, Wailuku Moku, Maui Island, Hawai'i

Hōkūao Pellegrino was interviewed via telephone, on December 23, 2019, by Cathleen Dagher, SCS Senior Archaeologist. Initially, Mr. Pellegrino had agreed to an interview conducted by Ms. Dagher via Skype. However, at the time of the scheduled interview, Mr. Pellegrino contacted Ms. Dagher, via email, stating that he could not get his Skype to work and that "we will need to just talk over the phone."

Mr. Pellegrino began the interview by stating he was born and raised in the Waikapū Ahupua'a, in the 'Ili of Pilipili and Noho'ana. His father is Italian from New York. His family, on his mother's side, is Hawaiian, Chinese, Portuguese, French and English. Through his mother, his family has genealogical connections to a number of kuleana parcels in Waikapū Ahupua'a, on multiple sides of his family (i.e., on the Hawaiian side, on the English side, and on the French side). On his French side, there is Eugene Bal (married to Me'eau), who is Mr. Pellegrino's 4th great grandfather. Mr. Bal received three Māhele awards in Waikapū Ahupua'a. The Land Grant was one of the largest Land Grants [comprised of approximately 130 acres] and was located just south and east of the current project area.

On his English side, Edward Bailey, who was also Mr. Pellegrino's 4th great grandfather, had a kuleana parcel located in Waikapū Valley in the 'ili of 'Ōhi'a, as well, as a large parcel near the boundary of Waikapū and Wailuku Ahupua'a.

The kuleana parcel that Mr. Pellegrino lives on today with his wife and family is located adjacent to the parcel of land that he grew up on, in Pilipili 'Ili, where his parents still reside. Mr. Pellegrino and his family currently live in the 'Ili of Nohoana, which he is connected to on his

Hawaiian side through Keanini and the Enos family. Mr. Pellegrino has multiple lineal genealogical ties, especially on his Hawaiian side, to Waikapū Ahupua'a and to Wailuku Ahupua'a.

Being born and raised in Waikapū Ahupuaʻa, Mr. Pellegrino has spent a lot of time with kupuna and elders that are connected to him genealogically and through the community. Mr. Pellegrino stated he feels very blessed to have learned so much from these elders who were very knowledgeable about the history, sense of place, cultural sites, and the cultural and natural resources of the Waikapū area. This knowledge that has been passed down to him is what led him to continue on with the traditions of the land where he and his family live on now. Mr. Pellegrino, his wife and children raise wetland taro on his family kuleana land, which historically was cultivated at the time of the Māhele, and prior to that.

There are a number of cultural sites that he and his family care for on their kuleana parcel, as well as the kuleana parcel they have in the mauka area of the valley, which they are connected to through the Bailey side of his mother's family. And then, on the Eugene Bal side, they don't have ownership of that property, but on East Waiko Road, which is below and east of the property where Mr. Pellegrino and his family live in Waikapū, there is a Japanese Cemetery. This area once was part of the Nā Wai 'Ēha sand dune system that came across part of the upper central plains of Maui. There are ancient burials of his kupuna and the kupuna of others that are buried there. This particular parcel which is located where the Japanese Cemetery and remaining sand dune system is, was described at the time of the Māhele by Edward Bailey who was a surveyor for the Kingdom of Hawai'i, as having ancient Hawaiian burials. While the Nā Wai 'Ehā sand dune system was historically and is currently known as having hundreds if not thousands of iwi kūpuna interred in them, it was one of the only Māhele awards to make this notation, especially in the Waikapū ahupua'a.

During time he was growing up, up until 1988, there was in sugar cane cultivation all around, including in the current project area. Following, 1988, the project areas was cultivated in pineapple along with maintenance of the Waihe'e Irrigation Ditch and a reservoir on the northeaster end. Kupuna have shared with Mr. Pellegrino that prior to the land being in sugar cane there were lo'i kalo and 'auwai systems that spanned Waikapū in its entirety, even in the project area. Hōkūao in the latter part of his high school years, Mr. Pellegrino engaged into understanding the land tenure Waikapū and the greater part of Nā Wai 'Ehā since there was major changes in the cultural landscape from large scale plantation agriculture to extensive housing developments. Hōkūao has researched, compiled comprehensive data, developed cultural landscape maps, authored documents and curriculum about Waikapū and Nā Wai 'Ehā

for over the last 20 years since graduating from Notre Dame de Namur University and University of Hawai'i at Hilo. He has researched in detail, all 'ili, Land Commission Awards, Land Grants, traditional 'auwai/irrigation systems and eco-cultural landscape systems throughout the Waikapū ahupua'a, many of which are still in cultivation and in which cultural engagement practices are currently taking place.

In terms of people who have lineal ties to Waikapū, there are not many of them left. In terms of people who actually have genealogical lineal ties to Waikapū that connect back to these kuleana parcels, he can only think of a dozen, or so, who are still living there. That's why this information is so important. Some of those families with genealogical ties to Waikapū and are still very much engaged on their kuleana lands and exercising their traditional and customary practices are but not limited to the, descendants of Pelekai, Makaiwi, Kuamū, Nāhau, Kuolaia, Bailey, Cockett, Bal, Ka'iliponi, Ka'a'a, Ha'a, Kekeleaiku, Palakiko, Richardson, Koa, Kalawai'a, Ehunui, Sylva. Hōkūao highly recommends reaching out to many of the descendants of these families as part of the Cultural Impact Assessment as it relates to the Waikapū ahupua'a.

While there may have been sugar cane and then, later, pineapple growing on these lands, prior to that, these lands were rich in traditional agricultural terraces. Mr. Pellegrino spent some time, a while ago, when he was doing his graduate work around Waikapū conducting research and he found a number of sites that were connected to the area where the current project area is located. Mr. Pellegrino shared this information with one of his friends who is a Department of Hawaiian Home Lands Commissioner who was looking for a name for this project. While Mr. Pellegrino did not want to participate in naming the project, he offered to provide background information on the traditional land tenure that was associated with the project area. Mr. Pellegrino prepared a document comprised of a spread sheet listing all of the kuleana parcels, both Land Commission Awards and Land Grants, which were located in the project area and provided a brief description of what was historically there.

According to Mr. Pellegrino's research there were about five Land Commission Awards and three Land Grants in the parcel containing the project area. Predominantly, these lands were traditionally used for cultural ag practices, specifically tied to wetland cultivation. There were animals that were raised there, there were kula lands, and there were 'auwai systems that connected directly to the Waikapū Stream. Most important is the significance of one of the most important areas in Waikapū Ahupua'a. Near the Old Government Road that is adjacent to the western and northern boundaries of the project area, near the northwest corner of the current project area, there once was located a very important stone called Pōhāko'i. Pōhāko'i was first and foremost a hoana, or grinding stone used to file and finish ko'i (adzes – stone tool used for

cutting and carving wood). Secondly, it was a commonly known palena 'āina (boundary marker) for the northern end of the Waikapū ahupua'a according to Mr. Pellegrino.

Mr. Pellegrino says that Pōhākoʻi is shown on approximately 60 historic maps of Waikapū. Some maps reference that site as the location of Pōhākoʻi (the stone), but, adjacent to where the stone is located, there is reference to a Pōhākoʻi as an ʻili also. However, Land Grant 2952, to David Crowningburg, and Land Commission Award 433, to William Crowningburg, both specified the ahupuaʻa boundary, as well as the ʻili, as Pōhākoʻi. So, it was an important cultural site, not just for being a boundary marker and a grinding stone, but also for being a place name (i.e., the name of an ʻili). Pōhākoʻi is such a significant site; it has been mentioned in mele [songs], in oli [chants], and historical moʻolelo [legends]. The exact location of Pōhākoʻi (the stone) is not known and it is not known if Pōhākoʻi remains in situ, or if it has been relocated. Pōhākoʻi (the stone) is shown on almost every historic map of Waikapū [see Figure 8]. Pōhākoʻi (the stone) is shown on most maps as on the Waikapū Ahupuaʻa boundary and sometimes it is shown more within Waikapū Ahupuaʻa, more along that William Crowningburg property boundary in the ʻIli of Pōhākoʻi. So, if there is any archaeological work conducted in the, that would be a critical thing to look for in addition to former agricultural and irrigation sites.

Also, there was a historic bridge at that same corner [the northwest corner of the current project area] that crossed Kahoi Gulch and Lapaleihua Gulch. These two gulches came down from the West Maui Mountains. The bridge was in existence at the time of the Māhele [mid-1800s] and is shown on historic maps dated as late as 1939.

One of the points that Mr. Pellegrino would like to stress in this interview is that archaeological work and cultural impact assessment studies do not always make a concerted effort to delve into the historical background of these types of areas that were historically in sugar cane cultivation to present information about how these lands were used traditionally, prior to being under commercial sugar cane cultivation. Although lands were extensively impacted and modified historically for the commercial cultivation of sugar cane, they retain the potential to contain information about the traditional use of these lands. In addition, there may still be kupuna who have connections to those lands. Mr. Pellegrino also recommended that if the project does move forward, that archaeological monitors be required on-site at all times. Many kuleana parcels whether impacted or not by plantation era agriculture, still retain numerous archaeological features above and below the ground, which can include walls, artifacts, and most importantly, burial sites. He stated that it was not uncommon for Māhele land parcels to have burial sites both pre-western and post-contact. He stressed the need especially for a Hawaiian

Organization such as DHHL to go above and beyond the basic requirements and processes for developing land, especially knowing that these were Native Hawaiian ancestral kuleana lands.

For cultural practitioners it is very important to know whether, or not, Pōhāko'i (the stone) is still in or near its original location. There are a number kupuna who conduct traditional cultural practices; i.e., farming, fishing, carving. Mr. Pellegrino is also traditional wood and stone carver; he makes traditional-type stone tools; he has made adzes along with poi pounders and other stone tools. So, for cultural practitioners, the sites where their ancestors conducted the same types of activities are very important. Mr. Pellegrino explained that access to these areas was always limited and/or prohibited to any and all lineal descendants since the plantation and their predecessors took over the project area and adjacent lands.

Of the remaining kuleana land holders that are still left in Waikapū, most of them reside all along Waikō Road, which is the main road that come in and on the north side of the Waikapū Stream as well as those living on the southern portion of the Waikapū Stream. Approximately 25 years ago, there was a development that came about called Waiolani Subdivision and most recently the Waiolani Mauka Subdivision in the last 10 years which abuts the current DHHL project area. At that time, major concerns were widely shared by lineal descendants of Waikapū along with long-standing community members/residents - they didn't want the Old Waikapū Government Road open in that section because they didn't want the extra traffic and most importantly the impacts that would have on the Waikō Road kuleana properties which still retain, pre-western archaeological sites such as stone walls, lo'i kalo and 'auwai systems. One of the major 'auwai flows along Waikō Road. Waikō Road is a main road and a County road, but it is substandard; in some areas it is a two-lane highway and in others it's one lane. So, when the developers for Waiolani and Waiolani Mauka came up, they said they were not going to open up the road to traffic and that the road would just be used for emergency purposes. But, in the end, they defied the cries of the community and ended up opening up that portion of the road; i.e., the Old Government Road which feeds into Waiko Road, and that has caused a lot of issues, including accidents on the road, most which have caused severe damage to portions of the 'auwai system used by kalo farmers, crime, and people impacting their traditional cultural practices. There are all these 'ulu [breadfruit, Artocarpus altilis] trees and traditional pre-Western stone walls located along the 'auwai and those have been impacted by the traffic. For Mr. Pellegrino, the major issue, if not the only issue, is ensuring that there is no access to that Government Road. Based on the project plan, it looked like the feeder road, inlet, and outlet, would be on Honoapiilani Highway which is what he wants to see happen. Mr. Pellegrino believes that if this section of the Old Government Road is opened up to Waikō Road, which would be all the way up to Honoapiilani Highway, the County or State would have to upgrade the road which would

impact all of these cultural sites and their 'auwai system, which are positioned along part of Waikō Road and part of the Government Road, at least on the Waikō Road side.

Mr. Pellegrino's other major concern is the view plain. There are specific ridges, like Kahoi, Lapaleihua, and Kalapaooka'īlio, where he and his family gather lā'au lapa'au [medicinal plants] and which house some very rare native plant species. These are all ridges mauka [west] of the project area. Mr. Pellegrino is concerned that during the construction phase of the current project the land would be filled to the extent that these culturally important view plains would be blocked from those who are genealogically connected to Waikapū Ahupua'a and living in the lower areas below. A prime example of how this occurred is the neighboring Waiolani Subdivision which built up their properties in some cases over 10 feet and directly adjacent to the Honoapi'ilani Highway. This has destroyed any natural view plains of the Kapilau and Hana'ula Mountain Ranges. Former development plans for this project site under the name of Pu'unani Subdivision had explicit setbacks from the Honoapi'ilani Highway as well as a large buffer between the Waiolani Subdivision and northern boundary of the Waikapū ahupua'a near Ku'ikahi Road and Honoapi'ilani Highway. This was to ensure a clear distinction between the Waikapū ahupua'a and the Wailuku ahupua'a. There is a project the Mr. Pellegrino is working on with the Waikapū and greater Wailuku moku community members to develop ahupua'a signage. One such sign for the northern most boundary of the Waikapū ahupua'a would be near and/or adjacent to the project area and he states that it is imperative there are clear distinctions between ahupua'a still are retained. Knowing that Waikapū has been greatly impacted by development and continues to be with future development, retaining our cultural identity will be critically important moving forward and something the Waikapū community made clear for as long as he can remember.

Along the Government Road, along the mauka portion, there was a historic 'auwai. And so, that road is still there and Mr. Pellegrino believes there are remnants of that 'auwai are still there. That 'auwai historically connected to the 'auwai that Mr. Pellegrino's family accesses along Waikō Road. There were four major 'auwai in Waikapū and this particular 'auwai that came down, part of it comes off the 'auwai used by Mr. Pellegrino's family, but above his family's kuleana parcel and currently goes under Waikō Road. On historic (1887) maps you can see that 'auwai go within the boundary of the project area, as well as along the upper (northern) boundary of the project area. That 'auwai provided the water that was used to feed all of the lo'i kalo that were in this project area. Water also fed kuleana parcels of land before the project area as well.

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Mr. Pellegrino reiterated that while his family had kuleana lands throughout Waikapū Ahupua'a, none of them were located within the confines of the current project area. The names of the Hawaiian families who had connections to the project area were Manu and Keliiolelo. There were also a number of foreigners who received kuleana parcels of lands within the project area: James Louzada, who married into a Hawaiian family. A lot of the foreigners like William Crowningberg, David Crowningberg had Hawaiian wives that connected them to the 'ili or parcels of lands as well.

A lot of people see Waikapū as a sleepy little town; but prior to western contact, it was a thriving kalo growing landscape which was part of the greater Nā Wai 'Ehā region. There were over 1,400 lo'i kalo documented on 900 acres of land as being in cultivation at the time of the Māhele in Waikapū alone. Following western contact, Waikapū was really the birthplace of sugarcane industry in Hawai'i. One of the kuleana claimants, James Louzada, who had a Land Commission Award in the project area, he and another Italian, were really the forefathers of the sugarcane industry on Maui and in Hawai'i. They started cultivation sugarcane on the parcels of land, working with kuleana landowners in Waikapū even before the Māhele occurred and they were milling sugarcane and processing into molasses by 1838.

Lastly, Mr. Pellegrino wanted to include the importance of water resources as being a major cultural impact. While most if not all of the project site's historical land use was wetland kalo cultivation, these lands are not likely going to be returning to that practiced knowing that a housing development is being proposed. There are currently agricultural practices being conducted on that land, although not cultural, they are an important part of retaining the historic and cultural nature of the Waikapū ahupua'a. Hōkūao is a leader in water resource management issues on Maui, especially within the region of Nā Wai 'Ehā. A major concern that he has is the potential impacts this project will have on both surface and ground water resources, both of which are directly tied to cultural practices. While not necessarily tied to the project site, both ground water and surface water resources would likely cause impacts to those surrounding ahupua'a in Nā Wai 'Ehā, which have already seen great strain for decades. With the return of in-stream flow standards occurring in all four streams of Nā Wai 'Ehā (Waikapū, Wailuku, Waiehu, and Waihe'e) he is seeing a huge influx of Native Hawaiian lineal descendants of kuleana lands returning and re-cultivating their lands in kalo and other traditional food crops. Ensuring that these water resources are protected in the areas for which they derive is critical to not only food production and sustainability but the positive impact it is having to our Native Hawaiians community and greater lāhui building. Most if not all development projects have

direct impacts to water resource depletion both from our ground water aquifers and surface water. Mr. Pellegrino has grave concerns about this project and its impact to already heavily strains on the Wailuku/Waikapū aquifer and surface water waters of Nā Wai 'Ehā. Mr. Pellegrino is the president of Hui o Nā Wai 'Ehā, an organization that is focused on protecting both surface and ground water resources. There has not been anything shared with him nor their organization about the water needs of this project as it relates to both ground and surface water.

Concerns: Mr. Pellegrino would like to see that lineal descendants of Waikapū Ahupua'a have access through the project area for use of Pōhāko'i (hoana or grinding stone) if it is still there. Another important concern for his family and for many of the other lineal descendants and community members in Waikapū is use of the Government Road. Mr. Pellegrino requests that there will be no access to or from the DHHL Pu'unani Homestead project area to the Government Road, as that would impact traditional cultural practices. Mr. Pellegrino also expressed concern that construction phase of the DHHL Pu'unani Homestead project would include filling the land to the extent that the culturally important view plains would be blocked from those who are genealogically connected to Waikapū Ahupua'a and to those living in the lower areas below. He urges that there be large and clearly defined green buffers between Honoapi'ilani Highway, Waiolani Development, and the Ku'ikahi Road near the northern most boundary of the Waikapū ahupua'a to ensure clear delineation between the Waikapū and Wailuku ahupua'a. Lastly, Mr. Pellegrino expressed concerns about the cultural impacts of this project as it relates to water resources both ground and surface water, both within the ahupua'a of Waikapū as well as neighboring ahupua's such as Wailuku.

Note: Scientific Consultant Services, Inc. received Mr. Pellegrino's signed information form March 30, 2020, via e-mail (see Appendix D). In an email dated March 26, 2020, Mr. Pellegrino suggested SCS contact Nicholas Harders (see Written Response section), Crystal Smythe (see Written Response section), and Wallette Pellegrino (see Written Response section). In a subsequent email dated March 30, 2020, Mr. Pellegrino suggested SCS also contact 'Iliahi McLean, as all of these individuals are life-long residents of Waikapū Ahupua'a. Scientific Consultant Services, Inc. made a good faith effort to contact 'Iliahi McLean. Scientific Consultant Services, Inc. sent Ms. McLean the initial letter of Inquiry inviting her to participate in the consultation process for this project via an email dated March 30, 2020. Scientific Consultant Services, Inc. conversed with Ms. McLean between March 30, 2020 and August 24, 2020, via email. Although Ms. McLean indicated in several of her emails that she would like to contribute her mana'o, she ultimately was unable to do so.

Foster Ampong, recognized cultural descendant of inadvertent discovered iwi kupuna of Wailuku Ahupua'a, a lineal and cultural descendant of o'iwi (native Hawaiian) ancestors that lived in the Wailuku Moku

Foster Ampong is a recognized Cultural Descendant of inadvertent discovered iwi kupuna of the Wailuku Ahupua'a, as well as a lineal and cultural descendant of my o'iwi (native Hawaiian) ancestors that lived in the Wailuku Moku. Mr. Ampong was interviewed via telephone by Cathleen Dagher, SCS Senior Archaeologist, on December 5, 2019, the interview resumed on April 9, 2020, and continued on August 18, 2020. Unfortunately, due to health issues, Mr. Ampong was unable to provide his permission to include the interview summary in this document. Please note that SCS reached out to Mr. Ampong, via emails and telephone calls between August 21 and September 10, 2020

Concerns: On August 18, 2020, Mr. Ampong re-stated his initial concerns:

- 1. That this was a Hawaiian Home Lands project,
- 2. That this project would benefit the beneficiaries,
- 3. The lots would not be sold on the open market, and
- An archaeological monitor to be on site during all construction related ground altering activities associated with the project, specifically one archaeological monitor present per each earth-moving machine.

Scientific Consultant Services, Inc. was able to confirm this is a DHHL project on land owned by DHHL where all 161 proposed residential lots will be for DHHL beneficiaries (Darren Okimoto, Dowling Company Inc., personal communication April 9, 2020). In addition, the DHHL is committed to a program of archaeological monitoring during all construction-related ground-altering activities associated with this development (Darren Okimoto, Dowling Company Inc., personal communication September 9, 2020).

CONSULTATION RESULTS FROM DAGHER (2018)

The currently proposed DHHL Pu'unani Homestead project will include sewer line improvements within a portion of TMK: (2) 3-5-001:064. A separate CIA report (Dagher2018) was prepared in advance of the proposed Wailuku Affordable Housing project, which was located in Wailuku and Waikapū Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-5-001:064]. Thus, the results of the Dagher (2018) consultation process are included in the current CIA report and are presented below.

INTERVIEWS (FROM DAGHER 2018)

As stated elsewhere in this document, sewer line improvements within a portion of TMK: (2) 3-5-001:064 will be undertaken as part of the currently proposed DHHL Pu'unani Homestead project. A separate CIA report (Dagher2018) was prepared in advance of the proposed Wailuku Affordable Housing project, which was located in Wailuku and Waikapū Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-5-001:064]. Thus, the results of the Dagher (2018) consultation process are presented below.

Clayton Suzuki, long-time community member and worked for Wailuku Sugar Company.

Clayton Suzuki was interviewed via telephone by Cathleen Dagher on February 27, 2018. Mr. Suzuki reviewed his interview summary between March 2 and March 4, 2018, when SCS received his edited summary, via e-mail.

Clayton Suzuki grew up on the island of Hawaii and came to Maui for work opportunities. After graduating from the University of Hawaii. He came to Maui in 1975 to work for HC&S then moved to Wailuku Sugar Company in 1978. He worked for the company as an engineer then later as the Operation Manager till retirement in 2016.

Wailuku Sugar Company shut down its sugarcane milling operation in 1979, it delivered the sugarcane to the HC&S mill under contract. The 2500 acres of sugarcane from Iao Valley to Waihee Valley were converted to Macadamia Nut in the early 1980's. Sugarcane was continued in the 2500 acres in the Wailuku to Maalaea area. Some Wailuku fields about 500 acres were left fallow, its long-term plan was for a housing development,

Wailuku Sugar Company became Wailuku Agribusiness in 1988 when its sugarcane growing operation stopped. Much of the lands in sugar were converted to pineapple and sold to Maui Land & Pineapple. The fields that were of sandy soil were not converted to pineapple. These fields were left fallow. The macadamia nut operation continued.

After closing both its macadamia nut and pineapple operations in 1999, Wailuku Agribusiness became Wailuku Water Company. This company continued its water delivery operations using the existing ditch system used for its agricultural operations.

Mr. Suzuki did not mention any traditional cultural activities practiced in the area.

Concerns: None

Roger Yamaoka, long-time community member and family also comes from Waikapu.

Roger Yamaoka was interviewed via telephone by Cathleen Dagher on February 28, 2018. Mr. Yamaoka reviewed his interview summary between March 2 and March 8, 2018, when SCS received his edited summary, via e-mail.

Roger Yamaoka is a long-time Waikapū community member whose family comes from Waikapū. His father owned a pig farm near the Vida family's in Waikapū, several miles away on Old Waikapu Road, which is where Mr. Yamaoka grew up. Mr. Yamaoka said that the project area was currently used as a baseyard or staging area for a construction company, and that Long's Drugs and Foodland where nearby, and a prison is located to the north. He also mentioned that Emmanuel Lutheran Church of Maui was on the next lot over to the south.

He remembered that when he was a child, some 50 years ago, and while he was growing up, the whole area was planted in sugar cane and later in pineapple. After the sugar mill closed down, the area was abandoned, and eventually was covered in grass and weeds. Gradually the area came to be developed – first homes began to appear (Kealani Subdivision), then Foodland and Long's Drugs, and Maui Lani began to open up.

Mr. Yamaoka stated that he was not aware of any tradition cultural practices conducted in the area nor was he aware of anywhere in the area where traditional cultural practices could be conducted, as the whole area was under commercial agriculture for many years and eventually began to be developed for residential use.

Mr. Yamaoka suggested SCS contact the Vida family, as they may have information pertaining to traditional cultural practices conducted in the area. He also spoke highly of Uncle Les Kuloloio and suggested he be contacted, as he would be a reliable source of information on traditional cultural practices conducted in the area.

Concerns: None

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Wally Rogers, long-time community member, family has lived in Waikapū on Upper Waiko Road for several generations. His father was Eddie Rogers who started the Rogers Ranch and pig farm in Waikapū.

Scientific Consultant Services, Inc. included Mr. Rogers in the consultation process for this CIA on February 27 and March 6, 2018, via telephone. Scientific Consultant Services, Inc. spoke with Dolores, Mr. Rogers' wife, on both occasions. Mrs. Rogers said that she and her husband reached out to other family members in an effort to see if they had information about traditional cultural practices conducted in the near the proposed project area. None of the family members had any information to share.

Concerns: None

WRITTEN RESPONSES (FROM DAGHER 2018)

Chris Nakahashi, Cultural Historian State Historic Preservation Division. Scientific

Consultant Services, Inc. receive a written response, via e-mail dated September 11, 2017, from Chris Nakahashi. Cultural Historian State Historic Preservation Division:

Aloha Cathy,

Mahalo for contacting me regarding the CIA for the proposed Wailuku Affordable Housing Project.

The people listed at the bottom of your September 9, 2017 letter are appropriate to contact regarding the traditional cultural practices in the ahupua'a of Wailuku and Waikapū, on the island of Maui.

Please contact Ke'eaumoku Kapu... about this CIA.

I recommend SCS to also utilize the media (ex. OHA's Ka Wai Ola, Maui News, etc.) to solicit additional information for this CIA.

I recommend SCS also to contact and meet with the native tenants and people that currently live or previously lived in the ahupua'a of Wailuku and Waikapū on Maui for information about the cultural customs and practices for this CIA. Please let me know if I can assist with anything else.

A hui hou,

Christopher "Ikaika" Nakahashi, M.S. Cultural Historian Department of Land & Natural Resources State Historic Preservation Division

[Note:] Scientific Consultant Services, Inc. did include Mr. Kapu in the consultation process. The initial letter of inquiry and associated project area maps were sent to Mr. Kapu via

an e-mail dated September 29, 2017. The follow-up letter was sent to Mr. Kapu via an e-mail dated October 17, 2017. However, SCS did not receive a response from Mr. Kapu.

Kaniloa Kamaunu, Wailuku District Representative, Aha Moku O Maui

Scientific Consultant Service, Inc. received an e-mail dated November 7, 2017, from Mr. Kamaunu. In his e-mail Mr. Kamaunu stated that the proposed project area is adjacent from Long's on Waiale Drive and expressed concerns about what companies would be conducting the Archaeological Inventory Survey and preparing the Environmental Impact Assessment.

Glenn McLean, community member, community member

Scientific Consultant Services, Inc. made several unsuccessful efforts to contact Mr. McLean. In an e-mail dated October 26, 2017, SCS contacted Hinano R. Rodrigues, State Historic Preservation Division (SHPD) Culture and History Branch Chief requesting Mr. McLean's contact information. In an e-mail dated October 27, 2017, Mr. Rodrigues responded, "I don't have contact information for him, but I am sure his son Luke lives in Waikapu on a daily basis. Hokuao [sic] [Pellegrino] may be able to contact him."

As no contact information was provided for Luke McLean, SCS e-mailed Mr. Pellegrino, via an e-mail dated October 27, 2017, requesting this information. Scientific Consultant Services, Inc. did not receive a response from Mr. Pellegrino. In an e-mail dated October 27, 2017, SCS contacted Andrew "Kealana" Phillips, SHPD Burial Sites Specialist requesting Mr. McLean's contact information. Mr. Phillips did not respond. In e-mails dated October 24 and 27, 2017, SCS contacted Chris Nakahashi, SHPD Cultural Historian, also requesting Mr. McLean's contact information. Mr. Nakahashi responded, via an e-mail dated October 25, 2017, that he did not have the requested information.

IDENTIFED CULTURAL PRACTICES

The purpose of a CIA is to identify the possibility of on-going cultural activities and resources within a project area, or its vicinity, and then assessing the potential for impacts on these cultural resources. As stated elsewhere in this report, the Hawaii State Office of Environmental Quality Control (OEQC 2012:11), states the geographical extent of the CIA study area should be greater than the area over which the proposed project extends to ensure that cultural practices that occur outside of the project area, but which may still be affected, are included in the assessment. Thus, for the purpose of this CIA study, the entire ahupua'a is the project area.

The consultation process of the Dagher (2018) CIA did not identify traditional cultural practices currently conducted in or near the Wailuku Affordable Housing project area and there were no concerns expressed regarding impacts to traditional cultural practices or the gathering of cultural resources. The findings of the current CIA did not identify "valued cultural and natural resources" specifically within the DHHL Pu'unani Homestead project area. The findings of this study indicate there are on-going traditional cultural practices, primarily consisting of taro cultivation, within Waikapū Ahupua'a and on lands near the project area which may be impacted by the proposed DHHL Pu'unani Homestead development. In addition, the consultation process identified a unique cultural property, the grinding stone known as Pōhāko'i, which may be in close proximity to the northwestern boundary of the DHHL Pu'unani Homestead project area. However, the exact location of Pōhāko'i is not known and it is not known if Pōhāko'i remains in situ, or if it has been relocated.

AGRICULTURE

The findings of previous archaeological studies conducted in the vicinity and the traditional and historic background research indicate Waikapū Ahupua'a was not only an area rich with traditional and customary practices during the pre-Contact and early-Historic Periods, it was renowned for its extensive lo'i fields.

One traditional practitioner and lineal descendant is currently living within Waikapū Ahupua'a on land near the proposed project area and actively cultivating wet land taro on the property. Taro or kalo (*Colocasia esculenta*) was and continues to be an important staple in the Hawaiian diet. Neal (1965: 58) states that taro was brought to Hawai'i by the Polynesians on their voyages and that "it has been the principle food of the natives from the earliest times to the present." Kirch (1985:216) elaborates on the intricate intertwining Hawaiian system of agriculture:

The Hawaiian planter commanded a sophisticated knowledge of his plants and their varieties (several hundred varieties of taro and sweet potato were named and recognized), of planting, tending, and harvesting methods, and of food preparation. His system of agriculturealong with an intricate web of social, religious, and political relationships -tied him to the land, to his chiefs, and to his gods, especially Lono, deity of fertility...

Water is integral for any agricultural pursuit and is a necessary resource for the traditional practice of wet land taro, which is a dietary supplement for this individual's family. There is the potential for this project to impact the Wailuku/Waikapū aquifer and surface water waters of Nā Wai 'Ehā.

CULTURAL IMPACT ASSESSMENT SUMMARY

This Cultural Impact Assessment was prepared in accordance with the Guidelines for Assessing Cultural Impacts (OEQC 2012:11-13). The Guidelines recommend that a CIA consult relevant individuals/organizations, conduct ethnographic interviews and archival and historical research, identify cultural resources and practices located within the project area or in proximity, and finally, assess the impact of the proposed action and its mitigation measures on the cultural practices or resources identified.

Letters of inquiry were sent to twenty-five individuals and organizations that may have knowledge or information pertaining to the collection of cultural resources and/or practices currently, or previously, conducted in the vicinity of the proposed project area. The consultation process resulted in SCS receiving responses from twelve (12) individuals via e-mail and SCS conducting two telephone interviews.

As sewer line improvements for the DHHL Pu'unani Homestead project will occur within a portion of TMK: (2) 3-5-001:064, which was the subject of an earlier CIA report (Dagher2018) prepared under separate cover in advance of the proposed Wailuku Affordable Housing project located in Wailuku and Waikapū Ahupua'a, Wailuku District, Island of Maui, Hawai'i, the results of the Dagher (2018) consultation process are included in the Consultation section of the current CIA report.

The information obtained during the consultation process reflects that the proposed project area is located in an area rich with traditional and customary practices conducted during the pre-Contact and early Historic Period. However, based on historical research and the above listed responses, it is reasonable to conclude that there <u>is</u> evidence of cultural practices related to Hawaiian rights related to agricultural pursuits, access to resources (i.e., water), and possibly other customary activities presently occurring in the vicinity of the proposed project area.

Based on the information obtained during the consultation process portion of the current CIA, ground altering activities associated with the proposed Pu'unani Homestead project has the potential to impact currently conducted traditional native Hawaiian activities in the surrounding environment in the vicinity of the proposed DHHL residential development.

CONCLUSION AND RECOMMENDATIONS

The findings of the current CIA did not identify any traditional cultural practices previously or currently conducted within the proposed DHHL Pu'unani Homestead project area. Nor were valued cultural and natural resources identified within the proposed DHHL Pu'unani Homestead project area. Based upon this review and analysis, sufficient information has been provided in this document to determine that traditional cultural practices were previously and continue to be conducted within the surrounding environs of the proposed DHHL Pu'unani Homestead project area. This determination has been substantiated by the culture-historical background, the summarized results of prior archaeological studies in the project area and in the neighboring areas, and primarily in the concerns expressed by the cultural informants during the consultation process of the current CIA. Thus, it is the finding of the current analysis that specific cultural activities are currently conducted on lands in the vicinity of the DHHL Pu'unani Homestead project area which may potentially be impacted by the proposed project.

To date, the legendary grinding stone (Pōhākoʻi) is currently unknown. Thus, it is recommended that an archaeological field inspection be conducted by a qualified archaeologist, in an effort to locate this cultural feature, prior to the commencement of any construction-related ground-altering activities. If the archaeological field inspection identifies the Pōhākoʻi within the proposed Puʻunani Homestead project area, then consultation with the State Historic Preservation Division will need to be undertaken to discuss appropriate mitigation measures. If the Pōhākoʻi is evaluated as a Traditional Cultural Place (i.e., a property that is eligible for inclusion in the National Register of Historic Places based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community), then community consultation will also need to be undertaken.

In addition, given the proximity of the proposed DHHL residential development to the sand dunes, which are known to contain pre-Contact native Hawaiian burials, there is the potential for the human burials and the continuous use of the area from the pre-Contact Period through the Historic Period and Plantation Era, evidence of pre- and post-Contact and the Plantation Era may still be present in subsurface contexts. Thus, a program of full-time archaeological monitoring is recommended during all construction-related ground-altering activities. The remaining issues are of an environmental nature and will be better addressed under separate cover in the Environmental Assessment

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APPENDIX A: EXAMPLE LETTER OF INQUIRY

67 A

Aloha kāua,

Scientific Consultant Services, Inc. (SCS) is seeking information on cultural resources and traditional, previously or on-going, cultural activities within or near the proposed Pu'unani Homestead Project area. The proposed Project will consist of the development of a subdivision comprised of 137 turn-key homes and 24 vacant lots, for a total of 161 homes and lots, within the 48.23-acre Project area. The proposed State of Hawaii, Department of Hawaiian Home Lands (DHHL) Project will be located in Waikapū Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-5-002:002, Figures 1 through 3]. The subject property is owned by the State of Hawaii, Department of Hawaiian Home Lands.

The purpose of this Cultural Impact Assessment (CIA) is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources or traditional cultural practices associated with the project area and the surrounding ahupua'a. In an effort to promote responsible decision-making, the CIA will gather information about the project area and its surroundings through research and interviews with individuals that are knowledgeable about the area in order to assess potential impacts to the cultural resources, cultural practices, and beliefs identified as a result of the proposed project. We are seeking your kōkua and guidance regarding the following aspects of our study:

- · General history as well as present and past land use of the project area
- Knowledge of cultural resources which may be impacted by future development of the project area (i.e. historic and archaeological sites, as well as burials)
- Knowledge of traditional gathering practices in the project area, both past and ongoing Cultural associations of the project area, such as legends, traditional uses and beliefs
- Referrals of kupuna or elders and kama'āina who might be willing to share their cultural knowledge of the project area and the surrounding ahupua'a
- Due to the sensitive nature regarding iwi kūpuna or ancestral remains discovered, mana'o regarding nā iwi kūpuna will be greatly appreciated
- Any other cultural concerns the community has related to Hawaiian cultural practices within or in the vicinity of the project area.

The CIA is in compliance with the Hawai'i Revised Statute (HRS) Chapter 343 Environmental Impact Statements Law and in accordance with the State of Hawai'i Department of Health's Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai'i on November 19, 1997 (and revised in 2012).

According to the Guidelines for Assessing Cultural Impacts (Office of Environmental Quality Control 2012:12):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs...The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

Enclosed are maps showing the locations of the proposed project area. Please contact me within 30 days at (808) 597-1182 or via e-mail (cath/@scshwaii.com) with any information or recommendations concerning this Cultural Impact Assessment.

Sincerely yours,

Cathleen Dagher Senior Archaeologist

att Dapue

Enclosures (3)

APPENDIX B: CIA NOTICE PUBLISHED IN KA WAI OLA, SEPTEMBER 2019

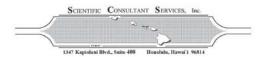
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PU'UNANI HOMESTEAD

Scientific Consultant Services. Inc. (SCS) is seeking information on cultural resources and traditional, previously or on-going, cultural activities within or near the proposed Pu'unani Homestead project area. The proposed project will consist of the development of a State of Hawai'i, Department of Hawaiian Home Lands (DHHL) subdivision comprised of 137 turnkey homes and 24 vacant lots, for a total of 161 homes and lots, to be located in Waikapū Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-5-002:002]. The 48.23-acre project area is owned by the State of Hawai'i, Department of Hawaiian Home Lands.

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APPENDIX C: EXAMPLE FOLLOW-UP LETTER



Aloha kāua,

This is the follow-up letter to our July 31, 2019, letter which was in compliance with the statutory requirements of the State of Hawai'i Revised Statute (HRS) Chapter 343 Environmental Impact Statements Law, and in accordance with the State of Hawai'i Department of Health's Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai'i, on November 19, 1997.

Scientific Consultant Services, Inc. (SCS) is seeking information on cultural resources and traditional, previously or on-going, cultural activities within or near the proposed Pu'unani Homestead Project area. The proposed Project will consist of the development of a subdivision comprised of 137 turn-key homes and 24 vacant lots, for a total of 161 homes and lots, within the 48.23-acre Project area. The proposed State of Hawaii, Department of Hawaiian Home Lands (DHHL) Project will be located in Waikapū Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-5-002:002]. The subject property is owned by the State of Hawaii, Department of Hawaiian Home Lands.

The purpose of this Cultural Impact Assessment (CIA) is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources or traditional cultural practices associated with the project area and the surrounding ahupua'a. In an effort to promote responsible decision-making, the CIA will gather information about the project area and its surroundings through research and interviews with individuals that are knowledgeable about the area in order to assess potential impacts to the cultural resources, cultural practices, and beliefs identified as a result of the proposed project. We are seeking your kōkua and guidance regarding the following aspects of our study:

- . General history as well as present and past land use of the project area
- Knowledge of cultural resources which may be impacted by future development of the project area (i.e. historic and archaeological sites, as well as burials)
- Knowledge of traditional gathering practices in the project area, both past and ongoing Cultural associations of the project area, such as legends, traditional uses and beliefs
- Referrals of kupuna or elders and kama'āina who might be willing to share their cultural knowledge of the project area and the surrounding ahupua'a
- Due to the sensitive nature regarding iwi kūpuna or ancestral remains discovered, mana'o regarding nā iwi kūpuna will be greatly appreciated



 Any other cultural concerns the community has related to Hawaiian cultural practices within or in the vicinity of the project area.

The CIA is in compliance with the Hawai'i Revised Statute (HRS) Chapter 343 Environmental Impact Statements Law and in accordance with the State of Hawai'i Department of Health's Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai'i on November 19, 1997 (and revised in 2012).

According to the Guidelines for Assessing Cultural Impacts (Office of Environmental Quality Control 2012:12):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs...The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

Please contact me within 30 days at (808) 597-1182 or via e-mail (cathy@scshawaii.com) with any information or recommendations concerning this Cultural Impact Assessment.

Sincerely yours,

Cathleen Dagher Senior Archaeologist

att Dapue

APPENDIX D: SIGNED INFORMATION RELEASE FORMS

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INFORMATION RELEASE FORM

I, the undersigned, personally participated in an interview with Cathleen Dagher, B.A., of Scientific Consultant Services, Inc., on December 23, of the year 2019. The interview was conducted, by telephone. I also provided supplemental information following the interview in late February that was written into the document.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as part of a Cultural Impact Assessment report prepared in advance of the proposed Pu'unani Homestead Project, located in Waikapū Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-5-002:002]. This information will be subject to publication which will be submitted to the public for general review.

I have read the summary of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc., for the purpose outlined above (i.e., making the contents of this interview available for publication to the general public).

Print Name: Höküso Pellegrino

Signature: Türküso Pellegrino

Release Dated: February 28, 2020

D2



PHASE I ENVIRONMENTAL SITE ASSESSMENT **APPENDIX**



Phase I Environmental Site Assessment

Southeast of Honoapiilani Highway and Kuikahi Drive TMK No. (2) 3-5-002:002 Wailuku, Maui, Hawaii

November 13, 2018 Project Number 25018-018132.00

Prepared for: DDC, LLC c/o Dowling Company, Inc. 2005 Main Street Wailuku, Maui, Hawaii

Prepared by:

Bureau Veritas North America, Inc. Los Angeles Regional Office 1940 East Deere Street, Suite 210 Santa Ana, California 92705 714.431.4100

www.us.bureauveritas.com/hse

The purpose of this report is to assist you, the client, in your responsibility to establish and maintain a health, safety or environmental program to prevent illness and injury to your employees and others. Our activities and recommendations are a supplement to and not a substitute for, any part of your own responsibilities and activities. These services are based upon information supplied by client management and conditions that are readily observable, and should not be relied upon exclusively to prevent all possible illnesses, injuries or losses.





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EXECUTIVE SUMMARY

DDC, LLC c/o Dowling Company, Inc. retained Bureau Veritas North America, Inc. (BVNA) to conduct a Phase I Environmental Site Assessment ("ESA" or "Assessment") of the property located southeast of Honoapillani Highway and Kuikahi Drive (Tax Map Key [TMK] number [2] 3-5-002: Parcel 002) in Wailuku, Maui, Hawaii (the "subject property"). The objective of the Assessment was to provide an independent, professional opinion regarding recognized environmental conditions, as defined by ASTM, associated with the subject property. This Assessment was requested in association with a real estate transaction. The planned use for the subject property is development as residences.

This Assessment was performed under the conditions of, and in accordance with BVNA's Proposal Number 2018 4547, dated October 18, 2018, and ASTM International Practice E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. Any exceptions to, additions to, or deletions from the ASTM Practice are described in the report. Details of the work performed, sources of information, and findings are presented in the report. Limitations of the Assessment are described in Sections 1.2 and 1.3.

The subject property was assessed on foot. At the time of the walkthrough, the subject property was in good condition; however, BVNA could not access the southwest portion of the property due to minor flooding. The subject property is primarily in use as pasture land for grazing livestock with a farm headquarters area in the southeast portion of the property. This area consists of make-shift animal shelters, abandoned vehicles, equipment, storage containers, and other miscellaneous items. An irrigation ditch bisects the subject property from the northwest of the south. Access can be gained from Honoapillani Highway to the west.

The historical research presented in this Assessment has established the *obvious* uses of the subject property since 1950. In addition, information on historic uses of adjoining properties was also obtained.

The subject property was developed as agricultural land from at least 1950 until circa 2009 when it became in use as pasture land.

The adjoining properties were developed as agricultural land from at least 1950 until sometime prior to 2009. The north and west adjoining properties have been in use as pasture land since 2009. The current residences and church on the east adjoining property were developed circa 2009 and 2015, respectively. The residences were developed on the south adjoining property by 2011.

This assessment has revealed no evidence of *recognized environmental conditions*, as defined by ASTM, in connection with the subject property.

The following environmental condition, which is not considered a recognized environmental condition, was identified during this assessment:

• Agricultural Use - The subject property was in agricultural from at least 1950 until sometime prior to 2009. Given this usage, it is possible that the pesticides and/or herbicides were once used on site. Based on BVNA's experience in sampling soils for residual pesticides and or fertilizers that have been applied in conjunction with normal agricultural activities and the length of time since agricultural activity occurred on site, the likelihood that residual chemicals will be found above clean-up levels is low. In February 2011, a multi-increment sampling investigation was conducted by BVNA on the northern portion of the east adjoining property and at the property approximately 1,075 feet northeast. A total of five multi-increment soil samples were collected from this area and analyzed for arsenic using EPA Method 6010B, dioxins using EPA Method



Executive Summary

(Continued)

8290, and organochlorine pesticides using EPA Method 8081. Results indicated that organochlorine pesticides were not detected above their respective method reporting limits. Arsenic and dioxin were both detected above their respective method reporting limits but below their environmental action limits. Exact concentrations were not listed in the report reviewed. Based on nearby results, it is BVNA's opinion that the potential past use of pesticides and/or fertilizers does not present a recognized environmental condition to the subject property.

Based on soil sampling on adjoining and nearby properties which did not find pesticides above action limits, no additional sampling is required. However, if site specific pesticide information is needed, then soil sampling would be required.

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1.0 INTRODUCTION

DDC, LLC c/o Dowling Company, Inc. retained Bureau Veritas North America, Inc. (BVNA) to conduct a Phase I Environmental Site Assessment ("ESA" or "Assessment") of the property located southeast of Honoapillani Highway and Kuikahi Drive (Tax Map Key [TMK] number [2] 3-5-002: Parcel 002) in Wailuku, Maui, Hawaii (the "subject property"). The planned use for the subject property is development as residences.

1.1 PURPOSE

The purpose the assessment is to follow ASTM International Practice E1527-13 (practice), which defines good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitation on CERCLA liability (the landowner liability protections or LLPs); that is, the practice that constitutes all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial and customary practice as defined at 42 U.S.C. 9601(35)(B). The term recognized environmental conditions is defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at the property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.

1.2 METHODOLOGY

This Assessment was performed under the conditions of, and in accordance with BVNA's Proposal Number 2018 4547, dated October 18, 2018 and ASTM International Practice E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. The United States Environmental Protection Agency (USEPA) has determined that the ASTM E1527-13 standard is consistent with the requirements for conducting All Appropriate Inquiry (AAI) and may be used to comply with the AAI regulations (40 Code of Federal Regulations [CFR] Part 312). The methods and terms are as defined in the ASTM standard and AAI regulations.

The Assessment included the following components:

- Review information provided by the client. This includes that information required by the Standard with respect to "User Responsibilities" as well as other information provided (e.g., Environmental Liens, Activity and Use Limitations (AULs), Specialized Knowledge).
- Review selected information on general geology and topography of the subject property, local
 groundwater conditions, and proximity to ecologically sensitive receptors, such as streams, that
 might be impacted by recognized environmental conditions.
- Investigate historical use of the subject property through reasonably ascertainable ASTM
 Standard Historical Sources for evidence of prior land use that could have led to recognized
 environmental conditions. These Standard Historical Sources may include: aerial photography,
 United States Geological Survey (USGS) topographic maps, fire insurance maps, local street
 directories, property tax files, building department records and zoning/land use records. Unless
 otherwise specified by the client/proposal this did not include a review of recorded land title
 records.
- Review of environmental records available from the client, property owner or site contact for
 evidence of recognized environmental conditions and AULs. This includes helpful documents
 such as regulatory agency reports, permits, registrations, previous assessments, etc.



- Review a commercial database summary of ASTM Standard Federal, State, and Tribal regulatory
 agency records pertinent to the subject property and offsite facilities located within ASTMspecified search distances from the subject property.
- Review of reasonably ascertainable Federal, State, Tribal and Local environmental agency case
 files for onsite facilities and adjoining properties identified in the database summary report and/or
 during the site reconnaissance that have the potential to adversely impact the subject property.
- Conduct an interview with at least one staff member of any one of the following: local fire
 department, local health department, local building department, or State/Local environmental
 agency. This individual was asked about their personal knowledge of the subject property, with
 the questioning directed to identifying recognized environmental conditions. For example, if the
 site includes a known leaking underground storage tank (LUST) incident, the State agency LUST
 Program Project Manager for the facility may be the person interviewed under this portion of the
 scope of services.
- Conduct interviews with the subject property owner (or their designated Key Site Manager) and
 occupants regarding current and previous uses of the subject property, particularly with respect to
 activities involving hazardous substances and petroleum products. Past owners, operators and
 occupants were also interviewed to the extent they were identified and their information was not
 likely to be duplicative. In cases of abandoned properties, where there is evidence of
 uncontrolled access, this included interviews with Owners/Occupants of one or more neighboring
 properties (subject to availability).
- Conduct an onsite reconnaissance of the subject property for visual evidence of recognized
 environmental conditions, including, but not limited to: existing or potential soil and water
 contamination, as evidenced by soil or pavement staining or discoloration, unnaturally stressed
 vegetation, or indications of waste dumping or burial; pits, ponds, or lagoons; containers of
 hazardous substances or petroleum products; electrical and hydraulic equipment that may
 contain polychlorinated biphenyls (PCBs), such as electrical transformers and hydraulic hoists;
 underground and aboveground storage tanks (USTs and ASTs, respectively); etc.
- A determination of the sources of water, power, and sewer service at the subject property.
- Perform a subject property line visual reconnaissance of adjacent properties for evidence of
 potential offsite environmental conditions that may affect the subject property.
- Evaluate information gathered during the Assessment to reach conclusions concerning recognized environmental conditions and prepare this report.

This Assessment did not include considerations of "Non-ASTM" issues (e.g., asbestos-containing building materials, radon, lead-based paint).

This Assessment did not include sampling or analysis of soil, groundwater or other materials.

A BVNA representative, Ms. Michelle Gonsalves, Consultant, conducted the site walkthrough portion of the Assessment on November 2, 2018, accompanied by Mr. Brian Ige, the Construction Manager with Dowling Company, Inc. This Assessment was performed by (or under the responsible charge of) an *Environmental Professional* as defined in §312.10 of 40 CFR 312 (see Section 11.0).

Copies of selected relevant documents and supporting information are included in the applicable appendices. See the Table of Contents for a list of Appendices. Resumes for assessors and *Environmental Professionals* involved in this Assessment are included in the Appendices. Photographs taken at the time of the walkthrough are included behind the *Photographs* Tab.

1.3 EXCEPTIONS & LIMITING CONDITIONS OF ASSESSMENT

Information for the Assessment was obtained from the sources listed in the Appendices. This information, to the extent it was relied on to form our opinion, is assumed to be correct and complete. BVNA is not responsible for the quality or content of information from these sources.

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1.3.1 Unavailable Documentation

Requested documentation regarding the subject property was made available for review, except for the following:

· Maui Fire Department records, if any

BVNA has not received a response from the above request(s) as of the date of this report.

1.3.2 Lack of Access/Reconnaissance Limitations

BVNA did not encounter significant access or reconnaissance limitations at the subject property, except for the following:

The southwestern portion of the subject property could not be accessed due to minor flooding.

No opinion regarding environmental conditions in areas that were not observed can be formed. It is BVNA's opinion that the access/reconnaissance limitation(s) listed above did not likely impede an evaluation of the subject property with respect to recognized environmental conditions.

1.3.3 Data Gaps

The ASTM Standard requires that the report identify the following: 1) obvious uses of the subject property since 1940 or first development, whichever is earlier; and 2) significant "data gaps" which affect the ability of the Environmental Professional to identify recognized environmental conditions. The report is also to include information on the sources consulted to address the data gaps.

Historical subject property ownership and/or use information was obtained for the time period 1950 to present. Based on this information, BVNA has established the history of *obvious* uses of the subject property since 1950 or first development, whichever is *earlier*. No significant data gaps (or other data gaps warranting discussion) were encountered during this Assessment, except for the following:

gape warraning diseases. If no expension a daming and reception are issueing.			
Data Gap:	Data Failure – pre 1950, a type of data gap as defined by ASTM		
Does this data gap affect the EP's ability to identify RECs?	No		
Rationale	Use of the subject property has been established since 1950. Prior use was likely the same (agricultural).		
Information sources consulted	BVNA obtained and reviewed the following reasonably ascertainable records/information: 1) ASTM Standard Historical Sources (except recorded land title records), 2) selected local environmental records sources, 3) interviewed local government agency personnel, 4) interviewed the current owner, and 5) ASTM Standard Environmental Records Sources (through a commercially available database). Contact information for the previous owner was not provided and the scope of service did not include obtaining a chain-of-title.		

1.4 RELIANCE

The information and opinions rendered in this report are exclusively for use by DDC, LLC and Dowling Company, Inc. BVNA will not distribute or publish this report without consent except as required by law or



court order. The information and opinions expressed in this report are given in response to a limited assignment and should be considered and implemented only in light of that assignment. The services provided by BVNA in completing this project were consistent with normal standards of the profession. No other warranty, expressed or implied, is made.

BVNA warrants that the services, findings, and/or recommendations provided to Comerica Incorporated, its affiliates and subsidiaries, and their respective successors and assigns (individually and collectively) "Comerica"), have been prepared, performed and rendered in accordance with procedures, practices and standards generally accepted and customary in the consultant's profession for use in similar assignments. BVNA shall indemnify, save and hold harmless Comerica from and against any and all losses, costs, expenses and liabilities, including without limit reasonable attorney's fees, which are attributable to the breach of the above warranty, up to an aggregate amount of \$1,000,000 (One Million Dollars), notwithstanding any limitation (expressed or implied) contained in any other agreement or document relating to the services, findings and/or recommendations provided by BVNA.

2.0 USER PROVIDED INFORMATION

ASTM E1527-13 defines "User" as the party seeking to use Practice E1527 to complete an environmental site assessment of the subject property. BVNA understands that DDC, LLC c/o Dowling Company, Inc. is the User as defined by ASTM E1527-13. ASTM E1527-13 specifies that certain tasks associated with identifying potential recognized environmental conditions at the subject property should be performed by the User and provided to the Environmental Professional (i.e., User Responsibilities). Accordingly, BVNA provided the User a questionnaire, requesting specific information (see Appendices).

The User Questionnaire included requests for information on the following: environmental liens and AULs that are filed or recorded against the property; "specialized knowledge" of the *User*, relationship of the purchase price to the fair market value of the property if it were not contaminated; commonly known or reasonable ascertainable information; the degree of obviousness of the presence of likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation; the presence of *Proceedings Involving the Property* (e.g., litigation, regulatory agency rulings, violations); and the reason for performing the Phase I ESA, and other information/documents (e.g., site plan, ALTA survey).

Based on BVNA's review of the *User* provided information, no readily apparent evidence of potential recognized environmental conditions at the subject property was noted.

BVNA's understands that the *User* intends to develop the subject property as residences.

3.0 SUBJECT PROPERTY DESCRIPTION

3.1 LOCATION

The subject property is located on one parcel with TMK No. (2) 3-5-002: Parcel 002 in Wailuku, Maui, Hawaii (Figure 1, *Figures* Tab). The subject property consists of approximately 60 acres of pasture land.

3.2 CURRENT USE OF SUBJECT PROPERTY

A description of the current uses and improvement(s) (if any) at the subject property is presented in the following table(s):

Parcel/Street Address (including known historic address[es])	TMK No. (2) 3-5-002: Parcel 002	
Owner:	Pacific Rim Land	

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Number and Size of Buildings:	Several make-shift animal shelters and storage containers
Construction Date(s):	Unknown
Tenants:	Endurance Investors LLC and Association of Wai Hui LP
Current Usage:	Pasture Land
Areas Inspected:	The southwest portion of the subject property could not be accessed due to minor flooding. The remainder of the subject property was inspected.

3.3 CURRENT USES OF ADJOINING/NEARBY PROPERTIES

The area surrounding the subject property consists of residential development and pasture land. Adjoining and nearby properties were observed (from the subject property or from public access areas) for evidence of potential *recognized environmental conditions* and their potential to pose an environmental concern to the subject property (Figure 1, *Figures* Tab). The uses and features of adjoining properties are described below (by relative compass direction and across adjoining roadways):

North		
Company/Facility Name	Address	Type/Relevant Observations (if any)
Pasture	Unaddressed Parcel	Pasture/No Concerns

East			
Company/Facility Name	Address	Type/Relevant Observations (if any)	
Valley Isle Fellowship/ Single-Family Residences, and Undeveloped Land	1033 Waiale Road, 50-63 Kanamele Loop, and Unaddressed Parcel	Church, Residential, Undeveloped/No Concerns	

South			
Company/Facility Name	Address	Type/Relevant Observations (if any)	
Single-Family Residences	46-159 Mo'olu Circle, 76-80 Koani Loop	Residential/No Concerns	

West		
Company/Facility Name	Address	Type/Relevant Observations (if any)
Pasture	Unaddressed Parcel	Pasture/No Concerns



Information regarding historical or other documented uses of nearby properties that may pose an environmental concern to the subject property is discussed in Sections 4.0 and 6.0, respectively.

3.4 PHYSICAL SETTING

The "physical setting" of the subject property was assessed through a review of the following: USGS Topographic Map, visual observations at the subject and nearby properties, and selected additional documentation (e.g., soil survey, geotechnical reports, previous Phase II assessment, interviews with local personnel, etc.). General information on the topography, surface water, soils, bedrock and groundwater in the vicinity of the subject property is as follows:

Soil Type

Lao cobbly silty clay, which is well drained and has moderately

high runoff potential (ERIS, 2018).

Bedrock (Type and

Depth) Mesoz

Mesozoic volcanic rocks (USGS, 2017).

Nearby Surface A drainage ditch is currently located in the southwest portion of the subject property (Google image).

the subject property (Google image).

Estimated Depth Shallow Groundwater was measured to be greater than 500 feet below ground surface (bgs) in the vicinity of the subject property

(USGS, 2013).

Estimated Shallow Groundwater Flow

Groundwater:

Direction East (ERIS, 2018).

The subsurface conditions under the subject property are interpreted from available data and may vary. Estimated groundwater flow direction is based on topography and nearby water features unless otherwise noted. Topography is not always a reliable basis for predicting groundwater flow direction. The local groundwater gradient under the subject property may be influenced naturally by zones of higher or lower permeability, or artificially by nearby pumping or recharge, and may deviate from the regional trend.

4.0 HISTORICAL REVIEW

The following Sections detail BVNA's review of available historical and related information. This includes a review of ASTM Standard Historical Sources, Agency/Department records/personnel interviews and other documents. The historical summary also incorporates information obtained from interviews and other components of the Assessment process.

4.1 SUMMARY OF HISTORICAL REVIEW

The historical research presented in this Assessment has established the *obvious* uses of the subject property since 1950. In addition, information on historic uses of adjoining properties was also obtained. A chronological summary of the historic use of the subject and adjoining/nearby properties is presented below. Please refer to Section 1.3.3 for a summary of significant data gaps (if any).

The subject property was developed as agricultural land from at least 1950 until circa 2009 when it became in use as pasture land.

The adjoining properties were developed as agricultural land from at least 1950 until sometime prior to 2009. The north and west adjoining properties have been in use as pasture land since 2009. The current residences and church on the east adjoining property were developed circa 2009 and 2015, respectively. The residences were developed on the south adjoining property by 2011.

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4.2 AERIAL PHOTOGRAPHS

Aerial photographs, including the subject and adjoining properties, were obtained from ERIS for the years 1950, 1965, 1976, 1992, 2000, 2009, 2011, and 2015 which are included in the Appendices. Photographs reviewed are summarized as follows:

Date	Scale	Comments
1950		The subject and adjoining properties were developed for
1965		agricultural use.
1976	1"=500'	
1992		
2000		
2009	1"=500'	The subject, north, and west adjoining properties were no longer in agricultural use. Residences were developed on the southern portion of the east adjoining property. The south adjoining property was graded for development. No further changes were noted.
2011	1"=500'	There were no significant changes from the 2009 photograph, except that residences were developed on the south adjoining property.
2015	1"=500'	There were no significant changes from the 2011 photograph, except that one small building was developed in the center of the east adjoining property.

No readily apparent evidence of potential *recognized environmental conditions* at the subject or adjoining properties were noted on the aerial photographs reviewed, except for the following:

The subject property was in agricultural use since at least 1950 until sometime prior to 2009.

4.3 USGS TOPOGRAPHIC MAPS

Topographic maps for the subject property and vicinity were obtained from ERIS for the years 1955, 1977, 1983, 1997, and 2013, which are included in the Appendices. Topographic maps reviewed are summarized as follows:

Date	Comments
1955	No structures or improvements were depicted on the subject and adjoining properties.
1977	
1983	
1997	
2013	

No readily apparent evidence of potential *recognized environmental conditions* at the subject or adjoining properties were noted on the topographic maps reviewed.

4.4 FIRE INSURANCE MAPS

Fire insurance maps were not available for the area of the subject property, according to ERIS.



4.5 CITY DIRECTORIES

City directories covering the subject property and adjoining properties were obtained from ERIS for the period between 1995 and 2018, which are included in the Appendices. A summary of the listings for the subject property and selected adjoining/nearby properties is shown below.

• The subject and adjoining properties were not listed in the city directories reviewed.

No readily apparent evidence of potential *recognized environmental conditions* at the subject or adjoining properties was noted on the city directories reviewed.

4.6 RECORDED LAND TITLE RECORDS

Information (if any) provided to BVNA by the *User* with respect to environmental liens or AULs was discussed in Section 2.0. It should be noted that the ASTM Standard recommends that the User retain a title company or title professional to undertake a review of recorded land title records.

4.7 AGENCY CONTACTS

BVNA contacted various government offices to request information on the subject property. Information was requested with respect to historic use and various environmental-related issues, such as: permits, use of or complaints/spills/violations involving hazardous substance and petroleum products, USTs, ASTs, etc. In addition, interviews were also conducted with available agency personnel. Interviews requested relevant personal knowledge regarding the past history of use of, and/or potential recognized environmental conditions associated with, the subject property. The government offices and local officials contacted are presented below, along with the relevant information (if any) they provided.

Agency: BUILDING, PLANNING AND/OR ZONING DEPARTMENTS

Permits/Comments: The County of Maui Building Department and Tax Assessor was contacted on October 30, 2018 to obtain any structural permits for the subject property. No structural permits are on file for the subject property; however, it was noted that the subject property has been primarily used as pasture land in the tax records since at least 2001.

Agency: HAWAII DEPARTMENT OF HEALTH

Permits/Comments: The Hawaii Department of Health was contacted on October 30, 2018 to obtain information regarding permits or violations involving hazardous material use or USTs on record for the subject property. According to the HDOH on November 8, 2018, there were no records on file for the subject property.

Agency: COUNTY OF MAUI FIRE DEPARTMENT

Permits/Comments: The Maui Fire Department was contacted on October 30, 2018 to obtain information regarding any files regarding subsurface contamination at the subject property and adjoining properties. BVNA has not received a response as of the date of this report.

Agency: COUNTY OF MAUI DEPARTMENT OF PUBLIC WORKS

Permits/Comments: The County of Maui Department of Public Works (MDPW) was contacted October 30, 2018 to obtain any files regarding subsurface contamination at the subject property. According to the MDPW on November 12, 2018 there were no records on file for the subject property.

4.8 PREVIOUS ENVIRONMENTAL REPORTS OR OTHER DOCUMENTS

BVNA made requests to the client and the current property owner/site contact regarding the presence of previous environmental reports or other relevant documents for the subject property (e.g., previous Phase

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I or Phase II ESA, geotechnical report, MSDS, etc.) No previous reports were available for review; however, the following report was available for the northern portion of the east adjoining property:

Phase I Environmental Site Assessment, 160-Acre Kehalani Property, TMKs (2) 3-5-001: Parcels 063 (Portions), 064, and 108 through 117, Wailuku, Maui, Hawaii, dated March 7, 2016, prepared by BVNA for Redwood Capital Finance Company, LLC.

This Assessment was completed for a larger property that includes the northern portion of the east adjoining property (Parcel 064). According to the report, a multi-increment sampling investigation was completed in February 2011 for the entirety of the property. A total of 64 multi-increment soil samples were collected and analyzed for arsenic using EPA Method 6010B, dioxins using EPA Method 8290, and organochlorine pesticides using EPA Method 8081. A total of five multi-increment soil samples collected from near the subject property found that organochlorine pesticides were not detected above their respective method reporting limits. Arsenic and dioxin were both detected above their respective method reporting limits but below their respective environmental action limits. Exact concentrations were not listed in the report reviewed. No further action was recommended.

5.0 INTERVIEWS

BVNA interviewed selected individuals associated with the subject property. The purpose of the interview(s) was to obtain additional information related to 1) the current and past operations at the subject and/or adjoining properties that may result in recognized environmental conditions, and 2) the presence of Proceedings Involving the Property (e.g., litigation, regulatory agency rulings, violations, etc.).

This included interviews with the current property Owner(s) and/or their "Key Site Manager(s)" and major Operators/Occupants. The "Key Site Manager" is that individual designated by the Property Owner that possesses good knowledge of the uses and physical characteristics of the property. Past owners, operators and occupants were also interviewed if 1) they were identified, 2) contact information was obtained, and 3) the information was not likely to be duplicative of that obtained from other sources. Information (if any) obtained from interviews with local Agency personnel is included in Section 4.7. In addition, in the event the subject property currently appears "abandoned" with evidence of potentially unauthorized uses or uncontrolled access, one or more owners/occupants of adjoining properties were interviewed.

5.1 INTERVIEW WITH OWNER

Mr. Ryan Churchill, the Vice President of Pacific Rim Land, filled out an interview questionnaire via email on November 2, 2018. Mr. Churchill has been associated with the subject property for approximately three years and was forthcoming with information of which he had knowledge. Mr. Churchill was unaware of any USTs, ASTs, or hazardous materials located on the subject property.

Mr. Churchill was asked if he was aware of any of the following:

Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property.	Yes	No	х
Any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.	Yes	No	x
Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.	Yes	No	х
Previous owners were not interviewed during this assessment, because adequate in obtained from other sources.	formation wa	as	



5.2 INTERVIEWS WITH OTHERS

No other interviews were conducted.

6.0 STANDARD ENVIRONMENTAL RECORD SOURCES: FEDERAL, STATE, AND TRIBAL

Available government database information prepared by ERIS was reviewed to evaluate both the subject property and listed sites within ASTM-recommended search distances. This included ASTM Standard Federal, State, and Tribal databases and may also include other types of records, subject to availability (e.g., local lists).

The regulatory database report also included an Unmappable Sites Section. Unmappable sites are sites that cannot be plotted with confidence, but can be located by zip code or city name. In general, a site cannot be geocoded due to inaccurate or missing information in the environmental database record provided by its applicable agency. Unmappable sites that were identified by BVNA are included, as applicable, within the following paragraphs.

The subject property was not identified in the databases reviewed.

Eight sites and two unmappable sites were identified in the databases reviewed.

The computer database review identified no nearby/adjoining facilities within the specified search distances from the subject property within ASTM-recommended search distances of the subject property. It is BVNA's opinion that these facilities do not represent a potential recognized environmental condition with respect to the subject property.

7.0 TIER 1 VAPOR ENCROACHMENT SCREEN (VES)

BVNA conducted a Tier 1 VES during the Phase I ESA. The VES was conducted in accordance with ASTM E2600-10, Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions. A VES is often conducted in conjunction with a Phase I Assessment as much of the information utilized is common to both processes. The methods and terms are as defined in the ASTM standard

The goal of a VES is to identify a *vapor encroachment condition* (VEC) at a subject property. A VEC is defined as the presence of likely presence of *chemicals of concern* (COC) vapors in the subsurface of a subject property caused by the release of vapors from contaminated soil or groundwater either on or near the subject property.

In accordance with the Standard, BVNA requested that the *User* provide information on the subject property, with respect to the following: "specialized knowledge" of the *User*, and commonly known or reasonable ascertainable information. No evidence of a VEC was identified in the *User* provided information.

7.1 TIER 1 SCREENING INFORMATION

A Tier 1 VES includes obtaining and reviewing information on the subject property and adjoining properties. This includes information on the following: user provided information; physical setting information; existing/planned use of the subject property; types of structures/existing or planned on the subject property; surrounding area description; selected Federal, State, Local and Tribal environmental records sources; historical records related to the past use of the subject property and adjoining properties within the area of concern (AOC), ¹/₃ to ¹/₁o mile; the likely chemicals of concern (COC); and the presence of significant natural or man-made conduits that can serve as preferential pathways, such as utility corridors, sewers, storm drains, etc. (Note: These "preferential pathways" may provide for a more direct route for vapors to encroach upon the subject property).

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As stated previously, most of this information was obtained as part of the standard Phase I assessment process and has already been discussed in the applicable sections of this report. Additional information was also obtained with respect to the following: planned additional structures; and significant natural or man-made "preferential pathways" of potential vapor migration. This information is summarized below:

- The planned use for the subject property is development as residences.
- The subject property is currently not connected to utilities.

7.2 TIER 1 SCREENING EVALUATION

An evaluation of that information includes two tests: 1) a search distance test to evaluate the proximity of the target property to known or suspected "contaminated properties", and 2) a chemicals of concern test to determine the likely presence of COCs at the subject or properties within the AOC. In evaluating the data, the distance and proximity to potentially contaminated offsite properties must be evaluated, including whether they are up-, cross-, or down-gradient relative to the subject property. A brief summary of relevant information considered for the Tier 1 screening follows:

Use of Property: Pasture

Soil Characteristics: Lao cobbly silty clay

Depth to groundwater: Greater than 500 feet bgs

Preferential Pathways: The subject property is not connected with utilities

The vapor encroachment screen process has been completed in accordance with the Standard. No evidence of a vapor encroachment conditions were identified at the subject property or nearby properties.

8.0 SITE RECONNAISSANCE

8.1 GENERAL OBSERVATIONS

The subject property was assessed on foot. At the time of the walkthrough, the subject property was in good condition; however, BVNA could not access the southwest portion of the property due to minor flooding. The subject property is primarily in use as pasture land for grazing livestock with a farm headquarters area in the southeast portion of the property. This area consists of make-shift animal shelters, abandoned vehicles, equipment, storage containers, and other miscellaneous items. An irrigation ditch bisects the subject property from the northwest of the south. Access can be gained from Honoapiilani Highway to the east.

The following information was obtained regarding subject property utilities:

Electricity: Not Applicable
 Natural Gas: Not Applicable
 Water: Not Applicable



8.2 CURRENT SITE CONDITIONS

Stained Soil/Surface	Yes		No	XX
Distressed Vegetation	Yes		No	xx
Odors	Yes		No	xx
Chemical/Hazardous Materials Storage	Yes	xx	No	
Comments (types, amount, location): Small are stored within a flammable cabinet in farm ASTs were observed within this area. No secowere in good condition and no evidence of a result of the condition of the condition and second the condition and second the condition are calculated as a condition and second the condition are calculated as a condition and second the condition are calculated as a	neadquarters. Indary contain	Additionally, the ment was obse	ree 500-g	allon propane
Drums/Unidentified Substance Containers	Yes		No	XX
Wastewater/Stormwater	Yes	xx	No	
			_	
Comments (types, amount, location): Waste property. The storm water runoff percolates in on the subject property.				
property. The storm water runoff percolates in				
property. The storm water runoff percolates in on the subject property.	to the ground		irrigatior	n ditch located
property. The storm water runoff percolates in on the subject property. Sumps/Floor Drains	to the ground o		No	xx
property. The storm water runoff percolates in on the subject property. Sumps/Floor Drains Leachfields/Septic Tank	Yes Yes Yes		No	XX XX

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Waste Handling and Disposal:

Comments (types, amount, location): Non-hazardous household waste is currently not generated at the subject property.

Potential PCB-Containing Equipment Aboveground Storage Tanks (ASTs)	Yes	XX	No	XX
	Yes		No	
Comments (types, amount, location): Thr water totes were observed in the farm head observed. All containers were in good condi	quarters area. N	No secondai	y containme	nt was
Underground Storage Tanks (USTs)	Yes _		No _	XX

9.0 NON-ASTM ISSUES

The scope of services for this Assessment did not include an evaluation of "Non-ASTM" issues (e.g., asbestos-containing building materials, radon, lead-based paint, lead in drinking water, wetlands, etc).

10.0 FINDINGS AND OPINIONS

This section presents a summary of available information on known or suspected recognized environmental conditions, controlled recognized environmental conditions, vapor encroachment conditions, and de minimis conditions (if any) at the subject property. It also includes BVNA's opinion and rationale for concluding that a condition is, or is not, currently a recognized environmental condition.

BVNA has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-0513 of the property located southeast of Honoapiiliani Highway and Kuikahi Drive (TMK No. [2] 3-5-00: Parcel 002) in Wailuku, Maui, Hawaii (the "subject property"). Any exceptions to, or deletions from, this practice are described in Sections 1.2 and 1.3 of this report.

This assessment has revealed no evidence of *recognized environmental conditions*, as defined by ASTM, in connection with the subject property.

The following environmental condition, which is not considered a recognized environmental conditions, was identified during this assessment:

Agricultural Use - The subject property was in agricultural from at least 1950 until sometime
prior to 2009. Given this usage, it is possible that the pesticides and/or herbicides were once
used on site. Based on BVNA's experience in sampling soils for residual pesticides and or
fertilizers that have been applied in conjunction with normal agricultural activities and the length of
time since agricultural activity occurred on site, the likelihood that residual chemicals will be found
above clean-up levels is low. In February 2011, a multi-increment sampling investigation was
conducted by BVNA on the northern portion of the east adjoining property and at the property



approximately 1,075 feet northeast. A total of five multi-increment soil samples were collected from this area and analyzed for arsenic using EPA Method 6010B, dioxins using EPA Method 8290, and organochlorine pesticides using EPA Method 8081. Results indicated that organochlorine pesticides were not detected above their respective method reporting limits. Arsenic and dioxin were both detected above their respective method reporting limits but below their environmental action limits. Exact concentrations were not listed in the report reviewed. Based on nearby results, it is BVNA's opinion that the potential past use of pesticides and/or fertilizers does not present a recognized environmental condition to the subject property.

Based on soil sampling on adjoining and nearby properties which did not find pesticides above action limits, no additional sampling is required. However, if site specific pesticide information is needed, then soil sampling would be required.

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SIGNATURES

This report was prepared, under the responsible charge of the Environmental Professional noted below, by:



Jennifer Woods Consultant Health, Safety and Environmental Services Los Angeles Regional Office BVNA North America, Inc.

Environmental Professional's Certification:

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Thame Sulon-

Shannon Gillespie, REA No. 03582 Manager, Due Diligence & Regulated Building Materials Health, Safety and Environmental Services Los Angeles Regional Office Bureau Veritas North America, Inc.

November 13, 2018

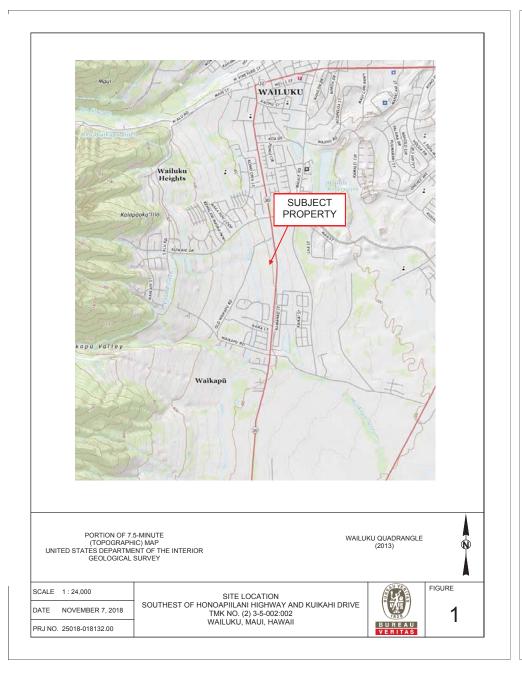
Phase I Environmental Site Assessment Southeast of Honoapillani Highway and Kuikahi Drive TMK Nos. (2) 3-5-002:Parcel 002 Wailuku, Maui, Hawaii

BVNA Project No. 25018-018132.00



FIGURES

15 Project Number 25018-018132.00 Project Number 25017-017125.00







PHOTOGRAPHS

SITE: Southeast of Honoapiilani Highway and Kuikahi Drive PROJECT No.: 25018-018132.00

LOCATION: TMK No. (2) 3-5-002: 002, Wailuku, Maui, Hawaii DATE: November 2, 2018



View of southeast corner of the subject property facing southeast.



Abandoned vehicle located on the southeast corner of the subject property facing north.



)

SITE: Southeast of Honoapiilani Highway and Kuikahi Drive LOCATION: TMK No. (2) 3-5-002: 002, Wailuku, Maui, Hawaii

PROJECT No.: 25018-018132.00

DATE: November 2, 2018



Abandoned equipment located on the southeast corner of the subject property facing west.





View of access road, and abandoned equipment, on the southeast side of the subject property, facing west.



SITE: Southeast of Honoapiilani Highway and Kuikahi Drive LOCATION: TMK No. (2) 3-5-002: 002, Wailuku, Maui, Hawaii

PROJECT No.: 25018-018132.00

DATE:

November 2, 2018



Irrigation ditch that bisects the subject property facing north.



Shipping container used for storage, located in the center of the subject property facing north.



SITE: Southeast of Honoapiilani Highway and Kuikahi Drive PROJECT No.: 25018-018132.00

LOCATION: TMK No. (2) 3-5-002: 002, Wailuku, Maui, Hawaii

November 2, 2018 DATE:



Animal shelters located on the central portion of the subject property facing northwest.



Arena located on the central portion of the subject property facing east.



SITE: Southeast of Honoapiilani Highway and Kuikahi Drive PROJECT No.: 25018-018132.00 LOCATION: TMK No. (2) 3-5-002: 002, Wailuku, Maui, Hawaii November 2, 2018 DATE:



Propane tanks located near the farm headquarters on the central portion of the subject property facing west.



Fire hazard cabinet located north of the farm headquarters area facing north.



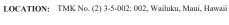
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SITE: Southeast of Honoapiilani Highway and Kuikahi Drive PROJECT No.: 25018-018132.00

DATE: November 2, 2018

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Tires and other rubbish located just north of the farm headquarters facing east.



Large dumpsters located just north of the farm headquarters facing north.



SITE: Southeast of Honoapiilani Highway and Kuikahi Drive PROJECT No.: 25018-018132.00 LOCATION: TMK No. (2) 3-5-002: 002, Wailuku, Maui, Hawaii November 2, 2018 DATE:



One of the pastures on the subject property looking west from the northeast side of the subject



Gated entrance to the southwest side of the subject property facing south.



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SITE: Southeast of Honoapiilani Highway and Kuikahi Drive PROJECT No.: 25018-018132.00 LOCATION: TMK No. (2) 3-5-002: 002, Wailuku, Maui, Hawaii DATE: November 2, 2018



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Residential properties that border the south side of the subject property facing southeast.



Honoapiilani Highway, which borders the east side of the subject property facing northeast.





APPENDIX A
RESUMES

Project Number 25017-017125.00



Jennifer Woods

Consultant I

Education

B.S., Environmental Science University of California, San Diego La Jolla, CA

Registrations/Certifications

Asbestos Hazard Emergency Response Act (AHERA) Certified Building Inspector (6N10515)

Asbestos Contractor/Supervisor

(5N12392)

(17-6101)

Asbestos Certified Site Surveillance Technician

Certified Lead Sampling Technician

40-Hour OSHA HAZWOPER Trained

Location

Costa Mesa, CA

Years with Bureau Veritas

2.5 Years

Total Years of Experience

2.5 Years

Ms. Woods conducts Phase I Environmental Site Assessments (ESAs) for various financial, real estate, industrial, and commercial clients. Using American Society for Testing Materials (ASTM) standard practices as a guideline, Ms. Woods has conducted Phase I ESAs of industrial sites, commercial buildings, and undeveloped land throughout California, Arizona, Washington, Nevada, Idaho, and Montana. These have included performing historical research, interviewing owners, occupants, and local government officials, and generating reports. Ms. Woods also has participated in all phases of asbestos and lead projects.

In addition, to assessing potential environmental conditions, Ms. Woods participates in Phase II investigative activities, including soil sampling, groundwater sampling, and soil vapor sampling.

Ms. Woods also performs National Environmental Protection Act (NEPA) compliance work in California for proposed and existing wireless communications facilities. She also researches and generates reports regarding the specific location of historical sites, endangered species and habitats, wildlife and wilderness preserves, and Native American religious areas.



Jennifer Woods

Project Experience

Phase I Environmental Site Assessments (ESAs)

Real Estate Transactions

Ms. Woods has conducted various Phase I ESAs throughout Southern California to satisfy due diligence investigations for real estate transactions, banks, real estate investment companies, developers, and property owners. Ms. Woods has conducted site inspections and investigated surrounding property usage; reviewed relevant regulatory files for investigations at the site or in the immediate area; and surveyed past site and surrounding property uses using aerial photographs, city directories, fire insurance maps and government records.

Phase II Subsurface Investigations

Real Estate Transactions

Ms. Woods has conducted a variety of activities associated with Phase II Subsurface Investigations including field soil, groundwater, and soil vapor sample collection and lithology description, data quality control, and generating reports.

National Environmental Policy Act (NEPA)

Telecommunications

Ms. Woods has conducted environmental assessments in Southern California in compliance with the National Environmental Protection Act (NEPA) for national telecommunications clients. Ms. Woods' research includes consultation with several bureaus within the United States Department of Interior such as National Park Services (NPS), United States Fish & Wildlife Services and Bureau of Land Management (BLM). In addition, Ms. Woods contacts state and local agencies, federally and non-federally recognized Native American Tribes concerning religious areas, and the California Historic Preservation Office. Ms. Woods has investigated potential wildlife and wilderness preserves, wetlands, endangered or threatened species and habitats and Native American religious areas. Ms. Woods has knowledge of the Federal Communications Commission's (FCC) Nationwide Programmatic Agreement (NPA).

Employment History

Bureau Veritas North America, Inc. – Costa Mesa, California Consultant I 2015 to Present

Bureau Veritas North America, Inc.

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Shannon Gillespie, REPA

Manager, Due Diligence & Regulated Building Materials

Due Diligence Practice Line Leader

B.S., Chemistry, 1986 Arizona State University, Tempe, Arizona

California Registered Environmental Assessor, REA-03582: 1992

Registered Environmental Property Assessor: 2013

OSHA 8-hour HAZWOPER Refresher

OSHA 40-hour Hazardous Waste, Health and Safety Accreditation Training

AHERA Building Inspector

Ms. Gillespie has over 27 years of technical experience in conducting environmental assessments. Ms. Gillespie supervises staff responsible for conducting Phase I Environmental Assessments and subsequent subsurface investigations, NEPA projects and asbestos and lead projects and has final review of project deliverables. She interacts with clients and is responsible for assuring report timeliness and maintaining project budgets. She prepares Phase I, subsurface investigation and asbestos and lead proposals and conducts business development. Ms. Gillespie is also the Due Diligence Practice Line Leader, which conducts Phase I training of BVNA personnel, standardizing company boilerplate reports and maintaining company quality.

Ms. Gillespie has coordinated, managed, and conducted Phase I environmental assessments of commercial and industrial properties as part of real estate transactions for due diligence investigations. The Phase I assessments include site visits to inspect current site and vicinity usage, review of relevant regulatory files for investigations at the site or in the area, personnel interviews, reviews of hazardous material and waste handling practices, identifying potential sources of contamination and asbestos-containing materials, and surveys of past site and vicinity usages, and reviewing aerial photographs, city directories, fire insurance maps, and government records.

Ms. Gillespie also reviews environmental assessment reports for financial inistitutions to assess business risk and assists clients in the preparation of Hazardous Materials Business Plans. Additionally, she conducts Phase II and Phase III assessments to locate and determine the extent of soil and groundwater contamination. Her responsibilities include soil boring installation, developing site-specific work plans and health and safety plans, interpreting analytical results, estimating volumes of impacted soil and groundwater, estimating remediation costs and report preparation. She reviews environmental assessment and subsurface investigation reports written by staff personnel and other consultants.



Shannon Gillespie, REPA

Project Experience

CERCLA Preliminary Assessment

State of California Real Estate Division (formerly Division of the State Architect)

Prepared a CERCLA preliminary assessment for a 1,300-acre Department of Defense and California Army National Guard installation (Los Alamitos Armed Forces Reserve Center). The assessment included: a review of available files, personnel interviews, onsite and offsite reconnaissance, historical aerial photograph review and survey of potential sources of past and current contamination and contaminant sources. The preliminary assessment indicated that past and present operations at the installation had involved the use, storage, treatment, spillage, leakage, and disposal of materials and/or wastes that are now considered hazardous. These materials and wastes were used in a variety of aircraft and vehicle maintenance, fuel storage, landfilling, aircraft-washing, and other facility activities and operations. Based on this information, potential areas of concern at the installation requiring site investigation activities were identified. The Preliminary Assessment was conducted using guidelines developed by the U.S. Environmental Protection Agency (EPA), Waste Management Division, Region IX and the California Department of Toxic Substances (DTSC).

The SI included twelve potential areas of concern identified in the Preliminary Assessment (PA). The areas included two landfills, a flight line area, revetments, fuel tank farms, former rifle ranges, clarifiers, munitions bunkers, agricultural areas and a wastewater treatment plant. Investigation included the collection of air, surface water, groundwater, soil and soil vapor samples to assess the presence of various contaminants that were identified in the previously completed PA. Ms Gillespie was an integral member of the team in the evaluation of data collected during the SI and generation the Remedial Investigation Work plan, Health and Safety Plan, Quality Assurance Project Plan and Field Sampling Plan.

Phase I Environmental Assessments

Lending Institute

Supervised the completion of a 45 site portfolio for a major lending institute to satisfy due diligence. The sites were located in California, Texas and Arizona and required the coordination of staff from 3 other BVNA offices. All field work and written reports had to be completed within a 4 week period of time and within a tight budget. Ms. Gillespie solely maintained client contact and reviewed all deliverables prior to submittal to client. Some of the projects required subsequent Phase II investigations based on findings during the Phase I.

Phase I Environmental Assessments

Residential Housing Developer

Conducted numerous Phase I environmental assessment s of large tracts of land prior to the client purchasing properties for residential development. Based on the findings of the site inspection, subsurface investigations are conducted simultaneous to the completion of the Phase I. The subsurface investigations have to be completed within the same time frame as the Phase Is. Previous site usage ranges from agricultural use to multiple gas stations and industrial use.

Phase I Environmental Assessments Cellular Communications Company

Managed the completion of over 1000 assessments for a cellular communications company to satisfy due diligence. Completion of the project, which included Phase I Environmental Site Assessments, NEPA work, subsurface investigations and asbestos & lead assessments, required the coordination of staff from five other BVNA offices. All fieldwork and written reports had to be completed within a quick turnaround and within a tight budget. Ms. Gillespie solely maintained client contact and reviewed all deliverables prior to submittal to client.

Employment History

Bureau Veritas North America, Inc., Costa Mesa, California, Manager Due Diligence, 1989 to Present

Rollins Chempak, Inc., Ontario & Los Angeles, California - 1988 to 1989; Disposal Control Service, Phoenix, Arizona, 1987 to 1988; Maricopa County Landfill Department, Phoenix, Arizona, 1987; Salt River Project, Phoenix, Arizona, 1985



APPENDIX B SOURCES AND REFERENCES

LIST OF SOURCES/REFERENCES

Sources of Information

- ASTM International, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," ASTM Designation E1527-13
- ASTM International, "Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transaction," ASTM Designation E2600-10

Persons/Agencies Contacted

- Mr. Brian Ige, Construction Manager, November 2, 2018
- Mr. Aaron Churchill, Vice President, November 2, 2018
- Maui Fire Department, October 31, 2018
- Maui Building Department, October 31, 2018
- Hawaii Department of Health, October 31, 2018

Documents Reviewed

- USGS Topographic Map, Wailuku, Quadrangle Map, 7.5 Minute Series, 2013
- Aerial photographs, obtained from ERIS: 1950, 1965, 1976, 1992, 2000, 2009, 2011, 2015
- Historic topographic maps, obtained from ERIS: 1955, 1977, 1983, 1997, 2013
- Fire insurance maps, obtained from ERIS: No maps are available for the subject property vicinity
- City Directories, obtained from ERIS: 1995 to 2016
 Database Report, ERIS, dated October 31, 2018

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Project Number 25017-017125.00



USER QUESTIONNAIRE AND OTHER DOCUMENTS

Project Number 25017-017125.00



ASTM PRACTICE E 1527-13 USER/CLIENT QUESTIONNAIRE To be returned to BVNA with the authorized proposal

GENERAL INFORMATION

User/Client Name(s):	DDC, LLC
Property Name and Address (Include known current and former address[es] and parcel no.):	TMK: (2) 3-5-002:002
Property Acreage:	60.087 acres
Current Property Type (Designate property type and list current tenants [business name and type of operation]):	Residential: Commercial: Industrial: Other: X Agriculture
Type of Property Transaction with respect to User (Designate one):	Purchase: X Lease: Other (provide further information):
Reason Phase I is Required (Check all that apply):	Landowner Liability Protections (e.g. Innocent Landowner Defense): Evaluation of Business Risk: X Suitability of Land for Residential Development Other (list): (Note: If no reason is given it is assumed that this assessment is being performed to satisfy one of the requirements for Landowner Liability Protections to CERCLA liability.
Site Owner/ Contact(s) (Name and phone number):	Association of II Wai Hui LP & Endurance Investors, LLC Ryan Churchill (808) 270-5946

Please provide the above information as well as a site plan (ALTA Survey, if available) which clearly designates the boundaries of the subject property for purposes of this Phase I ESA. A list of other Helpful Documents is included with the proposal.

Providing the following information (if available) to the *environmental professional* (BVNA) is one of the requirements to qualify for one of the *Landowner Liability Protections* (*LLPs*) offered under CERCLA. Missing or incomplete information could result in a determination that "*all appropriate inquiry*" is not complete. If further information is desired regarding these issues, BVNA recommends you consult with an Environmental Attorney.

REQUIRED INFORMATION

The citation at the end of each item (e.g., 40 CFR 312.XX) is the section of EPA's November 1, 2005 AAI Final Rule which discusses that item. The ASTM Standard requires that reasonably ascertainable recorded land title records that are filed under federal, tribal, state and local law should be reviewed to determine the presence of Environmental Liens and Activity and Use Limitations (AULs) that are currently recorded against the property. This should also include a review of Fenvironmental Liens and AULs that are imposed by judicial authorities and recorded/filed in judicial records. The Standard recommends that the User retain a title company or title professional to undertake a review of recorded land title records. Furthermore, the User is to provide any actual knowledge on Environmental Liens and AULs, as well as other selected information regarding recognized environmental conditions, to the environmental professional.

1. Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).

Given the above requirement, are you aware of any environmental cleanup liens against the *property* that are filed or recorded under federal, tribal, state or local law? (Check One)

property that are filed or recorded under federal, tribal, state or local law? (Check One)
No: X, We are obtaining a current title report for the property.
Yes (If "Yes" provide further information):
(Note: If you desire that BVNA retain a title company/title professional on your behalf to review reasonably ascertainable recorded land title records for the presence of environmental cleanup liens and AULs currently recorded against the property please designate such on the Proposal Acceptance Agreement)

2. Activity and land use limitations (AULs) that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).

Given the above requirement, are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? (Check One)

No: X	
Yes (If "Yes" provide further information):	

3. Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).

As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? (Check One)

N.	۱	v

Yes (If "Yes" provide further information):
4. Relationship of the purchase price to the fair market value of the <i>property</i> if it were not contaminated (40 CFR 312.29).
Does the purchase price being paid for this <i>property</i> reasonably reflect the fair market value of the <i>property</i> ? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the <i>property</i> ?
Yes: X
No (If "No" provide further information):
Not Applicable (e.g., transaction is a lease):
5. Commonly known or reasonably ascertainable information about the property (40 CFR 312.30).
Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases?
No: X
Yes (If "Yes" provide further information):
For example, as <i>user</i> , (a.) Do you know the past uses of the <i>property</i> ?
No:
Yes (If "Yes" provide further information): X, The property was formerly used for the
growing of sugar cane.
(b.) Do you know of specific chemicals that are present or once were present at the <i>property?</i>
No:
Yes (If "Yes" provide further information):
(c.) Do you know of spills or other chemical releases that have taken place at the <i>property</i> ?
No:
Yes (If "Yes" provide further information):
(d.) Do you know of any environmental cleanups that have taken place at the <i>property?</i>
No:
Yes (If "Yes" provide further information):

property and the ability CFR 312.31).	usness of the presence or likely presence of contamination at the to detect the contamination by appropriate investigation (40 based on your knowledge and experience related to the <i>property</i> are						
	tors that point to the presence or likely presence of contamination at						
No: X							
Yes (If "Yes" provide furth	ner information):						
7. Proceedings involvin Are you aware of any of t	ng the <i>property</i> (ASTM E 1527-13 § 10.9). the following:						
products in, on, or from the	ned, or past litigation relevant to hazardous substances or petroleum he property?						
No: X							
Yes (If "Yes" provide furth	ner information):						
	ned, or past administrative proceedings relevant to hazardous products in, on, or from the property?						
No: X							
Yes (If "Yes" provide further information):							
	governmental entity regarding any possible violation of environmental elating to hazardous substances or petroleum products?						
No: X							
Yes (If "Yes" provide furth	ner information):						
GIGNATURE							
	nformation presented in this form is an integral part of the Phase I /NA will evaluate and rely on this information in the development of bort.						
Questionnaire Prepared By:	Bui A Le						
Print/Type Name:	Brian H. Ige						
	Construction Manager						
Title:	Construction Manager DDC, LLC / Dowling Company, Inc.						

APPENDIX D
AERIAL PHOTOGRAPHS

Project Number 25017-017125.00



HISTORICAL AERIAL REPORT

for the site:

Wailuku Maui

Honoapiilani Highway and Kuikahi Drive Wailuku, HI 96793

PO #:

Report ID: 20181030092 Completed: 10/30/2018 ERIS Information Inc.

Environmental Risk Information Services (ERIS) A division of Glacier Media Inc. T: 1.866.517.5204 E: info@erisinfo.com

www.erisinfo.com

Search Results Summary

Date	Source	Scale	Comment
2015	NAIP - National Agriculture Information Program	1"=500'	
2011	NAIP - National Agriculture Information Program	1"=500'	
2009	NAIP - National Agriculture Information Program	1"=500'	
2000	NAIP - National Agriculture Information Program	1"=500'	
1992	NASA - National Aeronautics Space Administration	1"=500'	BEST COPY AVAILABLE
1976	USGS - US Geological Survey	1"=500'	
1965	USDA - US Department of Agriculture	1"=500'	
1950	USGS - US Geological Survey	1"=500'	



Date: 2015 Source: NAIP Scale: 1" to 500'

Comments:





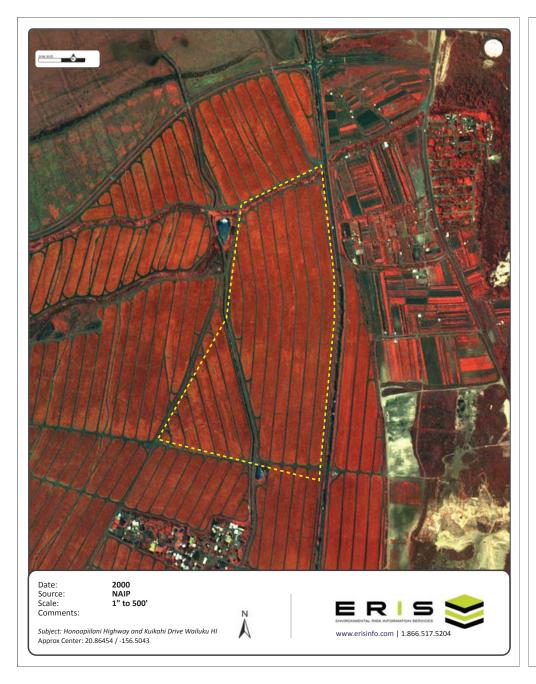


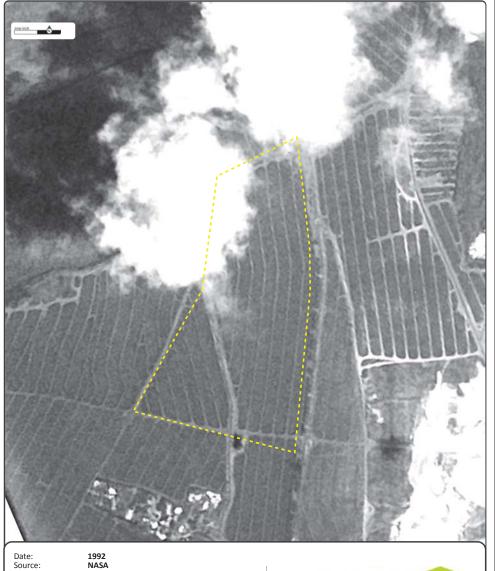


www.erisinfo.com | 1.866.517.5204

Scale:

Comments:





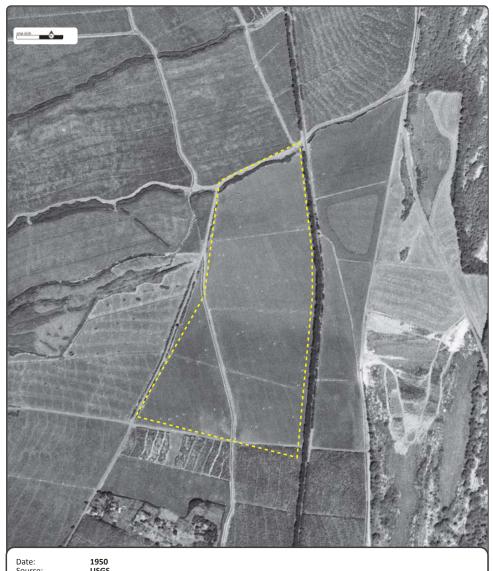
1992 NASA 1" to 500' BEST COPY AVAILABLE Scale: Comments:







www.erisinfo.com | 1.866.517.5204



1950 USGS 1" to 500' Date: Source: Scale:

Comments:

Subject: Honoapiilani Highway and Kuikahi Drive Wailuku HI Approx Center: 20.86454 / -156.5043



APPENDIX E USGS TOPOGRAPHIC MAPS

Project Number 25017-017125.00



TOPOGRAPHIC MAP RESEARCH RESULTS

Date: 2018-10-31

Order Number: 20181030092

Site Name: Wailuku Maui Address: Honoapiilani Highway and Kuikahi Drive, Wailuku, HI, 96793

We have searched USGS collections of current topographic maps and historical topographic maps for the project property. Below is a list of maps found for the project property and adjacent area. Maps are from 7.5 and 15 minute topographic map series, if available.

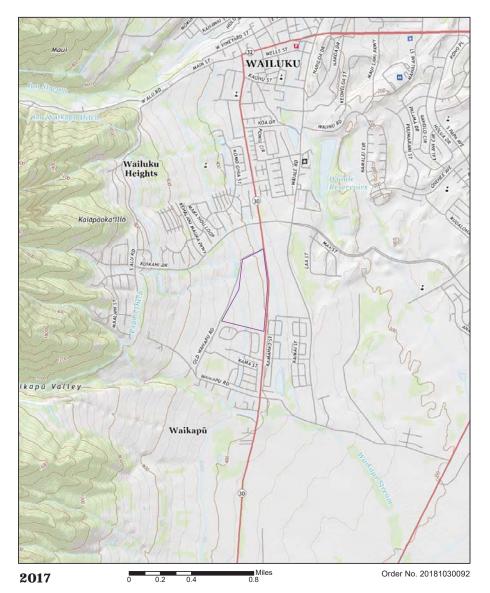
Year	Map Serie
2017	7.5
1997	7.5
1983	7.5
1977	7.5
1955	7.5

Topographic Maps included in this report are produced by the USGS and are to be used for research purposes including a phase I report. Maps are not to be resold as commercial property.

No warranty of Accuracy or Liability for ERIS: The information contained in this report has been produced by ERIS Information Inc. (in the US) and ERIS Information Limited Partnership (in Canada), both doing business as 'ERIS', using Topographic Maps produced by the USGS. This maps contained herein does not purport to be and does not constitute a guarantee of the accuracy of the information contained herein. Although ERIS has endeavored to present you with information that is accurate, ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of ERIS is limited to the monetary value paid for this report.

Address: 38 Lesmill Road Unit 2, Toronto, ON M3B 2T5

Phone: 1-866-517-5204 Fax: 416-447-7658 info@erisinfo.com www.erisinfo.com

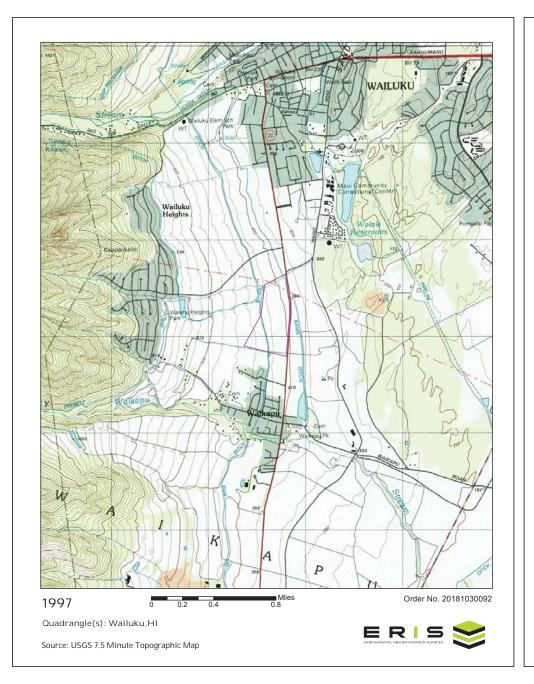


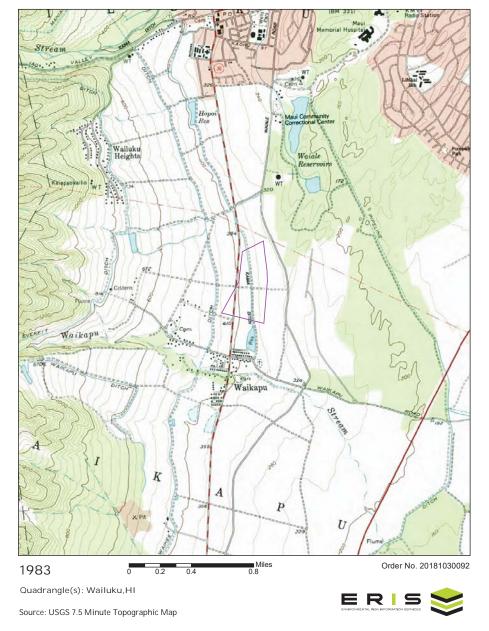
Quadrangle(s): Wailuku,HI

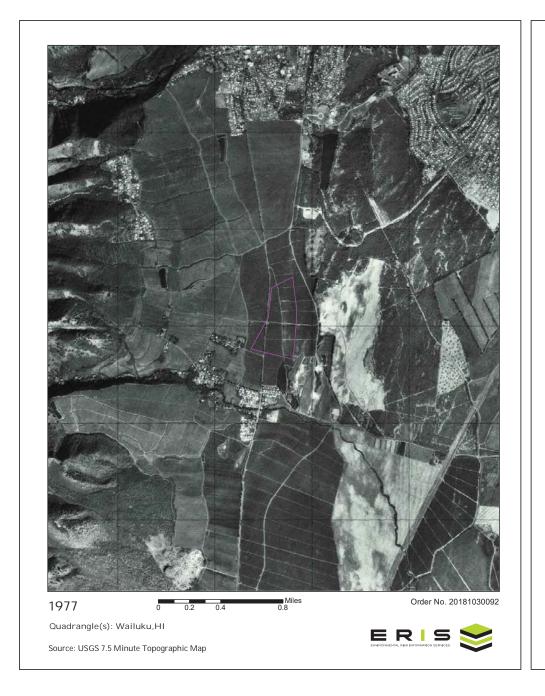
Source: USGS 7.5 Minute Topographic Map

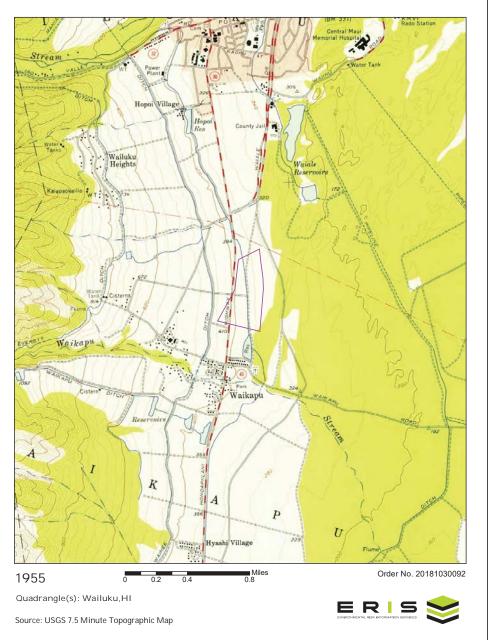
















CITY DIRECTORIES



HISTORICAL DIRECTORY REPORT

for the site:

Wailuku Maui Honoapiilani Highway and Kuikahi Drive Wailuku, HI 96793 PO #:

Report ID: 20181030092 Completed: 10/31/2018 Environmental Risk Information Service (ERIS) A division of Glacier Media Inc. T: 1.866.517.5204 E: info@erisinfo.com

www.erisinfo.com



Search Results Summary

Date	Source
2018	POLKS
2013	POLKS
2008	POLKS
2003	POLKS
1998	POLKS
1995	POLKS

Comment

Project Number 25017-017125.00



www.erisinfo.com | 866-517-5204

10/31/2018

RE: CITY DIRECTORY RESEARCH Wailuku Maui Honoapiilani Highway and Kuikahi Drive Wailuku, HI

Thank you for contacting ERIS for an City Directory Search for the site described above. Our staff has conducted a reverse listing City Directory search to determine prior occupants of the subject site and adjacent properties. We have provided the nearest addresses(s) when adjacent addresses are not listed. If we have searched a range of addresses, all addresses in that range found in the Directory are included.

Note: Reverse Listing Directories generally are focused on more highly developed areas. Newly developed areas may be covered in the more recent years, but the older directories will tend to cover only the "central" parts of the city. To complete the search, we have either utilized the ACPL, Library of Congress, State Archives, and/or a regional library or history center as well as multiple digitized directories. These do not claim to be a complete collection of all reverse listing

ERIS has made every effort to provide accurate and complete information but shall not be held liable for missing, incomplete or inaccurate information. To complete this search we used the general range(s) below to search for relevant findings. If you believe there are additional addresses or streets that require searching please contact us at 866-517-5204.

Search Criteria:

900 - 1100 of Honoapiilani Highway 332 - 432 of Kuikahi Drive

Report ID: 20181030092 - 10/31/2018

HONOAPIILANI HIGHWAY KUIKAHI DRIVE - A 2018 SOURCE: POLKS 2018 SOURCE: POLKS HOUSEHOE ... NO LISTINGS IN RANGE KUIKAHI DR (WAILUKU)-FROM 599 KUALAU + WAIALE RD CONTINUES • ZIP CODE 96793 CAR-RT C010 331 Jimenez Jai N & Ann W ✓ 2 • (2012) Takamori Carol ✓ • (2000) 332 Hasegawa Earl A & Cheryl L / 21 . 335 Pich Mark A / (1986) + HONOAPIILANI HWY INTERSECTS 345 Cosma Francis F Sr & Estrella G / 31 . 352 Waki Robert M & Thelma T ✓ 32 • (1984) 353 Foronda Rolando E & Estrella V / 30 . 363 Janus Shirley F ✓ 9 . (1986)808-214-6638

Report ID: 20181030092 - 10/31/2018 Page: 3



Page: 4

2013 HONOAPIILANI HIGHWAY

NO LISTINGS IN RANGE

```
KUIKAHI DRIVE
2013
SOURCE: POLKS
 KUIKAHI DR (WAILUKU)-FROM 599 KUALAU
  + WAIALE RD CONTINUES

    ZIP CODE 96793 CAR-RT C010

  332 Hasegawa Cheryl L & Earl A / 16 6
       (1986) ......808-244-9844
  335 No Current Listing
  + HONOAPIILANI HWY INTERSECTS
  345 Cosma Francis F Sr / 26 ▲ (1986)
        ......808-242-5019
      Cosma Kawika F .....808-242-5019
  352 Waki Robert M & Thelma T ✓ 27 ▲
       (1995) ......808-242-7248
  353 Foronda Rolando E & Estrella V ✓
       25 (1985) ......808-244-7025
  363 No Current Listing
  369 Tabbal Bernice D ✓ 24 6 (1987)
     Tabbal Bernie D
 371 No Current Listing
 379 Yamashiro Michael N & Lynette S ✓
       19 📤 (1989)
 382 Fujimoto Don S & Luanne K ✓ 27 ▲
      (1995)
 412 Shimabuku Edward N & Cynthia S /
      25 (1987) ......808-244-4567
 413 Vu Hung M ✓ 5 	(2009)
 421 No Current Listing
 429 Wakamatsu Diane A √ 7 6 (1988)
        .....808-244-0843
     Wakamatsu Leigh I ....808-244-0843
 441 Kodama Kyle R ✓ B 	(2001)
        .....808-249-2441
 442 Bal Bervl M / [15] 4 (1997)
```

Report ID: 20181030092 - 10/31/2018 www.erianfo.com

2008

NO LISTINGS IN RANGE

HONOAPIILANI HIGHWAY

Report ID: 20181030092 - 10/31/2018 www.erisinfo.com



2003 SOURCE: POLKS RAZINESSES I KUIKAHI DR (WAILUKU)-FROM 599 KUALAU + WAIALE RD CONTINUES • ZIP CODE 96793 CAR-RT C010 332 Not Verified 335 Carrithers Edwin F Sr 5808-242-6890 Carrithers Amanda R .. 808-242-6890 HI Cain Kathleen C 5 .. 808-249-0473 HI Cain Kyle L808-249-0473 + HONOAPIILANI HWY INTERSECTS 345 Cosma Francis F Sr 16 a808-242-5019 352 Waki Robert M 17 ... 808-242-7248 353 Foronda Rolando E 15808-244-7025 363 Moniz Clifford K 3 369 Tabbal Bernice D 14 . Tabbal Rodolpo R 371 Kim Michael E [12]808-242-8185 379 Yamashiro Michael N & Lynette S 9 382 Fujimoto Don S 17 . + OLD WAIKAPU RD BEGINS 412 Shimabuku Edward N 15808-244-4567 Shimabuku Cynthia S .. 808-244-4567 421 - 429 Not Verified (2 Hses) 442 Bal Eugene III 5808-242-5001 449 Breen John J 13 a Breen Maureen V Morgan Jerry A808-242-7916 453 Waki Daniel I 9 a

HONOAPIILANI HIGHWAY 1998 NO LISTINGS IN RANGE

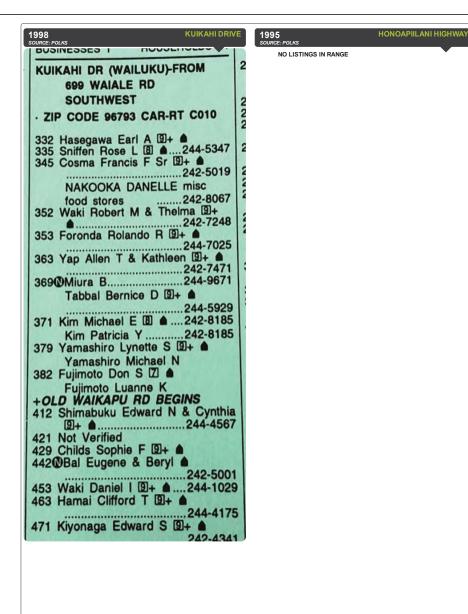
Report ID: 20181030092 - 10/31/2018

HONOAPIILANI HIGHWAY

NO LISTINGS IN RANGE

Page: 6

Report ID: 20181030092 - 10/31/2018



Page: 8

Report ID: 20181030092 - 10/31/2018

KUIKAHI DRIVE 1995 SOURCE: POLKS KUIKAHI DR (WAILUKU MAUI)-FROM HONOAPIILANI HWY WEST 298 · ZIP CODE 96793 + PO WAILUKU HI 335 Sniffen John N & Rose 3 6 244-5347 345 Cosma Francis & Estrella 3 6.242-5019 Cosma Francis Jr......242-5019 352 Waki Robert M & Thelma 2 a 242-7248 353@Foronda Roland244-7025 332@Slack Timothy E242-5413 363 Yap Allen & Kathleen 2 242-7639 369 Not Verified 371@Kim Michael E ▲242-8185 412 Shimabuku Edward N & Cindy 3 a244-4567 Shimabuku Cindy S......244-4567 421@Canha Robert......244-4866 449@Breen John J......244-9864 471 Kiyonaga Edward S 3 6 242-4341 479@Shishido Robert......242-6773 509@Paet Romeo A Sr.....242-8758 512-515 Not Verified (2 Hses) 523 Altura Geoffrey & Esther 3 .. 244-8066

--- END REPORT ---

APPENDIX H RECORDED LAND TITLE DOCUMENTS

Project Number 25017-017125.00

STATUS REPORT

This Report (and any revisions thereto) is issued for the sole benefit of the Purchaser of this Report identified in the Order No. referenced below. Title Guaranty of Hawaii, Inc.'s responsibility for any actual loss incurred by reason of any incorrectness herein is limited to the lesser of \$3,500 or two times the amount paid for this Report.

SCHEDULE A

Title Guaranty of Hawaii, Inc. hereby reports as follows as to the title of the Parties named in Schedule A in and to the title to land described in Schedule C, subject to the matters set forth in Schedule B, based solely upon an abstract and examination of the following Indices in the State of Hawaii: (a) the Office of the Clerks of the Circuit Court of the Judicial Circuit within which the land is located; (b) the Office of the Clerk of the District Court of the United States for the District of Hawaii; (c) the Office of the Registrar of Conveyances; and (d) the Office of the Real Property Tax Assessment Division of the County within which the land is located.

ENDURANCE INVESTORS, LLC,
a Washington limited liability company,
and
ASSOCIATION OF II WAI HUI LP,
a Hawaii limited partnership,
as equal Tenants in Common,
as Fee Owner

This report is subject to the Conditions and Stipulations set forth in Schedule D and is dated as of September 14, 2017 at 8:00 a.m.

Inquiries concerning this report should be directed to RESIDENTIAL TITLE SERVICES. Email rtscustomerservice@tghawaii.com Fax (808) 521-0288

SCHEDULE A CONTINUED

Telephone (808) 533-5874. Refer to Order No. 201745960.

SCHEDULE B EXCEPTIONS

1. Real Property Taxes, if any, that may be due and owing.

Tax Key: (2) 3-5-002-002 Area Assessed: 60.087 acres

- 2. Any and all matters not shown in the Indices described in Schedule $\mbox{A.}$
- 3. Mineral and water rights of any nature.
- 4. Rights of native tenants as reserved in Royal Patent Grant Numbers 282, 2005, 2952, 2953, 3152 and Royal Patent Number 1111.
- 5. GRANT

201745960

TO : MAUI ELECTRIC COMPANY, LIMITED, and HAWAIIAN TELEPHONE COMPANY, now known as HAWAIIAN TELCOM

INC.

DATED : January 5, 1987
RECORDED : Liber <u>20331</u> Page <u>23</u>

GRANTING : a nonexclusive right and easement for utility purposes as shown on maps attached thereto

- Any and all existing roadways, easements of right-of-way and irrigation ditches.
- 7. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF COVENANTS, CONDITIONS, EASEMENTS,

RESERVATIONS AND RESTRICTIONS

DATED : effective December 30, 2002 RECORDED : Document No. 2002-234375

Page 2

SCHEDULE B CONTINUED

Said Declaration was assigned to WAILUKU WATER COMPANY, LLC, a Hawaii limited liability, doing business as WAILUKU WATER COMPANY, by ASSIGNMENT OF DECLARATIONS OF COVENANTS, CONDITIONS, EASEMENTS, RESERVATIONS AND RESTRICTIONS dated effective October 1, 2005, recorded as Document No. 2005-229075.

CORRECTION TO ASSIGNMENT OF DECLARATIONS OF COVENANTS. CONDITIONS, EASEMENTS, RESERVATIONS AND RESTRICTIONS dated August 27, 2007, recorded as Document No. 2007-157854.

- 8. Claims arising out of customary and traditional rights and practices, including without limitation those exercised for subsistence, cultural, religious, access or gathering purposes, as provided for in the Hawaii Constitution or the Hawaii Revised Statutes.
- 9. Discrepancies, conflicts in boundary lines, shortage in area, encroachments or any other matters which a correct survey or archaeological study would disclose.
- 10. The terms and provisions contained in the following:

INSTRUMENT : CO-TENANCY AGREEMENT

: December 31, 2003

RECORDED : Document No. 2004-027470

PARTIES : ENDURANCE INVESTORS, LLC, a Washington limited

liability company, "Endurance", and II WAI HUI, a

Hawaii limited partnership, "Hui"

11. ASSIGNMENT OF IN GROSS RESERVATIONS dated effective October 1, 2005, by and between WAILUKU AGRIBUSINESS CO., INC., a Hawaii corporation, and WAILUKU WATER COMPANY, LLC, a Hawaii limited liability company, doing business as WAILUKU WATER COMPANY, recorded as Document No. 2005-229077.

Note:- No joinder by ENDURANCE INVESTORS, LLC, a Washington limited liability company, and II WAI HUI, a Hawaii limited partnership.

END OF SCHEDULE B

SCHEDULE C

All of that certain parcel of land (being all of the land(s) described in and covered by Royal Patent Grant Number 2953 to W.P. Brown; Royal Patent Number 2775, Land Commission Award Number 3201, Apana 2 to Wm. McLane; Royal Patent Grant Number 282 to James Louzada; Royal Patent Grant Number 2005 to John Ross; Royal Patent Number 3121, Land Commission Award Number 3525, Apana 2 to Keliiolelo; Royal Patent Number 1111, Land Commission Award Number 433 to William Crowningburg; Royal Patent Grant Number 2952 to David Crowningburg and portions of Royal Patent Numbers 4529-B and 4549, Land Commission Award Number 71to Michael J. Nowlein; Royal Patent Number 7659, Land Commission Award Number 326 to Wm. Humphreys; Royal Patent Grant Number 3152 to Henry Cornwell; Royal Patent Grant Number 2951 to H. Cornwell and J. Louzada; Royal Patent Number 7658, Land Commission Award Number 225 to James Louzada; Royal Patent Number 5356, Land Commission Award Number 2980:1 to Pakele; Royal Patent Grant Number 1680:1 to Manuel Flores and Royal Patent Number 5333, Land Commission Award 3019:2 to Mehao) situate, lying and being on the westerly side of Honoapiilani Highway (F.A.P. 13-G) at Waikapu, Wailuku, Island and County of Maui, State of Hawaii, and thus bounded and described:

Beginning at a point at the southwesterly corner of this parcel of land, being also the northwesterly corner of Lot 3-A of Waikapu North Large-Lot Subdivision, the coordinates of said point of beginning referred to Government Survey Triangulation Station "LUKE" being: 6,616.94 feet south and 3,748.66 feet west and running by azimuths measured clockwise from true South:

1.	209°	26'	1,2	10.02	feet along the easterly side of Old Waikapu Road to a point;
2.	186°	59'	1,0	34.51	feet along same to a point;
3.	246°	10'	7:	17.18	feet along the southerly side of Old Waikapu Road to a point;
4.	231°	17'		92.08	feet along same to a point;
5.	352°	39'	11" 9	24.10	feet along the westerly side of Honoapiilani Highway (F.A.P. 13-G) to a point;

© Title Guaranty of Hawaii, Inc.

Page 4

SCHEDULE C CONTINUED

6. Thence along same on a curve to the right, having a radius of 2,824.93 feet, the chord azimuth and distance being: 359° 05' 41" 633.87 feet to a point;

7. 5° 32' 11" 1,231.66 feet along same to a point;

8. 103° 26' 1,498.62 feet along the remainders of Grant 2951 to H. Cornwell and J. Louzada; Royal Patent 7658, Land Commission Award 225 to James Louzada; Royal Patent 5356, Land Commission Award 2980:1 to Pakele; Grant 1680:1 to Manuel Flores and Royal Patent 5333, Land Commission Award 3019:2 to Mehao, being also along Lot 3-A of Waikapu North Large-Lot Subdivision to the point of beginning and

more or less.

BEING THE PREMISES ACQUIRED BY QUITCLAIM DEED

GRANTOR : LLOYD K. SODETANI, husband of Sharon L. Sodetani,

and ENDURANCE INVESTORS, LLC, a Washington limited

containing an area of 60.087 acres,

liability company

GRANTEE : ENDURANCE INVESTORS, LLC, a Washington limited

liability company, and II WAI HUI, a Hawaii limited

partnership, as equal Tenants in Common

DATED : December 31, 2003

RECORDED : Document No. 2004-027469

Said above Deed was corrected by instrument dated February 17, 2006, recorded as Document No. $\underline{2006-044462}$. Re: to correct name of grantee from II WAI HUI to ASSOCIATION OF II WAI HUI LP.

END OF SCHEDULE C

GENERAL NOTES

1. There is hereby omitted from any covenants, conditions and reservations contained herein any covenant or restriction based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law. Lawful restrictions under state or federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

Page 6

SCHEDULE D

CONDITIONS AND STIPULATIONS

- 1. This Status Report (which term shall include any revisions thereto) is a report of the record title only, based solely upon an abstract and examination of the Indices described in Schedule A as of the date of the Report. No responsibility is assumed for (a) matters which may affect the title but either were not disclosed or were incorrectly disclosed in said indices at the date hereof; or (b) matters created, suffered, assumed, or agreed to by Purchaser; or (c) matters not shown herein but actually know to Purchaser. Title Guaranty of Hawaii, Incorporated (the "Company") makes no representation as to the legal effect, validity or priority of matters shown or referred to herein.
- 2. If the Report is incorrect in any respect, the responsibility of the Company shall be limited to the resulting actual loss, including any attorney's fees and legal costs, but in no event shall exceed the lesser of \$3,500 or two times the amount paid for the Report. Upon payment of any loss hereunder, the Company shall be subrogated to all rights the Purchaser may have against any person or property as a result of such
- 3. If the Purchaser of this Report shall suffer an actual loss by reason of the incorrectness of the Report, the Purchaser shall promptly notify the Company in writing. After receipt of such notice, the Company shall be allowed a reasonable time in which to investigate the claim. At its sole option, the Company may litigate the validity of the claim, negotiate a settlement or pay to Purchaser the amount the Company is obligated to pay under this Report. The Company's responsibility hereunder constitutes indemnity only and nothing herein shall obligate the Company to assume the defense of the Purchaser with respect to any claim made hereunder
- This report is the entire contract between the Purchaser and the Company and any claim by Purchaser against the Company, arising hereunder, shall be enforceable only in accordance with the provisions herein.
- Notice required to be given the Company shall include the Order Number of this Report and shall be addressed to Title Guaranty of Hawaii, Inc., P.O. Box 3084, Honolulu, HI 96802, Attention: Legal Department.

DATE PRINTED: 9/18/2017

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO. 002 002 0000

CLASS: AGRICULTURAL AREA ASSESSED: 60 087 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2017

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$ 0				
EXEMPTION	\$ 0				
NET VALUE	\$ 0				
LAND	\$ 13,400	HIGHEST	&	BEST	USE
EXEMPTION	\$ 0				
NET VALUE	\$ 13,400				
TOTAL NET VALUE	\$ 13,400				

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 7/01/2017

Tax Year	Installm	nent Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2017	2	200.00				200.00	PENDING
2017	1	200.00				200.00	PENDING
2016	2	150.00				150.00	PAID
2016	1	150.00				150.00	PAID
2015	2	125.00				125.00	PAID
2015	1	125.00				125.00	PAID

Total Amount Due: 400.00

Penalty and Interest Computed to: 7/01/2017

The real property tax information provided is based on information furnished by the respective counties, is deemed reliable but not guaranteed, and no warranties are given express or implied. Billing and tax collection details may have changed. Please refer to the appropriate county real property tax offices for any further information or updates for the subject property.

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201745960

APPENDIX I PREVIOUS REPORTS/ MISCELLANEOUS DOCUMENTS

Project Number 25017-017125.00

Phase I Environmental Site Assessment

160-Acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [Portions], 064, and 108 through 117) Wailuku, Maui, Hawaii

> March 7, 2016 Project Number 17016-016021.01

> > Prepared for:

REDWOOD CAPITAL FINANCE COMPANY, LLC c/o PCCP, LLC

c/o PCCP, LLC 10100 Santa Monica Boulevard, Suite 1000 Los Angeles, California 90067



Move Forward with Confidence

Prepared by:

BUREAU VERITAS NORTH AMERICA, INC. Health, Safety, and Environmental Services 841 Bishop Street, Suite 1100 Honolulu, Hawaii 96813 808.531.6708 www.us.bureauveritas.com



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List of Acronyms

AAI

All Appropriate Inquiry Asbestos-Containing Materials ACM

AOC Area of Concern

Arsenic-Containing Materials ArCM AST Aboveground storage tanks ASTM ASTM International AULs Activity and Use Limitations

Bureau Veritas Bureau Veritas North America, Inc.

CERCLA Comprehensive Environmental Response, Compensation and Liability Act

CERCLIS Comprehensive Environmental Response, Compensation and Liability

Information System

CESQG Conditionally Exempt Small Quantity Generator

CFR Code of Federal Regulations

COC Chemicals of Concern

DLNR State of Hawaii, Department of Land and Natural Resources

DU Decision Unit

Environmental Action Level EAL

EDR Environmental Data Resources, Inc. Environmental Site Assessment ESA

FEMA Federal Emergency Management Agency

Federal Insecticide, Fungicide, and Rodenticide Act **FIFRA**

FIRM Flood Insurance Rate Map **FTTS** FIFRA/TSCA Tracking System GPS Global Positioning System Hawaii Administrative Rules HAR

HEER Hazard Evaluation and Emergency Response

HDOH State of Hawaii Department of Health HUD Housing and Urban Development

ICIS Integrated Compliance Information System

1 F Landfill

LUST Leaking underground storage tank

LBP Lead Based Paint LBP Lead-Containing Paint

Maui Electrical Company, Ltd. MECO Mg/CI-Milligrams per liter chloride MLTS Material Licensing Tracking System

NFA No Further Action

NFRAP No Further Remediation Action Planned

NonGen Non Generator

PCBs Polychlorinated biphenyls

Resource Conservation and Recovery Act RCRA

RGA Recovered Government Archive SHWB Soil and Hazardous Waste Branch SHWS State Hazardous Waste Site SQG Small Quantity Generator

SPILLS Records of Emergency Release Report Toxicity Characteristic Leaching Procedure **TCLP**

TEFs Toxicity Equivalence Factors



List of Acronyms (Continued)

TEQ Toxicity Equivalence TMK Tax Map Key

TSCA Toxic Substances Control Act UIC **Underground Injection Control**

USDA United States Department of Agriculture USEPA United States Environmental Protection Agency

USGS United States Geological Survey UST Underground storage tank Vapor Encroachment Condition VEC VES Vapor Encroachment Screen WHO World Health Organization

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Executive Summary

Redwood Capital Finance Company, LLC ("Client") retained Bureau Veritas North America, Inc. (Bureau Veritas) to conduct a Phase I Environmental Site Assessment ("ESA" or "assessment") of the 160-acre Kehalani property (Tax Map Key numbers [TMKs]: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), located in Wailuku, Maui, Hawaii (the "subject property"). The objective of the assessment was to provide an independent, professional opinion regarding the presence or absence of recognized environmental conditions, as defined by ASTM International (ASTM), associated with the subject property.

This assessment was performed under the conditions of, and in accordance with Bureau Veritas' Proposal Number 1709.16.034, dated January 26, 2016 and ASTM International Practice E1527-13, Standard Practice for Environmental Site Assessments: Phase I ESA Process. The United States Environmental Protection Agency (USEPA) has determined that the ASTM E1527-13 standard is consistent with the requirements for conducting All Appropriate Inquiry (AAI) and may be used to comply with the AAI regulations (40 Code of Federal Regulations [CFR] Part 312). The methods and terms are as defined in the ASTM standard and AAI regulations. Details of the work performed, sources of information, and findings are presented in the report. Limitations of the Assessment are described in Sections 1.2 and 1.3.

The subject property, currently owned by RCFC Kehalani, LLC, Inc. is located on the eastern slope of the West Maui Mountains on the island of Maui. It consists of eight non-contiguous land areas totaling approximately 160 acres, within the larger, planned Kehalani Development. The location of the subject property is presented in Figures 1 and 2, located behind the *Figures* tab.

The subject property is further described by the County of Maui Real Property Tax Assessment Office as the parcels of land identified as TMKs: (2) 3-5-001: Parcels 063 [portions], 064, and 108 through 117. According to the County of Maui Real Property Tax Assessment Office database, the portions of Parcel 063 are currently zoned "Commercial," Parcel 064 is currently zoned "Agriculture," and Parcels 108 through 117 are currently zoned "Residential."

A description of the current uses and improvements at the subject property, by area, is presented in the tables below.

Parcel 63 (Portions)

Parcel/Street Address (including known historic address[es])	Portions of TMK: (2) 3-5-001: Parcel 063, Wailuku, Maui, Hawaii (no designated street address), including eight designated land units (Units 4, 5, 6, 7, 8, 10, 11, and 12), encompassing approximately 8.31 acres
Owners:	RCFC Kehalani, LLC
Number and Size of Buildings:	There are currently no buildings located on the portions of Parcel 063 that are included in the subject property.
Construction Date(s):	Not applicable
Tenants:	Not applicable
Current Usage:	These lower, southeastern portions of the subject property are undeveloped areas within the Kehalani Village Center commercial development. A propane tank is located at the southeast corner of Unit 4.



Parcel 064

Parcel/Street Address (including known historic address[es])	TMK: (2) 3-5-001: Parcel 064, Wailuku, Maui, Hawaii (no designated street address)		
Owners:	RCFC Kehalani, LLC		
Number and Size of Buildings:	There are currently no permanent structures located on Parcel 064, but there are temporary office trailers on the northeast portion, at the corner of Waialae Road and Kuikahi Drive.		
Construction Date(s):	Not applicable		
Tenants:	Clean & Green Landscaping (KCA Landscaping), Stanford Carr Development, and Kehalani Community Association (KCA)		
Current Usage:	This lower, southeastern portion of the subject property is undeveloped except for several temporary office trailers occupied by a landscaping company, a land developer, and a community association.		

Parcels 108 through 117

Parcel/Street Address (including known historic address[es])	TMKs: (2) 3-5-001: Parcels 108 through 117, Wailuku, Maui, Hawaii (no designated street address)
Owners:	RCFC Kehalani, LLC
Number and Size of Buildings:	There are currently no buildings on the majority of this portion of the subject property. However, the northeastern-most area includes the Wailuku Shaft 33 water well (formerly used for irrigation), a corrugated metal Quonset hut (former warehouse), and a Maui Electrical Company, Ltd. (MECO) electrical substation with three large padmounted transformers, and three pole-mounted transformers.
Construction Date(s):	Not applicable
Tenants:	Not applicable
Current Usage:	These upper, western portions of subject property are currently under initial residential development, including some grading and infrastructure such as roadways, utility lines, and a water well.

The historical research presented in this assessment has established the obvious uses of the subject property since 1922. In addition, information on historic uses of adjoining properties was also obtained. A chronological summary of the historic use of the subject and adjoining/nearby properties is presented below.

On the earliest available topographic map, from 1922, the subject property and surrounding areas were depicted as undeveloped land. According to the 1950 through 1992 aerial photographs, the subject property appeared as cultivated agricultural land, most likely sugar cane and/or pineapple. The 2000 aerial photographs showed the subject property as fallow agricultural land. The 2010 aerial photographs showed the southeastern-most portion of the subject property (Parcel 064) as a construction baseyard with vehicles, stored building materials, ASTs, equipment, shipping containers, and a few small buildings. This construction baseyard was no longer present in the 2012 through 2014 aerial photographs.

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According to records at the County of Maui Real Property Tax Assessment Office, the Wailuku Sugar Company owned the subject property as early as 1939. Maui Pineapple Co, Ltd. leased a portion in the 1950s. In 1993, the property was deeded from Wailuku Agribusiness Company, Inc. to C. Brewer & Company, Ltd., which changed its name to C. Brewer Homes, Inc. and then to Hawaii Land & Farming Company, Inc. Kehalani Mauka, LLC became the landowner in 1999, and the 2006 ownership is listed under the names: Kehalani Village Center-Condo Master, Kehalani Holdings Company, Inc., Kehalani Mauka, LLC, and Wailuku Water Company, LLC. RCFC Kehalani, LLC was listed as the owner of the parcels that comprise the subject property between 2014 and 2016.

Bureau Veritas conducted a Multi-Increment Sampling Investigation at the subject property in 2011 to assess the presence of agricultural chemicals from the past agricultural use of the subject property. Based on the investigation, agricultural chemicals were not detected at or above regulatory levels. The State of Hawaii Department of Health (HDOH), Hazard Evaluation and Emergency Response (HEER) Office subsequently issued a "No Further Action (NFA) Determination" regarding the presence of agricultural chemicals at the subject property.

This Assessment has revealed no evidence of recognized environmental conditions, as defined by ASTM, in connection with the subject property, except for the following:

 Onsite MECO Electrical Substation - Three large, pad-mounted electrical transformers are located within a fenced-in MECO electrical substation on the northeast portion of the upper, western residential area at the subject property, next to the Wailuku Shaft 33 water well. No staining or other evidence of releases was observed on or around the transformers.

According to MECO's records, the transformers were purchased in 1948 and contain PCB concentrations ranging from 2.47 parts per million (ppm) to 34.8 ppm. These transformers contain less than 50 ppm PCBs and are, therefore, considered non-PCB units. However, there is a potential that the transformers formerly contained di-electric fluids with higher PCB concentrations (based on the ages of the transformers), with a potential for past PCB releases to impact the subject property.

It is MECO's policy to conduct a comprehensive Environmental Site Assessment (including soil testing) whenever they decommission one of their electrical substations. In addition, MECO is responsible for the cleanup and remediation of all releases from their transformers.

This finding is considered a recognized environmental condition because there is a potential for past releases of PCB fluids from the MECO transformer substation to impact the subject property. However, MECO is responsible for the cleanup and remediation of all releases from their transformers.

This assessment has also revealed the following evidence of a historical recognized environmental condition, as defined by ASTM, in connection with the subject property:

Past Agricultural Use - Agricultural chemicals such as pesticides and/or herbicides formerly
used on agricultural crops at the subject property have the potential to impact the subject
property. Bureau Veritas conducted multi-increment soil sampling with laboratory analyses for
agricultural chemicals of concern on the agricultural portions of the subject property in 2011.
Based on the results, agricultural chemicals were not detected at or above regulatory levels. The
State of Hawaii Department of Health (DOH), Hazard Evaluation and Emergency Response
(HEER) Office subsequently issued a No Further Action Determination letter for the subject
property.



This historical recognized environmental condition is not considered a current recognized environmental condition because the subject property has received a "No Further Action Determination" letter from the DOH HEER Office in regards to elevated agricultural chemicals in the soil

In addition, this assessment has revealed the following environmental condition, which is not considered a recognized environmental condition, as defined by ASTM, in connection with the subject property:

Lead-Based Paint (LBP) – Based on a 2008 Hazardous Materials Assessment report, the large, corrugated metal Quonset hut (former warehouse) located on the northeastern-most portion of the subject property (next to the Wailuku Shaft 33 water well) includes silver LBPs on the interior and exterior corrugated metal walls/ceiling. The loose and flaking LBP was reportedly removed and disposed; however, the intact LBPs were left in place.

This finding is not considered a recognized environmental condition because LBP on buildings is not considered an ASTM issue. However, the remaining LBPs should be monitored over time, with loose and flaking LBP properly removed as necessary. If the structures are to be demolished, the building components covered with LBP should be sampled and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) — Lead in order to asses disposal options

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1.0 INTRODUCTION

Redwood Capital Finance Company, LLC ("Client") retained Bureau Veritas North America, Inc. (Bureau Veritas) to conduct a Phase I Environmental Site Assessment ("ESA" or "assessment") of the 160-acre Kehalani property (Tax Map Key numbers [TMKs]: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), located in Wailuku, Maui, Hawaii (the "subject property"). The objective of the assessment was to provide an independent, professional opinion regarding the presence or absence of recognized environmental conditions, as defined by ASTM International (ASTM), associated with the subject property.

1.1 PURPOSE

The purpose of the assessment is to follow ASTM Practice E1527-13, which defines good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. As such, this standard is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitation on CERCLA liability (the landowner liability protections or LLPs); that is, the standard that constitutes all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial and customary practice as defined at 42 United States Code 9601(35) (B). The term recognized environmental conditions is defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at the property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De Minimis conditions are not recognized environmental conditions.

1.2 METHODOLOGY

This assessment was performed under the conditions of, and in accordance with Bureau Veritas' Proposal Number 1709.16.034, dated January 26, 2016 and ASTM International Practice E1527-13, Standard Practice for Environmental Site Assessments: Phase I ESA Process. The United States Environmental Protection Agency (USEPA) has determined that the ASTM E1527-13 standard is consistent with the requirements for conducting All Appropriate Inquiry (AAI) and may be used to comply with the AAI regulations (40 Code of Federal Regulations [CFR] Part 312). The methods and terms are as defined in the ASTM standard and AAI regulations. Details of the work performed, sources of information, and findings are presented in the report. Limitations of the Assessment are described in Sections 1.2 and 1.3.

The assessment generally included the following components:

- Review information provided by the client. This includes that information required by the Standard with respect to "User Responsibilities" as well as other information provided (e.g., Environmental Liens, Activity and Use Limitations [AULs], Specialized Knowledge).
- Review selected information on general geology and topography of the subject property, local
 groundwater conditions, and proximity to ecologically sensitive receptors, such as streams, that
 might be impacted by recognized environmental conditions. A determination of the sources of
 water, power, and sewer service at the subject property.
- Investigate historical use of the subject property through reasonably ascertainable ASTM Standard Historical Sources for evidence of prior land use that could have led to recognized environmental conditions. These Standard Historical Sources may include: aerial photography,



United States Geological Survey (USGS) topographic maps, fire insurance maps, property tax files, building department records and zoning/land use records.

- Review of environmental records available from the client, property owner or site contact for evidence of recognized environmental conditions and AULs. This includes documents such as regulatory agency reports, permits, registrations, previous assessments, etc.
- Review a commercial database summary of ASTM Standard Federal, State, and Tribal regulatory
 agency records pertinent to the subject property and offsite facilities located within ASTM
 specified search distances from the subject property.
- Conduct interviews with the subject property owner (or their designated Key Site Manager) and
 occupants regarding current and previous uses of the subject property, particularly with respect to
 activities involving hazardous substances and petroleum products. Past owners, operators and
 occupants may also be interviewed to the extent they may be identified and their information is
 not likely to be duplicative. In cases of abandoned properties, where there is evidence of
 uncontrolled access, this included interviews with Owners/Occupants of one or more neighboring
 properties (subject to availability).
- Conduct an onsite reconnaissance of the subject property for visual evidence of recognized
 environmental conditions, including, but not limited to: existing or potential soil and water
 contamination, as evidenced by soil or pavement staining or discoloration, unnaturally stressed
 vegetation, or indications of waste dumping or burial; pits, ponds, or lagoons; containers of
 hazardous substances or petroleum products; electrical and hydraulic equipment that may
 contain polychlorinated biphenyls (PCBs), such as electrical transformers and hydraulic hoists;
 underground and aboveground storage tanks (USTs and ASTs, respectively); etc.
- Perform a subject property line visual reconnaissance of adjacent properties for evidence of
 potential offsite environmental conditions that may affect the subject property.
- Evaluate information gathered during the Assessment to reach conclusions concerning recognized environmental conditions and prepare this report.

This assessment also included the following non-ASTM items:

- Asbestos-Containing Materials (ACM)
- Lead-Based Paint (LBP)
- Radon
- Wetlands

This assessment does not include sampling and laboratory analysis of suspect ACM, paints, soil, groundwater or other materials.

Bureau Veritas representatives Mr. Bryan Starks, Staff Engineer and Mr. Tim Swartz, Senior Project Manager and Environmental Professional as defined in §312.10 of 40 Code of Federal Regulations (CFR) 312 (see Section 10.0), conducted the site reconnaissance portion of the assessment on February 4, 2016, accompanied by Mr. Brian Ige, Construction Manager of Dowling Company, Inc.

Copies of selected relevant documents and supporting information are included in the applicable appendices. See the Table of Contents for a list of Appendices. Resumes for assessors and Environmental Professionals involved in this Assessment are included in the Appendices. Photographs taken at the time of the reconnaissance are included behind the Photographs Tab.

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1.3 EXCEPTIONS & LIMITING CONDITIONS OF ASSESSMENT

Information for the assessment was obtained from the sources listed in the Appendices. This information, to the extent it was relied on to form our opinion, is assumed to be correct and complete. Bureau Veritas is not responsible for the quality or content of information from these sources.

1.3.1 Unavailable Documentation

All requested documentation regarding the subject property was made available for review.

1.3.2 <u>Lack of Access/Reconnaissance Limitations</u>

Bureau Veritas did not encounter significant access or reconnaissance limitations at the subject property. However, much of the undeveloped portions of the subject property were covered with vegetation, preventing a thorough assessment of the ground in those areas. The heavily vegetated areas should be monitored for evidence of staining, abandoned items, and structures of environmental concern during the planned redevelopment activities.

1.3.3 Data Gaps

The ASTM E1527-13 requires that the report identify the following: 1) obvious uses of the subject property since 1940 or first development, whichever is earlier; and 2) significant "data gaps" which affect the ability of the Environmental Professional to identify recognized environmental conditions. The report is also to include information on the sources consulted to address the data gaps.

Historical subject property ownership and/or use information was obtained for the time period 1922 to present. Bureau Veritas has established the history of *obvious* uses of the subject property since first development. No significant data gaps (or other data gaps warranting discussion) were encountered during this Phase I ESA.

1.4 RELIANCE

The information and opinions rendered in this report are exclusively for use by Redwood Capital Finance Company, LLC. Bureau Veritas will not distribute or publish this report without consent except as required by law or court order. The information and opinions expressed in this report are given in response to a limited assignment and should be considered and implemented only in light of that assignment. The services provided by Bureau Veritas in completing this project were consistent with normal standards of the profession. No other warranty, expressed or implied, is made.

2.0 USER PROVIDED INFORMATION

ASTM E1527-13 defines "User" as the party seeking to use Practice E1527 to complete an environmental site assessment of the subject property. Bureau Veritas understands that Redwood Capital Finance Company, LLC is the User as defined by ASTM E1527-13. ASTM E1527-13 specifies that certain tasks associated with identifying potential recognized environmental conditions at the subject property should be performed by the User and provided to the Environmental Professional (i.e., User Responsibilities). Accordingly, Bureau Veritas provided the User a questionnaire, requesting specific information (see Appendices).

The User Questionnaire included requests for information on the following: environmental liens and AULs that are filed or recorded against the property; "specialized knowledge" of the *User*, relationship of the purchase price to the fair market value of the property if it were not contaminated; commonly known or



reasonable ascertainable information; the degree of obviousness of the presence of likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation; the presence of *Proceedings Involving the Property* (e.g., litigation, regulatory agency rulings, violations); the reason for performing the Phase I ESA, and other information/documents (e.g., site plan, ALTA survey).

Based on Bureau Veritas' review of the *User* provided information, no readily apparent evidence of potential recognized environmental conditions at the subject property was noted except for the findings in the previous environmental report titled, *Phase I Environmental Assessment*, 182-Acre Kehalani Property (Tax Map Key [TMK] Numbers: [2] 3-5-001: Parcels 63 [Portion], 64, 67, and 80 and [2] 3-5-001: Parcel 36), Walluku, Maui, Hawaii, dated March 16, 2012, prepared by Bureau Veritas.

3.0 SUBJECT PROPERTY DESCRIPTION

3.1 LOCATION

The subject property, currently owned by RCFC Kehalani, LLC, Inc. is located on the eastern slope of the West Maui Mountains on the island of Maui. It consists of eight non-contiguous land areas totaling approximately 160 acres, within the larger, planned Kehalani Development. The location of the subject property is presented in Figures 1 and 2, located behind the *Figures* tab.

The subject property is further described by the County of Maui Real Property Tax Assessment Office as the parcels of land identified as TMKs: (2) 3-5-001: Parcels 063 [portions], 064, and 108 through 117. According to the County of Maui Real Property Tax Assessment Office database, the portions of Parcel 063 are currently zoned "Commercial," Parcel 064 is currently zoned "Agriculture," and Parcels 108 through 117 are currently zoned "Residential."

3.2 CURRENT USE OF SUBJECT PROPERTY

A description of the current uses and improvements at the subject property, by area, is presented in the tables below.

Parcel 63 (Portions)

Parcel/Street Address (including known historic address[es])	Portions of TMK: (2) 3-5-001: Parcel 063, Wailuku, Maui, Hawaii (no designated street address), including eight designated land units (Units 4, 5, 6, 7, 8, 10, 11, and 12), encompassing approximately 8.31 acres
Owners:	RCFC Kehalani, LLC
Number and Size of Buildings:	There are currently no buildings located on the portions of Parcel 063 that are included in the subject property.
Construction Date(s):	Not applicable
Tenants:	Not applicable
Current Usage:	These lower, southeastern portions of the subject property are undeveloped areas within the Kehalani Village Center commercial development. A propane tank is located at the southeast corner of Unit 4.

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Parcel 064

Parcel/Street Address (including known historic address[es])	TMK: (2) 3-5-001: Parcel 064, Wailuku, Maui, Hawaii (no designated street address)
Owners:	RCFC Kehalani, LLC
Number and Size of Buildings:	There are currently no permanent structures located on Parcel 064, but there are temporary office trailers on the northeast portion, at the corner of Waialae Road and Kuikahi Drive.
Construction Date(s):	Not applicable
Tenants:	Clean & Green Landscaping (KCA Landscaping), Stanford Carr Development, and Kehalani Community Association (KCA)
Current Usage:	This lower, southeastern portion of the subject property is undeveloped except for several temporary office trailers occupied by a landscaping company, a land developer, and a community association.

Parcels 108 through 117

Parcel/Street Address (including known historic address[es])	TMKs: (2) 3-5-001: Parcels 108 through 117, Wailuku, Maui, Hawaii (no designated street address)
Owners:	RCFC Kehalani, LLC
Number and Size of Buildings:	There are currently no buildings on the majority of this portion of the subject property. However, the northeastern-most area includes the Wailuku Shaft 33 water well (formerly used for irrigation), a corrugated metal Quonset hut (former warehouse), and a Maui Electrical Company, Ltd. (MECO) electrical substation with three large padmounted transformers, and three pole-mounted transformers.
Construction Date(s):	Not applicable
Tenants:	Not applicable
Current Usage:	These upper, western portions of subject property are currently under initial residential development, including some grading and infrastructure such as roadways, utility lines, and a water well.

3.3 CURRENT USES OF ADJOINING/NEARBY PROPERTIES

The area surrounding the subject property consists primarily of residential properties. Adjoining and nearby properties were observed (from the subject property or from public access areas) for evidence of potential recognized environmental conditions and their potential to pose an environmental concern to the subject property (Figure 1, Figures Tab). The uses and features of adjoining properties, by area, are described below (by relative compass direction and across adjoining roadways):

Parcel 63 (Portions)

North		
Company/Facility Name	Address	Type/Relevant Observations (if any)
Kaupo Street and residential	Various private	Roadway, beyond which are single-family
properties	addresses	houses.



East		
Company/Facility Name	Address	Type/Relevant Observations (if any)
Waiale Road, beyond which is a Walgreens store and residential properties	700 Waiale Road (Walgreens) and various private addresses	Roadway, beyond which are a drug store and single-family houses.

South		
Company/Facility Name	Address	Type/Relevant Observations (if any)
Kuikahi Drive, beyond which is undeveloped land and temporary office trailers	Not applicable	Roadway, beyond which is undeveloped land and temporary office trailers occupied by Clean & Green Landscaping, Stanford Carr Development, and Kehalani Community Association.

West		
Company/Facility Name	Address	Type/Relevant Observations (if any)
Honoapiilani Highway,	Various private	Roadway, beyond which are single-family
beyond which are residential	addresses	houses.
properties		

Parcel 064

North		
Company/Facility Name	Address	Type/Relevant Observations (if any)
Kuikahi Drive, beyond which is Kehalani Village Center	135 Kehalani Village Drive	Roadway, beyond which are various commercial facilities including Longs Drugs, Foodland (grocery store), American Savings Bank, Coffee Bean & Tea Leaf, McDonalds (restaurant), and Aloha Gas (gas station).

East		
Company/Facility Name Address Type/Relevant Observations (if any)		
Waiale Road, beyond which is undeveloped land	Not applicable	Roadway, beyond which is undeveloped land

South		
Company/Facility Name	Address	Type/Relevant Observations (if any)
Undeveloped land	Not applicable	Undeveloped land

West		
Company/Facility Name	Address	Type/Relevant Observations (if any)
Honoapiilani Highway,	Not applicable	Highway, beyond which is a construction
beyond which is a		baseyard and undeveloped land
construction baseyard and		
undeveloped land		

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Parcels 108 through 117

North		
Company/Facility Name	Address	Type/Relevant Observations (if any)
Large water tank (reportedly two million gallons), MECO Electrical substation, and residential properties, beyond which are lao Valley Road/Main Street, undeveloped land, and lao Stream/Kama Ditch	Various private addresses	Water tank, electrical substation, and residential properties.

East			
Company/Facility Name	Address	Type/Relevant Observations (if any)	
Residential properties and Puu Kukui Elementary School and residential properties	3700 Kehalani Mauka Parkway (school) and various private addresses	Elementary School and single-family houses.	

South				
Company/Facility Name	Address	Type/Relevant Observations (if any)		
Residential properties	Various private addresses	Single-family houses.		

West				
Company/Facility Name	Address	Type/Relevant Observations (if any)		
Residential properties of	Various private	Single-family houses.		
Wailuku Heights	addresses			

Information regarding historical or other documented uses of nearby properties that may pose an environmental concern to the subject property is discussed in Sections 4.0 and 6.0, respectively.

3.4 PHYSICAL SETTING

The physical setting of the subject property was assessed through a review of the following: USGS Topographic Maps, visual observations at the subject property and nearby properties, and selected additional documentation (e.g., soil survey, geotechnical reports, previous Phase II assessment, and interviews with local personnel). General information on the topography, surface water, soils, bedrock and groundwater in the vicinity of the subject property is as follows:

Parcel 63 (Portions)

Soil Types	lao clay, 3 to 7 percent slopes (USDA, 1972)
	lao silty clay, 0 to 3 percent slopes (USDA 1972)
Nearby Surface Water/Drainage Features	Waiale Reservoir, located approximately 800 feet to the east

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Estimated Depth Shallow	Approximately 280 to 360 feet (USGS, Wailuku, 2013)
Groundwater:	
Estimated Shallow Groundwater Flow	East-northeast, toward the Pacific Ocean (USGS, Wailuku, 2013)
Direction	2013)

Parcel 064

Soil Types	lao clay, 3 to 7 percent slopes (USDA, 1972)	
	lao silty clay, 0 to 3 percent slopes (USDA 1972)	
Nearby Surface Water/Drainage Features	Waiale Reservoir, located approximately 1,400 feet to the northeast	
Estimated Depth Shallow Groundwater:	Approximately 300 to 380 feet (USGS, Wailuku, 2013)	
Estimated Shallow Groundwater Flow Direction	East-northeast, toward the Pacific Ocean (USGS, Wailuku, 2013)	

Parcels 108 through 117

Soil Types	Wailuku silty clay, 3 to 7 percent slopes (USDA, 1972)
	Wailuku silty clay, 3 to 7 percent slopes (USDA 1972)
	lao clay, 7 to 15 percent slopes (USDA 1972)
	lao clay, 3 to 7 percent slopes (USDA 1972)
	lao cobbly silty clay, 7 to 15 percent slopes (USDA 1972)
Nearby Surface Water/Drainage Features	Waihee Ditch (irrigation ditch) extends alongside and through the upper, western portion of the subject property, and lao Ditch (irrigation ditch) extends alongside the upper, western boundary of the subject property.
Estimated Depth Shallow Groundwater:	Approximately 430 to 740 feet (USGS, Wailuku, 2013)
Estimated Shallow Groundwater Flow Direction	East-northeast, toward the Pacific Ocean (USGS, Wailuku, 2013)

Bureau Veritas reviewed the Aquifer Identification and Classification for Hawaii: Groundwater Protection Strategy for Hawaii, published by the Water Resources Research Center at the University of Hawaii, for information on groundwater conditions below the subject property (Mink, J.F. and L.S. Lau, 1990). According to the report, two aquifer systems underlie the subject property. The boundary between the two aquifer systems is located to the west of Honoapiilani Highway and runs roughly parallel to the west side of the highway. Both aquifer systems are part of the lao Aquifer System within the Wailuku Aquifer Sector.

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The aquifer system underlying the upper, western portion of the subject property is an unconfined, basal aquifer of the flank type, occurring in horizontally extensive lavas. Its status is described as an irreplaceable, fresh (less than 250 milligrams per liter [mg/L] chloride), drinking water aquifer. This aquifer has a high vulnerability to contamination.

The aquifer system underlying the lower, eastern portion of the subject property consists of an upper and lower aquifer. The upper aquifer is an unconfined, basal aquifer of the sedimentary type, with non-volcanic lithology. It is described as an ecologically important aquifer with a potential for use, but it is not considered a drinking water source. The aquifer is also described as a low salinity (250-1,000 mg/L chloride), irreplaceable aquifer with a high vulnerability to contamination.

The lower aquifer is a confined, basal aquifer of the flank type, occurring in horizontally extensive lavas. It is described as an irreplaceable, fresh drinking water aquifer with a potential for use and a low vulnerability to contamination.

The regional shallow groundwater flow direction is inferred to be east-northeast, based on surface topography. However, topography is not always a reliable basis for predicting groundwater flow direction. The local gradient under the subject property may be influenced naturally by zones of higher or lower permeability, or artificially by nearby pumping or recharge, and may deviate from the regional trend. The groundwater depth is expected to range between approximately 230 feet below ground surface (bgs) to approximately 750 feet bqs.

According to the State of Hawaii Department of Health (DOH) Underground Injection Control (UIC) Program, the UIC line runs along Honoapillani Highway, near or partially through the lower portion of the subject property. Areas above the UIC line are considered to be a source of potable water, while areas below the UIC line are not considered to be a source of potable water.

4.0 HISTORICAL REVIEW

The following Sections detail Bureau Veritas' review of available historical and related information. This includes a review of ASTM Standard Historical Sources, Agency/Department records/personnel interviews and other documents. The historical summary also incorporates information obtained from interviews and other components of the Assessment process.

4.1 SUMMARY OF HISTORICAL REVIEW

The historical research presented in this assessment has established the obvious uses of the subject property since 1922. In addition, information on historic uses of adjoining properties was also obtained. A chronological summary of the historic use of the subject and adjoining/nearby properties is presented below.

On the earliest available topographic map, from 1922, the subject property and surrounding areas were depicted as undeveloped land. According to the 1950 through 1992 aerial photographs, the subject property appeared as cultivated agricultural land, most likely sugar cane and/or pineapple. The 2000 aerial photographs showed the subject property as fallow agricultural land. The 2010 aerial photographs showed the southeastern-most portion of the subject property (Parcel 064) as a construction baseyard with vehicles, stored building materials, ASTs, equipment, shipping containers, and a few small buildings. This construction baseyard was no longer present in the 2012 through 2014 aerial photographs.



According to records at the County of Maui Real Property Tax Assessment Office, the Wailuku Sugar Company owned the subject property as early as 1939. Maui Pineapple Co, Ltd. leased a portion in the 1950s. In 1993, the property was deeded from Wailuku Agribusiness Company, Inc. to C. Brewer & Company, Ltd., which changed its name to C. Brewer Homes, Inc. and then to Hawaii Land & Farming Company, Inc. Kehalani Mauka, LLC became the landowner in 1999, and the 2006 ownership is listed under the names: Kehalani Village Center-Condo Master, Kehalani Holdings Company, Inc., Kehalani Mauka, LLC, and Wailuku Water Company, LLC. RCFC Kehalani, LLC was listed as the owner of the parcels that comprise the subject property between 2014 and 2016.

Bureau Veritas conducted a Multi-Increment Sampling Investigation at the subject property in 2011 to assess the presence of agricultural chemicals from the past agricultural use of the subject property. Based on the investigation, agricultural chemicals were not detected at or above regulatory levels. The State of Hawaii Department of Health (HDOH), Hazard Evaluation and Emergency Response (HEER) Office subsequently issued a "No Further Action (NFA) Determination" regarding the presence of agricultural chemicals at the subject property.

4.2 AERIAL PHOTOGRAPHS

Aerial photographs, including the subject and adjoining properties, were obtained from Environmental Data Resources, Inc. (EDR), and Google Earth™. Photographs taken in the years 1950, 1965, 1976, 2000, 2010, 2012, 2013, and 2014 were reviewed. Aerial photographs from EDR are included in Appendix D. Key findings noted during this review are as follows:

- In the 1950 aerial photograph, the subject property and surrounding areas appeared as cultivated agricultural land, most likely sugar cane and/or pineapple. Narrow waterways (irrigation ditches) were observed in the general area of the subject property. A structure was observed at or near the northeast corner of the subject property, near the former Wailuku Shaft 33 water well. A small reservoir (identified in the earlier topographic maps as "Hopoi Reservoir") and several structures that appeared as houses were observed just east of the upper residential area of the subject property, and several unimproved roads were observed to the south and east. In addition, several small structures, most likely houses or Quonset huts, and a few roadways were observed at the current Wailuku Heights subdivision to the west of the subject property. The City of Wailuku to the northeast appeared densely developed with residential housing and small commercial businesses.
- The 1965 aerial photographs showed no significant changes from the 1950 aerial photograph, although additional development was visible at the Wailuku Heights subdivision to the west of the subject property. In addition, a small group of buildings was observed to the east of the subject property, along Waiale Road. No significant changes were noted on the 1977 aerial photograph.
- The 2000 aerial photographs showed no significant changes from the 1977 aerial photograph, except the subject property appeared as fallow agricultural land. It was covered with vegetation, but the crop lines were no longer distinctly visible. The small reservoir ("Hopoi Reservoir") located just east of the upper. residential area of the subject property appeared as dry land.
- The 2010 aerial photographs showed no significant changes from the 2000 aerial photograph, except for a few small, cleared areas with stored equipment visible on the southernmost portion of the upper, residential area on the subject property. In addition, the southeastern-most portion of the subject property (Parcel 064) appeared as a construction baseyard with vehicles, stored building materials, ASTs, equipment, shipping containers, and a few small buildings. Increased residential development was observed on the adjoining areas, especially on the south and east adjacent properties.

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- The 2012 and 2013 aerial photographs appeared similar to the 2010 aerial photograph, except
 the southeastern-most portion of the subject property (Parcel 064) no longer appeared as a
 construction baseyard. The current office trailers were observed on the northeast corner of
 Parcel 064. In addition, the current Longs Drugs store was visible on Parcel 063, with other
 portions of Parcel 063 (including the subject property) under initial development.
- The 2014 aerial photograph appeared similar to the 2012/2013 aerial photographs, except Parcel
 063 of the subject property appeared with two more structures (Foodland/American Savings
 Bank/Coffee Bean & Tea Leaf and Aloha Gas).

No readily apparent evidence of recognized environmental conditions at the subject or adjoining properties was noted on the aerial photographs reviewed, except that the subject property was historically used for crop cultivation. As such, agricultural chemicals may have been applied to the crops. Past use of agricultural chemicals has the potential to impact the subject property.

4.3 USGS TOPOGRAPHIC MAPS

Available historic topographic maps for the subject property and vicinity were obtained from the Hawaii State Archives and EDR, and included the years 1922, 1955, 1983, 1997, and 2013. Topographic maps from EDR are included in Appendix E. Key findings noted during this review are as follows:

- The 1922 topographic map depicted the subject property and surrounding areas as undeveloped land. Waihee Ditch (an irrigation ditch) was depicted extending through portions of the subject property, and an unnamed irrigation ditch was depicted near the eastern edge of the subject property. The depiction of these irrigation ditches indicates that the subject property was most likely utilized for agricultural purposes. Several railroads owned by the Wailuku Sugar Company were depicted running in a north-west direction more than 3,000 feet east of the subject property. Approximately eight small structures labeled collectively as "Hopoi Camp" were depicted just southeast of the subject property's upper, residential area. The town of Wailuku was depicted to the northeast of the subject property.
- The 1955 topographic map showed no significant changes from the 1922 topographic map, except several small structures, most likely houses, and a few roadways were depicted to the west of the subject property. This area was labeled "Wailuku Heights." In addition, a structure labeled "Power Plant" was depicted at or near the northeast corner of the subject property, near the former Wailuku Shaft 33 water well. Irrigation ditches were depicted traversing the subject property from east to west, indicating that the subject property was utilized for agricultural cultivation. Hopoi Reservoir was depicted just south of Hopoi Camp. A round water tank and several small structures (likely houses) were depicted just north of the subject property, along lao Valley Road.
- The 1983 topographic map showed no significant changes from the 1955 topographic map, except the structure labeled "Power Plant" was no longer depicted at or near the northeast corner of the subject property. In addition, increased development was shown in the Wailuku Heights subdivision located to the west of the subject property. Waiale Road appeared as an improved roadway, with a round water tank depicted to the east, near the subject property.
- The 1997 topographic map showed no significant changes from the 1983 topographic map, except a small structure labeled "Well" was depicted at the northeast corner of the subject property, at the same location as the Wailuku Shaft 33 water well. The town of Wailuku was increased in size and extended closer to the subject property. It was shaded gray to depict unspecified development. Increased development was also shown in the Wailuku Heights



subdivision to the west of the subject property. In addition, most of the irrigation ditches depicted in the previous topographic maps were no longer present on the subject property. Hopoi Reservoir was no longer depicted on this topographic map.

 The 2013 topographic map showed no structures or irrigation ditches on or near the subject property. Only roadways, natural water bodies/waterways, and elevation lines were depicted on this map.

4.4 FIRE INSURANCE MAPS

Fire insurance maps typically depict either the locations of manufacturing and industrial facilities within the city limits or potential hazards existing within individual building structures. In many cases, evidence of environmental concern, such as locations of USTs, can be found by reviewing fire insurance maps.

There were no fire insurance maps available that included the subject property or nearby properties. EDR certification that these fire insurance maps were unavailable is included in Appendix F.

4.5 RECORDED LAND TITLE RECORDS

Information provided to Bureau Veritas by EDR with respect to environmental liens or AULs was discussed in Section 2.0. ASTM E1527-13 recommends that the User retain a title company or title professional to provide recorded land title records.

Preliminary title reports, prepared by Title Guaranty of Hawaii, Inc. and dated from August 18, 2015 to February 5, 2016, were provided by Redwood Capital Finance Company, LLC and were reviewed by Bureau Veritas. According to the reports, no environmental liens or AULs were identified for the subject property.

Readily available records at the County of Hawaii Real Property Tax Assessment Office were reviewed to assess past ownership and uses of the subject property. The subject property is listed as TMKs: (2) 3-5-001: Parcels 063 [portions], 064, and 108 through 117. The current owner of the subject property is listed as RCFC Kehalani, LLC. A summary of past ownership and lease records for the subject property is presented in the table below:

Tax Map Key	Year	Transaction
TMK: [2] 3-5-001: Parcel 001	1939	First record of parcel was in November 6, 1939. The 809.102-acre parcel was owned by Wailuku Sugar Company.
	1950s	After numerous transactions, such as subdivisions and granting of easements, the parcel was subdivided and the final area totaled 740.868 acres. The owner was still listed as Wailuku Sugar Company. Maui Pineapple Co, Ltd. leased 0.162 acres on the parcel on April 22, 1959.
	1960s	After several transactions, the parcel was 736.677 acres. The owner remained Wailuku Sugar Company.
	1970s	After several transactions, the parcel size and the owner remained constant. In 1975, 0.064 acres was exchanged with Parcel 21.
	1981	96.693 acres dropped into other parcels and 14.06 acres received from TMK: 3-5-2: Parcel 3. Total area was 654.044 acres.

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Tax Map Key	Year	Transaction
TMK: [2] 3-5-001: Parcel 001 (continued)	1987	Wailuku Sugar Company remained the owner of the 654.044 acre parcel. The County of Maui leased the area of the water tank.
	1990	Zoning was changed from agricultural to agricultural / urban (272.8 acres zoned agricultural and 381.244 acres zoned urban). Lessees were County of Maui and Maui Electric Company, Ltd. The owner remained Wailuku Sugar Company.
	1993	Parcel was sold from Wailuku Agribusiness Company, Inc. to C. Brewer & Company, Ltd., and then to C. Brewer Homes, Inc. Maui County and Maui Electric still leased portions of the parcel.
	1999	C. Brewer Homes, Inc. changed its name to Hawaii Land & Farming Company, Inc. The parcel was sold first to Katy Corp., then Kehalani Mauka, LLC. The parcel size (654.044 acre parcel) and the lessees remained the same.
TMK: [2] 3-5-001: Parcel 067	2003	New tax records established for TMK (2) 3-5-001: Parcel 67. Area listed as 203.193 acres and the owners were listed as Kehalani Holdings Company, Kehalani Mauka LLC, and Wailuku Agribusiness.
	2006	Declaration of merger, with Kehalani Mauka LLC and Wailuku Water Company LLC listed as owners.
	2013	Parcel deeded to RCFC Kehalani, LLC
	2015	Parcel subdivided with 12 new parcels, TMKs: (2) 3-5-001: Parcels 108 through 119, with RCFC Kehalani, LLC listed as owner.
TMK: [2] 3-5-001: Parcel 063 (Portions)	2006	Declaration of merger, with Kehalani Village Center-Condo Master listed as owner.
	2011	Kehalani Village Center – Condo Master listed as owner (no subsequent transactions listed in available records).
	2013	Deeded to RCFC in 2013
TMK: [2] 3-5-001: Parcel 064	2006	Declaration of merger, with Kehalani Holdings Company Inc. listed as owner.
	2013	RCFC Kehalani, LLC listed as owner.

No readily apparent evidence of recognized environmental conditions at the subject property was noted in the chain of title report reviewed, except that portions of the subject property were formerly owned by agricultural companies, including: Wailuku Sugar Company, Wailuku Agribusiness Company, Inc., and Hawaii Land & Farming Company, Inc. In addition, Maui Pineapple Co., Ltd. formerly leased a portion of the subject property. These companies formerly cultivated sugar cane and pineapple crops on the subject property. Past use of agricultural chemicals on sugar cane/pineapple fields has the potential to impact the subject property.

4.6 CITY DIRECTORY

A city directory provides names of former businesses and occupants of the subject property, which may indicate potential environmental concerns associated with the business. A city directory report was provided by EDR, and is included in Appendix G.



The subject property does not currently include street addresses and, therefore, is not listed in the city directory report. The city directory report includes listings for nearby residential properties along Komo Ohia Street and Kapalaia Place for the years 2008 and 2013. All of the listings are names of the individual owners/occupants of the residential properties.

No readily apparent evidence of recognized environmental conditions at the subject property and adjoining properties was noted in the city directory report.

4.7 AGENCY CONTACTS

4.7.1 Building, Planning, and/or Zoning Departments

The County of Maui Real Property Tax Assessment database lists the parcels of land that encompass the subject property as TMKs: (2) 3-5-001: Parcels 063 [portions], 064, and 108 through 117. According to the database, the portions of Parcel 063 are currently zoned "Commercial," Parcel 064 is currently zoned "Agriculture," and Parcels 108 through 117 are currently zoned "Residential." No building permit information was available for the subject property, except for six permits issued in 2005 for the upper residential area. However, the reasons for the permits were not included in the database.

4.7.2 Fire Department

The Maui Fire Department (MFD) was contacted to obtain information regarding any fires, complaints, permits, or violations involving hazardous material use, USTs, or ASTs on record for the subject and/or adjoining properties.

Bureau Veritas received a response from the MFD indicating that the only record they had for the subject property was a permit dated 2008 for a 450-gallon AST on the upper residential area. Bureau Veritas did not observe this AST during the site visit; however, based on the previous Phase I ESAs conducted by Bureau Veritas (see Section 4.8 below), this AST was likely a portable, temporary fuel tank used during construction activities on the south adjoining residential area.

4.7.3 Department of Health (Solid and Hazardous Waste Branch)

The HDOH, Solid and Hazardous Waste Branch (SHWB) UST and leaking underground storage tank (LUST) databases (2014) were reviewed to obtain information regarding any USTs or LUSTs at the subject property or adjoining properties.

The subject parcel/property and adjoining properties were not listed in the SHWB databases reviewed.

4.7.4 Department of Health (Hazard Evaluation & Emergency Response Office)

The HDOH, HEER Office Release Notification database (2014) was reviewed to obtain information regarding any spills or other environmental incidents that may have occurred at the subject property or adiacent properties.

The subject parcel/property and adjoining properties were not listed in the HEER databases reviewed.

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4.8 PREVIOUS ENVIRONMENTAL REPORTS OR OTHER DOCUMENTS

During this assessment, Bureau Veritas reviewed the following previous reports for land areas that include the subject property:

Phase I Environmental Assessment, 258.315-Acre Undeveloped Property (TMK Nos.: [2] 3-5-001: Parcels 67, 75, 77, 78, and 80), Planned Kehalani Residential Subdivision, Wailuku, Maui, Hawaii, conducted by Bureau Veritas (formerly Clayton Group Services, Inc.), Project No. 85-06214.00, dated March 16, 2006

Stanford Carr retained Bureau Veritas to conduct this Phase I ESA, which was performed to the ASTM E1527-00 standard and included the upper Residential Area of the subject property (TMK Nos.: [2] 3-5-001: Parcels 67 and 80), plus three more land parcels (TMK Nos.: [2] 3-5-001: Parcels 75, 77, and 78). This assessment revealed no evidence of recognized environmental conditions, as defined by ASTM, in connection with the subject property. However, the following environmental issues were identified in connection with the subject property:

Based on historical references, including aerial photographs and tax assessment records, the subject
property was formerly utilized for agricultural cultivation. Past use of chemicals on farmland has the
potential to impact the subject property. The historical evidence indicates that any agricultural
operations would have been terminated at the site recently after 1999 (the subject property appeared
as agricultural land in the 1999 aerial photograph). The past use of agricultural chemicals has a
potential to impact the subject property.

This finding was not considered a recognized environmental condition because there was no evidence of the mixing, storage, or excessive use of pesticides and/or herbicides on the subject property when it was utilized for agricultural cultivation. In addition, according to HAR Chapter 128D, the presence of agricultural chemicals does not constitute a release. However, because the subject property is to be developed with residential properties, Bureau Veritas recommended testing the soil for agricultural chemicals.

The subject property is heavily vegetated with tall grasses, which prevented a thorough inspection of
the ground surface. The subject property may contain abandoned items, debris, and/or stained soils
that were obscured from view during Bureau Veritas' site visit.

This finding was not considered a recognized environmental condition because there is no evidence of hazardous substance releases at the subject property. However, the subject property should be carefully monitored during clearing and grubbing activities for the planned residential development. If chemical containers or stained soils are discovered, environmental cleanup work may be warranted.

Phase I Environmental Assessment, 43-Acre Undeveloped Property (TMK Nos.: [2] 3-5-001: Parcels 63 and 64 and TMK No. [2] 3-5-020: Parcel 036), Planned Kehalani Residential Subdivision, Wailuku, Maui, Hawaii, conducted by Bureau Veritas (formerly Clayton Group Services, Inc.), Project No. 85-06214.00, dated March 16, 2006

Stanford Carr retained Bureau Veritas to conduct this Phase I ESA, which was performed to the ASTM E1527-00 standard and included the lower Commercial and Park Areas of the subject property (TMK Nos.: [2] 3-5-001: Parcels 63 [Portion] and 64, and [2] 3-5-020: Parcel 36). This assessment revealed no evidence of recognized environmental conditions, as defined by ASTM, in connection with the subject property except for the following:

 Bureau Veritas observed soil staining of petroleum product in the area of the 300-gallon capacity ASTs located in the Goodfellow Brothers Inc. base yard. The staining, with an approximate area of



nine square feet, was observed in front of the 300-gallon ASTs and appeared to be the result of incidental spillage. According to Mr. Mike Dias, Maui Mechanic with Goodfellow Brothers Inc., significant spills have not occurred on the premises; however, incidental spills have occurred in the area periodically.

This finding was considered a recognized environmental condition because there was evidence of a surficial release. Given that surficial releases have been reported and that the aboveground storage vessels are located on exposed soil, Bureau Veritas recommended that the stained soils be properly removed and disposed, and confirmation soil sampling with laboratory analysis for petroleum hydrocarbons be conducted to assess if cleanup has been completed. The staining was not observed during Bureau Veritas' recent site visit, but it is unknown whether confirmation soil sampling was conducted. However, based on the relatively small size of the stain (nine square feet), the potential for impacts to the subject property appears to be low.

The following environmental issues were identified in connection with the subject property, although they were not deemed to be recognized environmental conditions, as defined by ASTM:

• Goodfellow Brothers Inc. maintained one, 8,000-gallon AST storing diesel fuel; one, 5,000-gallon AST storing used oil; one, 300-gallon AST storing coolant; and four, 300-gallon aboveground storage tanks (ASTs) containing new oil along the southern boundary of Parcel 064. In addition, the operation utilized several 55-gallon drums to store grease. These storage vessels were located in the same unpaved area. The two large capacity ASTs used to store used oil and diesel fuel were located above makeshift catch basins which had been covered with a plastic tarp lining. The tarps were anchored by a number of concrete or sand filled bags. However, based upon the estimated sizes of the ASTs and the poor quality of the underlying catch basins, Bureau Veritas did not believe these controls were adequate secondary containment for these ASTs. In addition, the remaining ASTs and 55-gallon drums had no secondary containment.

This finding was not considered a recognized environmental condition because it was not associated with a significant release. However, the 8,000-gallon and 5,000-gallon ASTs do not appear to have adequate secondary containment. These ASTs (along with the other ASTs) and storage containers with capacities of 55-gallons and higher should be placed within proper secondary containment.

 Bureau Veritas identified miscellaneous abandoned items along the northern portions of the subject property's Area 1 (Hawaiian Dredging Company). Littered articles observed included pieces of heavy machinery, an automobile, and general refuse.

This finding was not considered a recognized environmental condition because there is no evidence of a release associated with the refuse items. However, Bureau Veritas recommended that the items be removed and a general inspection be conducted beneath these items to ensure a release has not occurred.

Based on historical references, including aerial photographs and tax assessment records, the subject
property was formerly utilized for agricultural cultivation. Past use of chemicals on farmland has the
potential to impact the subject property. The historical evidence indicates that agricultural operations
would have been terminated at the site prior to 1997, when the subject property appeared as fallow
land. The past use of agricultural chemicals has a potential to impact the subject property.

This finding was not considered a recognized environmental condition because there is no evidence of the mixing, storage, or excessive use of pesticides and/or herbicides on the subject property when it was utilized for agricultural cultivation. In addition, according to HAR Chapter 128D, the presence of agricultural chemicals does not constitute a release. If the subject property is ever redeveloped as

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a residential property or the soil is used as fill for residential properties, however, Bureau Veritas recommended testing the soil for agricultural chemicals.

Hazardous Materials Assessment Survey, Two Quonset Huts, Wailuku Shaft 33, Kehalani Mauka Subdivision, Wailuku, Maui, Hawaii, conducted by Bureau Veritas, Project No. 17008-008018.00, dated February 22, 2008

Stanford Carr retained Bureau Veritas to conduct this hazardous materials assessment of the two Quonset huts at Wailuku Shaft 33, located on the northeast portion of the upper Residential Area of the subject property. The scope of work included the identification and sampling of: (1) suspect asbestoscontaining materials (ACM) for asbestos analysis; (2) suspect lead-based paint (LBP) for lead analysis; and (3) suspect arsenic-containing materials (ArCM) for arsenic analysis. Bureau Veritas' findings and recommendations were as follows:

Asbestos-Containing Materials Assessment

Based on Bureau Veritas' inspection and laboratory analysis of bulk samples of suspect ACM, the following materials contain asbestos above the regulatory level of one percent (1%) and were identified as ACM:

- Approximately 1,300 square feet of weatherproof coating with silver paint is present on the
 exterior of the Small Quonset hut (over Wailuku Shaft 33)
- Approximately 6,700 square feet of weatherproof coating with silver paint is present on the exterior of the Large Quonset hut (electrical panel building)
- Approximately six (6) cubic feet of cementitious arc shoots (18 units) inside the dry-type electrical transformer box located in the Large Quonset hut (electrical panel building)

Bureau Veritas recommended removal of these asbestos-containing building materials prior to building demolition by a qualified asbestos abatement contractor under the supervision of a qualified industrial hygiene professional, in accordance with the HDOH Hawaii Administrative Rules (HAR) Title 11, Chapters 501 - 504.

Lead Paint Assessment

Based on Bureau Veritas' paint sampling and laboratory analytical results, the silver paints on the interior and exterior corrugated metal walls/ceiling of the large Quonset hut (electrical panel building) were confirmed as LBP. The silver paints on the interior and exterior corrugated metal walls/ceiling of the small Quonset hut (over Wailuku Shaft 33), and the turquoise paint on the interior concrete lower walls of the large Quonset hut (electrical panel building) contain detectable lead concentrations and are considered lead-containing paint (LCP). The only paint sample reporting no detectable lead was the gray paint on the interior concrete walls at the below-grade well entrance of the small Quonset hut (over Wailuku Shaft 33).

All of the LBP/LCP were observed in fair to poor condition. During the planned demolition activities, the general contractor and their subcontractors must follow the Hawaii Occupational Safety and Health (HIOSH) Lead in Construction Standard (Health Standards, Title 12, Subtitle 8, Part 3, Chapter 148.1) when workers have a potential to be exposed to lead during work activities (i.e., demolition, renovation, cutting, drilling, sanding, grinding, etc.).



Building materials covered with LBP must undergo Toxicity Characteristic Leaching Procedure (TCLP)-Lead laboratory analysis prior to disposal in the landfill. Therefore, Bureau Veritas returned to the project site and collected one representative sample of the building materials for TCLP-Lead analysis. The laboratory results indicated that the sample contained TCLP-Lead below the regulatory level of 5.0 mg/L. Therefore, the LBP-covered metal may be disposed as general construction waste. However, care should be taken to ensure that the LBP remains intact during demolition activities.

Arsenic-Containing Materials Assessment

Two types of canec materials (fiberboard) were sampled from the large Quonset hut (electrical panel building) and submitted to a qualified laboratory for arsenic analysis. Based on the laboratory results, arsenic concentrations in both materials are significantly greater than the regulatory level of 100 milligrams per kilogram (mg/kg). These confirmed ArCM are listed as follows:

- Approximately 500 square feet of canec wall/ceiling board in the small room at the northeast corner of the large Quonset hut (electrical panel building)
- Approximately 1,000 square feet of 1- by 1-foot canec acoustical tiles on the central portion of the interior walls in the large Quonset hut (electrical panel building)

These materials should be properly handled and removed in accordance with the HIOSH Inorganic Arsenic in Construction Standard prior to building demolition activities. Prior to disposal, the arsenic-containing materials require TCLP-Arsenic analysis to assess disposal options. Therefore, the two canec samples were further analyzed for TCLP-Arsenic, which revealed the following:

- The 1- by 1-foot acoustical tiles sampled from the interior walls of the large Quonset hut
 contained TCLP-Arsenic well above the regulatory level of 5.0 mg/L. Therefore, this canec
 material should be properly removed, packaged, and disposed according to regulatory
 requirements. The work should be conducted by a licensed hazardous waste abatement
 contractor under the supervision of a qualified industrial hygiene professional.
- The canec wall/ceiling board sampled from the small room at the northeast corner of the large Quonset hut contained no detectable TCLP-Arsenic (below laboratory reporting limit). Therefore, although this material must be properly removed prior to demolition activities, it may be disposed of as general garbage.

Other Potentially Hazardous Materials

During Bureau Veritas' survey, other potentially hazardous materials were observed onsite which may require special handling and disposal prior to the planned demolition activities. These materials are listed as follows:

- Seven unlabelled, 55-gallon drums of liquid located inside the large Quonset hut (electrical panel building), near the southwest corner. Approximately 100 square feet of staining was observed on the floor next to these drums.
- Four 5-gallon closed-top buckets of oil located inside the large Quonset hut (electrical panel building), near the southern entrance. Approximately 5 square feet of staining was observed on the floor next to these buckets.

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 Three large, pad-mounted electrical transformers within a fenced enclosure and three polemounted transformers on a utility pole (potential polychlorinated biphenyl [PCB] units), located just southwest of the two Quonset huts.

The unlabelled, 55-gallon drums of liquid should be tested and properly disposed and the 5-gallon oil buckets should be removed prior to the planned demolition activities. If the transformers are to be removed, these units should be tested for PCB content prior to removal/disposal.

According to Stanford Carr, all of the confirmed ACM, ArCM, loose and flaking LBP, and other potentially hazardous materials (except for the MECO transformers) have been properly removed and disposed.

Multi-Increment Sampling Investigation Report, 210.5 Acres of Proposed Residential Use and 38.5 Acres of Proposed Non-Residential Use, Kehalani Development, Wailuku, Maui, Hawaii, conducted by Bureau Veritas, Project No. 17009-009032.00, dated February 1, 2011

Bureau Veritas was retained by Stanford Carr to conduct this environmental investigation of the Kehalani Development in Wailuku, Maui, Hawaii. The environmental investigation focused on former agricultural property currently being developed for residential and non-residential uses.

The former agricultural property being developed for residential uses includes 12 contiguous residential lots (Modules 2, 3, 6, 7, 8, 9, 12, 13, 14, 17, 18, and 19), located in the western upper portion, and one non-contiguous commercial lot (Module C11), located on the lower, southeastern portion of the subject property (hereinafter referred to as the "Residential Site"). All of these Modules are part of the subject property included in this Phase I ESA, except for Module 2, which is located south of the other upland parcels. The Modules comprising the subject property are indicated on Figure 2, behind the Figures tab.

The former agricultural property being developed for non-residential uses includes five non-contiguous lots (Lots 3-A-2, 1-J, P-1, P-2, and P-3), which comprise a total area of 38.5 acres (hereinafter referred to as the "Non-Residential Site"). The planned future uses for Non-Residential Site include a school, a community center, and three parks.

The purpose of the project was to assess the extent and magnitude of potential environmental impacts resulting from past agricultural use of the proposed Residential Site (consisting of 13 modules) and the proposed Non-Residential Site (consisting of five lots).

The environmental investigation approach for the Residential Site was presented in the *Revised Sampling* and *Analysis Plan for Multi-Increment Sampling*, dated February 10, 2010 (Bureau Veritas, 2010b). The environmental investigation approach for the Non-Residential Site was documented in the *Addendum to the Sampling and Analysis Plan for Multi-Increment Sampling*, which was dated March 18, 2010 (Bureau Veritas, 2010c). In general, this investigation collected surface soils from the Residential and Non-Residential Sites using Decision Unit (DU) strategies and multi-increment sampling techniques.

For the Residential Site, 59 DUs, each 5,000-square feet in area, were established based on HDOH guidance. The 59 DUs were randomly dispersed throughout the 13 modules creating the Residential Site based on the ratio of an individual module's area to the total area of the Residential Site and the soil type(s) within a module. After the 59 DUs were established and the latitude and longitude of the approximate center of the DUs were determined, a hand-held Global Positioning System (GPS) receiver was used to locate the DUs in the field.

For the Non-Residential Site, five DUs, each with different areas, were established based on HDOH guidance. For the Non-Residential Site, each of the five lots were defined as one individual DU, and a multi-increment soil sample was collected from each of the five DUs.



In February and March 2010, Bureau Veritas collected multi-increment surface soils from 59 Residential Site DUs and five Non-Residential Site DUs. For the Residential Site, a multi-increment sample consisting of 30 increments was collected from each DU, and for the Non-Residential Site, a multi-increment sample consisting of 100 increments was collected from each DU. All of the multi-increment soil samples, plus seven replicate samples, were submitted to an analytical laboratory for preparation and analysis for (1) arsenic using the Environmental Protection Agency (EPA) Method 6010B, (2) dioxins using EPA Method 8290, and (3) organochlorine pesticides using EPA Method 8081.

For dioxins, the analytical results report the concentrations of individual congeners for each sample. The individual congeners were used to calculate the dioxin toxicity equivalence (TEQ) concentration based on the 2005 World Health Organization (WHO) toxicity equivalence factors (TEFs).

The analytical results for arsenic and organochlorine pesticides, and the calculated dioxin TEQ concentrations, were compared to the Final Tier 1 Environmental Action Levels (EALs) for unrestricted land use where groundwater is a drinking water resource and the site is less than 150 meters from a surface water body.

Residential Site Summary, Conclusions, and Recommendations

The analytical results show arsenic and organochlorine pesticides were detected in one or more soil samples at concentrations above their method reporting limits. None of the detected concentrations of arsenic or organochlorine pesticides were above their respective Final Tier 1 EALs.

The dioxin TEQ concentrations were calculated for the multi-increment samples collected from the 59 DUs. The dioxin TEQ concentrations were less than the 2010 HDOH TEQ Dioxin Soil Action Level of 240 ng/kg in all of the 59 soil samples. The dioxin TEQ concentrations were further compared to the Soil Management Categories, which show that nine dioxin TEQ concentrations were included in the Natural Background Soil Management Category (soil category "A") and 50 dioxin TEQ concentrations were included in the Minimally Impacted Soil Management Category (soil category "B").

Based on results of the analytical testing and the comparison of the results to the HDOH Final Tier 1 EALs and the 2010 HDOH TEQ Dioxin Soil Action Level, Bureau Veritas concluded that the surface soils of the Residential Site have not been significantly impacted by historical agricultural land uses and that the surface soil at the site is suitable for unrestricted land use.

Bureau Veritas recommended no further investigation of the Residential Site.

Non-Residential Site Summary, Conclusions, and Recommendations

The analytical results show arsenic was detected in two soil samples, at concentrations below the Final Tier 1 EAL. Organochlorine pesticides were not detected at concentrations above their respective method reporting limits in any of the five soil samples.

The dioxin TEQ concentrations were calculated for the multi-increment samples collected from the five DUs. The dioxin TEQ concentrations were less than the 2010 HDOH TEQ Dioxin Soil Action Level of 240 ng/kg in all five soil samples. The dioxin TEQ concentrations were further compared to the Soil Management Categories, which show that two dioxin TEQ concentrations were included in the Natural Background Soil Management Category (soil category "A") and three dioxin TEQ concentrations were included in the Minimally Impacted Soil Management Category (soil category (soil category (action to the Minimally Impacted Soil Management Category (soil cat

Based on results of the analytical testing and the comparison of the results to the HDOH Final Tier 1 EALs and the 2010 HDOH TEQ Dioxin Soil Action Level, Bureau Veritas concluded that the surface soils of the Non-Residential Site have not been significantly impacted by historical agricultural land uses and that the surface soil at the site is suitable for unrestricted land use.

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Bureau Veritas recommended no further investigation of the Non-Residential Site.

This Multi-Increment Sampling report was subsequently submitted to the DOH HEER Office for review. Based on their review, the HEER Office issued a "No Further Action (NFA) Determination" letter, dated March 1, 2011, indicating that no further action is warranted in regards to agricultural chemicals in the soil. A copy of the NFA letter from the DOH HEER Office is included in Appendix H.

Phase I Environmental Assessment, 182-Acre Kehalani Property (Tax Map Key [TMK] Numbers: [2] 3-5-001: Parcels 63 [Portion], 64, 67, and 80 and [2] 3-5-001: Parcel 36), Wailuku, Maui, Hawaii, conducted by Bureau Veritas, Project No. 17012-012038.00, dated March 16, 2012

Luce, Forward, Hamilton & Scripps LLP retained Bureau Veritas to conduct this Phase I ESA, which was performed to the ASTM E 1527-05 standard and included the lower Agricultural and Commercial portions of the subject property (TMK Nos.: [2] 3-5-001: Parcels 63 [Portions] and 64, respectively), and the upper Residential portion (formerly TMK No.: [2] 3-5-001: Parcel 067). It also included some of the adjoining and nearby areas.

This Phase I ESA revealed no evidence of current recognized environmental conditions, as defined by ASTM, in connection with the subject property. However, it did identify the past agricultural use as a historical recognized environmental condition. Based on the Multi-Increment Sampling Investigation Report completed in 2011 (summarized above), agricultural chemicals were not detected at or above regulatory levels. The HDOH, HEER Office subsequently issued a "No Further Action Determination" letter regarding the presence of agricultural chemicals at the subject property.

This Phase I ESA report also noted that the Goodfellow Brothers Inc./Campos construction base yard located on Parcel 064 of the subject property no longer included stained surface soil, but the fuel ASTs were stored within inadequate secondary containment. Bureau Veritas recommended the use of proper secondary containment for the ASTs. During Bureau Veritas' recent site visit, the former construction base yard was no longer present, and the area was mostly overgrown with vegetation.

5.0 INTERVIEWS

Bureau Veritas interviewed selected individuals associated with the subject property. The purpose of the interviews was to obtain additional information related to: 1) the current and past operations at the subject and/or adjoining properties that may result in recognized environmental conditions; and 2) the presence of Proceedings Involving the Property (e.g., litigation, regulatory agency rulings, and violations).

Bureau Veritas interviewed Mr. Brian Ige, Construction Manager at Dowling Company, Inc., during the site visit on February 4, 2016. Mr. Ige has been associated with the property for approximately three years and was forthcoming with the information for which he had knowledge.

According to Mr. Ige, some of the Kehalani areas have been sold since Bureau Veritas' previous Phase I ESA in 2012. He stated that the upper residential area was subdivided into 10 new land parcels in 2015. Furthermore, he showed Bureau Veritas the location of a new water well that is currently being installed in the upper residential area of the subject property. Mr. Ige stated that only some roadway construction, utility installation, and other infrastructure work has been conducted at the subject property since Bureau Veritas' previous Phase I ESA in 2012.

Mr. Ige was unaware of any USTs, hydraulic equipment, chemical spills, or hazardous materials releases on the subject property. Furthermore, he was unaware of any undocumented or unpermitted wells on the subject property.



Mr. Ige was asked the following and responded to the best of his knowle	dge
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Any pending, threatened, or past litigation relevant to	Yes	No	Х
hazardous substances or petroleum products in, on, or from the property.			
Any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.	Yes	No	Х
Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.	Yes	No	Х

6.0 STANDARD ENVIRONMENTAL RECORD SOURCES: FEDERAL, STATE, AND TRIBAL

Available government database information prepared by EDR was reviewed to evaluate both the subject property and any listed sites within ASTM-recommended search distances, which could potentially impact the subject property. Federal, state, and local databases reviewed are included in Appendix I.

The regulatory database report also included an Unmappable Sites Section. Unmappable sites are sites that cannot be plotted with confidence, but can be located by zip code or city name. In general, a site cannot be geocoded due to inaccurate or missing information in the environmental database record provided by its applicable agency. Unmappable sites that were identified by Bureau Veritas are included, as applicable, within the following paragraphs.

Subject Property

The subject property was not listed in the EDR report.

Offsite Facilities

A total of 128 sites were identified within the specified search distances from the subject parcel, including: one Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) No Further Remediation Action Planned (NFRAP) site; two Resource Conservation and Recovery Act (RCRA) Small Quantity Generator (SQG) sites; seven RCRA Conditionally Exempt Small Quantity Generator (CESQG) sites; 16 State Hazardous Waste Site (SHWS) sites; 20 RCRA Non Generator (NonGen) sites; 12 UST sites; 26 UST sites; one Institutional Control site; 12 Records of Emergency Release Report (SPILLS) sites; eight RCRA Non-Generator sites; one Integrated Compliance Information System (ICIS) site; two Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) / Toxic Substances Control Act (TSCA) Tracking System (FTTS) sites; two Historic FTTS sites; one Material Licensing Tracking System (MLTS) site; nine EDR Exclusive Historic Gas Stations (EDR Hist Auto) sites; one EDR Exclusive Historic Dry Cleaners (EDR Hist Cleaner) site; nine EDR Exclusive Recovered Government Archive State Hazardous Waste Database (HI RGA HWS) sites; three EDR RGS Landfill (LF) sites; and 14 EDR RGS LUST sites.

All of the listed sites of concern are located topographically down-gradient to the subject property and/or are too distant to reasonably affect it. The nearest site, listed as Waimaluhia Maui Meth/Drug Lab Act 170 at 115 Waimaluhia Lane, Unit 202, is a SHWS and SPILLS site, with a reported ½-gallon chemical release. The SHWS and SPILLS sites are both listed as "No Further Action."

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One unmappable site was identified in the vicinity of the subject property. The Aloha Kehalani Village facility located adjacent to the Parcel 063 portion of the subject property is listed as an UST site. This facility is also listed in the HDOH, SHWB database of registered USTs with three active USTs (gasoline and diesel), installed in 2013. However, it is not included in the LUST database, indicating that there have been no reported releases from the USTs.

7.0 TIER 1 VAPOR ENCROACHMENT SCREEN (VES)

Bureau Veritas conducted a Tier 1 VES during the Phase I ESA. The VES was conducted in accordance with ASTM E2600-10, Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions (VES standard). A VES is often conducted in conjunction with a Phase I Assessment as much of the information utilized is common to both processes. The methods and terms are as defined in the ASTM VES standard.

The goal of a VES is to identify a vapor encroachment condition (VEC) at a subject property. A VEC is defined as the presence of likely presence of chemicals of concern (COC) vapors in the subsurface of a subject property caused by the release of vapors from contaminated soil or groundwater either on or near the subject property.

In accordance with the VES standard, Bureau Veritas requested that the User provide information on the subject property, with respect to the following: "specialized knowledge" of the User; and commonly known or reasonable ascertainable information.

Based on Bureau Veritas' review of the User provided information, no readily apparent evidence of potential vapor encroachment conditions at the subject property was noted.

7.1 TIER 1 SCREENING INFORMATION

A Tier 1 VES includes obtaining and reviewing information on the subject property and adjoining properties. This includes information on the following: user provided information; physical setting information; existing/planned use of the subject property; types of structures/existing or planned on the subject property; surrounding area description; selected Federal, State, Local and Tribal environmental records sources; historical records related to the past use of the subject property and adjoining properties within the area of concern (AOC), 1/10 to 1/3 mile; the likely COC; and the presence of significant natural or man-made conduits that can serve as preferential pathways, such as utility corridors, sewers, storm drains, etc. (Note: These "preferential pathways" may provide for a more direct route for vapors to encroach upon the subject property).

As stated previously, most of this information was obtained as part of the standard Phase I assessment process and has already been discussed in the applicable sections of this report. Additional information was also obtained with respect to the following: planned additional structures; and significant natural or man-made "preferential pathways" of potential vapor migration. This information is summarized below:

- Installation of underground utilities at the subject property is underway.
- Construction of residential houses is planned for the upper, western portions of the subject
 property, and commercial development is planned for the lower, southeastern portions of the
 subject property.



7.2 TIER 1 SCREENING EVALUATION

An evaluation includes two tests: 1) a search distance test to evaluate the proximity of the target property to known or suspected "contaminated properties", and 2) a COC test to determine the likely presence of COCs at the subject or properties within the AOC. In evaluating the data, the distance and proximity to potentially contaminated off-site properties must be evaluated, including whether they are up-, cross-, or down-gradient relative to the subject property. A brief summary of relevant information considered for the Tier 1 screening follows:

Use of Property: Currently under initial residential and commercial development

Soil Characteristics lao silty clay, 0 to 3 percent slopes lao clay, 7 to 15 percent slopes

lao clay, 7 to 15 percent slopes lao clay, 3 to 7 percent slopes

lao cobbly silty clay, 7 to 15 percent slopes Wailuku silty clay, 3 to 7 percent slopes

Wailuku silty clay, 3 to 7 percent slopes (USDA 1972)

Depth to groundwater: Approximately 280 to 740 feet (USGS, Wailuku, 2013)

Preferential Pathways: Current and future underground utilities

The vapor encroachment screen process has been completed in accordance with the VES standard. Based on the information gathered during this assessment, no potential sources of COC, as defined in the ASTM VES standard, were identified. Therefore, no additional evaluation of VECs was conducted.

8.0 SITE RECONNAISSANCE

8.1 GENERAL OBSERVATIONS

At the time of Bureau Veritas' site walkthrough on February 4, 2016, the upper, western Residential areas and lower, eastern Commercial areas of the subject property were mostly undeveloped and vegetated with tall grasses, shrubs, and small trees. The upper, western Residential areas were partially graded and under initial development, and included a site where a water well was undergoing installation.

Upper, Western Residential Areas

This western, upland portion of the subject property, located west of Honoapiilani Highway on the upland area of Wailuku, appeared mostly undeveloped with some initial infrastructure for the planned residential development (e.g., partial roadway construction, utility installation, etc.). The undeveloped areas were covered with tall grasses, shrubs and small trees. Some heavy equipment and stored construction materials, including pipe sections and lumber, were observed in the central area.

The northeast portion of the residential area was observed as a vacant lot covered with low-lying grass. Structures were observed at the northeast corner west of this area, including the Wailuku Shaft 33 water well, a warehouse, and a MECO electrical substation with three large pad-mounted transformers. Three small, pole-mounted transformers were observed atop a nearby utility pole. No staining or other evidence of releases was observed on or around the transformers. The warehouse appeared as a large, corrugated metal Quonset hut, and a small Quonset hut covered the Wailuku Shaft 33 well. At the time of Bureau Veritas' site visit, the large warehouse Quonset hut was locked and not accessible, but this structure is currently empty, according to Mr. Ige.

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At the time of Bureau Veritas' site visit, drilling activities were observed at a site located on the central portion of the upper, residential area. According to Mr. Ige, the drilling is being conducted to install a domestic water well for the planned residential development.

Lower, Southeastern Commercial Areas

One of the lower southeastern portions of the subject property (TMK: [2] 3-5-001: Parcels 63 [portions]) is located along the east side of Honoapiilani Highway and on the north side of Kuikahi Drive, with Waiale Road along the east side. The portions of Parcel 063 comprising the subject property are eight designated land units (Units 4, 5, 6, 7, 8, 10, 11, and 12), which appeared as vacant grassy areas within the Kehalani Village commercial development. Four existing buildings were observed on the adjoining areas within Kehalani Village, including: (1) Longs Drugs (drug store), (2) Foodland/American Savings Bank/Coffee Bean & Tea Leaf, (3) McDonalds restaurant, and (4) Aloha Gas (gas station).

The other lower southeastern portion of the subject property (TMK: [2] 3-5-001: Parcel 64) is located on the south side of Kuikahi Drive, with Waiale Road along the east side. The northeast corner of this area was observed with a few temporary office trailers and associated parking lot. The office trailers are currently occupied by Kihei Gardens & Landscaping Company, Stanford Carr Development, and Kehalani Community Association. The remainder of Parcel 064 was vegetated with a small clearing in the central portion. An unlined drainage swale was observed on the western portion of Parcel 064, extending in a north-south direction to a culvert at the southern boundary of Parcel 064.

During the previous Phase I ESA conducted by Bureau Veritas in 2012 (see Section 4.8), the central area of Parcel 064 was occupied by the Goodfellow Brothers Inc./Campos construction base yard. No readiliy apparent evidence of the base yard was observed by Bureau Veritas during the recent site visit.

No evidence of chemical or petroleum hydrocarbon releases was observed, and no evidence of subsurface structures of environmental concern (e.g., USTs, hydraulic lifts) was observed on the subject property.

8.2 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS (OTHER THAN UST/AST)

The subject property was assessed for signs of use, storage, or disposal of hazardous substances and/or petroleum products. Property uses where these types of materials are typically found include: vehicle service bays, vehicle repair operations, auto body shops and related activities (e.g., solvents, cleaners, degreasers, lubricants, paints, antifreeze); dry cleaners, rug cleaners, steam laundries, Laundromats with self-serve dry clean machines (e.g., chlorinated solvents, Naphtha, mineral spirits); manufacturing operations, plating facilities and other industrial/commercial operations. For purposes of this assessment, this does not include use/storage of small quantities of typical janitorial and maintenance materials (if any), unless considered relevant.

No evidence of hazardous materials or petroleum products was observed on the subject property.

8.3 STORAGE TANKS

8.3.1 <u>Underground Storage Tanks</u>

The subject property was assessed for evidence of USTs. The assessment consisted of noting evidence (e.g., fill ports, vent piping, dispensing equipment, and pavement variations) indicating that USTs are currently or were previously located on the subject property.



No visual evidence was observed, and no other information was obtained, to indicate the current and/or potential past presence of USTs at the subject property.

The Aloha Kehalani Village facility located adjacent to the Parcel 063 portion of the subject property is listed as an UST site in the HDOH, SHWB database of registered USTs, with three active USTs (gasoline and diesel) installed in 2013. However, it is not included in the LUST database, indicating that there have been no reported releases from the USTs.

8.3.2 Aboveground Storage Tanks

The subject property was assessed for evidence of ASTs. The assessment included noting evidence (e.g., concrete foundations or saddles, pedestals or steel support structures) indicating that ASTs were previously located on the subject property.

No evidence of ASTs was observed at the subject property, except for a propane gas AST (approximately 1,500 gallons) located at the southeast corner of the Unit 4 area on Parcel 063 of the subject property. This AST appeared new and in good condition. According to Mr. Ige, this AST was recently installed and provides propane gas to the various businesses that occupy the offsite portions of Parcel 063. It should be noted that propane is gaseous at ambient conditions; therefore, releases from the AST would not impact the soils of the subject property.

8.3.3 In-Ground Hydraulic Equipment

The subject property was assessed for evidence of in-ground hydraulic equipment (e.g., hydraulic elevators or lifts that have hydraulic fluid-containing reservoirs or jacks below ground surface) or other types of hydraulic fluid-containing reservoirs in 1978 or before may contain PCBs.

No visual evidence was observed, and no other information was obtained, to indicate the current and/or potential past presence of in-ground hydraulic equipment at the subject property.

8.4 WASTES

The subject property was assessed for evidence suggesting the generation or disposal of "wastes" onsite (e.g., drums, dumpsters, debris piles). Observations suggesting the presence of wastes onsite (if any) are presented below. This includes observations/information suggesting 1) the placement of significant quantities of "fill" materials (from an unknown or potentially contaminated source) or 2) the "disposal" of wastes/debris/trash onsite

No significant debris or other evidence of unauthorized dumping was observed at the subject property.

8.5 POLYCHLORINATED BIPHENYLS

The subject property was assessed for the presence of liquid-cooled electrical units (e.g., transformers) and major sources of hydraulic fluid (e.g., elevators, lifts). Such units are notable because they may be potential PCB sources.

No evidence of potential PCB sources was observed at the subject property, except for the transformers observed in the northeast portion of the upper, western residential area, next to the Wailuku Shaft 33 water well. These transformers include a fenced-in MECO electrical substation with three large padmounted transformers, and a nearby utility pole with three small, pole-mounted transformers mounted at the top. No staining or other evidence of releases was observed on or around the transformers.

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Bureau Veritas requested information on the PCB content of the transformers from MECO on February 16, 2016, and received a response from MECO the same day. According to MECO's records, the three pole-mounted transformers were purchased in 1996 and are non-PCB units. The three pad-mounted transformers were purchased in 1948 and contain PCB concentrations ranging from 2.47 parts per million (ppm) to 34.8 ppm. These transformers contain less than 50 ppm PCBs and are, therefore, considered non-PCB units. However, there is a potential that the transformers formerly contained di-electric fluids with higher PCB concentrations (based on the ages of the transformers), with a potential for past PCB releases to impact the subject property.

Bureau Veritas contacted MECO to see if they had conducted any PCB testing of the soil at the substation. According to Ms. Brittani Capps-Balinbin, Environmental Specialist with MECO, a comprehensive assessment of the substation has not been completed. However, a small leak of fluid from Transformer #1372 was reported in April of 2012, and was cleaned up within 72 hours. Although the spill only impacted the concrete pad below the transformer, three confirmation soil samples were collected from the ground surface immediately adjacent to the stained pad and were analyzed for PCB content. According to the laboratory report, no PCBs were detected in the three soil samples. Ms. Capps-Balinbin provided Bureau Veritas with a copy of the Soil Sample Collection Form, the laboratory report (with chain-of-custody), and a Photograph of the soil sampling site. A copy of the correspondence from MECO is included as Appendix J.

Although the PCB testing conducted by MECO in 2012 indicated no PCBs in the surface soil, the testing was limited to a small portion of the substation and does not provide a comprehensive assessment of the entire substation and surrounding areas.

According to Ms. Capps-Balinbin, it is MECO's policy to conduct a comprehensive Environmental Site Assessment (including soil testing) whenever they decommission one of their electrical substations. It should also be noted that MECO is responsible for the cleanup and remediation of all PCB releases from their transformers.

8.6 WASTE WATER AND STORM WATER DISCHARGE

The subject property was assessed for evidence of waste or process water discharges (if any) and storm water discharges. For purposes of this assessment, this generally includes discharges other than domestic waste water from sinks and toilets. In addition, properly functioning septic systems used strictly for residential and most commercial operations generally do not represent a cause for concern. Exceptions can include those instances where hazardous substances/petroleum products may be discharged through the system (e.g., spent solvents at an auto repair facility).

No evidence of industrial wastewater discharge was observed at the subject property.

Storm water infiltrates the subsurface through the unpaved ground surface, and flows via sheet flow to the east-northeast, toward the Pacific Ocean coastline.

The assessment consisted of noting evidence of the following: hatches, manholes, patches on the floor slabs, clean out access points; oil/water separators, clarifiers, sumps and trench drains; septic systems; pools of liquid (i.e., likely to contain hazardous substances or petroleum products); pits, ponds, or lagoons (i.e., associated with waste disposal or treatment); industrial or other process discharge sources; etc.

No visual evidence was observed, and no other information was obtained, to indicate the current and/or potential past presence of the above noted features or discharges sources.



8.7 WELLS

The subject property was assessed for evidence of wells (e.g., dry, irrigation, injection, abandoned, monitor, supply).

At the time of Bureau Veritas' site visit, drilling activities were being conducted on the central portion of the upper residential area of the subject property. According to Mr. Ige, the drilling is being conducted to install a domestic water well that will service the planned residential area.

The Wailuku Shaft 33 water well was observed on the northeastern portion of the upper residential area of the subject property. It is a deep well formerly used for irrigation purposes that is housed in a Quonset hut. During the site visit, Bureau Veritas observed the well as a deep, angled tunnel with a railway and stairs.

According to the State of Hawaii Department of Land and Natural Resources, Division of Water Resource Management *Ground Water Index and Summary* (2006), the Wailuku Shaft 33 well (identification [ID] number 4-5330-05) was drilled in 1946 and is used as a municipal water well by Kehalani Mauka LLC. Another well (ID number 4-5330-03) is indicated approximately 800 feet northwest of Wailuku Shaft 33. This well, named "Field 63," was drilled in 1945 as an observation well, and the owner/user is listed as Wailuku Sugar. Bureau Veritas did not observe evidence of this well during their site visit.

9.0 NON-ASTM ISSUES

9.1 ASBESTOS-CONTAINING MATERIALS

The subject property was inspected for the presence of suspect asbestos-containing materials (ACM) such as ceiling and roofing materials, and presumed asbestos-containing materials (PACM) as defined by the Occupational Safety and Health Administration (OSHA) (29 CFR 1926.1101), which includes thermal system insulation and surfacing material, if building construction was prior to 1981. Asphalt and vinyl flooring material installed prior to 1980 must also be considered asbestos-containing unless proven otherwise.

The subject property is not yet developed with permanent buildings, except for the Wailuku Shaft 33 Quonset hut and nearby warehouse Quonset hut, located on the northeastern portion of the upper residential area of the subject property. Bureau Veritas conducted a hazardous materials assessment of these buildings in 2008 for Stanford Carr (see Section 4.8), which included sampling and laboratory analyses of suspect asbestos-containing materials (ACM). However, according to Stanford Carr, all of the identified ACM were properly removed and disposed.

9.2 RADON

Radon is a naturally occurring radioactive gas formed by the decay of uranium in bedrock and soil. The potential adverse health effects associated with radon gas depend on various factors, such as the concentration of the gas and duration of exposure. The concentration of radon gas in a building depends on subsurface soil conditions, the integrity of the building's foundation, and the building's ventilation system.

Due to the relatively young geological age (less than five million years) of the southernmost islands of the Hawaiian archipelago, radon gas does not occur at elevated levels. Therefore, no further investigation of radon is recommended for the subject property.

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9.3 LEAD-BASED PAINT

Lead-based paint (LBP) was commonly used for corrosion protection in the 1960s, and in prime, intermediate, and finish coats well into the 1970s. Regulations specifically addressing LBP include Housing and Urban Development (HUD) (1995) guidelines and the Consumer Product Safety Act (1977). These regulations define LBP as containing 0.5% lead by weight (5,000 ppm), and 0.009% lead by weight (90 ppm), respectively, for housing and consumer products. There is no industrial definition. There are specific testing methods for sampling and analyzing lead in paint.

The subject property is not yet developed with permanent buildings or structures, except for the Wailuku Shaft 33 Quonset hut and nearby warehouse Quonset hut. Bureau Veritas conducted a hazardous materials assessment of these buildings in 2008 for Stanford Carr (see Section 4.8), which included sampling and laboratory analysis of suspect LBP. However, according to Stanford Carr, the loose and flaking LBP was properly removed and disposed.

The remaining LBP should be monitored over time, with loose and flaking LBP properly removed as necessary. If the structure is to be demolished, the building components covered with LBP should be sampled and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) – Lead in order to asses disposal options.

9.4 WETLANDS

The subject property was inspected for the presence of sensitive ecological areas by noting environmental indicators (e.g., wetlands, vegetation, floodplains) located on or immediately adjoining the subject property.

No sensitive ecological areas were observed on the subject property. The USGS 7.5-Minute Topographic Quadrangle Map, Walluku (2013), which includes the subject property and adjoining properties, and the National Wetlands Inventory Map do not depict wetlands or other sensitive ecological areas on the subject property. The nearest designated wetlands area is located approximately 800 feet east of the upper western portion of the subject property. The wetland is the former Hopoi Reservoir, which is currently developed as a residential area, and it is listed as a "Palustrine" system, "Unconsolidated Bottom" class, and "Permanently Flooded" water regime, with a "Diked/Impounded" special modifier.

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps were reviewed to determine if the subject property is located in a flood hazard area. According to the designated map (FEMA Panel #150003 0319E, revised September 25, 2009) the subject property is located within Flood Zone X. which denotes areas determined to be outside the 0.2% annual chance floodplain.

10.0 FINDINGS AND OPINIONS

Bureau Veritas has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of the 160-acre Kehalani property (Tax Map Key numbers [TMKs]; [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), located in Wailuku, Maui, Hawaii (the "subject property"). Any exceptions to, or deletions from, this practice are described in Sections 1.2 and 1.3 of this report.

This Assessment has revealed no evidence of recognized environmental conditions, as defined by ASTM, in connection with the subject property, except for the following:

 Onsite MECO Electrical Substation - Three large, pad-mounted electrical transformers are located within a fenced-in MECO electrical substation on the northeast portion of the upper,



western residential area at the subject property, next to the Wailuku Shaft 33 water well. No staining or other evidence of releases was observed on or around the transformers.

According to MECO's records, the transformers were purchased in 1948 and contain PCB concentrations ranging from 2.47 parts per million (ppm) to 34.8 ppm. These transformers contain less than 50 ppm PCBs and are, therefore, considered non-PCB units. However, there is a potential that the transformers formerly contained di-electric fluids with higher PCB concentrations (based on the ages of the transformers), with a potential for past PCB releases to impact the subject property.

It is MECO's policy to conduct a comprehensive Environmental Site Assessment (including soil testing) whenever they decommission one of their electrical substations. In addition, MECO is responsible for the cleanup and remediation of all releases from their transformers.

This finding is considered a recognized environmental condition because there is a potential for past releases of PCB fluids from the MECO transformer substation to impact the subject property. However, MECO is responsible for the cleanup and remediation of all releases from their transformers

This assessment has also revealed the following evidence of a historical recognized environmental condition, as defined by ASTM, in connection with the subject property:

Past Agricultural Use - Agricultural chemicals such as pesticides and/or herbicides formerly
used on agricultural crops at the subject property have the potential to impact the subject
property. Bureau Veritas conducted multi-increment soil sampling with laboratory analyses for
agricultural chemicals of concern on the agricultural portions of the subject property in 2011.
 Based on the results, agricultural chemicals were not detected at or above regulatory levels. The
State of Hawaii Department of Health (DOH), Hazard Evaluation and Emergency Response
(HEER) Office subsequently issued a No Further Action Determination letter for the subject
property.

This historical recognized environmental condition is not considered a current recognized environmental condition because the subject property has received a "No Further Action Determination" letter from the DOH HEER Office in regards to elevated agricultural chemicals in the soil.

In addition, this assessment has revealed the following environmental condition, which is not considered a recognized environmental condition, as defined by ASTM, in connection with the subject property:

Lead-Based Paint (LBP) – Based on a 2008 Hazardous Materials Assessment report, the large, corrugated metal Quonset hut (former warehouse) located on the northeastern-most portion of the subject property (next to the Wailuku Shaft 33 water well) includes silver LBPs on the interior and exterior corrugated metal walls/ceiling. The loose and flaking LBP was reportedly removed and disposed; however, the intact LBPs were left in place.

This finding is not considered a recognized environmental condition because LBP on buildings is not considered an ASTM issue. However, the remaining LBPs should be monitored over time, with loose and flaking LBP properly removed as necessary. If the structures are to be demolished, the building components covered with LBP should be sampled and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) — Lead in order to asses disposal options

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11.0 SIGNATURES

This report was prepared, under the responsible charge of the Environmental Professional noted below, by:



Bryan Starks Staff Engineer Health, Safety, and Environmental Services

Environmental Professional's Certification:

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Tim Swartz Senior Project Manager Health, Safety, and Environmental Services

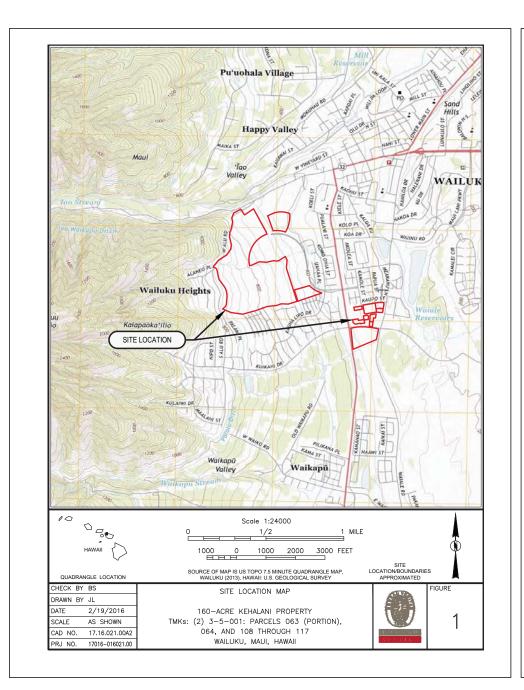
March 7, 2016

Phase I Environmental Site Assessment 160-Acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [Portions], 064, and 108 through 117) Wailuku, Maui, Hawaii

Bureau Veritas Project No. 17016-016027.01



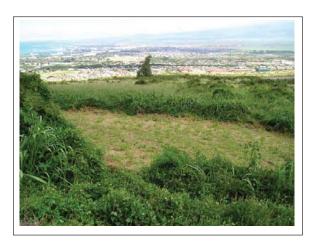
FIGURES







PHOTOGRAPHS



	Description	Overview of upper, western residential area on subject property, from western boundary looking east-northeast	Photo 1
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



	Description	Overview of upper, western residential area on subject property, from central area looking east-southeast	Photo 2
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



Project No. 17016-016021.01	Description	New road (extension of Kehalani Mauka Parkway) near south end of upper, western residential area on subject property, looking north	Photo 3
	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



Project No. 17016-016021.01	Description	Construction activities (including water well drilling) in central portion of upper, western residential area on subject property, looking northwest	Photo 4
	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



	Description	New asphalt-paved road (Kehalani Mauka Parkway) on central portion of upper, western residential area on subject property, looking northeast	Photo 5	
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date	
	Client	Redwood Capital Finance Company, LLC	February 4, 2016	



	Description	Irrigation canal extending along edge of northeast portion of upper, western residential area on subject property, looking northwest	Photo 6
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



		Description	Quonset hut over Wailuku Shaft 33 water well on northeast portion of upper, western residential area on subject property	Photo 7
	Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016	



		Description	Opening to the deep water well (with tracks for rail car) inside Quonset hut over Wailuku Shaft 33	Photo 8
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date	
	Client	Redwood Capital Finance Company, LLC	February 4, 2016	



	Description	Quonset hut (former warehouse) on northeast portion of upper, western residential area on subject property (lead-based paint on walls/ceiling)	Photo 9
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



	Description	MECO electrical substation (right) and three pole-mounted transformers (left) on northeast portion of subject property, looking southwest	Photo 10
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



	Description	Unit 4 portion of lower, eastern commercial portion of subject property (TMK: [2] 3-5-001: Parcel 063) at Kehalani Village Center, looking west	Photo 11
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



	Description	Propane tank at southeast corner of Unit 4 of subject property, used by various businesses at Kehalani Village Center, looking south	Photo 12
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



Project No. 17016-016021.01	Description	Overview of Units 6, 7 and 8 portions of subject property at Kehalani Village Center, looking northeast	Photo 13
	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



	Description	Unit 5 portion of subject property at Kehalani Village Center, looking east- northeast	Photo 14
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



Project No. 17016-016021.01	Description	Commercial building (Foodland, American Savings Bank, Coffee Bean & Tea Leaf) on western portion of Kehalani Village Center, looking west	Photo 15
	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



	Description	Aloha Gas station (UST site) on south-central portion of Kehalani Village Center, looking southwest	Photo 16
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



	Description	McDonalds restaurant on east-central portion of Kehalani Village Center, looking southeast	Photo 17	Ì
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date	
	Client	Redwood Capital Finance Company, LLC	February 4, 2016	l



	Description	Office trailers at northeast corner of TMK: (2) 3-5-001: Parcel 064 on lower, eastern portion of subject property	Photo 18
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



	Description	Overview of undeveloped area at TMK: (2) 3-5-001: Parcel 064 on lower, eastern portion of subject property, from east entrance looking west	Photo 19
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



	Description	Cleared area near center of TMK: (2) 3-5-001: Parcel 064 on lower, eastern portion of subject property, looking northwest	Photo 20
Project No. 17016-016021.01	Site Name	160-acre Kehalani Property (TMKs: [2] 3-5-001: Parcels 063 [portions], 064, and 108 through 117), Wailuku, Maui, Hawaii	Photo Date
	Client	Redwood Capital Finance Company, LLC	February 4, 2016



APPENDIX A RESUMES



Bryan Starks

Staff Engineer

B.S, Biological Engineering, 2010 University of Hawaii at Manoa, Honolulu, Hawaii

OSHA 40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training, 2013

HAZWOPER Refresher Training (8-Hour), Annual

AHERA Asbestos Building Inspector, 2014

AHERA 40-Hour Contractor Supervisor, 2014

Thermo Scientific Niton XRF, 2014

Mr. Bryan Starks has over four years of experience in environmental consulting and industrial hygiene. His experience includes conducting Phase I Environmental Site Assessments (ESAs), Phase II ESAs including soil and groundwater sampling and underground storage tank (UST) closures.

Mr. Starks also has extensive experience conducting hazardous materials assessments for asbestos and lead-based paint (LBP). In the field of Indoor Air Quality (IAQ) Mr. Starks has conducted numerous fungal investigations, and assisted in mold remediation and water intrusion restoration projects. Additionally Mr. Starks has prepared Storm Water Pollution Prevention Plans (SWPPP) and Spill Prevention, Control and Counter-measures (SPCC) plans, and monitored asbestos and lead abatement projects.



Tim J. Swartz

Senior Project Manager

Associate of Science Degree (AS) in Occupational and Environmental Safety Management Honolulu Community College, Honolulu,

Undergraduate Studies in Psychology and Biology University of Kansas, Lawrence, Kansas

Environmental Professional as defined in Section 312.10 of 40 CFR 312

Asbestos Hazard Emergency Response Act (AHERA) Building Inspector

AHERA Management Planner

State of Hawaii Department of Health (DOH) - Certified Asbestos Project Monitor

National Institute of Occupational Safety and Health (NIOSH) 582 Phase Contrast Microscopy/Asbestos Identification/AAR Participant

SCITEC Radiation Safety Training

OSHA 40-Hour Hazardous Waste, Health, and Safety Accreditation/Annual Update

Lead-Based Paint Inspector

Lead-Based Paint Abatement Worker Awareness Training Course Tim Swartz has over 27 years of experience in the environmental and industrial hygiene fields. His background includes numerous Phase I environmental site assessments (ESAs) and management of large-scale Phase I ESA projects; soil and groundwater sampling; asbestos and lead paint assessments and management of large-scale asbestos and lead paint projects; air monitoring and project oversight for asbestos and lead paint abatement projects; and various air quality surveys.

Mr. Swartz has extensive project management experience and is familiar with standards and requirements of the American Society for Testing and Materials (ASTM) International standards for Phase I environmental site assessments (ESAs), and Asbestos Hazard Emergency Response Act (AHERA) standards for asbestos projects. He is also familiar with Environmental Protection Agency (EPA) regulations for asbestos building surveys and air monitoring projects; EPA and Department of Housing and Urban Development (HUD) guidelines for lead-based paint surveys and abatement; and Occupational Safety and Health Administration (OSHA) regulations for projects involving worker health and safety.



APPENDIX B SOURCES AND REFERENCES



REFERENCES

Sources of Information

- ASTM International (ASTM), 2013. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. ASTM Practice E1527-13.
- ASTM, 2010. Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions. ASTM Practice E2600-10.

Persons/Agencies Contacted

- Mr. Brian Ige, Construction Manager at Dowling Company, Inc., phone (808) 270-0511, February 4, 2016
- Ms. Brittani Capps-Balinbin, Environmental Specialist with Maui Electrical Company, Ltd. (MECO), phone (808) 871-8461, February 16, 2016

Physical Setting

- Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM), 2011.
 FEMA/FIRM Map No. 150003 0319E, revised September 25, 2009.
- Foote, D.E. et al., 1972. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, prepared by the U.S. Department of Agriculture (USDA), Soil Conservation Service, in cooperation with the University of Hawaii Agricultural Experiment Station, dated 1972.
- Mink, J.F. and L.S. Lau, 1990. Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy for Maui (Technical Report No. 185), Water Resources Research Center at the University of Hawaii. February 1990.
- USDA, 2016. USDA Natural Resources Conservation Service Web Soil Survey Soil Map (http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx). Reviewed January 29, 2016.
- United States Fish and Wildlife Service (USFWS), 2015. USFWS National Wetland Map (http://www.fws.gov/wetlands/data/mapper.HTML). Reviewed February 10, 2016.

Federal, State and County Agencies

- Department of Land and Natural Resources (DLNR), 2006. Groundwater Well Index, State of Hawaii, DLNR, Commission on Water Resource Management. January 2006.
- Environmental Data Resources, Inc. (EDR), 2016. EDR Radius Map Report, prepared by EDR. February 4, 2016.
- Hawaii State Department of Health (HDOH), 2014. Hazard Evaluation & Emergency Response (HEER) Office Database. 2014.
- HDOH, 2015. Solid and Hazardous Waste Branch (SHWB), Underground Storage Tank (UST)
 Database and Leaking Underground Storage Tank (LUST) Databases. 2015.

Project No. 17016-016021.01



REFERENCES (Continued)

- . Ownership records and Tax Map Key maps, prepared by the County of Maui Real Property Tax Assessment Office (various dates)
- United States Department of Housing and Urban Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, 2012

Aerial Photographs

Sources: Environmental Data Resources, Inc. and Google Earth™

Date: 1950	Aerial Photograph: EDR Inquiry No. 4529586.9
Date: 1965	Aerial Photograph: EDR Inquiry No. 4529586.9
Date: 1976	Aerial Photograph: EDR Inquiry No. 4529586.9
Date: 2000	Aerial Photograph Source: Google Earth™
Date: 2010	Aerial Photograph Source: Google Earth™
Date: 2012	Aerial Photograph Source: Google Earth™
Date: 2013	Aerial Photograph Source: Google Earth™
Date: 2014	Aerial Photograph Source: Google Earth™

Topographic Maps

Sources: Hawaii State Archives in Honolulu, Hawaii, and Environmental Data Resources, Inc.

USGS Quadrangle: Wailuku, Hawaii

Scale: 1:24,000

1922, 1955, 1983, 1997, and 2013

Previous Environmental Reports

- Phase I Environmental Assessment, 258.315-Acre Undeveloped Property (TMK Nos.: [2] 3-5-001: Parcels 67, 75, 77, 78, and 80), Planned Kehalani Residential Subdivision, Wailuku, Maui, Hawaii, conducted by Bureau Veritas (formerly Clayton Group Services, Inc.), Project No. 85-06214.00, dated March 16, 2006
- Phase I Environmental Assessment, 43-Acre Undeveloped Property (TMK Nos.: [2] 3-5-001: Parcels 63 and 64 and TMK No. [2] 3-5-020: Parcel 036), Planned Kehalani Residential Subdivision, Wailuku, Maui, Hawaii, conducted by Bureau Veritas (formerly Clayton Group Services, Inc.), Project No. 85-06214.00, dated March 16, 2006
- Hazardous Materials Assessment Survey, Two Quonset Huts, Wailuku Shaft 33, Kehalani Mauka Subdivision, Wailuku, Maui, Hawaii, conducted by Bureau Veritas, Project No. 17008-008018.00, dated February 22, 2008



REFERENCES (Continued)

- Multi-Increment Sampling Investigation Report, 210.5 Acres of Proposed Residential Use and 38.5 Acres of Proposed Non-Residential Use, Kehalani Development, Wailuku, Maui, Hawaii, conducted by Bureau Veritas, Project No. 17009-009032.00, dated February 1, 2011
- Phase I Environmental Assessment, 182-Acre Kehalani Property (Tax Map Key [TMK] Numbers: [2] 3-5-001: Parcels 63 [Portion], 64, 67, and 80 and [2] 3-5-001: Parcel 36), Wailuku, Maui, Hawaii, conducted by Bureau Veritas, Project No. 17012-012038.00, dated March 16, 2012

3

Project No. 17016-016021.01 2 Project No. 17016-016021.01



APPENDIX C USER QUESTIONNAIRE



ASTM PRACTICE E 1527-13 USER/CLIENT QUESTIONNAIRE To be returned to Bureau Veritas with the authorized proposal

GENERAL INFORMATION

User/Client Name(s):	REDWOOD CAPITAL FINANCE COMPANY, LLC
Property Name and Address (Include known current and former address[es] and parcel no.):	refer to page 1 of this proposal (items 1-3)
Property Acreage:	refer to page 1 of this proposal (items 1-3)
Current Property Type (Designate property type and list current tenants [business name and type of operation]):	Residential: Commercial: Industrial: Other: _x Land
Type of Property Transaction with respect to User (Designate one):	Purchase: Lease: Other (provide further information): _X Financing
Reason Phase I is Required (Check all that apply):	Landowner Liability Protections (e.g. Innocent Landowner Defense): Evaluation of Business Risk: X Other (list): (Note: If no reason is given it is assumed that this assessment is being performed to satisfy one of the requirements for Landowner Liability Protections to CERCLA liability.
Site Owner/ Contact(s) (Name and phone number):	Brian Ige brian@dowlingco.com Tel. 808.244.1500

Please provide the above information as well as a site plan (ALTA Survey, if available) which clearly designates the boundaries of the subject property for purposes of this Phase I ESA. A list of other Helpful documents is included with the proposal.

Page 1 of 5



ASTM PRACTICE E 1527-13 USER/CLIENT QUESTIONNAIRE (Continued)

Providing the following information (if available) to the environmental professional (Bureau Veritas) is one of the requirements to qualify for one of the Landowner Liability Protections (LLPs) offered under CERCLA. Missing or incomplete information could result in a determination that *all appropriate inquiry* is not complete. If further information is desired regarding these issues, Bureau Veritas recommends you consult with an Environmental Attorney.

REQUIRED INFORMATION

The citation at the end of each item (e.g., 40 CFR 312.XX) is the section of EPA's November 1, 2005 AAI Final Rule which discusses that item. The ASTM Standard requires that reasonably ascertainable recorded land title records that are filed under federal, tribal, state and local law should be reviewed to determine the presence of Environmental Liens and Activity and Use Limitations (AULs) that are currently recorded against the property. This should also include a review of Environmental Liens and AULs that are imposed by judicial authorities and recorded/filed in judicial records. The Standard recommends that the User retain a title company or title professional to undertake a review of recorded land title records. Furthermore, the User is to provide any actual knowledge on Environmental Liens and AULs, as well as other selected information regarding recognized environmental conditions, to the environmental professional.

Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25). Given the above requirement, are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? (Check One)

	No. A
	Yes (If "Yes" provide further information):
	(Note: If you desire that Bureau Veritas retain a title company/title professional on your behalf to review reasonably ascertainable recorded land title records for the presence of environmental cleanup liens and AULs currently recorded against the property please designate such on the Proposal Acceptance Agreement)
2.	Activity and land use limitations (AULs) that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26). Given the above requirement, are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? (Check One)
	No: <u>X</u>

Page 2 of 5



ASTM PRACTICE E 1527-13 USER/CLIENT QUESTIONNAIRE (Continued)

3.	Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28). As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? (Check One) No: X Yes (If "Yes" provide further information):
4.	Relationship of the purchase price to the fair market value of the <i>property</i> if it were not contaminated (40 CFR 312.29). Does the purchase price being paid for this <i>property</i> reasonably reflect the fair market value of the <i>property</i> ? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the <i>property</i> ? Yes: _X
	No (If "No" provide further information):
5.	Commonly known or reasonably ascertainable information about the property (40 CFR 312.30). Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? No: Yes (If "Yes" provide further information): X_ see prior assessment performed in 2012
	For example, as user, (a.) Do you know the past uses of the property? No: X Yes (If "Yes" provide further information):

Page 3 of 5



ASTM PRACTICE E 1527-13 USER/CLIENT QUESTIONNAIRE (Continued)

de further information):	
ils or other chemical releases that have taken place at the property?	
e further information):	
y environmental cleanups that have taken place at the property?	
e further information):	
ess of the presence or likely presence of contamination at the to detect the contamination by appropriate investigation (40 Cl pased on your knowledge and experience related to the <i>property</i> are at point to the presence or likely presence of contamination at the	
er information):	
he property (ASTM E 1527-05 § 10.9), ne following: en or past litigation relevant to hazardous substances or petroleum e property?	
50.500.00	
30.57	

Page 4 of 5



ASTM PRACTICE E 1527-13 USER/CLIENT QUESTIONNAIRE (Continued)

(a.) Any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property?

Yes (If "Yes" provide further information): ___

(0.)	Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?
	No: <u>x</u>
	Yes (If "Yes" provide further information):
SIGNATUI	
	tood that the information presented in this form is an integral part of the Phase I ESA process treau Veritas will evaluate and rely on this information in the development of the final Phase I .
Questionna By:	ire Prepared Johna Calle
Print/Type	Name: Norma Cabrera
249	Name: Norma Cabrera Authorized Signatory
Print/Type Title: Company:	Tolina Ostola

Page 5 of 5



APPENDIX D AERIAL PHOTOGRAPHS

Kehalani Property 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

Inquiry Number: 4529586.9 February 04, 2016

The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th Floor Shelton, Connecticut 06484 Toll Free: 800.352.0050 www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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Please contact EDR at 1-800-352-0050 with any questions or comments.

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Date EDR Searched Historical Sources:

Aerial Photography February 04, 2016

Target Property:

11 KEHALANI VILLAGE DR WAILUKU, HI 96793

<u>Year</u>	Scale	<u>Details</u>	<u>Source</u>
1950	Aerial Photograph. Scale: 1"=750'	Flight Date: September 28, 1950	EDR
1965	Aerial Photograph. Scale: 1"=500'	Flight Date: January 28, 1965	EDR
1965	Aerial Photograph. Scale: 1"=500'	Flight Date: January 28, 1965	EDR
1976	Aerial Photograph. Scale: 1"=1000'	Flight Date: December 20, 1976	EDR

4529586.9











APPENDIX E
USGS TOPOGRAPHIC MAPS

Kehalani Property 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

Inquiry Number: 4529586.4

February 04, 2016

EDR Historical Topo Map Report with QuadMatch™



6 Armstrong Road, 4th floor Shelton, CT 06484 Toll Free: 800.352.0050 www.edrnet.com

EDR Historical Topo Map Report

02/04/16

Client Name: Site Name:

Kehalani Property Bureau Veritas North America, Ir 11 KEHALANI VILLAGE DR 841 Bishop Street Suite 1100 WAILUKU, HI 96793 Honolulu, HI 96813-0000 EDR Inquiry # 4529586.4



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Bureau Veritas North America, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late

Search Results:	Coordinates:

20.876029 20° 52' 34" North Kehalani Property Site Name: Latitude: -156.505865 -156° 30' 21" West Longitude: 11 KEHALANI VILLAGE DR Address:

UTM Zone: Zone 4 North City,State,Zip: WAILUKU, HI 96793 **UTM X Meters:** 759487.48 P.O.# NA **UTM Y Meters:** 2310441.01 Project: 17016-016021 Elevation: 361.90' above sea level

Contact: Bryan Starks

Maps Provided:

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Topo Sheet Thumbnails

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2013 Source Sheets



Wailuku 2013

7.5-minute, 24000

1997 Source Sheets



Wailuku 1997 7.5-minute, 24000 Aerial Photo Revised 1997

1983 Source Sheets

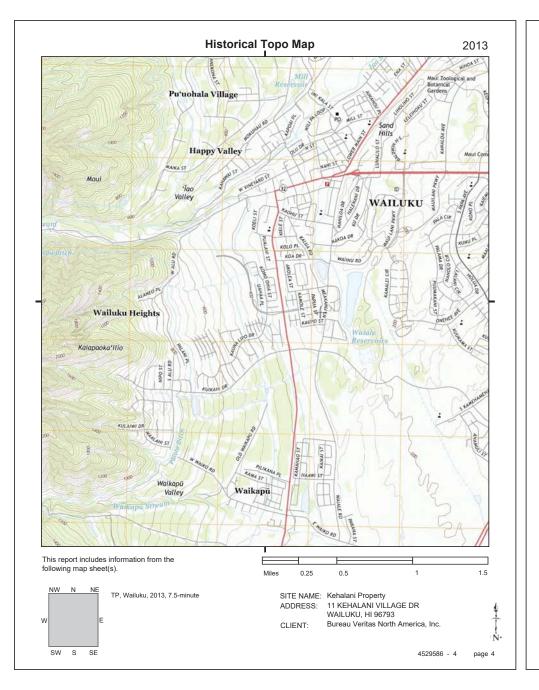


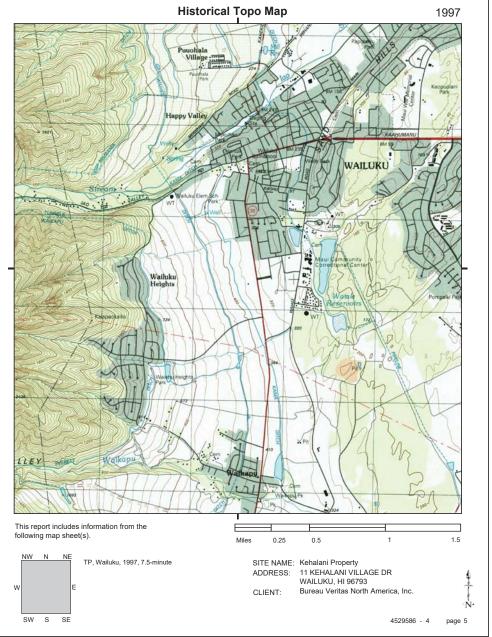
Wailuku 1983 7.5-minute, 24000 Aerial Photo Revised 1977 Edited 1983

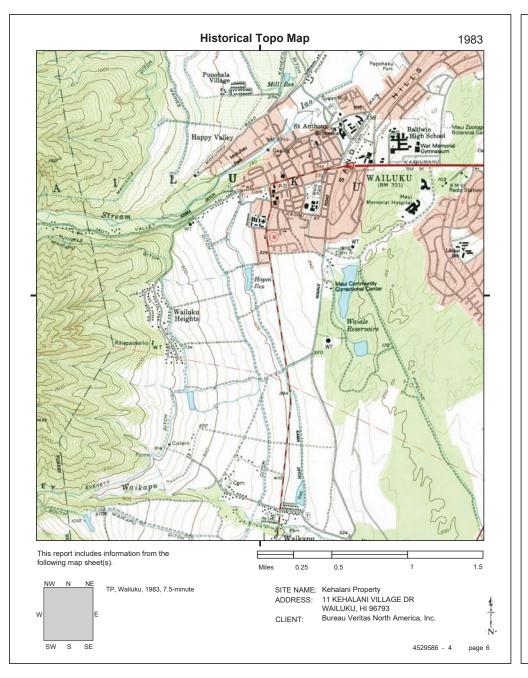
1955 Source Sheets

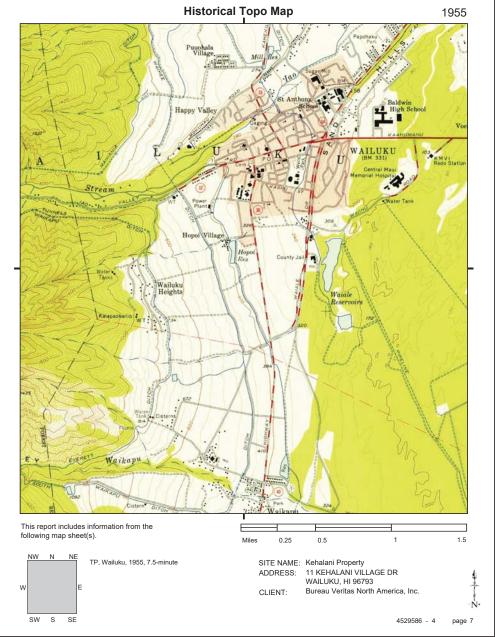


Wailuku 1955 7.5-minute, 24000 Aerial Photo Revised 1950











APPENDIX F FIRE INSURANCE MAPS

Kehalani Property 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

Inquiry Number: 4529586.3 February 04, 2016

Certified Sanborn® Map Report



6 Armstrong Road, 4th Floor Shelton, Connecticut 06484 Toll Free: 800.352.0050 www.edrnet.com

Certified Sanborn® Map Report

2/04/16

Site Name: Client Name:

Kehalani Property
Bureau Veritas North America,
11 KEHALANI VILLAGE DR
WAILUKU, HI 96793
Bureau Veritas North America,
841 Bishop Street Suite 1100
Honolulu, HI 96813-0000



EDR Inquiry # 4529586.3 Contact: Bryan Starks

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Bureau Veritas North America, Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Site Name: Kehalani Property

Address: 11 KEHALANI VILLAGE DR City, State, Zip: WAILUKU, HI 96793

Cross Street:

P.O. # N

Project: 17016-016021

Certification # A94E-4690-870F

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.



Sanborn® Library search results Certification # A94E-4690-870F

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:



The Sanborn Library LLC Since 1866TM

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APPENDIX G CITY DIRECTORIES

Kehalani Property 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

Inquiry Number: 4529586.5 February 04, 2016

The EDR-City Directory Image Report



6 Armstrong Road Shelton, CT 06484 800.352.0050 www.edrnet.com

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City Directory Images

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DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

<u>Year</u>	Target Street	Cross Street	<u>Source</u>
2013		$\overline{\checkmark}$	Cole Information Services
2008		$\overline{\checkmark}$	Cole Information Services
2003			Cole Information Services
1999			Cole Information Services
1995			Cole Information Services
1992			Cole Information Services

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FINDINGS

TARGET PROPERTY STREET

11 KEHALANI VILLAGE DR WAILUKU, HI 96793

CD Image

<u>year</u>	CD Image	Source	
KEHALAN	I VILLAGE DR		
2013	-	Cole Information Services	Street not listed in Source
2008	=	Cole Information Services	Street not listed in Source
2003	=	Cole Information Services	Street not listed in Source
1999	=	Cole Information Services	Street not listed in Source
1995	=	Cole Information Services	Street not listed in Source
1992	-	Cole Information Services	Street not listed in Source

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FINDINGS

CROSS STREETS

<u>Year</u>	CD Image	Source	
KAPALAIA	<u>PL</u>		
2013	pg. A1	Cole Information Services	
2008	pg. A4	Cole Information Services	
2003	-	Cole Information Services	Target and Adjoining not listed in Source
1999	=	Cole Information Services	Target and Adjoining not listed in Source
1995	=	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source
комо оні.	<u>A ST</u>		
2013	pg. A2	Cole Information Services	
2008	pg. A5	Cole Information Services	
2003	-	Cole Information Services	Target and Adjoining not listed in Source
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source

City Directory Images

Page 3

	Target Street	Cross Street	<u>Source</u>
	-	~	Cole Information Services
	K	APALAIA PL	2013
14	SUSAN KANAKURI-MU	RATA	
18	PIETRO IPPOLITO		
19	THOMAS WOLF		
23	DAVID HOLMES		
24	GIL RAMISCAL		
28	HARRY MANUEL		
29	BRENT WINTERFELD		
33	RONALD HUMBER		
34	THOMAS KEIRNERS		
36	LAC HOILIEN		
37	CONSTANTIN NOVOSE	ELSKY	
39	MICHAEL PALAZZOTTO		
40	ARI SHAPIRO	-	
68	SUZANNE GRUNOW		

Target Street Cross Street Source
- Cole Information Services

KOMO OHIA ST 2013

	KOWIO ONIA ST	2013
463	DUKIE RACADIO	
464	NOVIEH ABUT	
467	OCCUPANT UNKNOWN	
471	AUGUST KURODA	
472	GINGER COON	
477	TERENCE THOMAS	
481	OCCUPANT UNKNOWN	
485	WILLIAM ACASON	
493	LINDSAY MATHIAS	
497	JONATHON OLSON	
501	ALEXANDER DIOSO	
503	GARET TANAKA	
507	BRUCE MCDONALD	
508	OCCUPANT UNKNOWN	
509	AL CANTORNA	
511	RODDY DUMLAO	
514	JAMES BUIKA	
519	RAYNOR SHIMODA	
526	THOMAS MCGINN	
531	CLEMENT ANTONIO	
535	JUDY ELLIS	
538	RYAN SUZUKI	
541	CARLOS URMENETA	
542	EFREN TABBAY	
547	KYOUNG LITTLE	
552	OCCUPANT UNKNOWN	
558	HENRY ACIDERA	
559	CLAYTON MIRA	
564	SIMONE POLAK	
574	ROLLY PIANO	
580	MARK VICKERS	
581	SAMUEL MILLINGTON	
583	SOTICO UBALDO	
590	RHONDA RENY	
593	DENNIS LANSING	
594	JOSHUA PLUMLEY	
597	ROSEMARY MURRAY	
603	JOSEPH STAFFORD	
604	MICHAEL BAUTISTA	
609	KANOA HAAKE	
610	ELIZABETH CAMPOS	
615	ARTHUR PETERSEN	
616	ERIC ARBOGAST	
619	GLENN FUENTES	
620	MARCK DAOANG	
627	MARIO LOPEZ	
628	SUNDRA ALLEN-NEMOTO	
629	HARRIETTE ANZAI	
635	LISA OWAN	
640	LORENZO LICHT	

4529586.5 Page: A1

4529586.5 Page: A2

Target Street Cross Street Source Cole Information Services **KOMO OHIA ST** 2013 (Cont'd) MIYOUNG YANG 644 OCCUPANT UNKNOWN 645 MICHAEL NATHAN 649 JOHN DEAN 650 OCCUPANT UNKNOWN 654 OCCUPANT UNKNOWN 660 OCCUPANT UNKNOWN 665 TEODORICO DAHILIG 668 JIMMY BACH 671 GLEN PASCUAL 672 YASUO NISHIDA 673 OCCUPANT UNKNOWN 678 OCCUPANT UNKNOWN 679 OCCUPANT UNKNOWN 682 JOHN KANOHOKULA 688 OCCUPANT UNKNOWN 4529586.5 Page: A3

Target Street Cross Street Source Cole Information Services **KAPALAIA PL** 2008 10 ANTONIO ESTABILLO 14 MYLES MURATA 18 IL GIARDINO LLC PIETRO IPPOLITO 19 THOMAS WOLF 23 WAKON CHILDERS 24 GIL RAMISCAL 28 HARRY MANUEL 29 BRENT WINTERFELD 33 RONALD HUMBER 36 OCCUPANT UNKNOWN 39 MICHAEL PALAZZOTTO 40 PHILIP YUEN 43 OCCUPANT UNKNOWN

4529586.5 Page: A4

	Target Street	<u>Cross Street</u> ✓	Cole Information Services
	KOM	IO OHIA ST	2008
	KOW	IO OTILA OT	2000
463	RICHARD CHIASSON		
467	VERA DALIA		
471	OCCUPANT UNKNOWN		
472	NAIM PEXTON		
481	TIMOTHY HESS		
493	DAVID CANNON		
501	SANDRA DIOSO		
503	GARET TANAKA		
507	BRUCE MCDONALD		
508	JOANNE IRITANI		
509	AL CANTORNA		
511	RODDY DUMLAO		
519	RAYNOR SHIMODA		
525	SUSAN MCLAUGHLIN		
531	CLEMENT ANTONIO		
532	OCCUPANT UNKNOWN		
541	FELICITAS URMENETA		
	HO OMAIKA I OHANA LLC		
552	LORRAINE KOTAKE		
558	HENRY ACIDERA		
559	CLAYTON MIRA		
564	OCCUPANT UNKNOWN		
574	ROLLY PIANO		
580	MARK VICKERS		
581	MICHAEL GEERS		
583	SOTICO UBALDO		
590 593	RICHARD RENY JEFF STRAHN		
593	ALEX SUMIBCAY		
596	CASHUNDRA GRAY		
597	MICHAEL MURRAY		
603	OCCUPANT UNKNOWN		
609	KANOA HAAKE		
610	ELIZABETH CAMPOS		
615	OCCUPANT UNKNOWN		
616	ERIC ARBOGAST		
619	STEVE STORY		
019	STEVE STORY & ASSOCIA	TES	
620	OCCUPANT UNKNOWN	VILO	
627	OCCUPANT UNKNOWN		
629	HARRIETTE ANZAI		
635	LISA OWAN		
640	OCCUPANT UNKNOWN		
643	OCCUPANT UNKNOWN		
645	TROY MEDEIROS		
649	OCCUPANT UNKNOWN		
650	RAMON BELTRAN		
654	TERRENCE FUENTES		
660	OCCUPANT UNKNOWN		
665	TEODORICO DAHILIG		
300	. 200011100 07111210		

Cross Street

Source

Target Street

Target Street Cross Street Source Cole Information Services **KOMO OHIA ST** 2008 (Cont'd) 668 JIMMY BACH GLEN PASCUAL 671 672 YASUO NISHIDA 673 OCCUPANT UNKNOWN 678 OCCUPANT UNKNOWN 679 NOEL CARDONES 682 JOHN KANOHOKULA 688 JASPER RESPICIO

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APPENDIX H

STATE OF HAWAII DEPARTMENT OF HEALTH, "NO FURTHER ACTION" LETTER NEIL ABERCROMBIE



STATE OF HAWAII DEPARTMENT OF HEALTH P. O. BOX 3378 HONOLULU, HI 99801-3378

March 1, 2011

LORETTA J. FUDDY, A.C.S.W., M.P.H.
ACTING DIRECTOR OF HEALTH

In reply, please refer to: File:EHAMEER 2011-114MGC

John Rau, Senior Geologist Bureau Veritas North America, Inc. 970 North Kalaheo Avenue, Suite C-316 Kailua, Hawaii 96734

Facility: Kehalani Development, Wailuku, HI

Subject: No Further Action Determination Letter Based on the Review of t he Multi-

Incremental Sampling Investigation Report for the 210.5 Acres of Proposed Residential Use and 38.5 Acres of Non-Residential Use for Kehalani

Development, Wailuku, Maui

Dear Mr. Rau:

The State of Hawaii, Department of Health (HDOH), Hazard Evaluation and Emergency Response (HEER) Office supports the No Further Action Determination for Kehalani Development based on the review of the "Multi-Incremental Sampling Investigation Report for the 210.5 Acres of Proposed Residential Use and 38.5 Acres of Non-Residential Use received on February 3, 2011.

The former agricultural property will be developed for residential, commercial and other uses. The 210.5 acre residential area consists of 12 contiguous residential lots and one non-contiguous commercial lot. The non-residential site will include five non-contiguous lots that comprise a total area of 38.5 acres. The non-residential site includes a school, a community center, and three parks.

For the residential property, 59 Decision Units (DUs) of 5000 square foot areas were randomly located and characterized throughout the 13 lots based on the ratio of individual lot area to the total area of the residential site. For the non-residential site, each of the five lots was considered as a separate DU. Multi-incremental soil samples collected from the DUs were analyzed for Total Arsenic (EPA Method 6010B), Dioxin (EPA Method 8290) and Organochlorine pesticides (EPA Method 8081).

Based on the result of the investigation, soil samples collected from both residential and nonresidential sites show levels of total arsenic TEQ dioxins and organochlorine pesticides below DOH Final Tier I Environmental Action Levels (EALs) for unrestricted land use. The highest Total As concentration detected from soil samples collected from residential and non-residential sites is 13.3 mg/kg, below the default background value of 20 mg/kg. The highest reported level of TEQ dioxins is 122 ng/kg, below the HDOH action level of 240 ng/kg. Letter to John Rau March 1, 2011 Page 2 of 2

The HDOH HEER Office sent a letter to Department of Education regarding the presence of a possible quonset hut in the proposed location of the school site (Lot 3-A-2) based on the 2002 Phase I conducted by Clayton (now Bureau Veritas). The Quonset hut was considered by HDOH as a potential Recognized Environmental Concern (REC). As discussed and explained by Bureau Veritas who prepared the 2002 Phase I , the building mentioned in the report was in fact a wooden structure, not a quonset hut and not located within the proposed school site. In the February 3, 2001, investigation report, it was explained and clarified that the wooden structure was used for construction storage and was not considered to be an area of potentially significant contamination. A multi-increment soil sample collected from the proposed school site did not identify contaminants above levels for unrestricted land use. No further action is therefore warranted in regards to this issue.

Please be aware that if future information indicates that previously undisclosed contamination is identified at the site at a level that poses a threat to human health and the environment then HDOH could require additional investigation and cleanup to be performed.

If you need further information regarding this matter, please call Melody Calisay at 586-7577 or email her at melody.calisay@doh.hawaii.gov.

Sincerely,

Fenix Grange, Supervisor
Site Discovery and Remediation Section
Department of Health-HEER Office



APPENDIX I

REGULATORY DATABASE REPORT

Kehalani Property 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

Inquiry Number: 4529586.2s February 04, 2016

The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor Shelton, CT 06484 Toll Free: 800.352.0050 www.edrnet.com

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TC4529586.2s Page 1

FORM-LBC-ASH

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

11 KEHALANI VILLAGE DR WAILUKU, HI 96793

COORDINATES

Latitude (North): 20.8760290 - 20° 52' 33.70" Longitude (West): 156.5058650 - 156° 30' 21.11"

Universal Tranverse Mercator: Zone 4 UTM X (Meters): 759491.6 UTM Y (Meters): 2310304.8

Elevation: 370 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 5941607 WAILUKU, HI

Version Date: 2013

MAPPED SITES SUMMARY

Target Property Address: 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

Click on Map ID to see full detail.

Olloit	on Map ID to see full detail.				
MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	
1	SITE 11 AT KEHALANI	SOUTHEAST CORNER OF	FINDS	Lower	708, 0.134, ESE
2	HONOAPIILANI HIGHWAY	HONOAPIILANI HIGHWAY	FINDS	Lower	1288, 0.244, NNE
3	KEHALANI VILLAGE CEN	NORTHEAST CORNER OF	FINDS	Lower	1740, 0.330, SE
4	HAWAIIAN CEMENT		US MINES	Lower	1789, 0.339, NNE
5		95 KINOHI LOA LOOP	HI SPILLS	Higher	1976, 0.374, SSW
6	MECO PAD-MOUNTED #16	1627 B MILL ST	HI SPILLS	Lower	1986, 0.376, East
7	MILO COURT PHASE II	OMAOMAO STREET	FINDS	Higher	1988, 0.377, NW
A8	MAUI COMMUNITY CORRE	600 WAIALE DR	HI UST, HI Financial Assurance	Lower	2298, 0.435, East
A9		600 WAIALE RD	EDR Hist Auto	Lower	2298, 0.435, East
A10	MAUI COMMUNITY CORRE	600 WAIALE ROAD	FINDS	Lower	2298, 0.435, East
B11	WAILUKU - WAILUKU AG		FINDS	Higher	2382, 0.451, NNW
B12	WAILUKU - WAILUKU AG		FINDS	Higher	2382, 0.451, NNW
13	WALGREENS #15115 AT	INTERSECTION OF WAIA	FINDS	Lower	2627, 0.498, SE
C14	MERCURY 1939 MAKAHAL	1939 MAKAHALA PL	HI SPILLS	Lower	2667, 0.505, NE
D15	MAUI MEMORIAL PARK,	485 WAIALE DR	HIUST	Lower	2686, 0.509, ENE
D16	MAUI MEMORIAL PARK,	485 WAIALE ROAD	FINDS	Lower	2686, 0.509, ENE
C17	MERCURY - 1934 MAKAH	1934 MAKAHALA PL	HI SPILLS	Lower	2708, 0.513, NE
18	WAILUKU ELEMENTARY S	355 SOUTH HIGH STREE	FINDS	Lower	2713, 0.514, North
D19		500 WAIALE RD	EDR Hist Auto	Lower	2716, 0.514, ENE
20	MECO POLE-MOUNT TRAN	POLE E-9, 251 KOELI	HI SPILLS	Lower	2903, 0.550, North
D21	OHANA O NAHINU TRUST	455 WAIALE RD	HI SPILLS	Lower	2947, 0.558, NE
22	SITE 20 AT KEHALANI	272 A'APUEO PARKWAY	FINDS	Lower	3186, 0.603, North
E23	WAIMALUHIA MAUI METH	115 WAIMALUHIA LANE	HI RGA HWS	Lower	3242, 0.614, ESE
E24	WAIMALUHIA MAUI METH	115 WAIMALUHIA LN	HI SHWS, HI CDL, HI SPILLS	Lower	3242, 0.614, ESE
E25	WAIMALUHIA MAUI METH	115 WAIMALUHIA LN	HI RGA HWS	Lower	3242, 0.614, ESE
26	HIGH STREET MISCELLA		HI UIC	Higher	3246, 0.615, NNW
F27	MAUI COUNTY WAILUKU	1827 KAOHU ST	RCRA-CESQG, FINDS	Lower	3266, 0.619, NE
F28	MAUI COUNTY WAILUKU	1827 KAOHU ST	HI UST	Lower	3266, 0.619, NE
F29	LANAI LANDFILL	1827 KAUHU ST.	HI RGA LF	Lower	3266, 0.619, NE
G30	I A O INTERMEDIATE S	1910 KAOHU ST	RCRA NonGen / NLR, CA HAZNET	Lower	3422, 0.648, NNE
G31	IAO MIDDLE SCHOOL	1910 KAOHU ST	FTTS, HIST FTTS	Lower	3422, 0.648, NNE
G32	I A O INTERMEDIATE S	1910 KAOHU STREET	FINDS	Lower	3422, 0.648, NNE
G33	IAO MIDDLE SCHOOL	1910 KAOHU ST	FTTS. HIST FTTS	Lower	3422, 0.648, NNE
H34	DEPARTMENT OF WATER,	200 S HIGH ST	HI SPILLS	Lower	3464, 0.656, North
H35	KULANIHAKOI GULCH ST	200 S HIGH ST 200 SOUTH HIGH STREE	FINDS	Lower	3464, 0.656, North
H36	CENTRAL MAUI LANDFIL	200 SOUTH HIGH STREE	HI RGA LF	Lower	3464, 0.656, North
H37	COUNTY OF MAUI - CIV	200 SOOTH HIGH ST.	HI RGA LUST	Lower	3464, 0.656, North
			HI RGA LE		
H38	CENTRAL MAUI LANDFIL	200 SOUTH HIGH ST.		Lower	3464, 0.656, North
H39	COUNTY OF MAUI SMALL	KALANA O MAUI BLDG.	FINDS	Lower	3464, 0.656, North
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MAPPED SITES SUMMARY

Target Property Address: 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
H40	WAIOHONU BRIDGE REPL	200 SOUTH HIGH STREE	FINDS	Lower	3464, 0.656, North
H41	COUNTY OF MAUI IT SE	200 S HIGH STREET	FINDS	Lower	3464, 0.656, North
H42	KAMEHAMEHA AVENUE RO	200 SOUTH HIGH STREE	ICIS, FINDS	Lower	3464, 0.656, North
H43	COUNTY OF MAUI - CI	200 S HIGH ST	HI RGA LUST	Lower	3464, 0.656, North
H44	COUNTY OF MAUI VINEY	200 S. HIGH STREET	FINDS	Lower	3464, 0.656, North
H45	NAHOLO CIRCLE DWS	200 S. HIGH ST.	HI UIC	Lower	3464, 0.656, North
H46	COUNTY OF MAUI - CIV	200 S HIGH ST	HI LUST, HI UST, HI Financial Assurance	Lower	3464, 0.656, North
H47	SAND ISLAND INDUSTRI	200 SOUTH HIGH STREE	FINDS	Lower	3464, 0.656, North
148	ORGANIZATIONAL MAINT	260 S MARKET ST	HI RGA HWS	Lower	3571, 0.676, NNE
149		260 SOUTH MARKET ST	HI RGA HWS	Lower	3571, 0.676, NNE
150	ORGANIZATIONAL MAINT	260 S MARKET ST	HI SHWS	Lower	3571, 0.676, NNE
151	IAO MIDDLE SCHOOL	260 SOUTH MARTKET ST	FINDS	Lower	3593, 0.680, NNE
J52	MAUI DISTRICT OFFICE	54 S HIGH ST	FINDS	Lower	3728, 0.706, North
H53	DOH/DISTRICT OFFICE	54 HIGH ST, ROOM 301	HI UST, HI Financial Assurance	Lower	3752, 0.711, North
54	MECO TRANSFORMERS 13	2404 MAIN ST	HI SPILLS	Higher	3767, 0.713, NNW
55	WAILUKU SHAFT 33 PUM	WEST MAIN STREET	FINDS	Higher	3796, 0.719, NW
J56	OHANA KAI VILLAGE -	9 HONOAPIILANI HIGHW	FINDS	Lower	3941, 0.746, North
K57	EVA WINONA PASCHOAL	318 NANILOA DR	HIUST	Lower	3979, 0.754, NE
K58	EVA WINONA PASCHOAL	318 NANILOA DRIVE	FINDS	Lower	3979, 0.754, NE
J59	POLICE MOTOR POOL	MAIN STREET & NORTH	FINDS	Lower	3982, 0.754, North
J60	POLICE MOTOR POOL	HIGH & MAIN ST	HIUST	Lower	3982, 0.754, North
L61	WAILUKU CENTRAL OFFI	60 S CHURCH ST	HI LUST, HI UST, HI Financial Assurance	Lower	4035, 0.764, NNE
62	KEHALANI UPPER LEVEL		FINDS	Higher	4042, 0.766, West
M63	HOAPILI HALE - MAUI	2145 MAIN STREET	FINDS	Lower	4066, 0.770, North
M64	HOAPILI HALE - MAUI	2145 MAIN ST.	HI RGA LUST	Lower	4066, 0.770, North
M65	HOAPILI HALE	2145 MAIN STREET	FINDS	Lower	4066, 0.770, North
M66	HOAPILI HALE - MAUI	2145 MAIN ST.	HI LUST, HI Financial Assurance	Lower	4066, 0.770, North
M67	HOAPILI HALE	2145 MAIN STREET	RCRA-CESQG	Lower	4066, 0.770, North
L68	WAILUKU CENTRAL OFFI	60 S CHURCH ST	HI RGA LUST	Lower	4143, 0.785, NNE
L69	WAILUKU CENTRAL OFFI	60 SOUTH CHURCH STRE	FINDS	Lower	4143, 0.785, NNE
L70	GTE HAWAIIAN TEL	60 S CHURCH ST	CA HAZNET	Lower	4143, 0.785, NNE
N71	THE KIHEI RECYCLING	2200 MAIN STREET	FINDS	Lower	4175, 0.791, North
N72	COUNTY OF MAUI	2200 MAIN STREET, SU	FINDS	Lower	4175, 0.791, North
073	MAUI LANI 76 -MAKO'S	129 MAA ST	FINDS	Lower	4209, 0.797, SE
074	MAUI LANI 76 -MAKO'S	129 MAA ST	HI UST, HI Financial Assurance	Lower	4209, 0.797, SE
L75	ALVIN'S UPTOWN CHEVR	2085 WEST MAIN ST	HI RGA HWS	Lower	4293, 0.813, NNE
L76	UPTOWN SERVICE	2085 MAIN ST	HI LUST, HI UST, HI Financial Assurance	Lower	4293, 0.813, NNE
L77	ALVIN'S UPTOWN CHEVR	2085 W MAIN ST	HI SHWS, HI SPILLS	Lower	4293, 0.813, NNE
L78		2085 MAIN ST	EDR Hist Auto	Lower	4293, 0.813, NNE
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MAPPED SITES SUMMARY

Target Property Address: 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

Click on Map ID to see full detail.

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MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	
L79	UPTOWN SERVICE INC	2085 MAIN ST	RCRA-CESQG, FINDS	Lower	4293, 0.813, NNE
L80	UPTOWN SERVICE	2085 MAIN ST	HI RGA LUST	Lower	4293, 0.813, NNE
L81	MAUI SHELL SERVICE	2086 MAIN STREET	HI RGA LUST	Lower	4323, 0.819, NNE
L82	MAUI SHELL SERVICE	2086 MAIN ST	HI RGA LUST	Lower	4323, 0.819, NNE
L83	MINIT STOP SHELL MAR	2086 MAIN ST	HI RGA LUST	Lower	4323, 0.819, NNE
L84	KUKUIULA WASTEWATER	2086 MAIN STREET	FINDS	Lower	4323, 0.819, NNE
L85	COURTHOUSE SHELL	2086 MAIN ST	HI RGA LUST	Lower	4323, 0.819, NNE
L86	SHELL OIL CO	2086 MAIN ST	RCRA-CESQG	Lower	4334, 0.821, NNE
L87	COURTHOUSE SHELL SS	2086 MAIN ST	HI LUST, HI UST, HI Financial Assurance	Lower	4334, 0.821, NNE
P88	MAIN STREET PROMENAD	2058 MAIN ST	HI SHWS	Lower	4389, 0.831, NNE
P89	MAIN STREET PROMENAD	2058 MAIN ST	HI RGA HWS	Lower	4389, 0.831, NNE
P90	WAIKAPU STREAM DRAIN	24 NORTH CHURCH STRE	FINDS	Lower	4414, 0.836, NNE
P91		2026 MAIN ST	EDR Hist Auto	Lower	4470, 0.847, NNE
P92	VALLEY ISLE MOTORS L	2026 MAIN ST	HI RGA HWS	Lower	4470, 0.847, NNE
P93	ROBERT JOSLIN	2026 MAIN ST	RCRA-CESQG, HI SHWS, HI LUST, HI UST, HI SPILLS	Lower	4470, 0.847, NNE
P94	VALLEY ISLE MOTORS,	2026 MAIN ST	HI RGA LUST	Lower	4470, 0.847, NNE
P95	VALLEY ISLE MOTORS L	2026 MAIN ST	FINDS	Lower	4470, 0.847, NNE
P96	VALLEY ISLE MOTORS,	2026 MAIN STREET	HI RGA LUST	Lower	4470, 0.847, NNE
P97	KULAMALU HILLTOP SUB	2005 MAIN STREET	FINDS	Lower	4494, 0.851, NNE
P98	KAMEHAMEHA SCHOOL MA	1997 MAIN STREET	FINDS	Lower	4524, 0.857, NNE
99	WAILUKU - MAUI LANI		FINDS	Lower	4532, 0.858, ESE
Q100		1990 MAIN ST	EDR Hist Auto	Lower	4577, 0.867, NNE
R101	MAUI SCRAP METAL CO.	1791 WAIINU RD.	RCRA NonGen / NLR	Lower	4630, 0.877, ENE
	MAUI SCRAP METAL CO.	1791 WAIINU RD.	FINDS	Lower	4630, 0.877, ENE
	MAALAEA TRIANGLE DEV	75 NORTH CHURCH STRE	FINDS	Lower	4652, 0.881, North
104		23 KIEKIENA PL	EDR Hist Cleaner	Lower	4653, 0.881, East
	1X ALULI TRUST ESTAT	31 N MARKET ST	CA HAZNET	Lower	4664, 0.883, NNE
	MAUI AUTO DETAILING	1955 MAIN ST	HIUST	Lower	4670, 0.884, NNE
	MAUI AUTO DETAILING	1955 MAIN STREET	FINDS	Lower	4670, 0.884, NNE
	IMA HANADA TRUST	1960 MAIN ST	HIUST	Lower	4685, 0.887, NNE
	IMA HANADA TRUST	1960 MAIN STREET	FINDS	Lower	4685, 0.887, NNE
Q110		1941 MAIN ST	EDR Hist Auto	Lower	4712, 0.892, NNE
	JD PAINTING	70 KANOA ST	RCRA-SQG, FINDS	Lower	4724, 0.895, NNE
	LOKAHI PACIFIC	1935 MAIN ST	HI LUST, HI UST	Lower	4731, 0.896, NNE
	LOKAHI PACIFIC	1935 MAIN ST	HI RGA LUST	Lower	4731, 0.896, NNE
	CUTTER NISSAN	1935 MAIN ST	RCRA NonGen / NLR, FINDS	Lower	4731, 0.896, NNE
T115	JOTTEN NIGOAN	1820 WELLS ST	EDR Hist Auto	Lower	4731, 0.896, NNE
S116		2102 VINEYARD ST	HI RGA HWS	Lower	4731, 0.896, North
	2102 VINEYARD ST.	2102 VINEYARD ST 2102 WEST VINEYARD S	FINDS	Lower	4733, 0.896, North
311/	ZIUZ VINETARU SI.	2102 WEST VINETARUS	TINDO		
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MAPPED SITES SUMMARY

Target Property Address: 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
S118	MAUI VINEYARD INN, U	2102 VINEYARD ST	HI RGA HWS	Lower	4733, 0.896, North
S119	2102 VINEYARD ST.	2102 VINEYARD ST	HI RGA LUST	Lower	4733, 0.896, North
Q120	PACIFIC AMUSEMENT CO	1942 MAIN ST	HIUST	Lower	4738, 0.897, NNE
Q121	PACIFIC AMUSEMENT CO	1942 MAIN STREET	FINDS	Lower	4738, 0.897, NNE
Q122	TAKITANI BUILDING	1940 MAIN ST, STE 13	HIUST	Lower	4744, 0.898, NNE
Q123	DICKS FUMIGATION SER	1940 MAIN ST	RCRA NonGen / NLR, FINDS	Lower	4744, 0.898, NNE
2124	TAKITANI BUILDING	1940 MAIN STREET #13	FINDS	Lower	4744, 0.898, NNE
T125	BLUE & WHITE BUS LIN	60 KANOA ST	HIUST	Lower	4776, 0.905, NNE
Γ126	BLUE & WHITE BUS LIN	60 KANOA STREET	FINDS	Lower	4776, 0.905, NNE
S127	2102 VINEYARD ST.	2102 VINEYARD ST	HI SHWS, HI UST, HI Financial Assurance	Lower	4797, 0.909, North
U128	WAILUKU - MOKUHAU WE		FINDS	Lower	4861, 0.921, NNW
V129	LONGS DRUG STORE NO	1900 MAIN ST	FINDS	Lower	4868, 0.922, NNE
V130	LONGS DRUG STORE NO	1900 MAIN ST	RCRA-CESQG	Lower	4868, 0.922, NNE
U131	WAILUKU - MOKUHAU WE		FINDS	Lower	4883, 0.925, NNW
U132	WAILUKU - MOKUHAU WE		FINDS	Lower	4898, 0.928, NNW
W133	MAUI COUNTY WAILUKU	21 KINIPOPO ST	HI LUST, HI UST, HI SPILLS	Lower	4991, 0.945, NNE
W134	WAILUKU FIRE STATION	21 KINIPOPO STREET	FINDS	Lower	4991, 0.945, NNE
W135	WAILUKU FIRE STATION	21 KINIPOPO ST	HI RGA LUST	Lower	4991, 0.945, NNE
136	WAILUKU - MAUI LANI		FINDS	Lower	5029, 0.952, ESE
W137		1818 OIHANA ST	EDR Hist Auto	Lower	5106, 0.967, NNE
138		51 WAIALE RD	EDR Hist Auto	Lower	5282, 1.000, NNE
139	DOWN TO EARTH NATURA	1910 VINEYARD ST	HIUST	Lower	5508, 1.043, NNE
140	MAUI RECYCLING SRVC	105 WAIKO RD	RCRA NonGen / NLR, FINDS	Higher	5893, 1.116, SSW
X141	MAUI SANDTORCHES	46 TINGS DR	CERCLIS-NFRAP, RCRA NonGen / NLR, FINDS	Lower	5909, 1.119, NE
Y142	OGAWA SERVICE STATIO	327 N MARKET ST	HI LUST, HI UST	Lower	5925, 1.122, North
X143	REX TIRE & SUPPLY, D	1728 KAAHUMANU AVE	HI SHWS	Lower	5948, 1.127, NE
144	SAFEWAY STORE #3092	58 MAUI LANI PARKWAY	RCRA-CESQG, FINDS	Lower	6061, 1.148, NE
Y145	PAM FUJITA PROPERTY	346 N. MARKET ST	HIUST	Lower	6116, 1.158, North
Z146	GOMES CONSTRUCTION &	1790 MILL ST	HI SHWS, HI UST, RCRA NonGen / NLR, FINDS, HI	Lower	6129, 1.161, NNE
Y147	GEORGE S./ JEAN FUNA	350 N MARKET ST	HIUST	Lower	6144, 1.164, North
X148	MAUI SANDTORCHES	46 TING DR	HI SHWS	Lower	6165, 1.168, NE
Z149	GENROLL EQUIPMENT SE	1760 MILL ST	RCRA NonGen / NLR, FINDS	Lower	6309, 1.195, NNE
	CLINICAL LABORATORIE	221 MAHALANI ST	RCRA-SQG, FINDS	Lower	6541, 1.239, ENE
	I MAUI MEMORIAL MEDICA	221 MAHALANI STREET	HI UST, MLTS, HI Financial Assurance	Lower	6541, 1.239, ENE
152	WAILUKU SUGAR AGRICU	2015 HOLOWAI PL	HI SHWS, HI INST CONTROL	Lower	6556, 1.242, North
153	WAILUKU SUGAR COMPAN	250 IMI KALA ST	HI SHWS	Lower	6921, 1.311, NNE
154	MECO POLE-MOUNT TRAN	POLE E-9 AT AIAI ST	HI SHWS, HI SPILLS	Lower	7029, 1.331, East
155	MAUI COUNTY POLICE D	55 MAHALANI DR	HI LUST, HI UST, HI Financial Assurance	Lower	7240, 1.371, NE
	SHALE MAKUA NURSING H	1540 LOWER MAIN ST	HI LUST, HI UST	Lower	7284, 1.380, NNE
		. O. O LOWER WATER OF	200., 001		
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MAPPED SITES SUMMARY

Target Property Address: 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
AB15	7MECO TRANSFORMER 335	1540 E MAIN ST	HI SHWS, HI SPILLS	Lower	7284, 1.380, NNE
158	RADIO STATION KMVI	100 MAHALANI RD	HI LUST, HI UST	Lower	7895, 1.495, ENE
159	MECO PAD-MOUNT TRANS	45 MOLEHULEHU PL	HI SHWS, HI INST CONTROL, HI SPILLS	Lower	9643, 1.826, ESE
160	MAUI COMMUNITY COLLE	310 KAAHUMANU AVE	RCRA-CESQG, HI SHWS, HI LUST, HI UST, FINDS, HI	. Lower	9804, 1.857, NE
161	122 WEST AHULIU WAY	122 W AHULIU WAY	HI SHWS, HI INST CONTROL	Lower	10527, 1.994, SSE

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TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

Federal Delisted NPL site list

Delisted NPL...... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY.....Federal Facility Site Information listing
CERCLIS......Comprehensive Environmental Response, Compensation, and Liability Information System

Federal RCRA CORRACTS facilities list

CORRACTS...... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF...... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators

Federal institutional controls / engineering controls registries

Federal ERNS list

ERNS..... Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists

HI SWF/LF..... Permitted Landfills in the State of Hawaii

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State and tribal leaking storage tank lists
INDIAN LUST Leaking Underground Storage Tanks on Indian Land
State and tribal registered storage tank lists
FEMA UST Underground Storage Tank Listing INDIAN UST Underground Storage Tanks on Indian Land
State and tribal institutional control / engineering control registries
HI ENG CONTROLS Engineering Control Sites
State and tribal voluntary cleanup sites
HI VCP
State and tribal Brownfields sites
HI BROWNFIELDS Brownfields Sites
ADDITIONAL ENVIRONMENTAL RECORDS
Local Brownfield lists
US BROWNFIELDS A Listing of Brownfields Sites
Local Lists of Landfill / Solid Waste Disposal Sites
INDIAN ODI
Local Lists of Hazardous waste / Contaminated Sites
US HIST CDL
Local Land Records
LIENS 2 CERCLA Lien Information
Records of Emergency Release Reports
HMIRS Hazardous Materials Information Reporting System HI SPILLS 90. SPILLS 90 data from FirstSearch
Other Ascertainable Records
FUDS

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TSCA...... Toxic Substances Control Act TRIS...... Toxic Chemical Release Inventory System SSTS..... Section 7 Tracking Systems ROD...... Records Of Decision Risk Management Plans RAATS......RCRA Administrative Action Tracking System PRP......Potentially Responsible Parties COAL ASH EPA...... Coal Combustion Residues Surface Impoundments List PCB TRANSFORMER...... PCB Transformer Registration Database RADINFO...... Radiation Information Database DOT OPS...... Incident and Accident Data Superfund (CERCLA) Consent Decrees CONSENT INDIAN RESERV..... Indian Reservations UMTRA...... Uranium Mill Tailings Sites LEAD SMELTERS..... Lead Smelter Sites US AIRS...... Aerometric Information Retrieval System Facility Subsystem HI AIRS.... List of Permitted Facilities
HI DRYCLEANERS... Permitted Drycleaner Facility Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in bold italics are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a

EXECUTIVE SUMMARY

recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

A review of the CERCLIS-NFRAP list, as provided by EDR, and dated 10/25/2013 has revealed that there is 1 CERCLIS-NFRAP site within approximately 1.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAUI SANDTORCHES	46 TINGS DR	NE 1 - 2 (1.119 mi.)	X141	105

Federal RCRA generators list

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/09/2015 has revealed that there are 2 RCRA-SQG sites within approximately 1.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page	
JD PAINTING	70 KANOA ST	NNE 1/2 - 1 (0.895 mi.)	T111	86	
CLINICAL LABORATORIE	221 MAHALANI ST	ENE 1 - 2 (1.239 mi.)	AA150	116	

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 06/09/2015 has revealed that there are 7 RCRA-CESQG sites within approximately 1.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAUI COUNTY WAILUKU	1827 KAOHU ST	NE 1/2 - 1 (0.619 mi.)	F27	24
HOAPILI HALE	2145 MAIN STREET	N 1/2 - 1 (0.770 mi.)	M67	55
UPTOWN SERVICE INC	2085 MAIN ST	NNE 1/2 - 1 (0.813 mi.)	L79	64
SHELL OIL CO	2086 MAIN ST	NNE 1/2 - 1 (0.821 mi.)	L86	67
ROBERT JOSLIN	2026 MAIN ST	NNE 1/2 - 1 (0.847 mi.)	P93	73
LONGS DRUG STORE NO	1900 MAIN ST	NNE 1/2 - 1 (0.922 mi.)	V130	98
SAFEWAY STORE #3092	58 MAUI LANI PARKWAY	NE 1 - 2 (1.148 mi.)	144	108

State- and tribal - equivalent CERCLIS

HI SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state

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funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Health.

A review of the HI SHWS list, as provided by EDR, and dated 12/02/2014 has revealed that there are 16 HI SHWS sites within approximately 2 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WAIMALUHIA MAUI METH	115 WAIMALUHIA LN	ESE 1/2 - 1 (0.614 mi.)	E24	22
ORGANIZATIONAL MAINT	260 S MARKET ST	NNE 1/2 - 1 (0.676 mi.)	150	46
ALVIN'S UPTOWN CHEVR	2085 W MAIN ST	NNE 1/2 - 1 (0.813 mi.)	L77	62
MAIN STREET PROMENAD	2058 MAIN ST	NNE 1/2 - 1 (0.831 mi.)	P88	72
ROBERT JOSLIN	2026 MAIN ST	NNE 1/2 - 1 (0.847 mi.)	P93	73
2102 VINEYARD ST.	2102 VINEYARD ST	N 1/2 - 1 (0.909 mi.)	S127	96
REX TIRE & SUPPLY, D	1728 KAAHUMANU AVE	NE 1 - 2 (1.127 mi.)	X143	107
GOMES CONSTRUCTION &	1790 MILL ST	NNE 1 - 2 (1.161 mi.)	Z146	111
MAUI SANDTORCHES	46 TING DR	NE 1 - 2 (1.168 mi.)	X148	114
WAILUKU SUGAR AGRICU	2015 HOLOWAI PL	N 1 - 2 (1.242 mi.)	152	120
WAILUKU SUGAR COMPAN	250 IMI KALA ST	NNE 1 - 2 (1.311 mi.)	153	121
MECO POLE-MOUNT TRAN	POLE E-9 AT AIAI ST	E 1 - 2 (1.331 mi.)	154	122
MECO TRANSFORMER 335	1540 E MAIN ST	NNE 1 - 2 (1.380 mi.)	AB157	126
MECO PAD-MOUNT TRANS	45 MOLEHULEHU PL	ESE 1 - 2 (1.826 mi.)	159	128
MAUI COMMUNITY COLLE	310 KAAHUMANU AVE	NE 1 - 2 (1.857 mi.)	160	129
122 WEST AHULIU WAY	122 W AHULIU WAY	SSE 1 - 2 (1.994 mi.)	161	137

State and tribal leaking storage tank lists

HI LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health's Active Leaking Underground Storage Tank Log Listing.

A review of the HI LUST list, as provided by EDR, and dated 09/04/2015 has revealed that there are 12 HI LUST sites within approximately 1.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
COUNTY OF MAUI - CIV Release ID: 010053 Facility Id: 9-503420 Facility Status: Site Cleanup Comp	200 S HIGH ST	N 1/2 - 1 (0.656 mi.)	H46	44
WAILUKU CENTRAL OFFI Release ID: 980003 Facility Id: 9-500552 Facility Status: Site Cleanup Comp	60 S CHURCH ST	NNE 1/2 - 1 (0.764 mi.)	L61	51
HOAPILI HALE - MAUI Release ID: 000001 Facility Id: 9-503536 Facility Status: Site Cleanup Comp	2145 MAIN ST.	N 1/2 - 1 (0.770 mi.)	M66	54
UPTOWN SERVICE Release ID: 990175 Facility Id: 9-501128 Facility Status: Site Cleanup Comp	2085 MAIN ST	NNE 1/2 - 1 (0.813 mi.)	L76	60
COURTHOUSE SHELL SS	2086 MAIN ST	NNE 1/2 - 1 (0.821 mi.)	L87	68

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Release ID: 920149 Release ID: 000056 Facility Id: 9-501008 Facility Status: Site Cleanup Compl	eted (NFA)			
ROBERT JOSLIN Release ID: 900024 Release ID: 010004 Facility Id: 9-501588 Facility Status: Site Cleanup Compl	2026 MAIN ST eted (NFA)	NNE 1/2 - 1 (0.847 mi.)	P93	73
LOKAHI PACIFIC Release ID: 980218 Release ID: 990141 Facility Id: 9-501603 Facility Status: Site Cleanup Compl	1935 MAIN ST eted (NFA)	NNE 1/2 - 1 (0.896 mi.)	Q112	88
MAUI COUNTY WAILUKU Release ID: 930113 Facility Id: 9-502764 Facility Status: Site Cleanup Compl	21 KINIPOPO ST eted (NFA)	NNE 1/2 - 1 (0.945 mi.)	W133	101
OGAWA SERVICE STATIO Release ID: 960046 Facility Id: 9-500398 Facility Status: Site Cleanup Compl	327 N MARKET ST eted (NFA)	N 1 - 2 (1.122 mi.)	Y142	107
MAUI COUNTY POLICE D Release ID: 990097 Facility Id: 9-501698 Facility Status: Site Cleanup Compl	55 MAHALANI DR eted (NFA)	NE 1 - 2 (1.371 mi.)	155	124
HALE MAKUA NURSING H Release ID: 930098 Facility Id: 9-502621 Facility Status: Site Cleanup Compl	1540 LOWER MAIN ST eted (NFA)	NNE 1 - 2 (1.380 mi.)	AB156	125
RADIO STATION KMVI Release ID: 950085 Facility Id: 9-500844 Facility Status: Site Cleanup Compl	100 MAHALANI RD eted (NFA)	ENE 1 - 2 (1.495 mi.)	158	127

State and tribal registered storage tank lists

HI UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health's Listing of Underground Storage Tanks.

A review of the HI UST list, as provided by EDR, and dated 09/04/2015 has revealed that there are 26 HI UST sites within approximately 1.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAUI COMMUNITY CORRE	600 WAIALE DR	E 1/4 - 1/2 (0.435 mi.)	A8	15
Tank Status: Permanently Out of Use				
Facility Id: 9-501801				
Date Closed: 10/20/1992				
MAUI MEMORIAL PARK,	485 WAIALE DR	ENE 1/2 - 1 (0.509 mi.)	D15	18

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Tank Status: Permanently Out of Use Facility Id: 9-501570 Date Closed: 07/12/1991				
MAUI COUNTY WAILUKU Tank Status: Permanently Out of Use Facility Id: 9-501400 Date Closed: 02/22/1994	1827 KAOHU ST	NE 1/2 - 1 (0.619 mi.)	F28	26
COUNTY OF MAUI - CIV Tank Status: Permanently Out of Use Tank Status: Currently In Use Facility Id: 9-503420 Date Closed: 11/13/1998	200 S HIGH ST	N 1/2 - 1 (0.656 mi.)	H46	44
DOM/DISTRICT OFFICE Tank Status: Permanently Out of Use Tank Status: Permanently out of Use Facility Id: 9-500415 Date Closed: 01/30/1989 Date Closed: 09/21/2007	54 HIGH ST, ROOM 301	N 1/2 - 1 (0.711 mi.)	H53	48
EVA WINONA PASCHOAL Tank Status: Permanently Out of Use Facility Id: 9-502452 Date Closed: 01/30/1992	318 NANILOA DR	NE 1/2 - 1 (0.754 mi.)	K57	50
POLICE MOTOR POOL Tank Status: Permanently Out of Use Facility Id: 9-501790 Date Closed: 02/27/1987	HIGH & MAIN ST	N 1/2 - 1 (0.754 mi.)	J60	51
WAILUKU CENTRAL OFFI Tank Status: Currently In Use Tank Status: Permanently Out of Use Facility Id: 9-500552 Date Closed: 08/20/1996 Date Closed: 10/21/1999	60 S CHURCH ST	NNE 1/2 - 1 (0.764 mi.)	L61	51
MAUI LANI 76 -MAKO'S Tank Status: Currently In Use Tank Status: Currently in Use Facility Id: 9-503924	129 MAA ST	SE 1/2 - 1 (0.797 mi.)	074	59
UPTOWN SERVICE Tank Status: Currently in Use Tank Status: Currently In Use Tank Status: Permanently Out of Use Facility Id: 9-501128 Date Closed: 06/04/1997	2085 MAIN ST	NNE 1/2 - 1 (0.813 mi.)	L76	60
COURTHOUSE SHELL SS Tank Status: Permanently Out of Use Facility Id: 9-501008 Date Closed: 01/05/2004 Date Closed: 06/30/1991 Date Closed: 09/01/1999	2086 MAIN ST	NNE 1/2 - 1 (0.821 mi.)	L87	68
ROBERT JOSLIN Tank Status: Permanently Out of Use Facility Id: 9-501588	2026 MAIN ST	NNE 1/2 - 1 (0.847 mi.)	P93	73

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Date Closed: 05/10/1990 Date Closed: 01/01/1990 Date Closed: 10/01/2000				
MAUI AUTO DETAILING Tank Status: Permanently Out of Use Facility Id: 9-502203	1955 MAIN ST	NNE 1/2 - 1 (0.884 mi.)	Q106	83
IMA HANADA TRUST Tank Status: Permanently Out of Use Facility Id: 9-501268	1960 MAIN ST	NNE 1/2 - 1 (0.887 mi.)	Q108	84
LOKAHI PACIFIC Tank Status: Permanently Out of Use Facility Id: 9-501603 Date Closed: 03/18/1995 Date Closed: 07/29/1998	1935 MAIN ST	NNE 1/2 - 1 (0.896 mi.)	Q112	88
PACIFIC AMUSEMENT CO Tank Status: Permanently Out of Use Facility Id: 9-500409 Date Closed: 03/14/1990	1942 MAIN ST	NNE 1/2 - 1 (0.897 mi.)	Q120	92
TAKITANI BUILDING Tank Status: Permanently Out of Use Facility Id: 9-501913 Date Closed: 03/14/1990	1940 MAIN ST, STE 13	NNE 1/2 - 1 (0.898 mi.)	Q122	93
BLUE & WHITE BUS LIN Tank Status: Permanently Out of Use Facility Id: 9-501358	60 KANOA ST	NNE 1/2 - 1 (0.905 mi.)	T125	95
2102 VINEYARD ST. Tank Status: Permanently Out of Use Facility Id: 9-503115 Date Closed: 10/05/1995	2102 VINEYARD ST	N 1/2 - 1 (0.909 mi.)	S127	96
MAUI COUNTY WAILUKU Tank Status: Permanently Out of Use Facility Id: 9-502764 Date Closed: 06/01/1993	21 KINIPOPO ST	NNE 1/2 - 1 (0.945 mi.)	W133	101
DOWN TO EARTH NATURA Tank Status: Permanently Out of Use Facility Id: 9-502974 Date Closed: 07/24/1994	1910 VINEYARD ST	NNE 1 - 2 (1.043 mi.)	139	103
OGAWA SERVICE STATIO Tank Status: Permanently Out of Use Facility Id: 9-500398 Date Closed: 03/04/1996 Date Closed: 03/04/1995	327 N MARKET ST	N 1 - 2 (1.122 mi.)	Y142	107
PAM FUJITA PROPERTY Tank Status: Permanently Out of Use Facility Id: 9-503775 Date Closed: 04/16/2004	346 N. MARKET ST	N 1 - 2 (1.158 mi.)	Y145	110
GOMES CONSTRUCTION & Tank Status: Permanently Out of Use Facility Id: 9-500384 Date Closed: 02/01/1994	1790 MILL ST	NNE 1 - 2 (1.161 mi.)	Z146	111
GEORGE S./ JEAN FUNA	350 N MARKET ST	N 1 - 2 (1.164 mi.)	Y147	113

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Tank Status: Permanently Out of Use Facility Id: 9-503152 Date Closed: 02/08/1996 Date Closed: 01/01/1986

MAUI MEMORIAL MEDICA 221 MAHALANI STREET ENE 1 - 2 (1.239 mi.) AA151 11

Tank Status: Permanently Out of Use Facility Id: 9-501581

Date Closed: 01/20/2000

State and tribal institutional control / engineering control registries

Voluntary Remediation Program and Brownfields sites with institutional controls in place.

A review of the HI INST CONTROL list, as provided by EDR, and dated 12/02/2014 has revealed that there is 1 HI INST CONTROL site within approximately 1.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WAILUKU SUGAR AGRICU	2015 HOLOWAI PL	N 1 - 2 (1.242 mi.)	152	120

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

HI CDL: A listing of clandestine drug lab site locations.

A review of the HI CDL list, as provided by EDR, and dated 08/04/2010 has revealed that there is 1 HI CDL site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WAIMALUHIA MAUI METH	115 WAIMALUHIA LN	ESE 1/2 - 1 (0.614 mi.)	E24	22
Cleanup Status: Completed / No Furthe	ar Action Needed / Remediated			

Records of Emergency Release Reports

HI SPILLS: Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

A review of the HI SPILLS list, as provided by EDR, and dated 12/02/2014 has revealed that there are 12 HI SPILLS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported MECO TRANSFORMERS 13	95 KINOHI LOA LOOP 2404 MAIN ST	SSW 1/4 - 1/2 (0.374 mi.) NNW 1/2 - 1 (0.713 mi.)	5 54	14 49
Lower Elevation	Address	Direction / Distance	Map ID	Page
MECO PAD-MOUNTED #16	1627 B MILL ST	E 1/4 - 1/2 (0.376 mi.)	6	14

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Lower Elevation	Address	Direction / Distance	Map ID	Page
MERCURY 1939 MAKAHAL	1939 MAKAHALA PL	NE 1/2 - 1 (0.505 mi.)	C14	17
MERCURY - 1934 MAKAH	1934 MAKAHALA PL	NE 1/2 - 1 (0.513 mi.)	C17	19
MECO POLE-MOUNT TRAN	POLE E-9, 251 KOELI	N 1/2 - 1 (0.550 mi.)	20	20
OHANA O NAHINU TRUST	455 WAIALE RD	NE 1/2 - 1 (0.558 mi.)	D21	21
WAIMALUHIA MAUI METH	115 WAIMALUHIA LN	ESE 1/2 - 1 (0.614 mi.)	E24	22
DEPARTMENT OF WATER,	200 S HIGH ST	N 1/2 - 1 (0.656 mi.)	H34	29
ALVIN'S UPTOWN CHEVR	2085 W MAIN ST	NNE 1/2 - 1 (0.813 mi.)	L77	62
ROBERT JOSLIN	2026 MAIN ST	NNE 1/2 - 1 (0.847 mi.)	P93	73
MAUI COUNTY WAILUKU	21 KINIPOPO ST	NNE 1/2 - 1 (0.945 mi.)	W133	101

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 06/09/2015 has revealed that there are 8 RCRA NonGen / NLR sites within approximately 1.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MAUI RECYCLING SRVC	105 WAIKO RD	SSW 1 - 2 (1.116 mi.)	140	104
Lower Elevation	Address	Direction / Distance	Map ID	Page
I A O INTERMEDIATE S	1910 KAOHU ST	NNE 1/2 - 1 (0.648 mi.)	G30	26
MAUI SCRAP METAL CO.	1791 WAIINU RD.	ENE 1/2 - 1 (0.877 mi.)	R101	80
CUTTER NISSAN	1935 MAIN ST	NNE 1/2 - 1 (0.896 mi.)	Q114	90
DICKS FUMIGATION SER	1940 MAIN ST	NNE 1/2 - 1 (0.898 mi.)	Q123	94
MAUI SANDTORCHES	46 TINGS DR	NE 1 - 2 (1.119 mi.)	X141	105
GOMES CONSTRUCTION &	1790 MILL ST	NNE 1 - 2 (1.161 mi.)	Z146	111
GENROLL EQUIPMENT SE	1760 MILL ST	NNE 1 - 2 (1.195 mi.)	Z149	115

ICIS: The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

A review of the ICIS list, as provided by EDR, and dated 01/23/2015 has revealed that there is 1 ICIS site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
KAMEHAMEHA AVENUE RO	200 SOUTH HIGH STREE	N 1/2 - 1 (0.656 mi.)	H42	32

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FTTS: FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act) over the previous five years. To maintain currency, EDR contacts the Agency on a quarterly basis.

A review of the FTTS list, as provided by EDR, and dated 04/09/2009 has revealed that there are 2 FTTS sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
IAO MIDDLE SCHOOL	1910 KAOHU ST	NNE 1/2 - 1 (0.648 mi.)	G31	28
IAO MIDDLE SCHOOL	1910 KAOHU ST	NNE 1/2 - 1 (0.648 mi.)	G33	29

HIST FTTS: A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

A review of the HIST FTTS list, as provided by EDR, and dated 10/19/2006 has revealed that there are 2 HIST FTTS sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
IAO MIDDLE SCHOOL	1910 KAOHU ST	NNE 1/2 - 1 (0.648 mi.)	G31	28
IAO MIDDLE SCHOOL	1910 KAOHU ST	NNE 1/2 - 1 (0.648 mi.)	G33	29

US MINES: Mines Master Index File. The source of this database is the Dept. of Labor, Mine Safety and Health Administration.

A review of the US MINES list, as provided by EDR, and dated 08/18/2015 has revealed that there is 1 US MINES site within approximately 1.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
HAWAIIAN CEMENT		NNE 1/4 - 1/2 (0.339 mi.)	4	8

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S.; PA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 07/20/2015 has revealed that there are 57 FINDS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MILO COURT PHASE II	OMAOMAO STREET	NW 1/4 - 1/2 (0.377 mi.)	7	15
WAILUKU - WAILUKU AG		NNW 1/4 - 1/2 (0.451 mi.)	B11	16
WAILUKU - WAILUKU AG		NNW 1/4 - 1/2 (0.451 mi.)	B12	17
WAILUKU SHAFT 33 PUM	WEST MAIN STREET	NW 1/2 - 1 (0.719 mi.)	55	49

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Equal/Higher Elevation	Address	Direction / Distance	Map ID	Pag
KEHALANI UPPER LEVEL		W 1/2 - 1 (0.766 mi.)	62	53
Lower Elevation	Address	Direction / Distance	Map ID	Pag
SITE 11 AT KEHALANI	SOUTHEAST CORNER OF	ESE 1/8 - 1/4 (0.134 mi.)	1	7
HONOAPIILANI HIGHWAY	HONOAPIILANI HIGHWAY	NNE 1/8 - 1/4 (0.244 mi.)	2	7
KEHALANI VILLAGE CEN	NORTHEAST CORNER OF	SE 1/4 - 1/2 (0.330 mi.)	3	7
MAUI COMMUNITY CORRE	600 WAIALE ROAD	E 1/4 - 1/2 (0.435 mi.)	A10	16
WALGREENS #15115 AT	INTERSECTION OF WAIA	SE 1/4 - 1/2 (0.498 mi.)	13	17
MAUI MEMORIAL PARK,	485 WAIALE ROAD	ENE 1/2 - 1 (0.509 mi.)	D16	18
WAILUKU ELEMENTARY S	355 SOUTH HIGH STREE	N 1/2 - 1 (0.514 mi.)	18	19
SITE 20 AT KEHALANI	272 A'APUEO PARKWAY	N 1/2 - 1 (0.603 mi.)	22	21
MAUI COUNTY WAILUKU	1827 KAOHU ST	NE 1/2 - 1 (0.619 mi.)	F27	24
I A O INTERMEDIATE S	1910 KAOHU STREET	NNE 1/2 - 1 (0.648 mi.)	G32	28
KULANIHAKOI GULCH ST	200 SOUTH HIGH STREE	N 1/2 - 1 (0.656 mi.)	H35	30
COUNTY OF MAUI SMALL	KALANA O MAUI BLDG.	N 1/2 - 1 (0.656 mi.)	H39	31
WAIOHONU BRIDGE REPL	200 SOUTH HIGH STREE	N 1/2 - 1 (0.656 mi.)	H40	31
COUNTY OF MAULIT SE	200 S HIGH STREET	N 1/2 - 1 (0.656 mi.)	H41	31
KAMEHAMEHA AVENUE RO	200 SOUTH HIGH STREE	N 1/2 - 1 (0.656 mi.)	H42	32
COUNTY OF MAUI VINEY	200 S. HIGH STREET	N 1/2 - 1 (0.656 mi.)	H44	43
SAND ISLAND INDUSTRI	200 SOUTH HIGH STREE	N 1/2 - 1 (0.656 mi.)	H47	45
IAO MIDDLE SCHOOL	260 SOUTH MARTKET ST	NNE 1/2 - 1 (0.680 mi.)	I51	47
MAUI DISTRICT OFFICE	54 S HIGH ST	N 1/2 - 1 (0.706 mi.)	J52	47
OHANA KAI VILLAGE -	9 HONOAPIILANI HIGHW	N 1/2 - 1 (0.746 mi.)	J56	50
EVA WINONA PASCHOAL	318 NANILOA DRIVE	NE 1/2 - 1 (0.754 mi.)	K58	50
POLICE MOTOR POOL	MAIN STREET & NORTH	N 1/2 - 1 (0.754 mi.)	J59	51
HOAPILI HALE - MAUI	2145 MAIN STREET	N 1/2 - 1 (0.770 mi.)	M63	53 54
HOAPILI HALE	2145 MAIN STREET	N 1/2 - 1 (0.770 mi.)	M65	
WAILUKU CENTRAL OFFI THE KIHEI RECYCLING	60 SOUTH CHURCH STRE 2200 MAIN STREET	NNE 1/2 - 1 (0.785 mi.)	L69 N71	57 58
COUNTY OF MAUI	2200 MAIN STREET 2200 MAIN STREET. SU	N 1/2 - 1 (0.791 mi.)	N71 N72	58
MAULLANI 76 -MAKO'S	129 MAA ST	N 1/2 - 1 (0.791 mi.)	073	58
UPTOWN SERVICE INC	2085 MAIN ST	SE 1/2 - 1 (0.797 mi.) NNE 1/2 - 1 (0.813 mi.)	L79	64
KUKUIULA WASTEWATER	2086 MAIN STREET	NNE 1/2 - 1 (0.819 mi.)	L84	66
WAIKAPIJ STREAM DRAIN	24 NORTH CHURCH STRE	NNE 1/2 - 1 (0.836 mi.)	P90	73
VALLEY ISLE MOTORS L	2026 MAIN ST	NNE 1/2 - 1 (0.847 mi.)	P95	78
KULAMALU HILLTOP SUB	2005 MAIN STREET	NNE 1/2 - 1 (0.851 mi.)	P97	79
KAMEHAMEHA SCHOOL MA	1997 MAIN STREET	NNE 1/2 - 1 (0.857 mi.)	P98	79
WAILUKU - MAUI LANI	1007 WAIN OTHER	ESE 1/2 - 1 (0.858 mi.)	99	79
MAUI SCRAP METAL CO.	1791 WAIINU RD.	ENE 1/2 - 1 (0.877 mi.)	R102	82
MAALAEA TRIANGLE DEV	75 NORTH CHURCH STRE	N 1/2 - 1 (0.881 mi.)	S103	82
MAULAUTO DETAILING	1955 MAIN STREET	NNE 1/2 - 1 (0.884 mi.)	Q107	84
IMA HANADA TRUST	1960 MAIN STREET	NNE 1/2 - 1 (0.887 mi.)	Q109	85
JD PAINTING	70 KANOA ST	NNE 1/2 - 1 (0.895 mi.)	T111	86
CUTTER NISSAN	1935 MAIN ST	NNE 1/2 - 1 (0.896 mi.)	Q114	90
2102 VINEYARD ST.	2102 WEST VINEYARD S	N 1/2 - 1 (0.896 mi.)	S117	92
PACIFIC AMUSEMENT CO	1942 MAIN STREET	NNE 1/2 - 1 (0.897 mi.)	Q121	93
DICKS FUMIGATION SER	1940 MAIN ST	NNE 1/2 - 1 (0.898 mi.)	Q123	94
TAKITANI BUILDING	1940 MAIN STREET #13	NNE 1/2 - 1 (0.898 mi.)	Q124	95
BLUE & WHITE BUS LIN	60 KANOA STREET	NNE 1/2 - 1 (0.905 mi.)	T126	96
WAILUKU - MOKUHAU WE		NNW 1/2 - 1 (0.921 mi.)	U128	97
LONGS DRUG STORE NO	1900 MAIN ST	NNE 1/2 - 1 (0.922 mi.)	V129	97
WAILUKU - MOKUHAU WE		NNW 1/2 - 1 (0.925 mi.)	U131	100
WAILUKU - MOKUHAU WE		NNW 1/2 - 1 (0.928 mi.)	U132	100
WAILUKU FIRE STATION	21 KINIPOPO STREET	NNE 1/2 - 1 (0.945 mi.)	W134	102
WAILUKU - MAUI LANI		ESE 1/2 - 1 (0.952 mi.)	136	102

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HI Financial Assurance: A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

A review of the HI Financial Assurance list, as provided by EDR, and dated 09/28/2015 has revealed that there are 9 HI Financial Assurance sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAUI COMMUNITY CORRE Alt Facility ID: 9-501801 Tank Status: Permanently Out of Use	600 WAIALE DR	E 1/4 - 1/2 (0.435 mi.)	A8	15
COUNTY OF MAUI - CIV Alt Facility ID: 9-503420 Tank Status: Currently In Use Tank Status: Permanently Out of Use	200 S HIGH ST	N 1/2 - 1 (0.656 mi.)	H46	44
DOH/DISTRICT OFFICE Alt Facility ID: 9-500415 Tank Status: Permanently Out of Use Tank Status: Permanently out of Use	54 HIGH ST, ROOM 301	N 1/2 - 1 (0.711 mi.)	H53	48
WAILUKU CENTRAL OFFI Alt Facility ID: 9-500552 Tank Status: Currently In Use Tank Status: Permanently Out of Use	60 S CHURCH ST	NNE 1/2 - 1 (0.764 mi.)	L61	51
HOAPILI HALE - MAUI Alt Facility ID: 9-503536 Tank Status: Currently In Use Tank Status: Permanently Out of Use	2145 MAIN ST.	N 1/2 - 1 (0.770 mi.)	M66	54
MAUI LANI 76 -MAKO'S Alt Facility ID: 9-503924 Tank Status: Currently in Use Tank Status: Currently In Use	129 MAA ST	SE 1/2 - 1 (0.797 mi.)	074	59
UPTOWN SERVICE Alt Facility ID: 9-501128 Tank Status: Currently in Use Tank Status: Permanently Out of Use Tank Status: Currently In Use	2085 MAIN ST	NNE 1/2 - 1 (0.813 mi.)	L76	60
COURTHOUSE SHELL SS Alt Facility ID: 9-501008 Tank Status: Permanently Out of Use	2086 MAIN ST	NNE 1/2 - 1 (0.821 mi.)	L87	68
2102 VINEYARD ST. Alt Facility ID: 9-503115 Tank Status: Permanently Out of Use	2102 VINEYARD ST	N 1/2 - 1 (0.909 mi.)	S127	96

CA HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposin method. The source is the Department of Toxic Substance Control is the agency. This database begins with calendar year 1993.

A review of the CA HAZNET list, as provided by EDR, has revealed that there are 3 CA HAZNET sites

EXECUTIVE SUMMARY

within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
I A O INTERMEDIATE S GEPAID: HIP000114447	1910 KAOHU ST	NNE 1/2 - 1 (0.648 mi.)	G30	26
GTE HAWAIIAN TEL GEPAID: HIC981116044	60 S CHURCH ST	NNE 1/2 - 1 (0.785 mi.)	L70	57
1X ALULI TRUST ESTAT	31 N MARKET ST	NNE 1/2 - 1 (0.883 mi.)	P105	83

HI UIC: A listing of underground injection well locations.

A review of the HI UIC list, as provided by EDR, and dated 02/07/2013 has revealed that there are 2 HI UIC sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HIGH STREET MISCELLA Facility Id/Lat Long Min Coord: 6 UIC Permit Number: UM-2158	-	NNW 1/2 - 1 (0.615 mi.)	26	23
Lower Elevation	Address	Direction / Distance	Map ID	Page
NAHOLO CIRCLE DWS Facility Id/Lat Long Min Coord: 6 UIC Permit Number: UM-1516	200 S. HIGH ST. -5329.04.1	N 1/2 - 1 (0.656 mi.)	H45	43

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 9 EDR Hist Auto sites within approximately 1.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Page	
Not reported	600 WAIALE RD	E 1/4 - 1/2 (0.435 mi.)	A9	16
Not reported	500 WAIALE RD	ENE 1/2 - 1 (0.514 mi.)	D19	20
Not reported	2085 MAIN ST	NNE 1/2 - 1 (0.813 mi.)	L78	63
Not reported	2026 MAIN ST	NNE 1/2 - 1 (0.847 mi.)	P91	73
Not reported	1990 MAIN ST	NNE 1/2 - 1 (0.867 mi.)	Q100	80
Not reported	1941 MAIN ST	NNE 1/2 - 1 (0.892 mi.)	Q110	85

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Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	1820 WELLS ST	NNE 1/2 - 1 (0.896 mi.)	T115	91
Not reported	1818 OIHANA ST	NNE 1/2 - 1 (0.967 mi.)	W137	103
Not reported	51 WAIALE RD	NNE 1 - 2 (1.000 mi.)	138	103

EDR Hist Cleaner: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/alundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there is 1 EDR Hist Cleaner site within approximately 1.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	23 KIEKIENA PL	E 1/2 - 1 (0.881 mi.)	104	83

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

HI RGA HWS: The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

A review of the HI RGA HWS list, as provided by EDR, has revealed that there are 9 HI RGA HWS sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WAIMALUHIA MAUI METH	115 WAIMALUHIA LANE	ESE 1/2 - 1 (0.614 mi.)	E23	21
WAIMALUHIA MAUI METH	115 WAIMALUHIA LN	ESE 1/2 - 1 (0.614 mi.)	E25	23
ORGANIZATIONAL MAINT	260 S MARKET ST	NNE 1/2 - 1 (0.676 mi.)	148	45
Not reported	260 SOUTH MARKET ST	NNE 1/2 - 1 (0.676 mi.)	149	46
ALVIN'S UPTOWN CHEVR	2085 WEST MAIN ST	NNE 1/2 - 1 (0.813 mi.)	L75	60
MAIN STREET PROMENAD	2058 MAIN ST	NNE 1/2 - 1 (0.831 mi.)	P89	72
VALLEY ISLE MOTORS L	2026 MAIN ST	NNE 1/2 - 1 (0.847 mi.)	P92	73
Not reported	2102 VINEYARD ST	N 1/2 - 1 (0.896 mi.)	S116	91
MAUI VINEYARD INN, U	2102 VINEYARD ST	N 1/2 - 1 (0.896 mi.)	S118	92

HI RGA LF: The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

A review of the HI RGA LF list, as provided by EDR, has revealed that there are 3 HI RGA LF sites

EXECUTIVE SUMMARY

within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page	
LANAI LANDFILL	1827 KAUHU ST.	NE 1/2 - 1 (0.619 mi.)	F29	26	
CENTRAL MAUI LANDFIL	200 SOUTH HIGH ST.	N 1/2 - 1 (0.656 mi.)	H36	30	
CENTRAL MAUI LANDFIL	200 SOUTH HIGH ST.	N 1/2 - 1 (0.656 mi.)	H38	30	

HI RGA LUST: The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

A review of the HI RGA LUST list, as provided by EDR, has revealed that there are 14 HI RGA LUST sites within approximately 1 mile of the target property.

ower Elevation Address		Direction / Distance	Map ID	Page	
COUNTY OF MAUI - CIV Facility ID: 9-503420	200 S HIGH ST	N 1/2 - 1 (0.656 mi.)	H37	30	
COUNTY OF MAUI - CI Facility ID: 9-503420	200 S HIGH ST	N 1/2 - 1 (0.656 mi.)	H43	43	
HOAPILI HALE - MAUI Facility ID: 9-503536	2145 MAIN ST.	N 1/2 - 1 (0.770 mi.)	M64	53	
WAILUKU CENTRAL OFFI Facility ID: 9-500552	60 S CHURCH ST	NNE 1/2 - 1 (0.785 mi.)	L68	56	
UPTOWN SERVICE Facility ID: 9-501128	2085 MAIN ST	NNE 1/2 - 1 (0.813 mi.)	L80	65	
MAUI SHELL SERVICE Facility ID: 9-501008	2086 MAIN STREET	NNE 1/2 - 1 (0.819 mi.)	L81	66	
MAUI SHELL SERVICE Facility ID: 9-501008	2086 MAIN ST	NNE 1/2 - 1 (0.819 mi.)	L82	66	
MINIT STOP SHELL MAR Facility ID: 9-501008	2086 MAIN ST	NNE 1/2 - 1 (0.819 mi.)	L83	66	
COURTHOUSE SHELL Facility ID: 9-501008	2086 MAIN ST	NNE 1/2 - 1 (0.819 mi.)	L85	67	
VALLEY ISLE MOTORS, Facility ID: 9-501588	2026 MAIN ST	NNE 1/2 - 1 (0.847 mi.)	P94	78	
VALLEY ISLE MOTORS, Facility ID: 9-501588	2026 MAIN STREET	NNE 1/2 - 1 (0.847 mi.)	P96	79	
LOKAHI PACIFIC Facility ID: 9-501603	1935 MAIN ST	NNE 1/2 - 1 (0.896 mi.)	Q113	89	
2102 VINEYARD ST. Facility ID: 9-503115	2102 VINEYARD ST	N 1/2 - 1 (0.896 mi.)	S119	92	
WAILUKU FIRE STATION Facility ID: 9-502764	21 KINIPOPO ST	NNE 1/2 - 1 (0.945 mi.)	W135	102	

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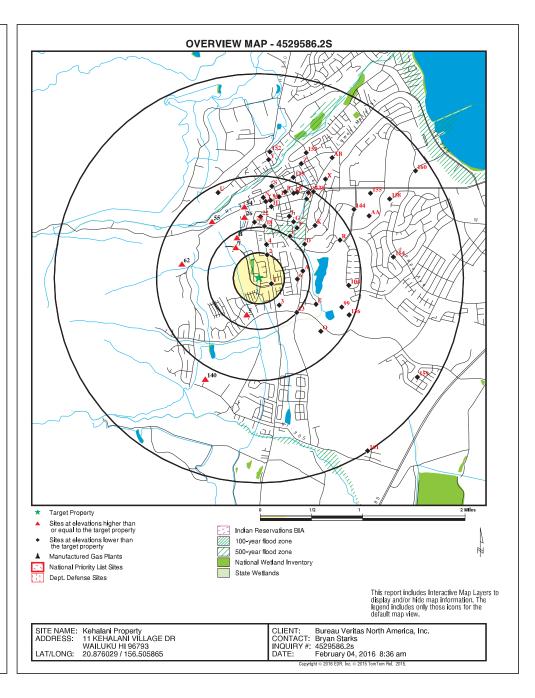
Due to poor or inadequate address information, the following sites were not mapped. Count: 9 records.

Site	Name	

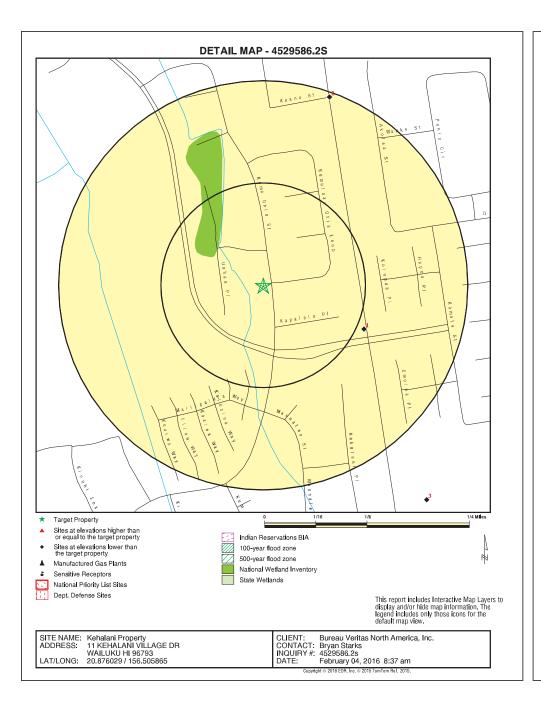
VECTOR CONTROL BRANCH, MAUI
A&B DUMP SITE
WAIKAPU DUMP-MAUI COUNTY DUMP
WAIALE ASH PILE
WAIKAPU DUMP-MAUI COUNTY DUMP
ALEXANDER & BALDWIN DUMP SITE
VECTOR CONTROL BRANCH
ALOHA KEHALANI VILLAGE
ALOHA KEHALANI VILLAGE

Database(s)

HI SHWS
HI SHWS
HI SHWS
HI SHWS
CERCLIS-NFRAP
CERCLIS-NFRAP
CERCLIS-NFRAP, RCRA NonGen / NLR
HI UST, HI Financial Assurance
FINDS



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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMEN	NTAL RECORDS	<u>i</u>						
Federal NPL site list								
NPL Proposed NPL NPL LIENS	2.000 2.000 1.000		0 0 0	0 0 0	0 0 0	0 0 0	0 0 NR	0 0 0
Federal Delisted NPL s	ite list							
Delisted NPL	2.000		0	0	0	0	0	0
Federal CERCLIS list								
FEDERAL FACILITY CERCLIS	1.500 1.500		0	0	0	0	0	0
Federal CERCLIS NFRA	AP site List							
CERCLIS-NFRAP	1.500		0	0	0	0	1	1
Federal RCRA CORRA	CTS facilities I	ist						
CORRACTS	2.000		0	0	0	0	0	0
Federal RCRA non-COI	RRACTS TSD	facilities list						
RCRA-TSDF	1.500		0	0	0	0	0	0
Federal RCRA generate	ors list							
RCRA-LQG RCRA-SQG RCRA-CESQG	1.250 1.250 1.250		0 0 0	0 0 0	0 0 0	0 1 6	0 1 1	0 2 7
Federal institutional co engineering controls re								
LUCIS US ENG CONTROLS US INST CONTROL	1.500 1.500 1.500		0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Federal ERNS list								
ERNS	1.000		0	0	0	0	NR	0
State- and tribal - equiv	alent CERCLI	S						
HI SHWS	2.000		0	0	0	6	10	16
State and tribal landfill solid waste disposal si								
HI SWF/LF	1.500		0	0	0	0	0	0
State and tribal leaking	storage tank	lists						
HI LUST INDIAN LUST	1.500 1.500		0	0	0	8	4 0	12 0
State and tribal register	red storage ta	nk lists						
FEMA UST	1.250		0	0	0	0	0	0

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
HI UST INDIAN UST	1.250 1.250		0	0	1 0	19 0	6 0	26 0
State and tribal institution control / engineering co.		s						
HI ENG CONTROLS HI INST CONTROL	1.500 1.500		0	0	0	0	0 1	0
State and tribal voluntar	y cleanup site	es						
HI VCP INDIAN VCP	1.500 1.500		0	0	0	0 0	0	0
State and tribal Brownfie	elds sites							
HI BROWNFIELDS	1.500		0	0	0	0	0	0
ADDITIONAL ENVIRONMEN	NTAL RECORDS	<u>s</u>						
Local Brownfield lists								
US BROWNFIELDS	1.500		0	0	0	0	0	0
Local Lists of Landfill / S Waste Disposal Sites	Solid							
INDIAN ODI DEBRIS REGION 9 ODI	1.500 1.500 1.500		0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Local Lists of Hazardou Contaminated Sites	s waste /							
US HIST CDL HI CDL US CDL	1.000 1.000 1.000		0 0 0	0 0 0	0 0 0	0 1 0	NR NR NR	0 1 0
Local Land Records								
LIENS 2	1.000		0	0	0	0	NR	0
Records of Emergency	Release Repo	rts						
HMIRS HI SPILLS HI SPILLS 90	1.000 1.000 1.000		0 0 0	0 0 0	0 2 0	0 10 0	NR NR NR	0 12 0
Other Ascertainable Rec	cords							
RCRA NonGen / NLR FUDS DOD SCRD DRYCLEANERS US FIN ASSUR EPA WATCH LIST 2020 COR ACTION TSCA TRIS	1.250 2.000 2.000 1.500 1.000 1.000 1.250 1.000 1.000		0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0	4 0 0 0 0 0 0	4 0 0 0 NR NR 0 NR	8 0 0 0 0 0 0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SSTS	1.000		0	0	0	0	NR	0
ROD	2.000		0	0	0	0	0	0
RMP	1.000		0	0	0	0	NR	0
RAATS	1.000		0	0	0	0	NR	0
PRP	1.000		0	0	0	0	NR	0
PADS	1.000		0	0	0	0	NR	0
ICIS	1.000		0	0	0	1	NR	1
FTTS	1.000		0	0	0	2	NR	2
MLTS	1.000		0	0	0	0	NR	0
COAL ASH DOE	1.000		0	0	0	0	NR	0
COAL ASH EPA	1.500		0	0	0	0	0	0
PCB TRANSFORMER	1.000		0	0	0	0	NR	0
RADINFO	1.000		0	0	0	0	NR	0
HIST FTTS	1.000		0	0	0	2	NR	2
DOT OPS	1.000		0	0	0	0	NR	0
CONSENT	2.000		0	0	0	0	0	0
INDIAN RESERV	2.000		0	0	0	0	0	0
UMTRA	1.500		0	0	0	0	0	0
LEAD SMELTERS	1.000		0	0	0	0	NR	0
US AIRS	1.000		0	0	0	0	NR	0
US MINES	1.250		0	0	1	0	0	1
FINDS	1.000		0	2	6	49	NR	57
HI AIRS	1.000		0	0	0	0	NR	0
HI DRYCLEANERS	1.250		0	0	0	0	0	0
HI Financial Assurance	1.000		0	0	1	8	NR	9
CA HAZNET	1.000		0	0	0	3	NR	3
HI UIC	1.000		0	0	0	2	NR	2
EDR HIGH RISK HISTORICA	L RECORDS							
EDR Exclusive Records								
EDR MGP	2.000		0	0	0	0	0	0
EDR Hist Auto	1.125		ő	Ö	1	7	1	9
EDR Hist Cleaner	1.125		Ō	0	0	1	0	1
EDR RECOVERED GOVERN	MENT ARCHIV	/ES						
Exclusive Recovered Go	vt. Archives							
111 BOA 1114/6	1.000		0	0	0	9	NR	9
HI RGA HWS				Ö	0	3	NR	3
HI RGA HWS	1 000		()					
HI RGA LF HI RGA LUST	1.000 1.000		0	0	0	14	NR	14

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

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MAP FINDINGS Map ID Direction

FDR ID Number Distance Site Database(s) EPA ID Number Elevation

SITE 11 AT KEHALANI 1009403802 FINDS ESE SOUTHEAST CORNER OF KEHALANI N/A

1/8-1/4 WAILLIKU HI 96793 0.134 mi.

708 ft. Relative: Lower

FINDS:

Registry ID: 110024878033

330 ft.

Environmental Interest/Information System

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act, Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

HONOAPIILANI HIGHWAY RESURFACI 2 NNE HONOAPIILANI HIGHWAY, RTE 30 1/8-1/4 WAILUKU, HI 96793

110022911820

0.244 mi.

1288 ft.

Relative Lower

Registry ID: Actual:

FINDS:

329 ft.

Environmental Interest/Information System

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

KEHALANI VILLAGE CENTER FOODLAND FINDS 1016391085 SE NORTHEAST CORNER OF HONOAPIILANI HWY. AND KUIKAHI 1/4-1/2 WAILUKU, HI 96793

0.330 mi. 1740 ft. Relative:

FINDS:

Lower Registry ID:

Actual: 335 ft.

Environmental Interest/Information System US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain

110055245015

Site Database(s) FPA ID Number Elevation KEHALANI VILLAGE CENTER FOODLAND (Continued) 1016391085

MAP FINDINGS

EDR ID Number

limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

STATE MASTER

US MINES 1016521967 **HAWAIIAN CEMENT**

1/4-1/2 0.339 mi. 1789 ft.

NNE

Actual: 324 ft.

FINDS 1008919101

N/A

N/A

Map ID

Direction

Distance

Relative: US MINES: Lower

MAUI (County), HI

Mine ID: 5100171 SIC code(s):

142900 000000 000000 000000 000000 000000 WAIKAPU QUARRY Entity name:

Company: HAWAIIAN CEMENT

Status: Status date: 20041015 Operation Class: non-Coal Mining

Number of shops: Number of plants: Latitude: 20 52 51 Longitude: 156 30 17

Violations Details:

Violation Number: 6435588 12/15/2007 Date Issued: Mine Status: Active 10/15/2004 Status Date: Action Type: 104(a) Date Abated: 12/15/2007 Citation/Order Citation Sig and Sub Designation: N Proposed Penalty: 207.00 Paid Penalty: 207.00 Assessment Status code: Closed Assess. Case Status code: Proposed

Assessment Amount: 207.00 Year 2007 Violation Number: 6367329 Date Issued: 12/14/2004 Mine Status: Active 10/15/2004

Status Date: Action Type: 104(a) Date Abated: 12/17/2004 Citation/Order Citation Sig and Sub Designation: Proposed Penalty: 60.00 Paid Penalty: 60.00 Assessment Status code: Closed Assess. Case Status code: Proposed Assessment Amount: 60.00 Year: 2004

TC4529586.2s Page 7 TC4529586.2s Page 8 Map ID MAP FINDINGS
Direction
Distance Elevation Site MAP FINDINGS

Database(s) EPA ID Number

HAWAIIAN CEMENT (Continued) 1016521967

Violation Number: 6367334 Date Issued: 12/14/2004 Mine Status: Active Status Date: 10/15/2004 Action Type: 104(a) 12/17/2004 Date Abated: Citation/Order: Citation Sig and Sub Designation: N Proposed Penalty: 60.00 Paid Penalty: 60.00 Assessment Status code: Closed Assess, Case Status code: Proposed Assessment Amount: 60.00 2004 Year:

Violation Number: 6367333 12/14/2004 Date Issued: Mine Status: Active Status Date: 10/15/2004 Action Type: 104(a) 12/17/2004 Date Abated: Citation/Order Citation Sig and Sub Designation: N Proposed Penalty: 60.00 Paid Penalty: 60.00 Assessment Status code: Closed Assess. Case Status code: Proposed Assessment Amount: 60.00 2004 Year:

Violation Number: 6367327 Date Issued: 12/14/2004 Mine Status: Active 10/15/2004 Status Date: Action Type: 104(a) 12/17/2004 Date Abated: Citation/Order: Citation Sig and Sub Designation: N Proposed Penalty: 60.00 Paid Penalty: 60.00 Assessment Status code: Closed Assess. Case Status code: Proposed Assessment Amount: 60.00 Year: 2004

Violation Number: 6367328 Date Issued: 12/14/2004 Mine Status: Active Status Date: 10/15/2004 Action Type: 104(a) Date Abated: 12/17/2004 Citation/Order: Citation Sig and Sub Designation: N Proposed Penalty: 60.00 Paid Penalty: 60.00 Assessment Status code: Closed Assess. Case Status code: Proposed

Map ID MAP FINDINGS
Direction
Distance EDR ID Number
Elevation Site Database(s) EPA ID Number

HAWAIIAN CEMENT (Continued)

Violation Number:

Date Issued:

1016521967

Assessment Amount: 60.00 Year: 2004

> 6367335 12/14/2004

Mine Status: Active Status Date: 10/15/2004 Action Type: 104(a) Date Abated: 12/15/2004 Citation/Order: Citation Sig and Sub Designation: Proposed Penalty: 60.00 Paid Penalty: 60.00 Assessment Status code: Closed Assess. Case Status code: Proposed Assessment Amount: 60.00 2004 Year:

Violation Number: 6367330 12/14/2004 Date Issued: Mine Status: Active Status Date: 10/15/2004 Action Type: 104(a) Date Abated: 12/17/2004 Citation/Order: Citation Sig and Sub Designation: N Proposed Penalty: 60.00 Paid Penalty 60.00

Paid Penalty: 60.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 60.00
Year: 2004

6367331 Violation Number: Date Issued: 12/14/2004 Mine Status: Active 10/15/2004 Status Date: Action Type: 104(a) Date Abated: 12/17/2004 Citation/Order: Citation Sig and Sub Designation: N 60.00 Proposed Penalty: Paid Penalty: 60.00

Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 60.00
Year: 2004

6367332 Violation Number: Date Issued: 12/14/2004 Mine Status: Active Status Date: 10/15/2004 Action Type: 104(a) Date Abated: 12/17/2004 Citation/Order: Citation Sig and Sub Designation: Proposed Penalty: 60.00

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Map ID
Direction

 Distance
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

HAWAIIAN CEMENT (Continued) 1016521967

Assessment Amount: 60.00 2004 Violation Number: 8562996 Date Issued: 12/01/2011 Mine Status: Active 10/15/2004 Status Date: Action Type: 104(a) Date Abated: 12/02/2011 Citation/Order: Citation Sig and Sub Designation: N Proposed Penalty: 100.00 Paid Penalty: 100.00 Assessment Status code: Closed Assess, Case Status code: Proposed Assessment Amount: 100.00 Year: 2011 Violation Number 8554033

Assessment Status code: Closed

Assess. Case Status code: Proposed

Paid Penalty:

10/21/2009 Date Issued: Mine Status: Active Status Date: 10/15/2004 Action Type: 104(a) 10/21/2009 Date Abated: Citation Citation/Order: Sig and Sub Designation: N Proposed Penalty: 100.00 Paid Penalty: 100.00 Assessment Status code: Closed Assess, Case Status code: Proposed Assessment Amount: 100.00 Year: 2009

6395644 Violation Number: Date Issued: 06/12/2007 Mine Status: Active Status Date: 10/15/2004 Action Type: 104(a) 06/14/2007 Date Abated: Citation/Order: Citation Sig and Sub Designation: N Proposed Penalty: 100.00 Paid Penalty: 100.00 Assessment Status code: Closed Assess. Case Status code: Proposed Assessment Amount: 100.00 Year: 2007

 Violation Number:
 6395642

 Date Issued:
 06/11/2007

 Mine Status:
 Active

 Status Date:
 10/15/2004

 Action Type:
 104(a)

 Date Abated:
 06/13/2007

Map ID MAP FINDINGS
Direction
Distance EDR ID Number
Elevation Site Database(s) EPA ID Number

HAWAIIAN CEMENT (Continued)

1016521967

Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assessment Amount: 100.00
Year: 2007
2007

Violation Number: 6395643 06/11/2007 Date Issued: Mine Status: Active 10/15/2004 Status Date: Action Type: 104(a) Date Abated: 06/14/2007 Citation/Order: Citation Sig and Sub Designation: N Proposed Penalty: 100.00 Paid Penalty: 100.00 Assessment Status code: Closed Assess. Case Status code: Proposed 100.00 Assessment Amount: 2007 Year:

Violation Number: 6392010 05/17/2006 Date Issued: Mine Status: Active 10/15/2004 Status Date: Action Type: 104(a) Date Abated: 05/17/2006 Citation/Order: Citation Sig and Sub Designation: N

Proposed Penalty: Not reported Not reported Assessment Status code: Not reported Assessment Amount: Not reported Assessment Amount: Not reported Assessment Amount: Not reported Assessment Amount: Not reported 2006

Violation Number: 6392009 Date Issued: 05/16/2006 Mine Status: Active Status Date: 10/15/2004 Action Type: 104(a) Date Abated: 05/17/2006 Citation/Order: Citation Sig and Sub Designation: N Proposed Penalty: 324 00 Paid Penalty: 324 00 Assessment Status code: Closed Assess. Case Status code: Proposed Assessment Amount: 324.00

Violation Number: 6392008
Date Issued: 05/16/2006
Mine Status: Active

Year:

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2006

Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation

HAWAIIAN CEMENT (Continued) 1016521967

Status Date: 10/15/2004 Action Type: 104(a) Date Abated: 05/16/2006 Citation/Order: Citation Sig and Sub Designation: Proposed Penalty: 324.00 Paid Penalty: 324.00 Assessment Status code: Closed Assess. Case Status code: Proposed Assessment Amount: 324.00 2006 Year: Violation Number: 6392007 05/16/2006 Date Issued: Mine Status: Active 10/15/2004 Status Date: Action Type: 104(a) 05/17/2006 Date Abated: Citation/Order: Citation Sig and Sub Designation: N Proposed Penalty: 324.00 Paid Penalty: 324.00 Assessment Status code: Closed Assess, Case Status code: Proposed Assessment Amount: 324.00 2006 Year: Violation Number 6392793 Date Issued: 05/07/2007 Mine Status: Active 10/15/2004 Status Date: Action Type: 104(a) 05/08/2007 Date Abated: Citation/Order Citation

Sig and Sub Designation: N

Assessment Status code: Closed

Assess, Case Status code: Proposed

Proposed Penalty:

Assessment Amount:

Paid Penalty:

Year:

687.00

687 00

687.00

2007

Direction Distance Site Database(s) Flevation HAWAIIAN CEMENT (Continued) Click this hyperlink while viewing on your computer to access 25 additional US_MINES: record(s) in the EDR Site Report. HI SPILLS S117391563 ssw 95 KINOHI LOA LOOP 1/4-1/2 WAILUKU, HI 96793 0.374 mi. 1976 ft. HI SPILLS: Relative: Higher Island: Maui Supplemental Loc. Text: Not reported Actual: Case Number: 20141120-1423 481 ft. HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R ER: None MECO PAD-MOUNTED TRANSFORMER #22356 RELEASE Units: Substances: Transformer Oil Less Or Greater Than: Numerical Quantity: Units: Gallons Activity Type: Response Activity Lead: Curtis Martin Assignment End Date: 2014-12-02 00:00:00 Result: SOSC NFA File Under: Not reported MECO PAD-MOUNTED #16664 TRANSFORMER RELEASE HI SPILLS S111677004 East **1627 B MILL ST** 1/4-1/2 WAILUKU, HI 96793 0.376 mi. 1986 ft. HI SPILLS: Relative: Lower Island: Maui Supplemental Loc. Text: Not reported Actual: 20110620-0806 Case Number: 261 ft. HID Number: Not reported Facility Registry Id: Not reported HEER EP&R Lead and Program: ER: Units: 644 Meakanu Mercury Substances: Mercury Less Or Greater Than: Not reported Numerical Quantity: Units: Pints Activity Type: Response Activity Lead: Liz Galvez Assignment End Date: Not reported

MAP FINDINGS

EDR ID Number

EPA ID Number

1016521967

N/A

N/A

Map ID

TC4529586.2s Page 13 TC4529586.2s Page 14

Not reported

Not reported

Not reported

20131002-0319

Maui

Result:

Island:

File Under:

Case Number:

Supplemental Loc. Text:

MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation

MECO PAD-MOUNTED #16664 TRANSFORMER RELEASE (Continued)

HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R

ER: None Units:

MECO pad-mounted #16664 transformer release

Substances: Transformer Oil

Less Or Greater Than: Numerical Quantity: Unknown Units: Activity Type: Response Activity Lead: Curtis Martin Assignment End Date: Not reported Not reported Result: File Under: Not reported

FINDS 1017381159 7 MILO COURT PHASE II OMAOMAO STREET NW N/A 1/4-1/2 WAILUKU, HI 96793

0.377 mi. 1988 ft Relative:

FINDS:

Higher Actual: 416 ft.

Registry ID: 110062652990

Environmental Interest/Information System US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that

discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the

discharge does not adversely affect water quality.

MAUI COMMUNITY CORRECTIONAL CENTER HI UST U003222248 A8 600 WAIALE DR HI Financial Assurance N/A East

1/4-1/2 WAILUKU, HI 96793 0.435 mi.

2298 ft. Site 1 of 3 in cluster A

Relative: UST: 9-501801 Lower Facility ID:

STATE PSD - MAUI COMMUNITY CORRECTIONAL CENTER Owner:

Actual: 247 ft. 600 WAIALE DRIVE Owner Address: Owner City,St,Zip: Wailuku, 96793 96793 Latitude: Not reported

Longitude: Not reported Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported

Tank ID: Date Installed:

12/31/1959 Tank Status: Permanently Out of Use

Date Closed: 10/20/1992

MAP FINDINGS

FDR ID Number

EPA ID Number

U003222248

Database(s)

MAUI COMMUNITY CORRECTIONAL CENTER (Continued)

Tank Capacity: 550 Substance: Gasoline

HI Financial Assurance:

9-501801 Alt Facility ID: Tank Id: R-1

Permanently Out of Use Tank Status: Letter of Credit FRTYPE: Expiration Date: Not reported

EDR Hist Auto 1015567568 Δ9

East 600 WAIALE RD N/A

1/4-1/2 WAILUKU, HI 96793 0.435 mi. 2298 ft. Site 2 of 3 in cluster A

Map ID

Direction

Distance

Elevation

Site

EDR Historical Auto Stations: Relative: LAHAINA AUTO BODY Lower Name:

Year: 2002 Actual:

600 WAIALE RD Address: 247 ft.

A10 MAUI COMMUNITY CORRECTIONAL CENTER FINDS 1015829092 Fast N/A

600 WAIALE ROAD 1/4-1/2 WAILUKU, HI 96793

0.435 mi. 2298 ft. Site 3 of 3 in cluster A

FINDS: Relative

Lower

110046192687 Registry ID: Actual:

247 ft Environmental Interest/Information System STATE MASTER

WAILUKU - WAILUKU AG. SHAFT 33 CHLORINATOR FINDS 1016380663 NNW N/A

1/4-1/2 WAILUKU (DWS), HI 96761 0.451 mi. 2382 ft. Site 1 of 2 in cluster B

FINDS: Relative:

Higher 110055125546 Registry ID:

Actual: 393 ft. Environmental Interest/Information System STATE MASTER

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TC4529586.2s Page 15

S111677004

MAP FINDINGS Map ID Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation WAILUKU - WAILUKU AG. SHAFT 33 B12 FINDS 1016368670 NNW N/A 1/4-1/2 WAILUKU (DWS), HI 96761 0.451 mi. 2382 ft. Site 2 of 2 in cluster B FINDS: Relative: Higher Registry ID: 110046190368 393 ft. Environmental Interest/Information System STATE MASTER FINDS 1016692553 13 WALGREENS #15115 AT MAUI LANI VILLAGE CENTER INTERSECTION OF WAIALE ROAD AND KUIKAHI DRIVE SE N/A 1/4-1/2 WAILUKU, HI 96793 0.498 mi. 2627 ft. FINDS: Relative: Lower Registry ID: 110054911752 Actual: 313 ft. Environmental Interest/Information System US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality. STATE MASTER C14 MERCURY 1939 MAKAHALA PLACE HI SPILLS S111677706 1939 MAKAHALA PL NE N/A 1/2-1 WAILUKU, HI 96793 0.505 mi. 2667 ft. Site 1 of 2 in cluster C HI SPILLS: Relative: Lower Island: 1939 Makahala Place - Mercury Supplemental Loc. Text: Actual: 20100210-1751 Case Number: 242 ft. HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R FR: None Units: Mercury 1939 Makahala Place Substances: Mercury Less Or Greater Than: Not reported Numerical Quantity: Units: Pounds Activity Type: Response Activity Lead: Liz Galvez

Map ID MAP FINDINGS Direction EDR ID Number Distance Database(s) EPA ID Number Flevation MERCURY 1939 MAKAHALA PLACE (Continued) S111677706 Assignment End Date: 2013-01-28 00:00:00 Result: SOSC NFA File Under: Not reported MAUI MEMORIAL PARK, INC. HI UST U003222231 ENE 485 WAIALE DR 1/2-1 WAILUKU, HI 96793 0.509 mi. Site 1 of 4 in cluster D 2686 ft. UST: Relative: Facility ID: 9-501570 Lower MAUI FUNERAL TRUST Owner: Actual: Owner Address: P. O. BOX 1440 Owner City,St,Zip: Wailuku, 96793 96793 Latitude: Not reported Longitude: Not reported Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported Tank ID: R-1 Date Installed: Not reported Tank Status: Permanently Out of Use Date Closed: 07/12/1991 Tank Capacity: 1000 Substance: Gasoline Tank ID: R-2 Date Installed: Not reported Tank Status: Permanently Out of Use Date Closed: 07/12/1991 Tank Capacity: 2500 Gasoline Substance: D16 MAUI MEMORIAL PARK, INC. FINDS 1015843247 ENE 485 WAIALE ROAD N/A 1/2-1 WAILUKU, HI 96793 0.509 mi. 2686 ft. Site 2 of 4 in cluster D FINDS: Relative: Lower 110055402014 Registry ID: Actual: 220 ft. Environmental Interest/Information System STATE MASTER

TC4529586.2s Page 17 TC4529586.2s Page 18

Map ID MAP FINDINGS Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation MERCURY - 1934 MAKAHALA PLACE C17 HI SPILLS \$115555450 1934 MAKAHALA PL NE N/A 1/2-1 WAILUKU, HI 96793 0.513 mi. 2708 ft. Site 2 of 2 in cluster C HI SPILLS: Relative: Island: Maui Lower Supplemental Loc. Text: Not reported Actual: 240 ft. Case Number: 20130123-1119 HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R ER: Off Scene Mercury - 1934 Makahala Place Units: Substances: Mercury Less Or Greater Than: Not reported Numerical Quantity: Pounds Units: Activity Type: Response Activity Lead: Liz Galvez Assignment End Date: Not reported Result: Not reported File Under Not reported WAILUKU ELEMENTARY SCHOOL FINDS 1008313843 18 355 SOUTH HIGH STREET North N/A 1/2-1 WAILUKU, HI 96793 0.514 mi. 2713 ft. FINDS: Relative: Lower Registry ID: 110022014817 Actual: 323 ft Environmental Interest/Information System

ICIS (Integrated Compliance Information System) is the Integrated

complete, will contain integrated Enforcement and Compliance

Federal Administrative and Judicial enforcement actions. This

it Headquarters. A future release of ICIS will replace the Permit

Compliance Information System and provides a database that, when

information across most of EPA's programs. The vision for ICIS is to

a single repository for that information. Currently, ICIS contains all

information is maintained in ICIS by EPA in the Regional offices and

that information with Federal actions already in the system. ICIS also

that support Compliance and Enforcement programs. These include;

Incident Tracking, Compliance Assistance, and Compliance Monitoring.

has the capability to track other activities occurring in the Region

Compliance System (PCS) which supports the NPDES and will integrate

replace EPA's independent databases that contain Enforcement data with

Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation EDR Hist Auto 1015522527 D19 ENE 500 WAIALE RD N/A 1/2-1 WAILUKU, HI 96793 0.514 mi. 2716 ft. Site 3 of 4 in cluster D EDR Historical Auto Stations: Relative DONS REPAIR Name: Lower 2003 Year: Actual: Address: 500 WAIALE RD DONS REPAIR Name: Year: 2008 Address: 500 WAIALE RD DONS REPAIR Name: 2009 Year: 500 WAIALE RD Address: DONS REPAIR Name: 2011 Year: 500 WAIALE RD Address: DONS REPAIR Name: 2012 Year: 500 WAIALE RD Address: MECO POLE-MOUNT TRANSFORMER NO. 8156 20 HI SPILLS S111677657 North POLE E-9, 251 KOELI ST N/A WAILUKU, HI 96793 1/2-1 0.550 mi. 2903 ft HI SPILLS: Relative: Island: Maui Lower Supplemental Loc. Text: MECO Pole-Mount Transformer No. 8156 (Pole E-9) Actual: Case Number: 20100909-0922 HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R ER: Units: MECO POLE MOUNTED TRANSFORMER #8156 RELEASE Substances: Transformer Oil Less Or Greater Than: Numerical Quantity: Units: Gallons Activity Type: Response Curtis Martin Activity Lead: Assignment End Date: 2010-08-06 00:00:00 Result: SOSC NFA File Under: Maui Electric Co., Inc.

TC4529586.2s Page 19 TC4529586.2s Page 20

MAP FINDINGS Map ID Direction EDR ID Number Distance Database(s) EPA ID Number Elevation Site **OHANA O NAHINU TRUST DRUMS** D21 HI SPILLS \$106819426 455 WAIALE RD NE N/A 1/2-1 WAILUKU, HI 96793 0.558 mi. 2947 ft. Site 4 of 4 in cluster D HI SPILLS: Relative: Maui Island: Lower Supplemental Loc. Text: Not reported Case Number: 19990831-0830 234 ft. HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R ER: Site Visit Units: Ohana O Nahinu Trust Drums Substances Waste Oil Less Or Greater Than: Not reported Numerical Quantity: Not reported Units: Not reported Activity Type: Response Activity Lead: Mike Cripps Assignment End Date: Not reported SOSC NFA Result: File Under Not reported SITE 20 AT KEHALANI FINDS 1008171875 22 272 Δ'ΑΡΙΙΕΌ ΡΑΒΚWΑΥ North N/A WAILUKU, HI 96793 1/2-1 0.603 mi. 3186 ft. FINDS: Relative: Lower 110020725107 Registry ID: Actual: 350 ft Environmental Interest/Information System US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality. E23 WAIMALUHIA MAUI METH / DRUG LAB ACT 170 HI RGA HWS \$116400669 ESE 115 WAIMALUHIA LANE 1/2-1 WAILUKU, HI 0.614 mi. Site 1 of 3 in cluster E 3242 ft. RGA HWS Relative: 2008 WAIMALUHIA MAUI METH / DRUG LAB ACT 170 115 WAIMALUHIA Lower LANE Actual: 240 ft.

Direction EDR ID Number Distance Database(s) EPA ID Number Elevation WAIMALUHIA MAUI METH / DRUG LAB ACT 170 HI SHWS \$108859869 E24 ESE 115 WAIMALUHIA LN HI CDL N/A 1/2-1 WAILUKU, HI 96793 HISPILIS 0.614 mi. 3242 ft. Site 2 of 3 in cluster E SHWS: Relative Organization: Not reported Lower Supplemental Location: Not reported Actual: Island: Maui 240 ft. Waimaluhia Maui Meth / Drug Lab Act 170 Environmental Interest: HID Number: Not reported Facility Registry Identifier: Not reported HEER Lead Agency: Program: State Project Manager: Anna Fernandez Hazard Priority: NFA Potential Hazards And Controls: No Hazard Organization: Not reported Island: Maui Supplemental Location Text: Not reported SDAR Environmental Interest Name: Waimaluhia Maui Meth / Drug Lab Act 170 HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Progran Name: State Potential Hazard And Controls: No Hazard Priority: NFA Assessment: Response Necessary Response Complete Response: Nature of Contamination: Found: Methamphetamine in interior of the unit Cleaned up to Residential Use Nature of Residual Contamination: No Hazard Present For Unrestricted Residential Use Use Restrictions: Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control: Not reported Within Designated Areawide Contamination: Not reported Site Closure Type: No Further Action Letter - Unrestricted Residential Use Document Date: 05/07/2007 2007-304-AF Document Number Document Subject: No Further Action Determination Project Manager: Anna Fernandez (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814 Contact Information CDL: Date Notified: 7/5/2007 Cleanup Status: Completed / No Further Action Needed / Remediated HI SPILLS: Island: Maui Supplemental Loc. Text: Not reported Case Number: 20070305-0950 HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R FR-Site Visit Units: Waimaluhia Maui Meth Substances Acetone, Red Phosphorous, Methyl Ethyl Ketone, propane, alkalai, meth oil

MAP FINDINGS

Map ID

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MAP FINDINGS Map ID Direction FDR ID Number Distance Database(s) EPA ID Number Elevation Site WAIMALUHIA MAUI METH / DRUG LAB ACT 170 (Continued) S108859869 Less Or Greater Than: Not reported Numerical Quantity: 0.5 Gallons Activity Type: Response Activity Lead: Anna Fernandez 2007-04-01 00:00:00 Assignment End Date: Result: Refer to SDAR File Under: County of Maui, Police Department Island: Maui Supplemental Loc. Text: Not reported Case Number: 20070305-0950 HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R ER: Site Visit Units: Waimaluhia Maui Meth Substances: Acetone, Red Phosphorous, Methyl Ethyl Ketone, propane, alkalai, meth oil Less Or Greater Than: Not reported Numerical Quantity: 0.5 Units: Gallons Activity Type: Response Activity Lead: Terry Corpus Assignment End Date: 2007-03-12 00:00:00 Result: SOSC NFA County of Maui, Police Department File Under WAIMALUHIA MAUI METH / DRUG LAB ACT 170 E25 HI RGA HWS \$116400670 115 WAIMALUHIA LN ESE N/A 1/2-1 WAILUKU HI 0 614 mi Site 3 of 3 in cluster E 3242 ft RGA HWS: Relative 2012 WAIMALUHIA MAUI METH / DRUG LAB ACT 170 115 WAIMALUHIA LN Lower 2009 WAIMALUHIA MAUI METH / DRUG LAB ACT 170 115 WAIMALUHIA LN Actual: 240 ft. HIGH STREET MISCELLANEOUS DRAINAGE IMPROVEMENTS HI UIC S109953304 26 NNW 1/2-1 0.615 mi. 3246 ft. Relative: UIC: UIC Permit Number: UM-2158 Higher Facility Id/Lat Long Minute Coordinates: 6-20 53 05 Actual: Central Latitude Of The Site: Central Longitude Of The Site: 156 30 29 Flow In Gallons Per Day: Not reported Total Number Of Inj. Well(S) On Permit: Not reported Island: Maui Location In Relation To UIC Line: Not reported Facility Type: DW Subclass:

Not reported

Not reported

Not reported

Facility Operator, Not Contract Opr:

Operator Address:

Facility Owner:

Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) FPA ID Number Elevation HIGH STREET MISCELLANEOUS DRAINAGE IMPROVEMENTS (Continued) S109953304 Owner Address: Not reported Tax Map Key Number: Owner Of Land Property On Leasehold: Not reported Consultant Serving The Application: Not reported Receipt Of Initial Application: Not reported Public Notice Date: Not reported Approval-To-Construct Issuance Date: Not reported Exemption Issuance Date: Not reported 1st Issuance Of Permit: Not reported Last Issuance Of Permit: Not reported Not reported Type: Permit Expiration Date: Not reported Date When File Is Closed: Not reported UIC Project Geologist: Not reported Remarks: Not reported MAUI COUNTY WAILUKU BASEYARD RCRA-CESQG 1004688823 F27 1827 KAOHU ST FINDS HID981982895 NE 1/2-1 WAILUKU, HI 96793 0 619 mi Site 1 of 3 in cluster F 3266 ft. RCRA-CESQG: Relative Date form received by agency: 04/16/1987 Lower Facility name: MAUI CITY OF Actual: Facility address: 1827 KAOHU ST 226 ft. WAILUKU, HI 96793 EPA ID: HID981982895 Mailing address KAOHU ST WAILUKU, HI 96793 Contact: ENVIRONMENTAL MANAGER Contact address: 1827 KAOHU ST WAILUKU, HI 96793 Contact country: Contact telephone: (808) 244-4061 Contact email: Not reported EPA Region: Classification: Conditionally Exempt Small Quantity Generator Handler: generates 100 kg or less of hazardous waste per calendar Description: month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste Owner/Operator Summary: Owner/operator name: NOT REQUIRED Owner/operator address: NOT REQUIRED

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NOT REQUIRED, ME 99999

Map ID
Direction

MAP FINDINGS

| Distance | EDR ID Number | Elevation | Site | Database(s) | EPA ID Number |

MAUI COUNTY WAILUKU BASEYARD (Continued)

1004688823

Owner/operator country: Not reported Owner/operator telephone: (415) 555-1212 Legal status: Municipal Owner/Operator Type: Operator Owner/Op start date: Not reported Owner/Op end date: Not reported

Owner/operator name: MAUI CITY OF Owner/operator address: NOT REQUIRED

NOT REQUIRED, ME 99999

NOT REQUIRED, ME 9999 Not reported

Owner/operator telephone: (415) 555-1212
Legal status: Municipal
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

Owner/operator country:

U.S. importer of hazardous waste: Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Transporter of hazardous waste: Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter:

Violation Status: No violations found

FINDS:

Registry ID: 110005725849

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation MAUI COUNTY WAILUKU BASE YARD HI UST U001236748 F28 1827 KAOHU ST NE N/A 1/2-1 WAILUKU, HI 96793 0.619 mi. 3266 ft. Site 2 of 3 in cluster F UST: Relative: Facility ID: 9-501400 Lower COUNTY OF MAUI Owner: Actual: Owner Address: 100 S HIGH ST Wailuku, 96793 96793 Owner City,St,Zip: Latitude: Not reported Longitude: Not reported Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported Tank ID: Date Installed: 01/01/1964 Tank Status: Permanently Out of Use 02/22/1994 Date Closed: Tank Capacity: 2000 Substance: Gasoline Tank ID: R-2 01/01/1964 Date Installed: Tank Status: Permanently Out of Use Date Closed: 02/22/1994 Tank Capacity: 1000 Substance: Diesel LANAI LANDFILL F29 HI RGA LF S116404729 1827 KAUHU ST. NE N/A 1/2-1 WAILUKU, HI 0.619 mi Site 3 of 3 in cluster F 3266 ft. RGA LF: Relative 1998 LANAI LANDFILL 1827 KAUHU ST. Lower Actual: 226 ft G30 I A O INTERMEDIATE SCHOOL RCRA NonGen / NLR 1012178194 NNE 1910 KAOHU ST CA HAZNET HIP000114447 1/2-1 WAILUKU, HI 96793 0.648 mi. 3422 ft. Site 1 of 4 in cluster G RCRA NonGen / NLR: Relative: Date form received by agency: 08/18/2009 Lower I A O INTERMEDIATE SCHOOL Facility name: Actual: Facility address: 1910 KAOHU ST 238 ft. WAILUKU, HI 96793 EPA ID: HIP000114447 Contact: RODNEY TOBA Contact address: P O BOX 1030 WAILUKU, HI 96793 Contact country: US

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Map ID MAP FINDINGS
Direction

 Distance
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

1012178194

I A O INTERMEDIATE SCHOOL (Continued)

Contact telephone: (808) 877-3305 Contact email: Not reported EPA Region: 09 Classification: Non-Generator

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:
Owner/operator address:
Owner/operator country:
Owner/operator telephone:
Legal status:
StatE OF H I D A G S
P O BOX 1030
WALLUKU, HI 96793
Not reported
(808) 877-3305
State

Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: Nο Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Nο Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: Nο Nο On-site burner exemption: Furnace exemption: Nο Used oil fuel burner: Nο Used oil processor: No User oil refiner: Nο Used oil fuel marketer to burner: Nο Used oil Specification marketer: Nο Used oil transfer facility: Nο Used oil transporter: Nο

Historical Generators:

Date form received by agency: 04/04/2002

Site name: I A O INTERMEDIATE SCHOOL
Classification: Conditionally Exempt Small Quantity Generator

. Waste code: D000 . Waste name: Not Defined

. Waste code: D008 . Waste name: LEAD

Violation Status: No violations found

HAZNET:

envid: 1012178194 Year: 2002

| GEPAID: HIP000114447 |
| Contact: RODNEY TOBA |
| Telephone: 8088773305 |
| Mailing Name: Not reported |
| Mailing Address: PO BOX 1030 |
| Mailing City, St, Zip: WAILUKU, HI 96793 |

Map ID MAP FINDINGS
Direction

| Distance | EDR ID Number | EDR VID Num

I A O INTERMEDIATE SCHOOL (Continued)

E SCHOOL (Continued) 1012178194

Gen County: Not reported
TSD EPA ID: CAT000646117
TSD County: Not reported
Waste Category: Other inorganic solid

Waste Category: Other inorganic solid waste Disposal Method: Disposal, Other

Tons: 0.05

Cat Decode: Other inorganic solid waste

Method Decode: Disposal, Other Facility County: 99

 IAO MIDDLE SCHOOL
 FTTS
 1009516154

 1910 KAOHU ST
 HIST FTTS
 NIA

1/2-1 WAILUKU, HI 96793 0.648 mi.

G31

NNE

3422 ft. Site 2 of 4 in cluster G

Relative: FTTS INSP:

Investigation Type: AHERA, Enforcement, State Conducted

Investigation Reason: Neutral Scheme, State

Legislation Code: TSCA Facility Function: User

HIST FTTS INSP:

Inspection Number: 19950222T05HI 1 Region: 09

Inspection Date: Not reported

Inspection Date: Not reported
Inspector: RLOPES
Violation occurred: No

Investigation Type: AHERA, Enforcement, State Conducted

Investigation Reason: Neutral Scheme, State

Legislation Code: TSCA Facility Function: User

I A O INTERMEDIATE SCHOOL FINDS 1004464722

N/A

G32 I A O INTERMEDIATE SCHO NNE 1910 KAOHU STREET 1/2-1 WAILUKU, HI 96793

0.648 mi. 3422 ft. Site 3 of 4 in cluster G

Relative: FINDS:

Lower

Registry ID: 110013387628

Actual:
238 ft. Environmental Interest/Information System

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions,

and settlements.

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MAP FINDINGS Map ID Direction EDR ID Number Distance Database(s) EPA ID Number Elevation Site

I A O INTERMEDIATE SCHOOL (Continued)

1004464722

FTTS 1007281721

N/A

HIST FTTS

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

IAO MIDDLE SCHOOL G33 NNE 1910 KAOHU ST 1/2-1 WAILUKU, HI 96793

0.648 mi. 3422 ft.

Site 4 of 4 in cluster G

FTTS INSP: Relative:

Inspection Number: 199505109499 1 Lower Region: Actual: 05/10/95

Inspection Date 238 ft. Inspector: MILETTE Violation occurred:

Investigation Type: Section 6 PCB Federal Conducted

Investigation Reason: Neutral Scheme, Region

Legislation Code:

Facility Function: Permitted Disposer - Incinerator

HIST FTTS INSP:

199505109499 1 Inspection Number: Region:

Inspection Date: Not reported MILETTE Inspector:

Violation occurred:

Investigation Type: Section 6 PCB Federal Conducted

Investigation Reason: Neutral Scheme, Region

Legislation Code: TSCA

Permitted Disposer - Incinerator Facility Function:

DEPARTMENT OF WATER, MAIN OFFICE H34 HI SPILLS \$105265165 200 S HIGH ST North N/A

1/2-1 WAILUKU, HI 96793 0.656 mi.

3464 ft. Site 1 of 15 in cluster H

HI SPILLS: Relative: Island: Lower

Maui Supplemental Loc. Text: Not reported Actual: Case Number: 19940729-21 319 ft. HID Number: Not reported Facility Registry Id: 110010037600 Lead and Program: HEER EP&R FR: Not reported

Units: WAILUKI PUBLIC WORKS Substances: SEE INCIDENT DESCRIPTION

Less Or Greater Than: Not reported Numerical Quantity: Not reported

FDR ID Number

EPA ID Number

S105265165

N/A

Database(s)

MAP FINDINGS

DEPARTMENT OF WATER, MAIN OFFICE (Continued) Units: Not reported

Activity Type: Response Activity Lead: Not reported Assignment End Date: Not reported SOSC NFA Result:

File Under: County of Maui, Department of Water Supply

KULANIHAKOI GULCH STREAM MOUTH OPENING H35 FINDS 1015951959 N/A

200 SOUTH HIGH STREET North 1/2-1 WAILUKU, HI 96793

0.656 mi.

Site 2 of 15 in cluster H 3464 ft.

Relative: FINDS: Lower

Map ID

Direction

Distance

Elevation

Site

Registry ID: 110046169034 Actual 319 ft.

Environmental Interest/Information System STATE MASTER

CENTRAL MAUI LANDFILL PHASE I HI RGA LF \$116404631

North 200 SOUTH HIGH ST. 1/2-1 WAILUKU, HI

0.656 mi.

3464 ft. Site 3 of 15 in cluster H

RGA LF: Relative:

Lower 1998 CENTRAL MAUI LANDFILL PHASE I 200 SOUTH HIGH ST

Actual:

COUNTY OF MAUI - CIVIL DEFENSE HI RGA LUST \$116401216 H37

North 200 S HIGH ST N/A 1/2-1 WAILUKU, HI

0.656 mi Site 4 of 15 in cluster H 3464 ft.

RGA LUST: Relative COUNTY OF MAUI - CIVIL DEFENSE 200 S HIGH ST Lower

2011 COUNTY OF MAUI - CIVIL DEFENSE 200 S HIGH ST COUNTY OF MAUI - CIVIL DEFENSE 200 S HIGH ST

319 ft 2009 COUNTY OF MAUI - CIVIL DEFENSE 200 S HIGH ST

CENTRAL MAUI LANDFILL PHASE 1 H38 HI RGA LF S116404630

200 SOUTH HIGH ST. North 1/2-1 WAILUKU. HI

0.656 mi. 3464 ft. Site 5 of 15 in cluster H

RGA LF:

Relative 1998 CENTRAL MAUI LANDFILL PHASE 1 200 SOUTH HIGH ST. Lower

Actual: 319 ft.

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FDR ID Number Distance Database(s) EPA ID Number Elevation Site

COUNTY OF MAUI SMALL MS4 1016871595 H39 FINDS KALANA O MAUI BLDG. 4TH FLR., 200 S. HIGH ST. North N/A

1/2-1 WAILUKU HI 96793 0 656 mi

3464 ft. Site 6 of 15 in cluster H

FINDS: Relative: Lower

Registry ID:

319 ft. Environmental Interest/Information System

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act, Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain

110059707544

limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

H40 WAIOHONU BRIDGE REPLACEMENT 200 SOUTH HIGH STREET North

WAILUKU, HI 96793 1/2-1

0.656 mi. 3464 ft. Site 7 of 15 in cluster H

FINDS: Relative

Lower Registry ID:

110046157029 Actual: 319 ft.

Environmental Interest/Information System STATE MASTER

COUNTY OF MAUI IT SERVICES FINDS 1015930463

H41 North 200 S HIGH STREET 1/2-1 WAILUKU, HI 96793 0.656 mi.

3464 ft. Site 8 of 15 in cluster H

FINDS: Relative:

Lower

Registry ID: 110056143686 Actual: Environmental Interest/Information System

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

STATE MASTER

ICIS (Integrated Compliance Information System) is the Integrated

MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) FPA ID Number Elevation

COUNTY OF MAUI IT SERVICES (Continued)

1015930463

Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include: Incident Tracking, Compliance Assistance, and Compliance Monitoring.

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 ICIS 1012304177 200 SOUTH HIGH STREET FINDS N/A

WAILUKU, HI 96793 1/2-1 0.656 mi

Site 9 of 15 in cluster H 3464 ft

ICIS: Relative

H42

FINDS 1015951081

N/A

North

Enforcement Action ID: 09-1997-0180 Lower FRS ID: 110010037600 Actual: Program ID: FRS 110010037600 319 ft. Action Name: COUNTY OF MAUI

Full Address: 200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE Facility Address: 200 SOUTH HIGH STREET WAILUKU, HI 96793-2155

Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 Program ID: HI-EHW 9624 COUNTY OF MAUI Action Name: Full Address:

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

State:

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE Facility Address: 200 SOUTH HIGH STREET WAILUKU, HI 96793-2155 CWA 309A AO For Compliance Enforcement Action Type:

Facility County: MAUI EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 Program ID: HI-EHW 10007 Action Name: COUNTY OF MAUI

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State: Hawaii

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE 200 SOUTH HIGH STREET Facility Address: WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

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EDR ID Number Distance Site Database(s) EPA ID Number Elevation

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 (Continued) 1012304177

Facility County: MAUI

EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 Program ID: HI-EHW 13102 Action Name: COUNTY OF MAUI

Full Address:

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

Hawaii State:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET Facility Address: WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI

EPA Region #:

Enforcement Action ID 09-1997-0180 FRS ID: 110010037600 Program ID: HI-EHW 13103 Action Name: COUNTY OF MAUI

Full Address: 200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

State Hawaii

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE 200 SOUTH HIGH STREET Facility Address:

WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI EPA Region #:

Enforcement Action ID: 09-1997-0180 110010037600 FRS ID:

Program ID: HI-FHW 13692 COUNTY OF MALII Action Name

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address

State COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

200 SOUTH HIGH STREET Facility Address:

WAILLIKU HI 96793-2155

Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI EPA Region #:

Enforcement Action ID: 09-1997-0180 110010037600 FRS ID:

Program ID: HI-FHW 14120 Action Name COUNTY OF MAUI

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE 200 SOUTH HIGH STREET Facility Address:

WAILUKU, HI 96793-2155 Enforcement Action Type CWA 309A AO For Compliance

Facility County: MAUI

EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 Map ID MAP FINDINGS Direction FDR ID Number Distance Database(s) FPA ID Number Flevation

1012304177

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 (Continued)

Program ID: HI-EHW 14184 Action Name: COUNTY OF MAUI

Full Address: 200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

Hawaii State:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET Facility Address: WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI

EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 Program ID: HI-EHW 1759 Action Name: COUNTY OF MAUI

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State: Hawaii

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE 200 SOUTH HIGH STREET Facility Address: WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

MALII Facility County: EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 HI-EHW 1763 Program ID: Action Name COUNTY OF MAUI

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: Facility Address:

200 SOUTH HIGH STREET WAILUKU HI 96793-2155

CWA 309A AO For Compliance Enforcement Action Type: Facility County: MAUI

EPA Region #:

Enforcement Action ID: 09-1997-0180 110010037600 FRS ID: HI-EHW 2809 Program ID: COUNTY OF MAUL Action Name:

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State Hawaii

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE Facility Address: 200 SOUTH HIGH STREET WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI

EPA Region #: 9

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 Program ID: HI-EHW 4561 Action Name: COUNTY OF MAUI

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE

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EDR ID Number Distance Site Database(s) EPA ID Number Elevation

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 (Continued) 1012304177

Facility Address: 200 SOUTH HIGH STREET WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI EPA Region #:

Enforcement Action ID: 09-1997-0180 110010037600 Program ID: HI-EHW 4581

Action Name: COUNTY OF MAUI Full Address: 200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

State: Hawaii

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: Facility Address: 200 SOUTH HIGH STREET WAILUKU, HI 96793-2155 CWA 309A AO For Compliance Enforcement Action Type

Facility County: MAUI EPA Region #:

09-1997-0180 Enforcement Action ID: FRS ID: 110010037600 Program ID: HI-EHW 5437 Action Name: COUNTY OF MAUI

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State: Hawaii

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE 200 SOUTH HIGH STREET Facility Address:

WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI EPA Region #:

09-1997-0180 Enforcement Action ID 110010037600 FRS ID: Program ID: HI-FHW 5477 Action Name COUNTY OF MAUL

Full Address: 200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

Hawaii COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

200 SOUTH HIGH STREET Facility Address: WAILUKU, HI 96793-2155

Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI

EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 Program ID: HI-EHW 5763 Action Name COLINTY OF MALII

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET Facility Address: WAILUKU, HI 96793-2155

Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI EPA Region #:

Map ID MAP FINDINGS Direction Distance

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 (Continued)

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 Program ID: HI-EHW 5766 Action Name: COUNTY OF MAUI

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

FDR ID Number

EPA ID Number

1012304177

Database(s)

State:

Flevation

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE Facility Address: 200 SOUTH HIGH STREET WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 HI-EHW 5813 Program ID: Action Name: COUNTY OF MAUI

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State:

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE 200 SOUTH HIGH STREET Facility Address: WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI EPA Region #:

09-1997-0180 Enforcement Action ID: 110010037600 FRS ID: Program ID: HI-EHW 6007

Action Name: COUNTY OF MAUL

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State: Hawaii Facility Name:

COUNTY OF MAUI - CIVIL DEFENSE Facility Address: 200 SOUTH HIGH STREET WAILUKU, HI 96793-2155

CWA 309A AO For Compliance Enforcement Action Type:

Facility County MAUI

EPA Region #:

09-1997-0180 110010037600 Enforcement Action ID: FRS ID: Program ID: HI-FHW 6076 Action Name: COLINTY OF MALII

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name 200 SOUTH HIGH STREET Facility Address: WAILUKU HI 96793-2155

Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 Program ID: HI-EHW 6349 Action Name: COUNTY OF MAUI

Full Address 200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

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FDR ID Number Distance Site Database(s) EPA ID Number Elevation

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 (Continued) 1012304177

Hawaii

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE Facility Address: 200 SOUTH HIGH STREET WAILUKU, HI 96793-2155

CWA 309A AO For Compliance Enforcement Action Type MAUI

Facility County: EPA Region #:

09-1997-0180 Enforcement Action ID: 110010037600 FRS ID: Program ID: HI-EHW 6830 Action Name: COUNTY OF MAUI

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State: Hawaii

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE 200 SOUTH HIGH STREET Facility Address: WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI

EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600 Program ID: HI-EHW 7305 COUNTY OF MAUI Action Name:

Full Address: 200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

State:

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE Facility Address: 200 SOUTH HIGH STREET

WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI EPA Region #:

Enforcement Action ID: 09-1997-0180 110010037600

FRS ID: Program ID: HI-FHW 7631 Action Name COUNTY OF MALII

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET Facility Address: WAILUKU HI 96793-2155

CWA 309A AO For Compliance Enforcement Action Type:

Facility County: MAUI EPA Region #:

09-1997-0180 Enforcement Action ID: 110010037600 FRS ID: Program ID: HI-EHW 7857 Action Name COUNTY OF MAUL

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State: Hawaii

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET Facility Address:

WAILUKU, HI 96793-2155

Enforcement Action Type CWA 309A AO For Compliance Map ID MAP FINDINGS Direction FDR ID Number Distance Database(s) EPA ID Number Flevation

1012304177

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 (Continued)

Facility County: MAUI EPA Region #:

Enforcement Action ID: 09-1997-0180 FRS ID: 110010037600

Program ID: HI-EHW 8019 Action Name: COUNTY OF MAUI

Full Address: 200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

State: Hawaii

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET Facility Address: WAILUKU. HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI

EPA Region #:

Enforcement Action ID: 09-1997-0180 110010037600 FRS ID: Program ID: HI-EHW 8972 COUNTY OF MAUI Action Name:

200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155 Full Address:

State

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE 200 SOUTH HIGH STREET Facility Address:

WAILUKU, HI 96793-2155 Enforcement Action Type: CWA 309A AO For Compliance

Facility County: MAUI

EPA Region #:

09-1997-0180 110010037600 Enforcement Action ID: FRS ID: Program ID: HI-FHW 10004 COLINTY OF MALII Action Name

Full Address: 200 SOUTH HIGH STREET 200 S HIGH ST WAILUKU HI 96793-2155

CWA 309A AO For Compliance

State:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET Facility Address: WAILLIKU HI 96793-2155

Enforcement Action Type: Facility County: MAUI

EPA Region #: 9

Program ID: FRS 110010037600

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE Address:

200 SOUTH HIGH STREET

Tribal Indicator Fed Facility: No NAIC Code Not reported SIC Code: 4952

Program ID: HI-EHW 10004

COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

Address: 200 SOUTH HIGH STREET

Tribal Indicator:

Fed Facility: NAIC Code Not reported

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Map ID MAP FINDINGS Direction

FDR ID Number Distance Site Database(s) EPA ID Number Elevation

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 (Continued) 1012304177

SIC Code: 4952

Program ID: HI-EHW 10007

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE

200 SOUTH HIGH STREET Address:

Tribal Indicator: Fed Facility: No NAIC Code: Not reported SIC Code: 4952

HI-EHW 13102 Program ID:

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE

200 SOUTH HIGH STREET Address:

Tribal Indicator: Fed Facility: Nο NAIC Code: Not reported SIC Code: 4952

HI-EHW 13103 Program ID:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET Address:

Tribal Indicator Fed Facility: No NAIC Code: Not reported

SIC Code: 4952

HI-EHW 13692 Program ID:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

Address: 200 SOUTH HIGH STREET Tribal Indicator:

Fed Facility: Nο NAIC Code: Not reported SIC Code: 4952

Program ID:

HI-EHW 14120 COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

200 SOUTH HIGH STREET Address:

Tribal Indicator: Fed Facility: Nο NAIC Code: Not reported SIC Code: 4952

Program ID: HI-EHW 14184

COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

Address: 200 SOUTH HIGH STREET Tribal Indicator:

Fed Facility: Nο NAIC Code: Not reported SIC Code: 4952

Program ID: HI-EHW 1759

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE

Address: 200 SOUTH HIGH STREET

Tribal Indicator: Fed Facility: No NAIC Code: Not reported SIC Code: 4952

Map ID MAP FINDINGS Direction

FDR ID Number Distance Site Database(s) EPA ID Number Flevation

1012304177

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 (Continued)

Program ID: HI-EHW 1763

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE Address: 200 SOUTH HIGH STREET

Tribal Indicator: Fed Facility: Not reported NAIC Code: SIC Code: 4952

Program ID: HI-EHW 2809

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET

Address:

Tribal Indicator: Fed Facility: No

NAIC Code: Not reported

4952 SIC Code:

Program ID: HI-EHW 4561

COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

200 SOUTH HIGH STREET Address:

Tribal Indicator: Fed Facility: Nο

NAIC Code: Not reported 4952 SIC Code:

Program ID: HI-EHW 4581

COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

200 SOUTH HIGH STREET Address:

Tribal Indicator Fed Facility: No NAIC Code: Not reported 4952 SIC Code:

HI-EHW 5437 Program ID:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

Address: 200 SOUTH HIGH STREET

Tribal Indicator Fed Facility: Nο NAIC Code Not reported SIC Code: 4952

Program ID:

HI-EHW 5477 COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

Address: 200 SOUTH HIGH STREET Tribal Indicator:

Fed Facility: Nο NAIC Code: Not reported SIC Code: 4952

HI-EHW 5763 Program ID:

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE

Address: 200 SOUTH HIGH STREET

Tribal Indicator: Fed Facility: No NAIC Code: Not reported

SIC Code: 4952

Program ID: HI-EHW 5766

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Map ID MAP FINDINGS Direction

FDR ID Number Distance Site Database(s) EPA ID Number Elevation

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 (Continued) 1012304177

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE

Address: 200 SOUTH HIGH STREET Tribal Indicator:

Fed Facility: No NAIC Code: Not reported SIC Code: 4952

Program ID: HI-EHW 5813

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET Address:

Tribal Indicator: Fed Facility: No NAIC Code: Not reported 4952 SIC Code:

HI-EHW 6007 Program ID:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

200 SOUTH HIGH STREET Address:

Tribal Indicator: Fed Facility: Nο NAIC Code: Not reported SIC Code: 4952

Program ID: HI-EHW 6076

COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

200 SOUTH HIGH STREET Address:

Tribal Indicator: Fed Facility Nο NAIC Code: Not reported SIC Code: 4952

Program ID: HI-FHW 6349

COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET Address:

Tribal Indicator: Fed Facility: Nο NAIC Code:

Not reported SIC Code: 4952

Program ID:

HI-EHW 6830 COUNTY OF MAUI - CIVIL DEFENSE Facility Name: 200 SOUTH HIGH STREET

Address:

Tribal Indicator: Fed Facility: No NAIC Code: Not reported SIC Code: 4952

HI-EHW 7305 Program ID:

COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

200 SOUTH HIGH STREET Address:

Tribal Indicator: Fed Facility: No NAIC Code: Not reported SIC Code: 4952

Program ID: HI-EHW 7631

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE Map ID MAP FINDINGS Direction FDR ID Number Distance

Database(s)

EPA ID Number

1012304177

KAMEHAMEHA AVENUE ROADWAY IMPROVEMENTS, JOB NO. 08-18 (Continued)

Address: 200 SOUTH HIGH STREET

Tribal Indicator: Fed Facility:

Site

Flevation

NAIC Code: Not reported SIC Code: 4952

Program ID: HI-EHW 7857

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE

Address: 200 SOUTH HIGH STREET

Tribal Indicator: Fed Facility:

NAIC Code: Not reported SIC Code:

Program ID: HI-EHW 8019

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE

Address: 200 SOUTH HIGH STREET Tribal Indicator:

Fed Facility: NAIC Code: Not reported SIC Code: 4952

Program ID: HI-EHW 8972

Facility Name: COUNTY OF MAUI - CIVIL DEFENSE

200 SOUTH HIGH STREET Address:

Tribal Indicator: Fed Facility: Nο NAIC Code: Not reported SIC Code: 4952

Program ID: HI-EHW 9624

COUNTY OF MAUI - CIVIL DEFENSE Facility Name:

200 SOUTH HIGH STREET Address: Tribal Indicator

Fed Facility: No NAIC Code Not reported SIC Code: 4952

FINDS:

110040079027 Registry ID:

Environmental Interest/Information System

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

STATE MASTER

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MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation COUNTY OF MAUI - CIVIL DEFENSE HI RGA LUST \$116401215 H43 200 S HIGH ST North N/A 1/2-1 WAILUKU, HI 0.656 mi. 3464 ft. Site 10 of 15 in cluster H RGA LUST: Relative: COUNTY OF MAUI - CIVIL DEFENSE 200 S HIGH ST 2008 Lower COUNTY OF MAUI - CIVIL DEFENSE 200 S HIGH ST COUNTY OF MAUI - CIVIL DEFENSE 319 ft. 2005 COUNTY OF MAUI - CIVIL DEFENSE 200 S HIGH ST H44 COUNTY OF MAUI VINEYARD STREET WATER LINE REPLACEMENT FINDS 1014696931 North 200 S. HIGH STREET WAILUKU, HI 96793 1/2-1 0.656 mi. 3464 ft. Site 11 of 15 in cluster H FINDS: Relative: Lower Registry ID: 110041252505 Actual: 319 ft. Environmental Interest/Information System US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality. H45 NAHOLO CIRCLE DWS HI UIC U003711775 North 200 S. HIGH ST. 1/2-1 WAILUKU, HI 96793 0.656 mi. 3464 ft. Site 12 of 15 in cluster H Relative: UIC Permit Number: UM-1516 Lower Facility Id/Lat Long Minute Coordinates: 6-5329.04.1 Actual: Central Latitude Of The Site: 20 53 04 Central Longitude Of The Site: 156 29 25 Flow In Gallons Per Day: Not reported Total Number Of Inj. Well(S) On Permit: 1 Island: Maui Location In Relation To UIC Line: Not reported Facility Type: DW Subclass: Facility Operator, Not Contract Opr: County of Hawaii - DPW & WM Operator Address: 200 S. High St., Wailuku, HI 96793 Facility Owner: County of Hawaii Owner Address: 200 S. High St., Wailuku, HI 96793 Tax Map Key Number: 2:3-8-41: Owner Of Land Property On Leasehold: none Consultant Serving The Application: County of Maui - DPW & WM Receipt Of Initial Application: 4/3/1989 Public Notice Date: Not reported

Map ID MAP FINDINGS Direction EDR ID Number Distance Database(s) FPA ID Number Elevation NAHOLO CIRCLE DWS (Continued) U003711775 Approval-To-Construct Issuance Date: 7/11/1989 Exemption Issuance Date: Not reported 1st Issuance Of Permit: 5/15/2000 Last Issuance Of Permit: Not reported Not reported Type: Permit Expiration Date: 8/15/2003 Date When File Is Closed: Not reported UIC Project Geologist: Not reported Remarks: COUNTY OF MAUI - CIVIL DEFENSE HI LUST U004192790 H46 200 S HIGH ST HI UST North N/A 1/2-1 WAILUKU, HI 96793 HI Financial Assurance 0.656 mi. 3464 ft. Site 13 of 15 in cluster H LUST: Relative: Facility ID: 9-503420 Lower Facility Status Site Cleanup Completed (NFA) Actual: Facility Status Date: 10/15/2001 319 ft. Release ID: 010053 Project Officer: Shunsheng Fu UST: Facility ID: 9-503420 County of Maui - Civil Defense Owner: Owner Address: Not reported Wailuku, 96793 96793 Owner City,St,Zip: Latitude: 20.885690 Lonaitude: -156 503865 Horizontal Reference Datum Name NAD83 Horizontal Collection Method Name: Map Tank ID: M-2 Date Installed 11/01/1998 Tank Status: Currently In Use Date Closed: Not reported Tank Capacity: 2000 Substance: Diesel Tank ID: R-M-1 Date Installed: 06/01/1973 Tank Status: Permanently Out of Use Date Closed: 11/13/1998 Tank Capacity: 1700 Substance: Diesel HI Financial Assurance: Alt Facility ID: 9-503420 Tank Id: M-2 Tank Status: Currently In Use FRTYPE: Other Expiration Date: Not reported Alt Facility ID: 9-503420 Tank Id: R-M-1

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MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation COUNTY OF MAUI - CIVIL DEFENSE (Continued) U004192790 Tank Status: Permanently Out of Use FRTYPE: Other Expiration Date: Not reported Alt Facility ID: 9-503420 Tank Id: R-M-1 Tank Status: Permanently Out of Use FRTYPE: Self Insured Expiration Date 07/18/2013 Alt Facility ID: 9-503420 Tank Id: M-2 Tank Status: Currently In Use FRTYPE: Self Insured Expiration Date 07/18/2013 SAND ISLAND INDUSTRIAL PARK SUBDIVISION FINDS 1006719521 H47 200 SOUTH HIGH STREET North N/A WAILUKU, HI 96793 1/2-1 0 656 mi Site 14 of 15 in cluster H 3464 ft. FINDS: Relative: Lower Registry ID: 110046170647 Actual: 319 ft. Environmental Interest/Information System STATE MASTER 148 ORGANIZATIONAL MAINTENANCE SHOP #3 (OMS #3) HI RGA HWS \$116400397 NNE 260 S MARKET ST 1/2-1 WAILUKU, HI 0.676 mi. 3571 ft. Site 1 of 4 in cluster I RGA HWS: Relative: 2012 ORGANIZATIONAL MAINTENANCE SHOP #3 (OMS #3) 260 S MARKET Lower Actual: 2009 ORGANIZATIONAL MAINTENANCE SHOP #3 (OMS #3) 260 S MARKET 256 ft. ST 2008 ORGANIZATIONAL MAINTENANCE SHOP #3 (OMS #3) 260 S MARKET 2006 ORGANIZATIONAL MAINTENANCE SHOP #3 (OMS #3) 260 S MARKET ST 2005 ORGANIZATIONAL MAINTENANCE SHOP #3 (OMS #3) 260 S MARKET ST

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MAP FINDINGS
Map ID
Direction
                                                                                                               FDR ID Number
Distance
           Site
                                                                                                 Database(s)
                                                                                                              EPA ID Number
Elevation
                                                                                                HI RGA HWS S116399336
149
           260 SOUTH MARKET ST
NNE
                                                                                                                 N/A
1/2-1
           WAILUKU, HI
0.676 mi.
3571 ft.
           Site 2 of 4 in cluster I
             RGA HWS:
Relative
                                2000 TLAZZARO 260 SOUTH MARKET ST
Lower
256 ft.
150
           ORGANIZATIONAL MAINTENANCE SHOP #3 (OMS #3)
                                                                                                    HI SHWS 1006818976
           260 S MARKET ST
NNE
                                                                                                                 N/A
           WAILUKU, HI 96793
1/2-1
0.676 mi.
3571 ft.
           Site 3 of 4 in cluster I
             SHWS:
Relative
Lower
                Organization:
                                                          Not reported
                Supplemental Location:
                                                          Not reported
Actual:
                Island:
                                                          Maui
256 ft.
                Environmental Interest:
                                                          Organizational Maintenance Shop #3 (OMS #3)
                HID Number:
                                                          Not reported
                Facility Registry Identifier:
                                                          110013767352
                Lead Agency:
                                                          Not reported
                                                          Hawaii Air National Guard
                Program:
                Project Manager
                                                          Unassigned
                Hazard Priority:
                Potential Hazards And Controls:
                                                          Hazard Undetermined
                Organization:
                                                          Not reported
                Island:
                Supplemental Location Text:
                                                          Not reported
                SDAR Environmental Interest Name:
                                                          Organizational Maintenance Shop #3 (OMS #3)
                HID Number:
                                                          Not reported
                Facility Registry Identifier:
                                                          110013767352
                Lead Agency:
                                                          Not reported
                Progran Name:
                                                          Hawaii Air National Guard
                Potential Hazard And Controls:
                                                          Hazard Undetermined
                Priority:
                                                          Low
                Assessment:
                                                          Assessment Ongoing
                Response:
                                                          Not reported
                Nature of Contamination:
                                                          Not reported
                Nature of Residual Contamination:
                                                          Not reported
                Use Restrictions:
                                                          Undetermined
                Engineering Control:
                                                          Not reported
                Description of Restrictions:
                                                          Not reported
                Institutional Control:
                                                          Not reported
                Within Designated Areawide Contamination:
                                                         Not reported
                Site Closure Type:
                                                          Not reported
                Document Date:
                                                          Not reported
                Document Number:
                                                          Not reported
                Document Subject:
                                                          Not reported
                Project Manager:
                                                          Unassigned
                Contact Information:
                                                          (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814
```

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Map ID MAP FINDINGS Direction

IAO MIDDLE SCHOOL 1015914219

FDR ID Number

EPA ID Number

N/A

Database(s)

FINDS

260 SOUTH MARTKET STREET NNE 1/2-1 WAILUKU HI 96793

0 680 mi

3593 ft. Site 4 of 4 in cluster I FINDS:

Site

Relative: Lower

253 ft.

Distance

Elevation

151

Registry ID: 110044866516 Environmental Interest/Information System

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit

Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include: Incident Tracking, Compliance Assistance, and Compliance Monitoring.

MAUI DISTRICT OFFICE FINDS 1016056880 N/A

.152 North 54 S HIGH ST WAILUKU, HI 96793 1/2-1 0.706 mi.

3728 ft Site 1 of 4 in cluster J

FINDS: Relative

Lower

Registry ID:

Actual: 337 ft. Environmental Interest/Information System

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions,

110011913956

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information, Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This

Map ID MAP FINDINGS Direction FDR ID Number Distance

MAUI DISTRICT OFFICE (Continued)

1016056880

FPA ID Number

Database(s)

information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include: Incident Tracking, Compliance Assistance, and Compliance Monitoring.

DOH/DISTRICT OFFICE HI UST U003222190 54 HIGH ST, ROOM 301 North HI Financial Assurance

WAILUKU, HI 96793 1/2-1 0.711 mi

3752 ft. Site 15 of 15 in cluster H

UST: Relative

Site

Elevation

H53

9-500415 Lower Facility ID:

Owner: STATE Of HAWAII - DAGS Actual: Owner Address: P.O. BOX 1030 Owner City,St,Zip: Wailuku, 96793 96793 Latitude: 20.886202 Longitude: -156.503982

Horizontal Reference Datum Name: NAD83 Horizontal Collection Method Name:

Tank ID: R-1 Date Installed: 01/21/1968

Tank Status: Permanently Out of Use

Date Closed: 01/30/1989 Tank Capacity: Substance: Gasoline

Tank ID: Date Installed 01/21/1968

Tank Status: Permanently Out of Use

Date Closed: 01/30/1989 Tank Capacity: Used Oil Substance:

Tank ID:

Date Installed 01/03/1989 Tank Status: Permanently out of Use

09/21/2007 Date Closed: Tank Capacity: 4000 Substance: Gasoline

HI Financial Assurance:

Alt Facility ID: 9-500415 Tank Id:

Permanently Out of Use Tank Status:

FRTYPF. Other Expiration Date: Not reported

Alt Facility ID: 9-500415 Tank Id: R-2

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MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation DOH/DISTRICT OFFICE (Continued) U003222190 Tank Status: Permanently Out of Use FRTYPE: Other Expiration Date: Not reported Alt Facility ID: 9-500415 Tank Id: r-87 Tank Status: Permanently out of Use FRTYPE: Other Expiration Date Not reported MECO TRANSFORMERS 13198 AND 13199 HI SPILLS \$108859779 54 NNW 2404 MAIN ST N/A 1/2-1 KAHULUI, HI 0.713 mi. 3767 ft. HI SPILLS: Relative: Island: Higher Supplemental Loc. Text: Not reported Actual: Case Number: 20070320-1318 404 ft. HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R Units: MECO Transformers 13198 and 13199 Substances: Mineral Oil Less Or Greater Than: Numerical Quantity: Units: Gallons Activity Type: Response Activity Lead: Anna Fernandez Assignment End Date: 2007-04-04 00:00:00 Result: SOSC NFA File Under: Maui Electric Co., Inc. 55 **WAILUKU SHAFT 33 PUMP STATION** FINDS 1017430745 NW WEST MAIN STREET N/A WAILUKU, HI 96793 1/2-1 0.719 mi. 3796 ft. FINDS: Relative: Higher Registry ID: 110000709154 Actual: 453 ft. Environmental Interest/Information System US EPA Risk Management Plan (RMP) database stores the risk management plans reported by companies that handle, manufacture, use, or store certain flammable or toxic substances, as required under section 112(r) of the Clean Air Act (CAA).

FDR ID Number Distance Database(s) EPA ID Number Elevation **OHANA KAI VILLAGE - RETENTION BASIN GRADING** FINDS 1014696878 J56 9 HONOAPIILANI HIGHWAY North N/A 1/2-1 **WAILUKU HI 96793** 0.746 mi. 3941 ft. Site 2 of 4 in cluster J FINDS: Relative: Lower 110041244418 Registry ID: Actual: 338 ft. Environmental Interest/Information System US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality. K57 EVA WINONA PASCHOAL HIUST U001236838 NE 318 NANILOA DR N/A WAILUKU. HI 96793 1/2-1 0.754 mi. 3979 ft. Site 1 of 2 in cluster K UST: Relative Facility ID: 9-502452 Lower EVA WINONA PASCHOAL Owner: Actual: Owner Address: 318 NANILOA DRIVE 270 ft. Owner City,St,Zip: Wailuku, 96793 96793 Latitude: Not reported Longitude: Not reported Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported Tank ID: Date Installed: Not reported Tank Status: Permanently Out of Use Date Closed: 01/30/1992 Tank Capacity: 500 Substance: Gasoline **EVA WINONA PASCHOAL** FINDS 1015876403 K58 318 NANILOA DRIVE NE N/A 1/2-1 WAILUKU, HI 96793 0.754 mi. 3979 ft. Site 2 of 2 in cluster K FINDS: Relative Lower Registry ID: 110055387200 Actual: 270 ft. Environmental Interest/Information System STATE MASTER

MAP FINDINGS

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Map ID

Direction

MAP FINDINGS Map ID Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation POLICE MOTOR POOL
MAIN STREET & NORTH HIGH STREET FINDS 1016403803 J59 North N/A 1/2-1 WAILUKU, HI 96793 0.754 mi. 3982 ft. Site 3 of 4 in cluster J FINDS: Relative: Lower Registry ID: 110055380966 335 ft. Environmental Interest/Information System STATE MASTER POLICE MOTOR POOL J60 HI UST U001237439 HIGH & MAIN ST North N/A 1/2-1 WAILUKU, HI 96793 0.754 mi. 3982 ft. Site 4 of 4 in cluster J UST: Relative: Facility ID: 9-501790 Lower Owner: COUNTY OF MAUI - POLICE DEPT Actual: 335 ft. Owner Address: 55 MAHALANI ST Owner City,St,Zip: Wailuku, 96793 96793 Latitude: Not reported Longitude: Not reported Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported Tank ID: Date Installed: 05/02/2046 Tank Status: Permanently Out of Use Date Closed: 02/27/1987 Tank Capacity: 2000 Substance: Gasoline Tank ID: R-2 Date Installed: 05/02/2046 Tank Status: Permanently Out of Use 02/27/1987 Date Closed: Tank Capacity: 2000 Substance: Gasoline WAILUKU CENTRAL OFFICE HI LUST U003222200 L61 NNE 60 S CHURCH ST HI UST 1/2-1 WAILUKU, HI 96793 HI Financial Assurance 0.764 mi. 4035 ft. Site 1 of 17 in cluster L LUST: Relative: Lower Facility ID: 9-500552 Facility Status: Site Cleanup Completed (NFA) Actual: Facility Status Date: 10/17/1997 300 ft. Release ID: 980003 Project Officer: Renato Maniulit

Map ID MAP FINDINGS
Direction
Distance EDR ID Number Elevation Site Database(s) EPA ID Number

WAILUKU CENTRAL OFFICE (Continued)

Horizontal Collection Method Name:

U003222200

UST:
Facility ID:
Owner:
Owner Address:
Owner City,St,Zip:
Latitude:
Longitude:
Horizontal Reference Datum Name:
NAD83

 Tank ID:
 R-M-1

 Date Installed:
 05/08/1971

Tank Status: Permanently Out of Use

Мар

 Date Closed:
 08/20/1996

 Tank Capacity:
 1000

 Substance:
 Diesel

Tank ID: R-M-2
Date Installed: 09/03/1996

Tank Status: Permanently Out of Use

Date Closed: 10/21/1999
Tank Capacity: 1000
Substance: Diesel

 Tank ID:
 m-1

 Date Installed:
 11/01/1999

 Tank Status:
 Currently In Use

 Date Closed:
 Not reported

 Tank Capacity:
 2500

 Substance:
 Diesel

HI Financial Assurance:

 Alt Facility ID:
 9-500552

 Tank Id:
 m-1

 Tank Status:
 Currently In Use

 FRTYPE:
 Other

 Expiration Date:
 Not reported

 Alt Facility ID:
 9-500552

Alt Facility ID: 9-500552

Tank Id: R-M-1

Tank Status: Permanently Out of Use FRTYPE: Other

Expiration Date: Not reported

Alt Facility ID: 9-500552
Tank Id: R-M-2

Tank Status: Permanently Out of Use FRTYPE: Other

Expiration Date: Not reported

Alt Facility ID: 9-500552

Tank Id: m-1

Tank Status: Currently In Idea

Tank Status: Currently In Use FRTYPE: Insurance

TC4529586.2s Page 51 TC4529586.2s Page 52

Direction FDR ID Number Distance Site Database(s) EPA ID Number Flevation WAILUKU CENTRAL OFFICE (Continued) U003222200 Expiration Date: 05/02/2015 Alt Facility ID: 9-500552 Tank Id: R-M-1 Tank Status: Permanently Out of Use FRTYPE: Insurance Expiration Date: 05/02/2015 Alt Facility ID: 9-500552 Tank Id: R-M-2 Tank Status: Permanently Out of Use FRTYPE: Insurance Expiration Date: 05/02/2015 KEHALANI UPPER LEVEL WATER SYSTEM 62 FINDS 1016380571 West N/A 1/2-1 MAUI (County), HI 0.766 mi. 4042 ft. FINDS: Relative: Higher Registry ID: 110055124413 Actual: 903 ft. Environmental Interest/Information System STATE MASTER M63 **HOAPILI HALE - MAUI JUDICIARY BUILDING** FINDS 1015828110 North 2145 MAIN STREET 1/2-1 WAILUKU, HI 96793 0.770 mi. 4066 ft. Site 1 of 5 in cluster M FINDS: Relative: Lower 110055390189 Registry ID: Actual: 319 ft. Environmental Interest/Information System STATE MASTER HOAPILI HALE - MAUI JUDICIARY BUILDING HI RGA LUST S116402071 M64 2145 MAIN ST. North N/A 1/2-1 WAILUKU, HI 0.770 mi. 4066 ft. Site 2 of 5 in cluster M RGA LUST: Relative: 2012 HOAPILI HALE - MAUI JUDICIARY BUILDING 2145 MAIN ST. Lower 2011 HOAPILI HALE - MAUI JUDICIARY BUILDING 2145 MAIN ST. HOAPILI HALE - MAUI JUDICIARY BUILDING 2145 MAIN ST. 319 ft. HOAPILI HALE - MAUI JUDICIARY BUILDING 2145 MAIN ST. 2009 2008 HOAPILI HALE - MAUI JUDICIARY BUILDING 2145 MAIN ST. HOAPILI HALE - MAUI JUDICIARY BUILDING 2145 MAIN ST.

MAP FINDINGS

Map ID

MAP FINDINGS Map ID Direction FDR ID Number Distance Database(s) EPA ID Number Elevation HOAPILI HALE - MAUI JUDICIARY BUILDING (Continued) S116402071 2006 HOAPILI HALE - MAUI JUDICIARY BUILDING 2145 MAIN ST. 2005 HOAPILI HALE - MAUI JUDICIARY BUILDING 2145 MAIN ST. HOAPILI HALE FINDS 1017373243 M65 2145 MAIN STREET North N/A 1/2-1 WAILUKU, HI 96793 0.770 mi. 4066 ft. Site 3 of 5 in cluster M FINDS: Relative: Lower Registry ID: 110061056413 Actual: 319 ft. Environmental Interest/Information System RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA. M66 HOAPILI HALE - MAUI JUDICIARY BUILDING HI LUST U003711776 North 2145 MAIN ST. HI Financial Assurance N/A 1/2-1 WAILUKU, HI 96793 0.770 mi. 4066 ft. Site 4 of 5 in cluster M LUST: Relative: Facility ID: 9-503536 Site Cleanup Completed (NFA) Facility Status: Facility Status Date: 02/25/2003 Actual: Release ID: 000001 Shunsheng Fu Project Officer: HI Financial Assurance: Alt Facility ID: 9-503536 Tank Id: M-2 Tank Status: Currently In Use FRTYPE: Other Expiration Date: Not reported Alt Facility ID: 9-503536 Tank Id: R-1 Tank Status: Permanently Out of Use FRTYPE: Other Expiration Date: Not reported

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 M67
 HOAPILI HALE
 RCRA-CESQG
 1016956271

 North
 2145 MAIN STREET
 HIR000142430

1/2-1 WAILUKU, HI 96793 0.770 mi.

4066 ft. Site 5 of 5 in cluster M

Relative: RCRA-CESQG:

Lower Date form received by agency: 08/12/2014
Facility name: HOAPILI HALE
Actual: Facility address: 2145 MAIN STREET
319 ft. MAIN INCLEDING 703

Contact: STEVEN A MORAR
Contact address: MAIN STREET SUITE 137
WAILUKU, HI 96793

Contact country: US

Contact telephone: (808) 244-2731

Contact email: STEVEN.A.MORAR@COURTS.HAWAII.GOV

EPA Region: 09

Classification: Conditionally Exempt Small Quantity Generator

Description: Handler: generates 100 kg or less of hazardous waste per calendar

month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely

hazardous waste

Owner/Operator Summary:

Owner/operator name: HI JUDICIARY
Owner/operator address: Not reported
Not reported
US
US

Owner/operator telephone: Not reported Legal status: State Owner/Operator Type: Operator Owner/Op start date: 03/07/1986 Owner/Op end date: Not reported

Owner/operator name: HI DAGS
Owner/operator address: P.O. BOX 119
HONOLULU, 96810

Owner/operator country:

Owner/operator country:

Owner/operator telephone:

Legal status:

Owner/Operator Type:

Owner

Owner/Operator Type: Owner
Owner/Op start date: 03/07/1986
Owner/Op end date: Not reported

HOAPILI HALE (Continued) 1016956271

Handler Activities Summary: U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: Nο On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner No Used oil fuel marketer to humen No Used oil Specification marketer: No Used oil transfer facility: No

 Used oil transporter:
 No

 . Waste code:
 D008

 . Waste name:
 LEAD

 . Waste code:
 D009

Violation Status: No violations found

MERCURY

 L68
 WAILUKU CENTRAL OFFICE
 HI RGA LUST
 \$116404452

 NNE
 60 S CHURCH ST
 N/A

1/2-1 WAILUKU, HI 0.785 mi.

4143 ft. Site 2 of 17 in cluster L

Waste name

 Relative: Lower
 RGA LUST:
 2012
 WAILUKU CENTRAL OFFICE
 60 S CHURCH ST

 2011
 WAILUKU CENTRAL OFFICE
 60 S CHURCH ST

 Actual: 295 ft.
 2010
 WAILUKU CENTRAL OFFICE
 60 S CHURCH ST

 205 ft.
 2009
 WAILUKU CENTRAL OFFICE
 60 S CHURCH ST

WAILLIKU CENTRAL OFFICE 2008 60 S CHURCH ST WAILUKU CENTRAL OFFICE 60 S CHURCH ST 2007 WAILUKU CENTRAL OFFICE 60 S CHURCH ST 2006 WAILUKU CENTRAL OFFICE 60 S CHURCH ST 2005 WAILUKU CENTRAL OFFICE 60 S CHURCH ST 2004 2003 WAILUKU CENTRAL OFFICE 60 S CHURCH ST WAILUKU CENTRAL OFFICE 60 S CHURCH ST 2002 2001 WAILUKU CENTRAL OFFICE 60 S CHURCH ST 1998

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MAP FINDINGS Map ID Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation WAILUKU CENTRAL OFFICE L69 FINDS 1016404015 60 SOUTH CHURCH STREET NNE N/A 1/2-1 WAILUKU, HI 96793 0.785 mi. 4143 ft. Site 3 of 17 in cluster L FINDS: Relative: Lower Registry ID: 110055383525 295 ft. Environmental Interest/Information System STATE MASTER GTE HAWAIIAN TEL L70 CA HAZNET \$113183404 60 S CHURCH ST NNE N/A 1/2-1 WAILUKU, HI 96793 0.785 mi. 4143 ft. Site 4 of 17 in cluster L HAZNET: Relative: envid: S113183404 Lower Actual: 295 ft. GEPAID: HIC981116044 Contact: HARLAN HASHIMOTO/ADMINISTRATOR Telephone: 8085462562 Mailing Name: Not reported Mailing Address: PO BOX 2200 Mailing City,St,Zip: HONOLULU, HI 968410000 Gen County: Not reported TSD EPA ID: CAT000646117 TSD County: Not reported Waste Category: Liquids with polychloronated biphenyls >= 50 Mg./L Disposal Method: Not reported 0.07 Tons: Cat Decode: Liquids with polychloronated biphenyls >= 50 Mg./L Method Decode: Not reported Facility County: envid: S113183404 Year: 1998 GEPAID: HIC981116044 Contact: GTE HAWAIIAN TEL Telephone: 0000000000 Mailing Name: Not reported Mailing Address: PO BOX 2200 Mailing City,St,Zip: HONOLULU, HI 968410000 Gen County: Not reported TSD EPA ID: CAD059494310 TSD County: Not reported Waste Category: . Off-specification, aged or surplus organics Disposal Method: Disposal, Other .1000 Tons: Cat Decode: Off-specification, aged or surplus organics Method Decode: Disposal, Other Facility County:

MAP FINDINGS Map ID Direction FDR ID Number Distance Database(s) EPA ID Number Elevation THE KIHEI RECYCLING AND REDEMPTION CENTER AT SOUTH MAUI COMM FINDS 1015796671 N71 2200 MAIN STREET North N/A 1/2-1 WAILUKU, HI 96793 0.791 mi. 4175 ft. Site 1 of 2 in cluster N FINDS: Relative Lower Registry ID: 110055382697 Actual: 333 ft. Environmental Interest/Information System STATE MASTER N72 COUNTY OF MAUI FINDS 1016698170 2200 MAIN STREET, SUITE 100 North N/A 1/2-1 WAILUKU, HI 96814 0.791 mi. 4175 ft. Site 2 of 2 in cluster N FINDS: Relative: Lower Registry ID: 110056348867 Actual: 333 ft. Environmental Interest/Information System US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality. MAUI LANI 76 -MAKO'S FINDS 1015940141 SE 129 MAA ST 1/2-1 KAHULUI, HI 96732 0.797 mi. Site 1 of 2 in cluster O 4209 ft. FINDS: Relative: Lower Registry ID: 110055401943 Actual: Environmental Interest/Information System STATE MASTER

TC4529586.2s Page 57 TC4529586.2s Page 57

Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation MAUI LANI 76 -MAKO'S 074 HI UST U004197585

HI Financial Assurance 129 MAA ST SE 1/2-1 KAHULUI, HI 96732 0.797 mi.

4209 ft. Site 2 of 2 in cluster O

UST: Relative: Lower

9-503924 Facility ID: Mid Pac Petroleum LLC Owner: Actual: 247 ft. Owner Address: 1100 Alakea St., 8th Floor Kahului, 96732 96732 Owner City,St,Zip:

Latitude: Not reported Longitude: Not reported Horizontal Reference Datum Name: Not reported

Horizontal Collection Method Name: Not reported Tank ID:

Date Installed: 02/13/2013 Tank Status: Currently in Use Date Closed: Not reported Tank Capacity: 12000 Gasoline Substance:

Tank ID:

02/13/2013 Date Installed: Currently In Use Tank Status: Date Closed: Not reported Tank Capacity: 7000 Gasoline Substance:

Tank ID: 02/13/2013 Date Installed: Tank Status: Currently In Use Date Closed: Not reported Tank Capacity: 5000 Substance: Diesel

HI Financial Assurance:

Alt Facility ID: 9-503924 Tank Id:

Tank Status: Currently in Use

FRTYPE: Insurance Expiration Date: 03/31/2015

Alt Facility ID: 9-503924 Tank Id: 2a

Tank Status: Currently In Use FRTYPE: Insurance Expiration Date: 03/31/2015

Alt Facility ID: 9-503924 Tank ld: 2b

Tank Status: Currently In Use FRTYPE: Insurance 03/31/2015 Expiration Date

Map ID MAP FINDINGS Direction EDR ID Number Distance Database(s) EPA ID Number Elevation ALVIN'S UPTOWN CHEVRON SERVICE STATION HI RGA HWS S116399552 L75 2085 WEST MAIN ST NNE N/A 1/2-1 WAILUKU HI 0.813 mi. 4293 ft. Site 5 of 17 in cluster L RGA HWS: Relative ALVIN'S UPTOWN CHEVRON SERVICE STATION 2085 WEST MAIN ST Lower ALVIN'S UPTOWN CHEVRON SERVICE STATION 2085 WEST MAIN ST ALVIN'S UPTOWN CHEVRON SERVICE STATION 2085 WEST MAIN ST 293 ft. ALVIN'S UPTOWN CHEVRON SERVICE STATION 2085 WEST MAIN ST ALVIN'S UPTOWN CHEVRON SERVICE STATION 2085 WEST MAIN ST L76 UPTOWN SERVICE HI LUST 1000344105 NNE 2085 MAIN ST HI UST N/A WAILUKU, HI 96793 1/2-1 HI Financial Assurance 0.813 mi. 4293 ft. Site 6 of 17 in cluster L LUST: Relative: Facility ID: 9-501128 Lower Facility Status Site Cleanup Completed (NFA) Actual: Facility Status Date: 01/04/2002 293 ft. Release ID: 990175 Project Officer: Richard Takaba UST: Facility ID: 9-501128 ALVIN MAKIMOTO Owner: UPTOWN SERVICE2085 MAIN ST Owner Address: Owner City,St,Zip: Wailuku, 96793 96793 Latitude: 20.887264 Lonaitude: -156 502780 Horizontal Reference Datum Name: NAD83 Horizontal Collection Method Name: GPS Tank ID: Date Installed 07/19/1983 Tank Status: Currently In Use Not reported Date Closed: 10000 Tank Capacity: Substance: Gasoline Tank ID: 2 Date Installed: 07/18/1977 Tank Status: Currently in Use Date Closed: Not reported Tank Capacity: 6000 Substance: Gasoline Tank ID: 07/19/1983 Date Installed: Tank Status: Currently in Use Date Closed: Not reported Tank Capacity: 10000 Substance: Gasoline

TC4529586.2s Page 59 TC4529586.2s Page 60 Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation

UPTOWN SERVICE (Continued) 1000344105

Tank ID: Date Installed: 07/19/1983 Tank Status: Currently in Use Date Closed: Not reported Tank Capacity: 10000 Gasoline Substance:

Tank ID: R-5

12/01/1982 Date Installed: Tank Status: Permanently Out of Use

Date Closed: 06/04/1997 Tank Capacity: 1000 Used Oil Substance:

HI Financial Assurance:

Alt Facility ID: 9-501128 Tank Id: Tank Status: Currently in Use FRTYPE: Not reported Expiration Date: Not reported

Alt Facility ID: 9-501128 Tank Id:

Tank Status: Permanently Out of Use

FRTYPE: Not reported Expiration Date: Not reported

Alt Facility ID: 9-501128 Tank Id: Tank Status: Currently in Use FRTYPE: Not reported Expiration Date: Not reported

Alt Facility ID: 9-501128 Tank Id: Tank Status: Currently in Use

FRTYPE: Not reported Expiration Date: Not reported

Alt Facility ID: 9-501128 Tank Id: Tank Status: Currently In Use

FRTYPE: Not reported Expiration Date: Not reported

Alt Facility ID: 9-501128 Tank Id: Tank Status: Currently in Use FRTYPE: Insurance

Expiration Date: 12/15/2015 Alt Facility ID: 9-501128 Tank Id:

Tank Status: Currently In Use FRTYPE: Insurance Expiration Date: 12/15/2015

Map ID MAP FINDINGS Direction EDR ID Number Distance Database(s) EPA ID Number Flevation

UPTOWN SERVICE (Continued) 1000344105

Alt Facility ID: 9-501128 Tank Id: Tank Status: Currently in Use FRTYPE: Insurance 12/15/2015 Expiration Date: Alt Facility ID: 9-501128

Tank Id: R-5

Tank Status: Permanently Out of Use FRTYPE: Insurance

12/15/2015 Expiration Date: Alt Facility ID: 9-501128 Tank Id: Tank Status: Currently in Use

FRTYPE: Insurance Expiration Date: 12/15/2015

L77 ALVIN'S UPTOWN CHEVRON SERVICE STATION HI SHWS S117391420 NNE 2085 W MAIN ST HI SPILLS N/A

1/2-1 WAILUKU, HI 96793 0.813 mi.

Site 7 of 17 in cluster L 4293 ft.

SHWS: Relative

293 ft

Organization: Not reported Lower Supplemental Location: Not reported Actual:

Island:

Environmental Interest: Hydraulic Hoist and Sand-and-Grease Trap Removal

HID Number: Not reported Facility Registry Identifier: 110006399922 Lead Agency: HEER Program: State Project Manager Diane England Hazard Priority: Potential Hazards And Controls: Hazard Undetermined

Organization: Not reported

Supplemental Location Text: Not reported

SDAR Environmental Interest Name: Hydraulic Hoist and Sand-and-Grease Trap Removal

HID Number: Not reported Facility Registry Identifier: 110006399922 Lead Agency: HEER Progran Name: State

Potential Hazard And Controls: Hazard Undetermined

Priority: NFA

Assessment: Response Necessary Response: Response Complete Nature of Contamination: Not reported Nature of Residual Contamination: Petroleum impacted soil

Undetermined Use Restrictions: Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control: Not reported Within Designated Areawide Contamination: Not reported

Site Closure Type: No Further Action Letter - Unrestricted Residential Use

Document Date: 04/28/2005 Document Number: 2005-185-DE Map ID MAP FINDINGS Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation

ALVIN'S UPTOWN CHEVRON SERVICE STATION (Continued)

S117391420

Document Subject: No Further Action Determination for Release No. 20031119-0831 Project Manager: Diane England

Contact Information: (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

HI SPILLS:

Island: Maui Supplemental Loc. Text: Not reported 20031119-0831 Case Number: HID Number: Not reported Facility Registry Id: 110006399922 Lead and Program: HEER EP&R FR: Not reported

Hydraulic Hoist Removal Units: Substances: Petroleum Hydrocarbon Less Or Greater Than: Not reported Numerical Quantity: Not reported

Units: Not reported Activity Type: Response Activity Lead: Marsha Graf Assignment End Date: 2005-04-18 00:00:00 Refer to ISST

File Under: Chevron Products Company

L78 EDR Hist Auto 1015316823 NNE 2085 MAIN ST

1/2-1 0.813 mi.

4293 ft. Site 8 of 17 in cluster L

WAILUKU, HI 96793

EDR Historical Auto Stations: Relative:

UPTOWN CHEVRON SERVICE INCORPORATED Name: 1999

Year. Actual: 2085 MAIN ST Address

293 ft.

UPTOWN CHEVRON SERVICE INC Name:

Year: 2001 2085 MAIN ST Address

UPTOWN CHEVRON SERVICE INC Name:

Address: 2085 MAIN ST

Name: UPTOWN FOOD MART & CAR WASH

2085 MAIN ST Address

UPTOWN CHEVRON FOOD MART & CAR Name:

Address: 2085 MAIN ST

Name: CHEVRON

2011 2085 MAIN ST Address:

Name CHEVRON 2085 MAIN ST Address:

Map ID MAP FINDINGS Direction EDR ID Number Distance Database(s) EPA ID Number Elevation

UPTOWN SERVICE INC RCRA-CESQG 1004688826 L79 2085 MAIN ST FINDS HID981983539 NNE

1/2-1 WAILUKU, HI 96793 0.813 mi.

4293 ft. Site 9 of 17 in cluster L RCRA-CESQG: Relative

Date form received by agency: 05/01/1987 Lower UPTOWN SERVICE INC Facility name:

Facility address: 2085 MAIN ST WAILUKU, HI 96793

EPA ID: HID981983539 ENVIRONMENTAL MANAGER Contact:

Contact address: 2085 MAIN ST

WAILUKU MAUI, HI 96793

Contact country: Contact telephone: (808) 244-0869 Contact email: Not reported

EPA Region:

Classification: Conditionally Exempt Small Quantity Generator Description

Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of

any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely

hazardous waste

Owner/Operator Summary:

CHEVRON Owner/operator name: Owner/operator address: NOT REQUIRED

NOT REQUIRED, ME 99999

Owner/operator country: Not reported Owner/operator telephone: (415) 555-1212 Legal status: Private Owner/Operator Type: Owner Owner/Op start date: Not reported Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED NOT REQUIRED Owner/operator address:

NOT REQUIRED, ME 99999 Owner/operator country: Not reported

Owner/operator telephone: (415) 555-1212 Legal status: Private Owner/Operator Type: Operator Owner/Op start date: Not reported Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No

TC4529586.2s Page 63 TC4529586.2s Page 64 Map ID Direction Distance Elevation Site Database(s) EDR ID Number EPA ID Number UPTOWN SERVICE INC (Continued) EDR 104688826

Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Transporter of hazardous waste: Treater, storer or disposer of HW: No Underground injection activity: On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: Nο User oil refiner: Nο Used oil fuel marketer to burner: No Used oil Specification marketer: No

Used oil transfer facility:

Used oil transporter:

Violation Status: No violations found

No

Nο

FINDS:

Registry ID: 110006399922

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

L80 UPTOWN SERVICE HI RGA LUST \$116404237
NNE 2095 MAIN ST N/A
1/2-1 WAILUKU, HI
0.813 mi.

2012 UPTOWN SERVICE 2085 MAIN ST

4293 ft. Site 10 of 17 in cluster L

Relative: RGA LUST: Lower

2011 UPTOWN SERVICE 2085 MAIN ST Actual: 2010 LIPTOWN SERVICE 2085 MAIN ST 293 ft. UPTOWN SERVICE 2085 MAIN ST 2009 2008 UPTOWN SERVICE 2085 MAIN ST 2007 UPTOWN SERVICE 2085 MAIN ST 2006 UPTOWN SERVICE 2085 MAIN ST 2005 UPTOWN SERVICE 2085 MAIN ST 2004 UPTOWN SERVICE 2085 MAIN ST 2003 UPTOWN SERVICE 2085 MAIN ST 2002 UPTOWN SERVICE 2085 MAIN ST 2001 UPTOWN SERVICE 2085 MAIN ST 2000 UPTOWN SERVICE 2085 MAIN ST 1999 UPTOWN SERVICE 2085 MAIN ST

MAP FINDINGS Map ID Direction EDR ID Number Distance Database(s) EPA ID Number Elevation MAUI SHELL SERVICE HI RGA LUST \$116402776 L81 2086 MAIN STREET NNE N/A 1/2-1 WAILUKU HI 0.819 mi. 4323 ft. Site 11 of 17 in cluster L RGA LUST: Relative 1995 MAUI SHELL SERVICE 2086 MAIN STREET Lower 1993 MAUI SHELL SERVICE 2086 MAIN STREET 295 ft. L82 MAUI SHELL SERVICE HI RGA LUST S116402777 2086 MAIN ST NNE 1/2-1 WAILUKU. HI 0.819 mi. Site 12 of 17 in cluster L 4323 ft. RGA LUST: Relative 1997 MAUI SHELL SERVICE 2086 MAIN ST Lower Actual 295 ft. L83 MINIT STOP SHELL MART HI RGA LUST \$116402915 NNE 2086 MAIN ST N/A 1/2-1 WAILUKU, HI 0.819 mi. 4323 ft. Site 13 of 17 in cluster L RGA LUST: Relative: 2001 MINIT STOP SHELL MART 2086 MAIN ST Lower MINIT STOP SHELL MART 2086 MAIN ST 2000 MINIT STOP SHELL MART Actual 2086 MAIN ST 1999 295 ft. 1998 MINIT STOP SHELL MART 2086 MAIN ST KUKUIULA WASTEWATER TREATMENT PLANT FINDS 1016056969 L84 2086 MAIN STREET NNE N/A WAILUKU, HI 96793 1/2-1 0 819 mi Site 14 of 17 in cluster L 4323 ft. FINDS: Relative: Lower Registry ID: 110013766683 Actual: 295 ft. Environmental Interest/Information System RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA. STATE MASTER

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MAP FINDINGS Map ID Direction FDR ID Number Distance Database(s) EPA ID Number Elevation Site COURTHOUSE SHELL HI RGA LUST \$116401218 L85 2086 MAIN ST NNE N/A 1/2-1 WAILUKU HI 0 819 mi 4323 ft. Site 15 of 17 in cluster L RGA LUST: Relative: 2012 COURTHOUSE SHELL 2086 MAIN ST Lower 2011 COURTHOUSE SHELL 2086 MAIN ST COURTHOUSE SHELL 2086 MAIN ST 295 ft. 2009 COURTHOUSE SHELL 2086 MAIN ST COURTHOUSE SHELL 2008 2086 MAIN ST COURTHOUSE SHELL 2007 2086 MAIN ST 2006 COURTHOUSE SHELL 2086 MAIN ST 2005 COURTHOUSE SHELL 2086 MAIN ST COURTHOUSE SHELL 2086 MAIN ST 2004 COURTHOUSE SHELL 2086 MAIN ST 2003 COURTHOUSE SHELL 2086 MAIN ST SHELL OIL CO RCRA-CESQG 1004688855 L86 2086 MAIN ST HID982445421 NNE WAILUKU, HI 96793 1/2-1 0 821 mi Site 16 of 17 in cluster L 4334 ft. RCRA-CESQG: Relative: Date form received by agency: 08/15/1993 Lower Facility name: SHELL OIL CO Actual: Facility address 2086 MAIN ST 296 ft. WAILUKU, HI 96793 EPA ID: HID982445421 Mailing address: P O BOX 4848 ANAHEIM, CA 92803 Contact: SONDRA BIENVENU Contact address: 2086 MAIN ST WAILUKU, HI 96793 Contact country: Contact telephone: (713) 241-2258 Contact email: Not reported EPA Region: Classification Conditionally Exempt Small Quantity Generator Handler: generates 100 kg or less of hazardous waste per calendar Description: month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste Owner/Operator Summary: Owner/operator name: SHELL OIL CO Owner/operator address: NOT REQUIRED NOT REQUIRED. ME 99999

Direction FDR ID Number Distance Site Database(s) FPA ID Number Elevation SHELL OIL CO (Continued) 1004688855 Owner/operator country: Not reported Owner/operator telephone: (415) 555-1212 Legal status: Owner/Operator Type: Owner Owner/Op start date: Not reported Owner/Op end date: Not reported Owner/operator name: NOT REQUIRED Owner/operator address: NOT REQUIRED NOT REQUIRED, ME 99999 Owner/operator country: Not reported Owner/operator telephone: (415) 555-1212 Legal status: Private Owner/Operator Type: Operator Owner/Op start date: Not reported Owner/Op end date: Not reported Handler Activities Summary: U.S. importer of hazardous waste: Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: Violation Status: No violations found L87 COURTHOUSE SHELL SS HILUST U001236712 NNE 2086 MAIN ST HI UST 1/2-1 WAILUKU, HI 96793 HI Financial Assurance 0.821 mi. 4334 ft. Site 17 of 17 in cluster L LUST: Relative: Facility ID: 9-501008 Facility Status: Site Cleanup Completed (NFA) Actual: Facility Status Date: 08/31/1995 Release ID: 920149 Project Officer: Jose Ruiz Facility ID: 9-501008 Facility Status Site Cleanup Completed (NFA) Facility Status Date: 02/29/2000 Release ID: 000056 Project Officer: Jose Ruiz UST: Facility ID: 9-501008 EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US Owner:

MAP FINDINGS

Map ID

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Map ID MAP FINDINGS Direction

EDR ID Number Distance Elevation Site Database(s) EPA ID Number

COURTHOUSE SHELL SS (Continued) U001236712

Owner Address: 2555 13TH AVE, SW Owner City,St,Zip: Wailuku, 96793 96793 20.887597 Longitude: -156.502870 Horizontal Reference Datum Name: NAD83 Address Matching

Horizontal Collection Method Name: Tank ID:

Date Installed: 06/30/1991 Tank Status: Permanently Out of Use 09/01/1999

Date Closed: Tank Capacity: 550 Used Oil Substance:

Tank ID: R-5 04/18/1962 Date Installed:

Tank Status: Permanently Out of Use

Date Closed: 06/30/1991 Tank Capacity: 550 Used Oil Substance:

Tank ID:

Date Installed: Not reported

Tank Status: Permanently Out of Use 06/30/1991 Date Closed:

R-6

4000 Tank Capacity: Substance: Gasoline

Tank ID: R-7 Date Installed:

Not reported Tank Status: Permanently Out of Use

06/30/1991 Date Closed: 4000

Tank Capacity: Gasoline Substance:

Tank ID: R-8 Date Installed:

Not reported Permanently Out of Use Tank Status:

Date Closed: 06/30/1991 Tank Capacity: 4000

Substance: Gasoline

Tank ID: r-87 Date Installed:

08/31/1979 Tank Status: Permanently Out of Use

Date Closed: 01/05/2004 Tank Capacity: 8000

Substance: Gasoline

Tank ID: r-89 Date Installed: 08/31/1979 Map ID MAP FINDINGS Direction Distance EDR ID Number Database(s) EPA ID Number Flevation

COURTHOUSE SHELL SS (Continued)

U001236712

Tank Status: Permanently Out of Use

Date Closed: 01/05/2004 Tank Capacity: 8000 Substance: Gasoline

Tank ID: r-92

Date Installed: 08/31/1979

Tank Status: Permanently Out of Use 01/05/2004

Date Closed: Tank Capacity: 8000 Substance: Gasoline

HI Financial Assurance:

Alt Facility ID: 9-501008 Tank Id: R-8

Tank Status: Permanently Out of Use

FRTYPE: Insurance Expiration Date: Not reported

Alt Facility ID: 9-501008

Tank Id: r-92

Permanently Out of Use Tank Status:

FRTYPE: Insurance Expiration Date: Not reported

Alt Facility ID: 9-501008 Tank Id: r-89

Tank Status: Permanently Out of Use

FRTYPE: Other

Expiration Date: Not reported

Alt Facility ID: 9-501008 Tank Id: r-89

Tank Status: Permanently Out of Use

FRTYPE: Insurance Expiration Date: Not reported

Alt Facility ID: 9-501008

Tank Id: r-87

Tank Status: Permanently Out of Use

FRTYPE: Other Expiration Date: Not reported

Alt Facility ID: 9-501008

Tank Id: r-92 Tank Status: Permanently Out of Use

FRTYPE: Other Expiration Date: Not reported

Alt Facility ID: 9-501008 Tank Id: R-8

Tank Status: Permanently Out of Use

FRTYPE: Other Expiration Date: Not reported

9-501008 Alt Facility ID:

TC4529586.2s Page 69 TC4529586.2s Page 70

FDR ID Number Distance Site Database(s) EPA ID Number Elevation

COURTHOUSE SHELL SS (Continued)

Tank Id:

Tank Status: Permanently Out of Use FRTYPE: Insurance

Expiration Date: Not reported

Alt Facility ID: 9-501008 Tank Id: R-6

Tank Status: Permanently Out of Use

FRTYPE: Other

Expiration Date: Not reported

Alt Facility ID: 9-501008 Tank Id: R-6

Tank Status: Permanently Out of Use

FRTYPE: Insurance

Expiration Date Not reported

Alt Facility ID: 9-501008

Tank Id: R-5

Permanently Out of Use Tank Status:

FRTYPE: Other Expiration Date: Not reported

Alt Facility ID: 9-501008 Tank Id: R-5

Tank Status: Permanently Out of Use

FRTYPF-Insurance

Expiration Date Not reported

Alt Facility ID:

9-501008 Tank Id: R-4

Tank Status: Permanently Out of Use

FRTYPF-Other Expiration Date: Not reported

Alt Facility ID: 9-501008 Tank Id: R-4

Tank Status: Permanently Out of Use

FRTYPF-Insurance

Expiration Date: Not reported

Alt Facility ID: 9-501008

Tank Id: r-87

Permanently Out of Use Tank Status:

FRTYPE: Insurance Expiration Date: Not reported

Alt Facility ID: 9-501008

Tank Id: R-7

Tank Status: Permanently Out of Use

FRTYPE: Other Expiration Date: Not reported Direction

Distance Database(s) Flevation

MAIN STREET PROMENADE PROJECT (DEMOLITION PHASE 1B) HI SHWS \$106818881 PRR NNE 2058 MAIN ST N/A

MAP FINDINGS

1/2-1 WAILUKU, HI

Map ID

Relative

0.831 mi.

4389 ft. Site 1 of 12 in cluster P SHWS:

Organization: Not reported Lower Supplemental Location: Not reported

Actual: Island: Maui Environmental Interest: Main Street Promenade Project (Demolition Phase 1B)

HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: Not reported Program: State Project Manager: Mike Cripps Hazard Priority: NFA

Potential Hazards And Controls: Hazard Undetermined

Organization: Not reported Island: Maui

Supplemental Location Text: Not reported

SDAR Environmental Interest Name: Main Street Promenade Project (Demolition Phase 1B)

HID Number: Not reported Facility Registry Identifier: Not reported Not reported Lead Agency: Progran Name: State

Potential Hazard And Controls: Hazard Undetermined

Priority: NFA Assessment:

Assessment Ongoing Response: Not reported Nature of Contamination: Not reported Nature of Residual Contamination: Not reported Use Restrictions: Undetermined Engineering Control: Not reported Description of Restrictions: Not reported Not reported Institutional Control:

Within Designated Areawide Contamination: Not reported No Further Action - Type Undetermined Site Closure Type:

09/01/2000 Document Date: Document Number Not reported Document Subject: Not reported Project Manager: Mike Cripps

(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814 Contact Information

P89 MAIN STREET PROMENADE PROJECT (DEMOLITION PHASE 1B) HI RGA HWS \$116400270 NNE 2058 MAIN ST N/A

1/2-1 WAILUKU, HI 0.831 mi.

Site 2 of 12 in cluster P 4389 ft.

RGA HWS: Relative

2012 MAIN STREET PROMENADE PROJECT (DEMOLITION PHASE 1B) 2058 Lower

MAIN ST

Actual: 2009 MAIN STREET PROMENADE PROJECT (DEMOLITION PHASE 1B) 2058 289 ft. MAIN ST

2008 MAIN STREET PROMENADE PROJECT (DEMOLITION PHASE 1B) 2058 MAIN ST

2006 MAIN STREET PROMENADE PROJECT (DEMOLITION PHASE 1B) 2058

MAIN ST

2005 MAIN STREET PROMENADE PROJECT (DEMOLITION PHASE 1B) 2058

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U001236712

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FDR ID Number

EPA ID Number

AIKAPU STREAM I NORTH CHURCH AILUKU, HI 96793 te 3 of 12 in cluster FINDS: Registry ID:	DRAINA STREET	GE OUTLET (1)			EDR ID Number EPA ID Number S116400270 1016403933 N/A
AIN STREET PROM AIKAPU STREAM IN NORTH CHURCH AILUKU, HI 96793 te 3 of 12 in cluster FINDS: Registry ID: Environmental In	DRAINA STREET	GE OUTLET (1) T 110055382580 information System	SE 1B) (Continued)	FINDS	S116400270 1016403933
AIKAPU STREAM I NORTH CHURCH AILUKU, HI 96793 te 3 of 12 in cluste FINDS: Registry ID: Environmental Ir	DRAINA STREET	GE OUTLET (1) T 110055382580 information System	SE 1B) (Continued)		1016403933
NORTH CHURCH AILUKU, HI 96793 te 3 of 12 in cluster FINDS: Registry ID: Environmental Ir	DRAINA STREET	GE OUTLET (1) T 110055382580			
NORTH CHURCH AILUKU, HI 96793 te 3 of 12 in cluster FINDS: Registry ID: Environmental Ir	STREET r P	110055382580			
FINDS: Registry ID: Environmental Ir	nterest/In	nformation System		FDD like A	
Registry ID: Environmental Ir		nformation System		EDD West A	
Environmental Ir		nformation System			
26 MAIN ST				EDD Hist A Co	
				EDD Hist A. C.	
,				EDR Hist Auto	1015308983 N/A
te 4 of 12 in cluste	- D				
EDR Historical Auto Name:	Station	is: VALLEY ISLE MOTORS LIMITEI)		
Year: Address:		2007 2026 MAIN ST			
26 MAIN ST AILUKU, HI		т		HI RGA HWS	S116400640 N/A
	r P				
NGA HWS.	2012 2009 2008 2006 2005		2026 MAIN ST 2026 MAIN ST 2026 MAIN ST 2026 MAIN ST 2026 MAIN ST		
DBERT JOSLIN 26 MAIN ST AILUKU, HI 96793				RCRA-CESQG HI SHWS HI LUST	1000601460 HID984466896
te 6 of 12 in cluste	r P			HI UST HI SPILLS	
	ed by ag				
		2026 MAIN ST WAILUKU, HI 96793 HID984466896 ROBERT JOSLIN			
2 A te F	6 MAIN ST ILUKU, HI 5 of 12 in cluster RGA HWS: BERT JOSLIN 6 MAIN ST ILUKU, HI 96793 9 of 12 in cluster RCRA-CESQG: CRA-CESQG: Facility nadress: Facility address: EPA ID: Contact:	16 MAIN ST ILLUKU, HI 2 5 of 12 in cluster P RGA HWS: 2012 2009 2008 2006 2005 BERT JOSLIN 6 MAIN ST ILLUKU, HI 96793 46 of 12 in cluster P RCRA-CESQG: Date form received by at Facility address: EPA ID: Contact:	### ACT OF CONTROL OF	16 MAIN ST	1.0 1.0

 Map ID
 MAP FINDINGS

 Direction
 EDR ID Number

 Distance
 ELevation

 Site
 Database(s)
 EPA ID Number

ROBERT JOSLIN (Continued)

1000601460

Contact country: US
Contact telephone: (808) 244-3980
Contact email: Not reported
EPA Region: 09
Land type: Private

Classification: Conditionally Exempt Small Quantity Generator

Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time;

or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely)

hazardous waste

No

Owner/Operator Summary:

Owner/operator name: ROBERT JOSLIN
Owner/operator address: 2026 MAIN ST

Owner/operator country: WAILUKU, HI 96793
Owner/operator telephone: (808) 244-3980

Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

Used oil transporter:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Nο Transporter of hazardous waste: Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Nο Furnace exemption: Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No

. Waste code: D000 . Waste name: Not Defined

. Waste code: D001

. Waste name: IGNITABLE WASTE

. Waste code: D008

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Map ID
Direction

MAP FINDINGS

| Distance | EDR ID Number | Elevation | Site | Database(s) | EPA ID Number |

ROBERT JOSLIN (Continued) 1000601460

. Waste name: LEAD

. Waste code: D018

. Waste name: BENZENE

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 01/19/1996

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation:
Date achieved compliance:
Evaluation lead agency:
Not reported
State

SHWS:

Organization: Not reported Supplemental Location: Not reported Island: Maui

Environmental Interest: Valley Isle Motors Leaking UST

HID Number: Not reported Facility Registry Identifier: 110005727516 SHWB Lead Agency: State Program: Project Manager: Melody Calisay Hazard Priority: NFA Potential Hazards And Controls: No Hazard Organization: Not reported Island: Maui Supplemental Location Text:

Supplemental Location Text: Not reported
SDAR Environmental Interest Name: Valley Isle Motors Leaking UST

 HID Number:
 Not reported

 Facility Registry Identifier:
 110005727516

 Lead Agency:
 SHWB

 Progran Name:
 State

Potential Hazard And Controls: No Hazard Priority: NFA

Assessment: Response Necessary
Response: Response Complete
Nature of Contamination: Found: Petroleum in soil

Nature of Residual Contamination: None

Use Restrictions: No Hazard Present for Unrestricted Residential Use

Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control: Not reported Within Designated Areawide Contamination: Not reported

Site Closure Type: No Further Action Letter - Unrestricted Residential Use

Document Date: 05/15/2003
Document Number: Not reported
Document Subject: Former Valley Isle Motors
Project Manager: Melody Calisay

Contact Information: (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

LUST:

Facility ID: 9-501588
Facility Status: Site Clean

Facility Status: Site Cleanup Completed (NFA)
Facility Status Date: 05/15/2003

Facility Status Date: 05/15/200 Release ID: 900024
 Map ID
 MAP FINDINGS

 Direction
 EDR ID Number

 Distance
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

ROBERT JOSLIN (Continued) 1000601460

Project Officer: Shunsheng Fu

Facility ID: 9-501588

Facility Status: Site Cleanup Completed (NFA)
Facility Status Date: 05/15/2003

Release ID: 010004
Project Officer: Shunsheng Fu

UST:

Facility ID: 9-501588

 Owner:
 VALLEY ISLE MOTORS, LTD.

 Owner Address:
 2026 MAIN St

 Owner City, St, Zip:
 Wailuku, 96793 96793

 Latitude:
 20.887813

 Longitude:
 1-56.502035

 Horizontal Reference Datum Name:
 NAD83

Horizontal Collection Method Name: Address Matching

 Tank ID:
 R-1

 Date Installed:
 04/22/1966

Tank Status: Permanently Out of Use

Date Closed: 05/10/1990
Tank Capacity: 1000
Substance: Used Oil

Tank ID: R-2

Date Installed: 04/22/1966
Tank Status: Permanently Out of Use

Date Closed: 05/10/1990
Tank Capacity: 1000
Substance: Used Oil

Tank ID: R-3

Date Installed: Not reported

Tank Status: Permanently Out of Use
Date Closed: 05/10/1990

Tank Capacity: 1000
Substance: Used Oil

Tank ID:

Date Installed: Not reported

Tank Status: Permanently Out of Use
Date Closed: 01/01/1990

Tank Capacity: 1000 Substance: Gasoline

Tank ID: R-7
Date Installed: Not i

Date Installed: Not reported
Tank Status: Permanently Out of Use

Date Closed: 10/01/2000
Tank Capacity: 300

Substance: Used Oil

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Map ID MAP FINDINGS Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation

r-5

ROBERT JOSLIN (Continued) 1000601460

Tank ID: Date Installed: Not reported

Tank Status: Permanently Out of Use

Date Closed: 01/01/1990 Tank Capacity: 300 Substance: Kerosene

Tank ID:

Date Installed: Not reported Tank Status: Permanently Out of Use

Date Closed: 01/01/1990 Tank Capacity: 1000 Gasoline Substance:

Tank ID:

r-6 Date Installed: Not reported

Tank Status: Permanently Out of Use

01/01/1990 Date Closed: Tank Capacity: 1000 Gasoline Substance:

HI SPILLS:

Island: Maui Supplemental Loc. Text: Not reported Case Number: 19990804-1500 HID Number: Not reported Facility Registry Id: 110005727516 Lead and Program: HEER EP&R

Units: Valley Isle Motors LUST

Substances:

Less Or Greater Than: Not reported Numerical Quantity: Not reported Units: Not reported Activity Type: Response Activity Lead: Bill Perry Assignment End Date: Not reported Refer to ISST Result: Valley Isle Motors File Under:

Island: Maui Supplemental Loc. Text: Not reported Case Number: 19990805-1343 HID Number: Not reported 110005727516 Facility Registry Id: Lead and Program: HEER EP&R

No

Units: Former Valley Isle Motors LUST

Substances: Not reported Less Or Greater Than: Not reported Numerical Quantity: Not reported Units: Not reported Activity Type: Response Activity Lead: Terry Corpus Assignment End Date: Not reported

Map ID MAP FINDINGS Direction EDR ID Number Distance Database(s) EPA ID Number Flevation ROBERT JOSLIN (Continued) 1000601460 Result: Refer to ISST File Under: Valley Isle Motors VALLEY ISLE MOTORS, LTD. HI RGA LUST S116404382 P94 NNE 2026 MAIN ST 1/2-1 WAILUKU, HI 0.847 mi. Site 7 of 12 in cluster P 4470 ft. RGA LUST: Relative 2012 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST Lower VALLEY ISLE MOTORS, LTD. 2026 MAIN ST Actual 2010 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST 281 ft. 2009 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST 2008 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST 2007 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST 2006 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST VALLEY ISLE MOTORS, LTD. 2026 MAIN ST 2004 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST VALLEY ISLE MOTORS, LTD. 2026 MAIN ST 2002 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST VALLEY ISLE MOTORS, LTD. 2026 MAIN ST 2000 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST VALLEY ISLE MOTORS, LTD. 2026 MAIN ST 1998 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST 1997 VALLEY ISLE MOTORS, LTD. 2026 MAIN ST P95 VALLEY ISLE MOTORS LTD FINDS 1016051741 NNE 2026 MAIN ST 1/2-1 WAILUKU, HI 96793 0.847 mi. 4470 ft. Site 8 of 12 in cluster P FINDS: Relative: Registry ID: 110005727516 Actual: Environmental Interest/Information System RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

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STATE MASTER

MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation VALLEY ISLE MOTORS, LTD. HI RGA LUST \$116404381 P96 2026 MAIN STREET NNE N/A 1/2-1 WAILUKU, HI 0.847 mi. 4470 ft. Site 9 of 12 in cluster P RGA LUST: Relative: 1995 VALLEY ISLE MOTORS, LTD. 2026 MAIN STREET Lower 1993 VALLEY ISLE MOTORS, LTD. 2026 MAIN STREET 281 ft. P97 KULAMALU HILLTOP SUBDIVISION FINDS 1016992773 2005 MAIN STREET NNE 1/2-1 WAILUKU, HI 96793 0.851 mi. Site 10 of 12 in cluster P 4494 ft. Relative: FINDS: Lower Registry ID: 110028076720 Actual: 277 ft. Environmental Interest/Information System STATE MASTER P98 KAMEHAMEHA SCHOOL MAUI CAMPUS DRIVEWAY FINDS 1015965290 NNE 1997 MAIN STREET N/A 1/2-1 WAILUKU, HI 96793 0.857 mi. 4524 ft. Site 11 of 12 in cluster P FINDS: Relative: Lower 110055399215 Registry ID: Actual: 275 ft. Environmental Interest/Information System STATE MASTER WAILUKU - MAUI LANI WELLS 7 FINDS 1016368656 99 ESE N/A 1/2-1 WAILUKU (DWS), HI 96761 0.858 mi 4532 ft. FINDS: Relative: Lower Registry ID: 110046190171 192 ft. Environmental Interest/Information System STATE MASTER

FDR ID Number Distance Site Database(s) EPA ID Number Elevation EDR Hist Auto 1015298405 Q100 NNE 1990 MAIN ST N/A 1/2-1 WAILUKU, HI 96793 0.867 mi. 4577 ft. Site 1 of 14 in cluster Q EDR Historical Auto Stations: Relative ALDENS AUTOMOTIVE SERVICE Name: Lower 2007 Year: Actual: Address: 1990 MAIN ST 273 ft. Name: ALDENS AUTOMOTIVE SERVICE Year: 2008 1990 MAIN ST Address: ALDENS AUTOMOTIVE SERVICE Name: Year: 2009 1990 MAIN ST Address: MAUI SCRAP METAL CO. RCRA NonGen / NLR 1000245009 R101 ENE 1791 WAIINU RD. HID056783624 WAILUKU, HI 96793 1/2-1 0.877 mi. 4630 ft. Site 1 of 2 in cluster R RCRA NonGen / NLR: Relative Date form received by agency: 07/23/1991 Lower Facility name: MAUI SCRAP METAL CO. Actual: 211 ft. Facility address: 1791 WAIINU RD. WAILUKU, HI 96793 EPA ID: HID056783624 Mailing address: PO BOX 1172 WAILUKU, HI 96793 Contact: Not reported Contact address: Not reported Not reported Contact country: Not reported Contact telephone: Not reported Contact email: Not reported EPA Region: Land type: Facility is not located on Indian land. Additional information is not known. Classification: Non-Generator Description: Handler: Non-Generators do not presently generate hazardous waste Owner/Operator Summary: Owner/operator name: MAUI SCRAP METAL CO. INC. Owner/operator address: PO BOX 1172 WAILUKU, HI 96793 Owner/operator country: Not reported Owner/operator telephone: (808) 244-0317 Legal status: Private Owner/Operator Type: Owner Owner/Op start date: Not reported Owner/Op end date: Not reported Owner/operator name: MAUI SCRAP METAL CO. INC. Owner/operator address: PO BOX 1172 CITY NOT REPORTED, HI 99999 Owner/operator country: Not reported TC4529586.2s Page 80

MAP FINDINGS

Map ID

Direction

TC4529586.2s Page 79

MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Flevation

MAUI SCRAP METAL CO. (Continued) 1000245009

Owner/operator telephone: (808) 244-0317 Legal status: Private Owner/Operator Type: Operator Owner/Op start date: Not reported Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Transporter of hazardous waste: Treater, storer or disposer of HW: No Underground injection activity: Nο On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: No

Historical Generators:

Date form received by agency: 08/18/1980

MAUI SCRAP METAL CO. Site name: Classification: Not a generator, verified

Facility Has Received Notices of Violations:

Regulation violated: FR - 262.10-12.A Area of violation: Generators - General Date violation determined: 03/05/1986

Date achieved compliance: 01/19/1996 Violation lead agency:

Enforcement action: WRITTEN INFORMAL

Enforcement action date: 06/19/1986 Enf. disposition status: Not reported Enf. disp. status date: Not reported Enforcement lead agency: EPA Proposed penalty amount: Not reported

Final penalty amount: Not reported Paid penalty amount: Not reported

Evaluation Action Summary:

01/10/2005 Evaluation date:

COMPLIANCE EVALUATION INSPECTION ON-SITE Evaluation: Area of violation: Not reported

Date achieved compliance: Not reported Evaluation lead agency: State

Evaluation date: 12/19/2003

Evaluation: FOLLOW-UP INSPECTION

Area of violation: Not reported Date achieved compliance: Not reported Evaluation lead agency:

Map ID MAP FINDINGS Direction FDR ID Number Distance Database(s) EPA ID Number Flevation

MAUI SCRAP METAL CO. (Continued)

Evaluation date: COMPLIANCE EVALUATION INSPECTION ON-SITE 1000245009

Evaluation: Area of violation: Not reported Date achieved compliance: Not reported Evaluation lead agency: State

Evaluation date: 03/05/1986

Evaluation: FOCUSED COMPLIANCE INSPECTION

Area of violation: Generators - General 01/19/1996 Date achieved compliance:

Evaluation lead agency:

Evaluation date: 03/05/1986

COMPLIANCE EVALUATION INSPECTION ON-SITE Evaluation:

Area of violation Not reported Date achieved compliance: Not reported Evaluation lead agency: State

Environmental Interest/Information System

MAUI SCRAP METAL CO. FINDS 1016110512 1791 WAIINU RD. N/A

WAILUKU. HI 96793 1/2-1 0.877 mi.

4630 ft. Site 2 of 2 in cluster R

FINDS: Relative

R102

ENE

Lower Registry ID:

110005723066 Actual: 211 ft.

> RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport,

and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and

corrective action activities required under RCRA.

MAALAEA TRIANGLE DEVELOPMENT PROJECT/MAALAEA HARBOR DRAINAGE FINDS 1016405442 S103

75 NORTH CHURCH STREET North

1/2-1 WAILUKU, HI 96793

0.881 mi. 4652 ft. Site 1 of 6 in cluster S

FINDS:

Relative: Lower

Registry ID: 110055400971 Actual: 306 ft.

Environmental Interest/Information System

STATE MASTER

TC4529586.2s Page 81 TC4529586.2s Page 82 Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation EDR Hist Cleaner 1015022806 104 23 KIEKIENA PL East N/A 1/2-1 KAHULUI, HI 96732 0.881 mi. 4653 ft. EDR Historical Cleaners: Relative: LILI LAUNDRY Name: Lower Year: 2009 Actual: 167 ft. Address: 23 KIEKIENA PL P105 1X ALULI TRUST ESTATE CA HAZNET \$113183265 31 N MARKET ST NNE N/A 1/2-1 WAILUKU, HI 96793 0.883 mi. Site 12 of 12 in cluster P 4664 ft. HAZNET: Relative: S113183265 Lower envid: 2002 Actual: GEPAID: HIC020104006 283 ft. Contact: JEFF Telephone: 8085721166 Mailing Name: Not reported Mailing Address: 31 N MARKET ST Mailing City,St,Zip: WAILUKU, HI 967930000 Gen County: Not reported TSD EPA ID: CAT000646117 TSD County: Not reported Waste Category: Tank bottom waste Disposal Method: Transfer Station 0.12 Cat Decode: Tank bottom waste Method Decode: Transfer Station Facility County: Q106 MAUI AUTO DETAILING HI UST U001236825 NNE 1955 MAIN ST 1/2-1 WAILUKU, HI 96793 0.884 mi. 4670 ft. Site 2 of 14 in cluster Q UST: Relative: Facility ID: 9-502203 MARGERET T. QUESNEL Owner: Actual: 259 ft. 7413 W. 83RD ST Owner Address: Wailuku, 96793 96793 Owner City, St, Zip: Latitude: Not reported Longitude: Not reported Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported Tank ID: R-001 Date Installed: Not reported Tank Status: Permanently Out of Use Date Closed: Not reported Tank Capacity: 400 Substance: Other

```
Map ID
                                                      MAP FINDINGS
Direction
                                                                                                           EDR ID Number
Distance
           Site
                                                                                              Database(s)
                                                                                                          EPA ID Number
Flevation
           MAUI AUTO DETAILING (Continued)
                                                                                                           U001236825
                Tank ID:
                                                     R-002
               Date Installed:
                                                     Not reported
                Tank Status:
                                                     Permanently Out of Use
               Date Closed:
                                                     Not reported
                                                     1000
                Tank Capacity:
                                                     Other
               Substance:
           MAUI AUTO DETAILING
                                                                                                   FINDS 1015813295
Q107
NNE
           1955 MAIN STREET
                                                                                                             N/A
1/2-1
           WAILUKU. HI 96793
0.884 mi.
4670 ft.
          Site 3 of 14 in cluster Q
Relative:
             FINDS:
Lower
               Registry ID:
                                          110055401881
Actual:
259 ft.
               Environmental Interest/Information System
                               STATE MASTER
Q108
           IMA HANADA TRUST
                                                                                                  HI UST U001236722
NNE
           1960 MAIN ST
                                                                                                             N/A
1/2-1
           WAILUKU, HI 96793
0.887 mi.
4685 ft.
           Site 4 of 14 in cluster Q
             UST:
Relative:
Lower
               Facility ID:
                                                     9-501268
                                                     IMA HANADA TRUST
               Owner:
               Owner Address:
                                                     1960 MAIN ST
Actual:
                                                     Wailuku, 96793 96793
               Owner City,St,Zip:
               Latitude:
                                                     Not reported
               Longitude:
                                                     Not reported
               Horizontal Reference Datum Name:
                                                     Not reported
               Horizontal Collection Method Name:
                                                     Not reported
                                                     P-1
               Tank ID:
               Date Installed:
                                                     Not reported
               Tank Status:
                                                     Permanently Out of Use
               Date Closed:
                                                     Not reported
               Tank Capacity:
                                                     Not reported
               Substance:
                                                     Other
               Tank ID:
                                                     P-2
               Date Installed:
                                                     Not reported
               Tank Status:
                                                     Permanently Out of Use
               Date Closed:
                                                     Not reported
               Tank Capacity:
                                                     Not reported
               Substance:
                                                     Other
               Tank ID:
                                                     P-3
               Date Installed:
                                                     Not reported
               Tank Status:
                                                     Permanently Out of Use
```

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MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Flevation IMA HANADA TRUST (Continued) U001236722 Date Closed: Not reported Tank Capacity: Not reported Substance: Other Tank ID: Date Installed: Not reported Tank Status: Permanently Out of Use Not reported Date Closed: Tank Capacity: Not reported Substance: Other Tank ID: P-5 Date Installed: Not reported Tank Status: Permanently Out of Use Date Closed: Not reported Tank Capacity: Not reported Other Substance: Q109 IMA HANADA TRUST FINDS 1015933072 NNE 1960 MAIN STREET N/A WAILUKU, HI 96793 1/2-1 0.887 mi. Site 5 of 14 in cluster Q 4685 ft. FINDS: Relative: Lower Registry ID: 110046154111 Actual: 261 ft. Environmental Interest/Information System STATE MASTER Q110 EDR Hist Auto 1015294831 NNE 1941 MAIN ST 1/2-1 WAILUKU, HI 96793 0.892 mi. 4712 ft. Site 6 of 14 in cluster Q EDR Historical Auto Stations: Relative: Name: MAGNUM AUTO BODY & PAINT SHOP 1941 MAIN ST Actual: Address 254 ft.

Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation JD PAINTING RCRA-SQG 1006806719 T111 70 KANOA ST NNE FINDS HIR000135111 1/2-1 WAILUKU, HI 96793 0.895 mi. 4724 ft. Site 1 of 4 in cluster T RCRA-SQG: Relative: Date form received by agency: 03/10/2003 Lower Facility name: JD PAINTING Facility address: 70 KANOA ST WAILUKU, HI 96793 EPA ID: HIR000135111 KANOA ST Mailing address: WAILUKU, HI 96793 MERRICK S IKEDA Contact: KANOA ST Contact address: WAILUKU, HI 96793 Contact country: Contact telephone: (808) 242-9731 Not reported Contact email: EPA Region: 09 Land type: Classification: Private Small Small Quantity Generator Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time Owner/Operator Summary: Owner/operator name: DOMINGUEZ LLC NO. J AND NO. L Owner/operator address: Not reported Not reported Owner/operator country: Owner/operator telephone: Not reported Legal status: Private Owner/Operator Type: Owner Owner/Op start date: 07/12/1999 Owner/Op end date: Not reported Owner/operator name: JD PAINTING AND DECORATING INC Owner/operator address: Not reported Not reported Owner/operator country: Owner/operator telephone: Not reported Legal status: Private Owner/Operator Type: Operator 07/16/1999 Owner/Op start date: Owner/Op end date: Not reported Handler Activities Summary: U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: Treater, storer or disposer of HW: No Underground injection activity: No

MAP FINDINGS

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No

On-site burner exemption:

Map ID

Map ID
Direction
Distance

 Distance
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

JD PAINTING (Continued) 1006806719

Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: No

. Waste code: D001

. Waste name: IGNITABLE WASTE

Waste code: F003

. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL

ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN FOOT, FOOZ, FOOA, AND FOOS, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENTS

MIXTURES.

. Waste code: F005 Waste name: THE

THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL

KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE,

2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN FO01, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF

THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Facility Has Received Notices of Violations:

Regulation violated: Not reported

Area of violation: State Statute or Regulation

Date violation determined: 08/19/2004 Date achieved compliance: 03/22/2006 Violation lead agency: State

Enforcement action: WRITTEN INFORMAL

Enforcement action date: 06/23/2005
Enf. disposition status: Not reported
Enf. disp. status date: Enforcement lead agency: State
Proposed penalty amount: Not reported
Paid penalty amount: Not reported
Not reported

Evaluation Action Summary:

Evaluation date: 03/02/2006

Evaluation: NOT A SIGNIFICANT NON-COMPLIER

Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/22/2005

Map ID MAP FINDINGS
Direction
Distance EDR ID Number
Elevation Site Database(s) FPA ID Number

JD PAINTING (Continued) 1006806719

Evaluation: SIGNIFICANT NON-COMPLIER

Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 08/19/2004

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: State Statute or Regulation

Date achieved compliance: 03/22/2006 Evaluation lead agency: State

FINDS:

Registry ID: 110014374989

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA

program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

 LOKAHI PACIFIC
 HI LUST
 U003402930

 1935 MAIN ST
 HI UST
 N/A

Q112 LOKAHI PACIFIC NNE 1935 MAIN ST 1/2-1 WAILUKU, HI 96793 0.896 mi.

4731 ft. Site 7 of 14 in cluster Q

Relative: LUST:

Actual:

Lower Facility ID: 9-501603

Facility Status: Site Cleanup Completed (NFA)
Facility Status Date: 02/29/2000
Release ID: 980218
Project Officer: Jose Ruiz

Facility ID: 9-501603

Facility Status: Site Cleanup Completed (NFA)

Facility Status Date: 02/29/2000 Release ID: 990141

Project Officer: Jose Ruiz

UST:

Facility ID: 9-501603 Owner: LOKAHI PACIFIC 840 ALUA ST, RM 203 Owner Address: Wailuku, 96793 96793 Owner City, St, Zip: Latitude: 20.887930 -156.500481 Lonaitude: Horizontal Reference Datum Name: NAD83 Horizontal Collection Method Name: Address Matching

Tank ID: R-1

Date Installed: Not reported

Tank Status: Permanently Out of Use

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TC4529586.2s Page 87

MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Flevation LOKAHI PACIFIC (Continued) U003402930 Date Closed: 03/18/1995 Tank Capacity: 1000 Substance: Gasoline Tank ID: R-2 Date Installed: Not reported Tank Status: Permanently Out of Use Date Closed: 03/18/1995 Tank Capacity: 500 Substance: Gasoline Tank ID: R-3 Date Installed: Not reported Tank Status: Permanently Out of Use Date Closed: 03/18/1995 Tank Capacity: 1000 Gasoline Substance: Tank ID: R-4 Date Installed: Not reported Tank Status: Permanently Out of Use Date Closed: 07/29/1998 Tank Capacity: 560 Substance: Diesel LOKAHI PACIFIC HI RGA LUST S116402671 Q113 1935 MAIN ST NNF N/A WAILUKU, HI 1/2-1 0 896 mi 4731 ft. Site 8 of 14 in cluster Q RGA LUST Relative: 2012 LOKAHI PACIFIC 1935 MAIN ST Lower LOKAHI PACIFIC 1935 MAIN ST Actual: LOKAHI PACIFIC 1935 MAIN ST 253 ft. 2009 LOKAHI PACIFIC 1935 MAIN ST LOKAHI PACIFIC 1935 MAIN ST 2008 2007 LOKAHI PACIFIC 1935 MAIN ST LOKAHI PACIFIC 1935 MAIN ST 2005 LOKAHI PACIFIC 1935 MAIN ST 2004 LOKAHI PACIFIC 1935 MAIN ST LOKAHI PACIFIC 1935 MAIN ST 2003 LOKAHI PACIFIC 2002 1935 MAIN ST 2001 LOKAHI PACIFIC 1935 MAIN ST LOKAHI PACIFIC 1935 MAIN ST 1999 LOKAHI PACIFIC 1935 MAIN ST

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Map ID
                                                       MAP FINDINGS
Direction
                                                                                                              FDR ID Number
Distance
           Site
                                                                                                Database(s)
                                                                                                             EPA ID Number
Elevation
           CUTTER NISSAN
                                                                                       RCRA NonGen / NLR 1000401589
Q114
           1935 MAIN ST
NNE
                                                                                                     FINDS HID981637986
1/2-1
           WAILUKU, HI 96793
0.896 mi.
4731 ft.
           Site 9 of 14 in cluster Q
              RCRA NonGen / NLR:
Relative:
                Date form received by agency: 01/16/1987
Lower
                Facility name:
                                           CUTTER NISSAN
                Facility address:
                                            1935 MAIN ST
                                           WAILUKU, HI 96793
                EPA ID:
                                            HID981637986
                Mailing address:
                                           MAIN ST
                                           WAILUKU. HI 96793
                                           ENVIRONMENTAL MANAGER
                Contact:
                                           1935 MAIN ST
                Contact address:
                                           WAILUKU, HI 96793
                Contact country:
                Contact telephone:
                                           (808) 244-7433
                Contact email:
                                           Not reported
                EPA Region:
                                           Facility is not located on Indian land. Additional information is not known.
                Land type:
                Classification:
                                           Non-Generator
                                           Handler: Non-Generators do not presently generate hazardous waste
                Description:
              Owner/Operator Summary:
                Owner/operator name:
                                            CORPORATION
                Owner/operator address:
                                           NOT REQUIRED
                                           NOT REQUIRED, ME 99999
                Owner/operator country:
                                           Not reported
                Owner/operator telephone:
                                           (415) 555-1212
                Legal status:
                                            Private
                Owner/Operator Type:
                                            Owner
                Owner/Op start date:
                                            Not reported
                Owner/Op end date:
                                            Not reported
                                            NOT REQUIRED
                Owner/operator name:
                Owner/operator address:
                                           NOT REQUIRED
                                            NOT REQUIRED, ME 99999
                Owner/operator country:
                                            Not reported
                Owner/operator telephone:
                                           (415) 555-1212
                Legal status:
                                            Private
                Owner/Operator Type:
                                           Operator
                Owner/Op start date:
                                            Not reported
                Owner/Op end date:
                                            Not reported
              Handler Activities Summary:
                U.S. importer of hazardous waste: No
                Mixed waste (haz. and radioactive): No
                Recycler of hazardous waste:
                                                 No
                Transporter of hazardous waste:
                Treater, storer or disposer of HW:
                                                 No
                Underground injection activity:
                                                 No
                On-site burner exemption:
                                                 No
                Furnace exemption:
                                                 No
                Used oil fuel burner:
                                                 No
                Used oil processor:
                                                 No
                User oil refiner:
                                                 No
```

TC4529586.2s Page 89 TC4529586.2s Page 90

MAP FINDINGS Map ID Direction FDR ID Number Distance Database(s) EPA ID Number Flevation Site **CUTTER NISSAN (Continued)** 1000401589

Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: Used oil transporter: No

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 01/19/1996

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Not reported Date achieved compliance: Not reported Evaluation lead agency: State

FINDS:

Registry ID: 110005724298

Environmental Interest/Information System

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corrective action activities required under RCRA.

STATE MASTER

EDR Hist Auto 1015281572 T115 1820 WELLS ST NNE N/A

1/2-1 WAILUKU, HI 96793 0.896 mi.

4731 ft.

Site 2 of 4 in cluster T

EDR Historical Auto Stations: Relative UNITED AUTO PARTS Name: Lower

Actual: 214 ft

1820 WELLS ST

Address:

Name:

UNITED AUTO PARTS 2012 Year: Address: 1820 WELLS ST

HI RGA HWS \$116399317

North 2102 VINEYARD ST 1/2-1 WAILUKU, HI

0.896 mi. 4733 ft. Site 2 of 6 in cluster S

RGA HWS Relative: 2000 TLAZZARO 2102 VINEYARD ST Lower

Actual: 303 ft.

S116

Direction FDR ID Number Distance Database(s) EPA ID Number Elevation 2102 VINEYARD ST. FINDS 1016403859 S117 2102 WEST VINEYARD STREET North N/A 1/2-1 WAILUKU, HI 96793 0.896 mi. 4733 ft. Site 3 of 6 in cluster S FINDS: Relative Lower Registry ID: 110055381616 Actual: 303 ft. Environmental Interest/Information System STATE MASTER MAUI VINEYARD INN, UST CLOSURE S118 HI RGA HWS S116400294 2102 VINEYARD ST North N/A 1/2-1 WAILUKU. HI 0.896 mi. 4733 ft. Site 4 of 6 in cluster S RGA HWS: Relative: MAUI VINEYARD INN, UST CLOSURE 2102 VINEYARD ST Lower MAUI VINEYARD INN, UST CLOSURE 2102 VINEYARD ST Actual MAUI VINEYARD INN, UST CLOSURE 2102 VINEYARD ST 303 ft. 2006 MAUI VINEYARD INN, UST CLOSURE 2102 VINEYARD ST 2005 MAUI VINEYARD INN, UST CLOSURE 2102 VINEYARD ST S119 2102 VINEYARD ST. HI RGA LUST \$116400723 2102 VINEYARD ST North 1/2-1 WAILUKU, HI 0.896 mi. 4733 ft. Site 5 of 6 in cluster S RGA LUST: Relative: 2006 2102 VINEYARD ST. 2102 VINEYARD ST Lower 2102 VINEYARD ST 2102 VINEYARD ST. 2005 Actual: 2102 VINEYARD ST 2102 VINEYARD ST 2004 303 ft. 2102 VINEYARD ST 2102 VINEYARD ST 2003 2002 2102 VINEYARD ST 2102 VINEYARD ST 2102 VINEYARD ST. 2102 VINEYARD ST 2001 2102 VINEYARD ST 2102 VINEYARD ST. 2000 2102 VINEYARD ST 2102 VINEYARD ST. 1999 1998 2102 VINEYARD ST 2102 VINEYARD ST 1997 2102 VINEYARD ST. 2102 VINEYARD ST PACIFIC AMUSEMENT CO., LTD. HI UST U003541878 Q120 1942 MAIN ST NNF N/A WAILUKU, HI 96793 1/2-1 0.897 mi. 4738 ft. Site 10 of 14 in cluster Q UST: Relative: Facility ID: 9-500409 Lower KURISU & FERGUS Owner: 1000 BISHOP ST, SUITE 310 Owner Address: 256 ft. Owner City,St,Zip: Wailuku, 96793 96793 Latitude: Not reported Not reported Lonaitude: Horizontal Reference Datum Name: Not reported

MAP FINDINGS

Map ID

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N/A

TC4529586.2s Page 92

MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation PACIFIC AMUSEMENT CO., LTD. (Continued) U003541878 Horizontal Collection Method Name: Not reported Tank ID: Date Installed: 04/21/2041 Tank Status: Permanently Out of Use Date Closed: 03/14/1990 Tank Capacity: 550 Substance: Gasoline Q121 PACIFIC AMUSEMENT CO., LTD. FINDS 1015797779 NNE 1942 MAIN STREET N/A 1/2-1 WAILUKU, HI 96793 0.897 mi. 4738 ft. Site 11 of 14 in cluster Q FINDS: Relative: Lower Registry ID: 110055405075 Actual: 256 ft. Environmental Interest/Information System STATE MASTER Q122 TAKITANI BUILDING HI UST U001236821 NNE 1940 MAIN ST, STE 1355 1/2-1 WAILUKU, HI 96793 0.898 mi. 4744 ft. Site 12 of 14 in cluster Q UST: Relative: 9-501913 Facility ID: KURISU & FERGUS Owner Actual: 1000 BISHOP ST, SUITE 310 Owner Address: 255 ft. Wailuku, 96793 96793 Owner City,St,Zip: Latitude: Not reported Longitude: Not reported Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported Tank ID: R-001 Date Installed: Not reported Tank Status: Permanently Out of Use Date Closed: 03/14/1990 Tank Capacity: Not reported Substance: Gasoline

Map ID MAP FINDINGS Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation DICKS FUMIGATION SERVICE INC RCRA NonGen / NLR 1000272237 Q123 **1940 MAIN ST** FINDS HID077662575 NNE 1/2-1 WAILUKU, HI 96793 0.898 mi. 4744 ft. Site 13 of 14 in cluster Q RCRA NonGen / NLR: Relative: Date form received by agency: 12/10/1993 Lower Facility name: DICKS FUMIGATION SERVICE INC Actual: Facility address: 1940 MAIN ST WAILUKU, HI 96793 EPA ID: HID077662575 ENVIRONMENTAL MANAGER Contact: Contact address: 1940 MAIN ST WAILUKU MAUI, HI 96793 Contact country: Contact telephone: (808) 244-7496 Contact email: Not reported EPA Region: 09 Classification: Non-Generator Handler: Non-Generators do not presently generate hazardous waste Description: Owner/Operator Summary: Owner/operator name: NOT REQUIRED Owner/operator address: NOT REQUIRED NOT REQUIRED, ME 99999 Owner/operator country: Not reported Owner/operator telephone: (415) 555-1212 Legal status: Private Owner/Operator Type: Operator Owner/Op start date: Not reported Owner/Op end date: Not reported Owner/operator name: K TAKITANI ENTERPRISES Owner/operator address: NOT REQUIRED NOT REQUIRED, ME 99999 Owner/operator country: Not reported Owner/operator telephone: (415) 555-1212 Legal status: Private Owner/Operator Type: Owner Owner/Op start date: Not reported Owner/Op end date: Not reported Handler Activities Summary: U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No

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MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation

DICKS FUMIGATION SERVICE INC (Continued) 1000272237

Used oil transporter:

Violation Status No violations found

FINDS:

110006399799 Registry ID:

Environmental Interest/Information System

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corrective action activities required under RCRA.

Q124 TAKITANI BUILDING FINDS 1015965434 NNE 1940 MAIN STREET #1355 N/A

1/2-1 WAILUKU, HI 96793 0.898 mi.

4744 ft. Site 14 of 14 in cluster Q

FINDS: Relative:

110046165886 Registry ID:

Actual: 255 ft. Environmental Interest/Information System

STATE MASTER

BLUE & WHITE BUS LINE, LTD. T125 HI UST U001236745 60 KANOA ST NNE N/A

1/2-1 WAILUKU, HI 96793 0 905 mi 4776 ft. Site 3 of 4 in cluster T

UST: Relative:

Facility ID: Lower

BLUE & WHITE BUS LINE, LTD. Owner: Actual: Owner Address: 140 KAULAWAHINE St 214 ft. Owner City,St,Zip: Wailuku, 96793 96793 Latitude: Not reported

Longitude: Not reported Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported

Tank ID:

Date Installed: Not reported

Tank Status: Permanently Out of Use Date Closed: Not reported

Tank Capacity: Not reported Gasoline Substance:

Map ID MAP FINDINGS Direction

FDR ID Number Distance Site Database(s) EPA ID Number Elevation

BLUE & WHITE BUS LINE, LTD. FINDS 1015843587 T126 60 KANOA STREET NNE N/A

110055382009

1/2-1 WAILUKU, HI 96793 0.905 mi.

4776 ft. Site 4 of 4 in cluster T

FINDS: Relative: Lower

Registry ID:

Actual: 214 ft. Environmental Interest/Information System

STATE MASTER

S127 2102 VINEYARD ST. HI SHWS U003222271 2102 VINEYARD ST North HI UST 1/2-1 WAILUKU, HI 96793 HI Financial Assurance

0.909 mi. 4797 ft. Site 6 of 6 in cluster S

SHWS: Relative:

Organization: Not reported Lower Supplemental Location: Not reported Actual:

Island: Maui

299 ft. Environmental Interest: Vineyard Street Tank Closure

HID Number: Not reported Facility Registry Identifier: 110013766656 Lead Agency: HEER Program: State Project Manager: Paul Chong Hazard Priority: Potential Hazards And Controls: No Hazard Organization: Not reported Island:

Supplemental Location Text: Not reported SDAR Environmental Interest Name: Vineyard Street Tank Closure

HID Number: Not reported Facility Registry Identifier: 110013766656 Lead Agency: HEER Progran Name: State Potential Hazard And Controls: No Hazard Priority:

Assessment: Response Necessary Response: Response Complete Nature of Contamination: Not reported Nature of Residual Contamination: Petroleum in soil

No Hazard Present For Unrestricted Residential Use Use Restrictions:

Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control: Not reported Within Designated Areawide Contamination: Not reported

Site Closure Type: No Further Action Letter - Unrestricted Residential Use 04/01/2011 Document Date:

2011-196-PC Document Number

Document Subject: No Further Action Determination for Removal of Underground Fuel Tank

located at 2102 Vineyard St, da

Project Manager: Paul Chong

(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814 Contact Information:

TC4529586.2s Page 95 TC4529586.2s Page 96 Map ID MAP FINDINGS
Direction
Distance EDR ID Number
Elevation Site Database(s) EPA ID Number

2102 VINEYARD ST. (Continued) U003222271

UST:

 Facility ID:
 9-503115

 Owner:
 RALPH KATO

 Owner Address:
 1063 L OWER MAIN ST

 Owner City, St, Zip:
 Wailuku, 96793 96793

 Latitude:
 Not reported

 Longitude:
 Not reported

Horizontal Reference Datum Name: Not reported
Horizontal Collection Method Name: Not reported

Tank ID: R-1
Date Installed: Not reported

Tank Status: Permanently Out of Use

Date Closed: 10/05/1995
Tank Capacity: 550
Substance: Diesel

HI Financial Assurance:

Alt Facility ID: 9-503115
Tank Id: R-1

Tank Status: Permanently Out of Use FRTYPE: Insurance

STATE MASTER

Expiration Date: Insurance Not reported

U128 WAILUKU - MOKUHAU WELL 1 FINDS 1016368658 NNW 1016368658

1/2-1 WAILUKU (DWS), HI 96761 0.921 mi.

4861 ft. Site 1 of 3 in cluster U

Relative: FINDS:

Lower

V129 LONGS DRUG STORE NO 4496 FINDS 1014697284

NNE 1900 MAIN ST 1/2-1 WAILUKU, HI 96793 0.922 mi.

4868 ft. Site 1 of 2 in cluster V

Relative: FINDS:

Lower Registry ID: 110043230349

Actual: 244 ft. Environmental Interest/Information System

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corrective action activities required under RCRA.

Map ID MAP FINDINGS
Direction

 Distance
 Elevation
 Site
 EDR ID Number
 EPA ID Number

 EPA ID Number
 EPA ID Number

LONGS DRUG STORE NO 4496 (Continued)

1014697284

TC4529586.2s Page 98

STATE MASTER

 V130
 LONGS DRUG STORE NO 4496
 RCRA-CESQG
 1014389659

 NNE
 1900 MAIN ST
 HIR000140061

NNE 1900 MAIN ST 1/2-1 WAILUKU, HI 96793 0.922 mi.

4868 ft. Site 2 of 2 in cluster V

Relative: RCRA-CESQG:
Lower Date form received by agency: 10/05/2012

Facility name: LONGS DRUG STORE NO 4496

Actual: Facility address: 1900 MAIN ST 244 ft. #4

#4 WAILUKU, HI 96793

 EPA ID:
 HIR000140061

 Mailing address:
 ONE CVS DRIVE

 WOONSOCKET, RI 02895

 Contact:
 WENDY L BRANT

Contact address: ONE CVS DRIVE
WOONSOCKET, RI 02895

Contact country: US

Contact telephone: (401) 765-1500
Contact email: WENDY.BRANT@CVSCAREMARK.COM

EPA Region:

Classification: Conditionally Exempt Small Quantity Generator

Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar

month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste to 0 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely

hazardous waste

Owner/Operator Summary:

Owner/operator name: 1900 LLC

Owner/operator address: 81 MAKAWAO AVE #106 PUKALANI, HI 96768

Owner/operator country: US

Owner/operator telephone: (808) 572-2590
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 10/22/2008
Owner/Op end date: Not reported

Owner/operator name: LONGS DRUG STORES CALIFORNIA, L.L.C

Owner/operator address: Not reported Not reported US
Owner/operator country: US
Owner/operator telephone: Not reported

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MAP FINDINGS Map ID Direction Distance

Database(s)

LONGS DRUG STORE NO 4496 (Continued) 1014389659

Legal status: Private Owner/Operator Type: Operator 10/22/2008 Owner/Op start date: Owner/Op end date: Not reported

Handler Activities Summary:

Elevation Site

> U.S. importer of hazardous waste: Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Transporter of hazardous waste: No Treater, storer or disposer of HW: Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: No

Waste code: D001

Waste name: IGNITABLE WASTE

Waste code: D002

Waste name: CORROSIVE WASTE

Waste code: Waste name: CADMIUM

Waste code: D007 CHROMIUM Waste name:

D009 Waste code: Waste name: MERCURY

D010 Waste code: SELENIUM Waste name:

Waste code:

Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS,

WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, &

SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

Waste code:

1,2-BENZENEDIOL, 4-[1-HYDROXY-2-(METHYLAMINO)ETHYL]-, (R)- (OR) Waste name:

EPINEPHRINE

Waste code: P075

NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & Waste name:

SALTS

Waste code: P081

1,2,3-PROPANETRIOL, TRINITRATE (R) (OR) NITROGLYCERINE (R) Waste name

MAP FINDINGS Map ID Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation

LONGS DRUG STORE NO 4496 (Continued)

Historical Generators:

Date form received by agency: 11/01/2010

Site name: LONGS DRUG STORE NO 4496

Classification: Conditionally Exempt Small Quantity Generator

Waste code: D001

IGNITABLE WASTE Waste name:

Waste code: D002

CORROSIVE WASTE Waste name

Waste code: D011 Waste name: SILVER

Waste code: P001

2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, Waste name:

WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, &

1014389659

SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

Waste code:

Waste name: 1,2-BENZENEDIOL, 4-[1-HYDROXY-2-(METHYLAMINO)ETHYL]-, (R)- (OR)

EPINEPHRINE

110055383482

Waste code:

NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & Waste name:

SALTS

Waste code:

1,2,3-PROPANETRIOL, TRINITRATE (R) (OR) NITROGLYCERINE (R) Waste name:

Violation Status: No violations found

U131 WAILUKU - MOKUHAU WELL 2 FINDS 1016404012 NNW

1/2-1 WAILUKU (DWS), HI 96761 0.925 mi. 4883 ft. Site 2 of 3 in cluster U

Relative: FINDS: Lower

Registry ID:

Actual: 356 ft. Environmental Interest/Information System STATE MASTER

U132 WAILUKU - MOKUHAU WELL 3 FINDS 1016368659 N/A

NNW

1/2-1 WAILUKU (DWS), HI 96761 0.928 mi.

4898 ft. Site 3 of 3 in cluster U

FINDS: Relative: Lower

110046190215 Registry ID: Actual: 355 ft. Environmental Interest/Information System

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EDR ID Number

EPA ID Number

MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation WAILUKU - MOKUHAU WELL 3 (Continued) 1016368659 STATE MASTER MAUI COUNTY WAILUKU FIRE STATION HI LUST U003155131 W133 NNE 21 KINIPOPO ST HI UST N/A 1/2-1 WAILUKU, HI 96793 HI SPILLS 0.945 mi. 4991 ft. Site 1 of 4 in cluster W LUST: Relative: Lower Facility ID: 9-502764 Site Cleanup Completed (NFA) Facility Status: Actual: Facility Status Date: 11/08/2001 234 ft. Release ID: 930113 Project Officer: Jose Ruiz UST: Facility ID: 9-502764 COUNTY OF MAUI - FIRE PREVENTION BUREAU Owner: 21 KINIPOPO ST Owner Address: Owner City,St,Zip: Wailuku, 96793 96793 20.888057 Latitude: Longitude: -156.498757 Horizontal Reference Datum Name: NAD83 Horizontal Collection Method Name: Address Matching Tank ID: R-1 Date Installed: Not reported Tank Status: Permanently Out of Use Date Closed: 06/01/1993 Tank Capacity: Not reported Substance: Not Listed HI SPILLS: Island: Maui Supplemental Loc. Text: Not reported Case Number: 20100429-0940 HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R ER: None Units: Mercury Disposal Substances: Mercury Less Or Greater Than: Not reported Numerical Quantity: Units: Pounds Activity Type: Response Activity Lead: Liz Galvez 2010-04-29 00:00:00 Assignment End Date: SOSC NFA Result: File Under: Not reported

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Map ID
                                                 MAP FINDINGS
Direction
                                                                                                  FDR ID Number
Distance
          Site
                                                                                     Database(s)
                                                                                                 EPA ID Number
Elevation
          WAILUKU FIRE STATION
                                                                                          FINDS 1015894733
W134
          21 KINIPOPO STREET
NNE
                                                                                                   N/A
1/2-1
          WAILUKU, HI 96793
0.945 mi.
4991 ft.
          Site 2 of 4 in cluster W
            FINDS:
Relative:
Lower
              Registry ID:
                                       110055383543
Actual:
234 ft.
              Environmental Interest/Information System
                            STATE MASTER
W135
          WAILUKU FIRE STATION
                                                                                    HI RGA LUST $116404453
          21 KINIPOPO ST
NNE
                                                                                                   N/A
1/2-1
          WAILUKU. HI
0.945 mi.
4991 ft.
         Site 3 of 4 in cluster W
            RGA LUST:
Relative:
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
Lower
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
Actual:
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
234 ft.
                             2009
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
                             2007
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
                            2005
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
                             2004
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
                             2001
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
                                   WAILUKU FIRE STATION 21 KINIPOPO ST
136
          WAILUKU - MAUI LANI WELLS 6
                                                                                          FINDS 1016368655
ESE
1/2-1
          WAILUKU (DWS), HI 96761
0.952 mi.
5029 ft.
Relative:
            FINDS:
Lower
              Registry ID:
                                       110046190162
Actual:
172 ft.
              Environmental Interest/Information System
                             STATE MASTER
```

TC4529586.2s Page 101 TC4529586.2s Page 102

Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation W137 EDR Hist Auto 1015281134 1818 OIHANA ST NNE N/A 1/2-1 WAILUKU, HI 96793 0.967 mi. 5106 ft. Site 4 of 4 in cluster W EDR Historical Auto Stations: Relative: LIC AUTO RECONDITIONING Name: Lower Year: Actual: 217 ft. Address: 1818 OIHANA ST LIC AUTO RECONDITIONING Name: Year: 2010 Address: 1818 OIHANA ST 138 EDR Hist Auto 1015530312 NNE 51 WAIALE RD N/A > 1 WAILUKU, HI 96793 1.000 mi. 5282 ft. EDR Historical Auto Stations: Relative: Name: HASHI RADIATOR SERVICE Lower Year: 2003 Actual: Address: 51 WAIALE RD 210 ft. 139 DOWN TO EARTH NATURAL FOODSTORE HI UST U003222268 NNE 1910 VINEYARD ST N/A WAILUKU, HI 96793 1.043 mi. 5508 ft. UST: Relative: Lower Facility ID: 9-502974 DOWN TO EARTH NATURAL FOODSTORE Owner: Actual: 1910 VINEYARD ST Owner Address: 240 ft. Owner City,St,Zip: Wailuku, 96793 96793 Latitude: Not reported Longitude: Not reported Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported Tank ID: R-1 Date Installed: Not reported Tank Status: Permanently Out of Use 07/24/1994 Date Closed: Tank Capacity: 2000 Substance: Gasoline Tank ID: R-2 Date Installed: Not reported Tank Status: Permanently Out of Use 07/24/1994 Date Closed: Tank Capacity: 2000 Substance: Gasoline

MAP FINDINGS

Map ID

```
Map ID
                                                       MAP FINDINGS
Direction
                                                                                                              FDR ID Number
Distance
                                                                                                Database(s)
                                                                                                             EPA ID Number
Elevation
           MAUI RECYCLING SRVC INC
                                                                                        RCRA NonGen / NLR 1001024234
140
           105 WAIKO RD
SSW
                                                                                                     FINDS HIR000000349
> 1
           WAILUKU, HI 96793
1.116 mi.
5893 ft.
              RCRA NonGen / NLR:
Relative
                Date form received by agency: 09/06/1995
Higher
                Facility name:
                                            MAUI RECYCLING SRVC INC
Actual:
                Facility address:
                                            105 WAIKO RD
724 ft.
                                            WAILUKU, HI 96793
                EPA ID:
                                            HIR000000349
                                            JOHN EVARTS
                Contact:
                Contact address:
                                            PO BOX 1596
                                            MAKAWAO, HI 96768
                Contact country:
                                            US
                Contact telephone:
                                            (808) 878-3496
                Contact email:
                                            Not reported
                EPA Region:
                                            09
                Classification:
                                            Non-Generator
                                            Handler: Non-Generators do not presently generate hazardous waste
                Description:
              Owner/Operator Summary:
                Owner/operator name:
                                            MAUI RECYCLING SRVC INC
                Owner/operator address:
                                            PO BOX 1596
                                            MAKAWAO, HI 96768
                Owner/operator country:
                                            Not reported
                Owner/operator telephone:
                                            (808) 878-3496
                Legal status:
                Owner/Operator Type:
                                            Owner
                Owner/Op start date:
                                            Not reported
                Owner/Op end date:
                                            Not reported
              Handler Activities Summary:
               U.S. importer of hazardous waste: No
                Mixed waste (haz. and radioactive): No
                Recycler of hazardous waste:
                Transporter of hazardous waste:
                                                 Nο
                Treater, storer or disposer of HW:
                                                 Nο
                Underground injection activity:
                                                 No
                On-site burner exemption:
                                                 Nο
                Furnace exemption:
                                                 Nο
                Used oil fuel burner:
                                                 Nο
                Used oil processor:
                                                 Nο
                User oil refiner:
                                                 Nο
                Used oil fuel marketer to burner:
                                                 No
                Used oil Specification marketer:
                                                 No
                Used oil transfer facility:
                                                 Nο
                Used oil transporter:
                                                 Yes
                Violation Status:
                                            No violations found
              FINDS:
                                            110005729275
                Registry ID:
                Environmental Interest/Information System
                                RCRAInfo is a national information system that supports the Resource
                                Conservation and Recovery Act (RCRA) program through the tracking of
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MAP FINDINGS Map ID Direction FDR ID Number Distance Database(s) EPA ID Number Elevation Site

MAUI RECYCLING SRVC INC (Continued) 1001024234

> events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

MAUI SANDTORCHES CERCLIS-NFRAP 1000245007 X141 NE 46 TINGS DR RCRA NonGen / NLR HID077670842 WAILUKU, HI 96793 > 1 **FINDS**

1.119 mi.

Site 1 of 3 in cluster X 5909 ft.

CERCLIS-NFRAP: Relative: Site ID: Lower

0902848 Federal Facility: Not a Federal Facility Actual: NPL Status: Not on the NPL

231 ft. Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:

13037389.00000 Contact Sequence ID: 9000059.00000 Person ID:

CERCLIS-NFRAP Assessment History:

Action: DISCOVERY Date Started: Date Completed: 07/01/80 Priority Level: Not reported

ARCHIVE SITE Date Started: Date Completed: 09/01/84 Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT

Date Started: 08/01/84

Date Completed:

NFRAP-Site does not qualify for the NPL based on existing information Priority Level:

RCRA NonGen / NLR:

Date form received by agency: 07/30/1980 Facility name:

MAUI SANDTORCHES 46 TINGS DR Facility address WAILUKU, HI 96793

EPA ID: HID077670842 Mailing address: 46 TINGS DRIVE

WAILUKU MAUI, HI 96793 Contact: ENVIRONMENTAL MANAGER

Contact address: 46 TINGS DR

WAILUKU, HI 96793

Contact country: LIS

Contact telephone: (808) 244-7541 Contact email: Not reported EPA Region: Classification: Non-Generator

Map ID MAP FINDINGS Direction Distance

Handler: Non-Generators do not presently generate hazardous waste

EDR ID Number

EPA ID Number

1000245007

Database(s)

MAUI SANDTORCHES (Continued)

Description: Owner/Operator Summary:

Flevation

Owner/operator name:

JACQUELINE CARLIN NOT REQUIRED Owner/operator address:

NOT REQUIRED, ME 99999

Owner/operator country: Not reported (415) 555-1212 Owner/operator telephone: Legal status: Private Owner/Operator Type: Owner Owner/Op start date: Not reported Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED Owner/operator address: NOT REQUIRED

NOT REQUIRED, ME 99999

Owner/operator country: Not reported Owner/operator telephone: (415) 555-1212 Legal status: Private Owner/Operator Type: Operator Owner/Op start date: Not reported Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: Nο Mixed waste (haz. and radioactive): No Recycler of hazardous waster Transporter of hazardous waste: No Treater, storer or disposer of HW: Nο Underground injection activity: Nο On-site burner exemption: Nο Furnace exemption: Nο Used oil fuel humer: Nο Used oil processor: Nο User oil refiner: Nο Used oil fuel marketer to burner: Nο Used oil Specification marketer: Nο Used oil transfer facility Nο Used oil transporter: Nο

Violation Status: No violations found

FINDS:

Registry ID: 110005723217

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and

corrective action activities required under RCRA.

MAP FINDINGS Map ID Direction FDR ID Number Distance Site Database(s) EPA ID Number Elevation OGAWA SERVICE STATION HI LUST U003222184 Y142 327 N MARKET ST HI UST North N/A > 1 WAILUKU, HI 96793 1.122 mi. 5925 ft. Site 1 of 3 in cluster Y LUST: Relative: Facility ID: 9-500398 Lower Facility Status: Site Cleanup Completed (NFA) Facility Status Date: 08/19/1996 237 ft. Release ID: 960046 Project Officer: Jose Ruiz UST: Facility ID: 9-500398 MASASHI OGAWA Owner: Owner Address: 327 N MARKET ST Owner City,St,Zip: Wailuku, 96793 96793 Latitude: 20.892254 Longitude: -156.504253 Horizontal Reference Datum Name: NAD83 Horizontal Collection Method Name: Address Matching Tank ID: R-001 Date Installed: 07/27/1956 Tank Status: Permanently Out of Use Date Closed: 03/04/1995 Tank Capacity: 1000 Substance: Gasoline Tank ID: R-002 Date Installed: 07/27/1956 Tank Status: Permanently Out of Use Date Closed: 03/04/1996 Tank Capacity: 1000 Gasoline Substance: Tank ID: R-003 Date Installed: 07/27/1977 Tank Status: Permanently Out of Use 03/04/1996 Date Closed: Tank Capacity: 5000 Substance: Gasoline **REX TIRE & SUPPLY, DIESEL** X143 HI SHWS \$106820230 NE 1728 KAAHUMANU AVE N/A > 1 KAHULUI, HI 96732 1.127 mi. 5948 ft. Site 2 of 3 in cluster X SHWS: Relative: Lower Organization: Not reported Supplemental Location: Not reported Actual: Island: Maui 212 ft. Environmental Interest: Rex Tire Diesel HID Number: Not reported

110013778386

Facility Registry Identifier:

Map ID MAP FINDINGS Direction FDR ID Number Distance Database(s) EPA ID Number Flevation

HEER

REX TIRE & SUPPLY, DIESEL (Continued)

Lead Agency:

S106820230

Program: State Project Manager Eric Sadoyama Hazard Priority: Potential Hazards And Controls: No Hazard Organization: Not reported Island: Maui Supplemental Location Text: Not reported SDAR Environmental Interest Name: Rex Tire Diesel HID Number: Not reported Facility Registry Identifier: 110013778386 Lead Agency: HEER Progran Name: State Potential Hazard And Controls: No Hazard Priority: NFA

Assessment: Response Necessary Response: Response Complete Nature of Contamination: Found: Diesel fuel in soil

Nature of Residual Contamination: Diesel fuel

No Hazard Present for Unrestricted Residential Use Use Restrictions:

Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control: Not reported Within Designated Areawide Contamination: Not reported

No Further Action Letter - Unrestricted Residential Use Site Closure Type:

03/14/2006 Document Date: 2006-149-ES Document Number

No further action determination for 1991 diesel release from heating Document Subject:

oil UST

Project Manager:

Eric Sadoyama (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814 Contact Information:

SAFEWAY STORE #3092 144 58 MAUI LANI PARKWAY NE WAILUKU, HI 96793 > 1

RCRA-CESQG 1017770197 FINDS HIR000142927

1 148 mi 6061 ft Lower

Actual:

113 ft.

RCRA-CESQG: Relative:

Date form received by agency: 09/08/2014

Facility name: SAFEWAY STORE #3092 Facility address: 58 MAUI LANI PARKWAY WAILUKU, HI 96793

EPA ID: HIR000142927

5918 STONERIDGE MALL ROAD Mailing address: PLEASANTON, CA 94588

Contact: KEITH B POWERS

Contact address: 5918 STONERIDGE MALL ROAD

PLEASANTON, CA 94588

Contact country:

Contact telephone: 925-226-5655

Contact email: KEITH.POWERS@SAFEWAY.COM

EPA Region:

Classification: Conditionally Exempt Small Quantity Generator Description:

Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time;

or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous

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TC4529586.2s Page 108

Map ID MAP FINDINGS Direction

 Distance
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

SAFEWAY STORE #3092 (Continued)

1017770197

waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name:

HRT REALTY LLC

Owner/operator address: 3660 WAIALAE AVENUE STE 400

HONOLULU, 96816

Owner/operator country:

Owner/operator telephone: 808-924-1000
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 07/01/2003
Owner/Op end date: Not reported

Owner/operator name: SAFEWAY
Owner/operator address: Not reported
Not reported

Owner/operator country: US
Owner/operator telephone: Not reported

Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 09/19/2013
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Nο Transporter of hazardous waste: Treater, storer or disposer of HW: Nο Underground injection activity: On-site burner exemption: No Furnace exemption: Nο Used oil fuel burner: Nο Used oil processor: Nο User oil refiner: Nο Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: No

. Waste code: D001

. Waste name: IGNITABLE WASTE

. Waste code: D002

. Waste name: CORROSIVE WASTE

. Waste code: P075

Map ID MAP FINDINGS
Direction
Distance EDR ID Number
Elevation Site Database(s) EPA ID Number

SAFEWAY STORE #3092 (Continued)

1017770197

HI UST U003967142

N/A

. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, &

SALTS

Violation Status: No violations found

FINDS:

Registry ID: 110063759678

Environmental Interest/Information System

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program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

9-503775

PAM FUJITA PROPERTY 346 N. MARKET ST

WAILUKU, HI 96793

1.158 mi. 6116 ft. Site 2 of 3 in cluster Y

Relative: Lower Actual:

230 ft.

Y145

North

UST: Facility ID:

Owner: Pam Fujita property
Owner Address: 3370 Emekona Place
Owner City, St, Zip: Wailuku, 96793 96793
Latitude: Not reported
Longitude: Not reported
Horizontal Reference Datum Name: Not reported
Horizontal Collection Method Name: Not reported

Tank ID: r-1

Date Installed: Not reported

Tank Status: Permanently Out of Use
Date Closed: 04/16/2004

Date Closed: 04/16/20/ Tank Capacity: 550 Substance: Gasoline

Tank ID:

Date Installed: Not reported

Tank Status: Permanently Out of Use

r-2

Date Closed: 04/16/2004
Tank Capacity: 550
Substance: Gasoline

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 Map ID Direction Distance
 MAP FINDINGS
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

 Z146
 GOMES CONSTRUCTION & REPAIRS INC
 HI SHWS
 1000220754

 NNE
 1790 MILL ST
 HI UST
 HI UST

 >1
 WAILLUKU, HI 96793
 RCRA NonGen/NLR

FINDS

6129 ft. Site 1 of 2 in cluster Z HI Financial Assurance

Relative: SHWS:

1.161 mi.

Lower Organization: Not reported Supplemental Location: Not reported Actual: Island: Maui

209 ft. Environmental Interest: Gomes Construction - 1790 Mill Street, Wailuku, Maui HID Number: Not reported

Facility Registry Identifier: Not reported
Lead Agency: HEER
Program: State
Project Manager: Clarence Callahan

Project Manager: Clarence Callahan Hazard Priority: NFA Potential Hazards And Controls: No Hazard Organization: Not reported Island: Maui

Supplemental Location Text: Not reported
SDAR Environmental Interest Name: Gomes Construction - 1790 Mill Street, Wailuku, Maui

 HID Number:
 Not reported

 Facility Registry Identifier:
 Not reported

 Lead Agency:
 HEER

 Progran Name:
 State

 Potential Hazard And Controls:
 No Hazard

 Priority:
 NFA

Assessment: Assessment Ongoing
Response: Response Complete
Nature of Contamination: Not reported

Nature of Residual Contamination: Petroleum contaminated soil

Use Restrictions:

No Hazard Present For Unrestricted Residential Use

Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control: Not reported Within Designated Areawide Contamination: Not reported

Site Closure Type: No Further Action - Type Undetermined

Document Date: 08/24/2005
Document Number: Not reported
Document Subject: Not reported
Project Manager: Clarence Callahan

Contact Information: (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

UST:

Tank ID:

Facility ID: 9-500384

Owner: GOMES CONSTRUCTION & REPAIRS INC

Owner City, St, Zip: Wailuku, 96793 96793
Latitude: Not reported
Horizontal Reference Datum Name: Not reported
Not reported
Not reported
Not reported

Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported

Date Installed: 04/10/1968
Tank Status: Permanently Out of Use

Date Closed: Permanently Out of Use 02/01/1994

Tank Capacity: 550

Map ID MAP FINDINGS
Direction
Distance EDR ID Number
Elevation Site Database(s) EPA ID Number

1000220754

GOMES CONSTRUCTION & REPAIRS INC (Continued)

Substance: Gasoline

RCRA NonGen / NLR:

Date form received by agency: 08/24/1987

Facility name: GOMES CONST & REPAIRS INC

Facility address: 1790 MILL ST WAILUKU, HI 96793 EPA ID: HID982027682

Contact: ENVIRONMENTAL MANAGER

Contact address: 1790 MILL ST WAILUKU MILL, HI 96793

Contact country: US
Contact telephone: (808) 244-4083
Contact email: Not reported
EPA Region: 09

Land type: Other land type
Classification: Non-Generator

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: GOMES CONST JACK GOMES
Owner/operator address: NOT REQUIRED

ess: NOT REQUIRED NOT REQUIRED, ME 99999

Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212

Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED

NOT REQUIRED, ME 99999
Owner/operator country: Not reported

Owner/Operator telephone:

Legal status:
Owner/Operator Type:
Owner/Operator Type:
Owner/Op start date:
Owner/Op end date:
Not reported
Owner/Op end date:
Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: Nο Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: Nο Used oil transfer facility: No Used oil transporter: Nο

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MAP FINDINGS Map ID Direction

FDR ID Number Distance Site Database(s) EPA ID Number Elevation

GOMES CONSTRUCTION & REPAIRS INC (Continued) 1000220754

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 01/17/1996

COMPLIANCE EVALUATION INSPECTION ON-SITE Evaluation: Area of violation: Not reported

Date achieved compliance: Not reported Evaluation lead agency: State

Evaluation date: 05/19/1992

COMPLIANCE EVALUATION INSPECTION ON-SITE Evaluation:

Area of violation: Not reported Date achieved compliance: Not reported Evaluation lead agency: State

FINDS:

Registry ID: 110006399940

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste, RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and

corrective action activities required under RCRA.

STATE MASTER

HI Financial Assurance:

Alt Facility ID: 9-500384 Tank Id:

Tank Status: Permanently Out of Use

FRTYPE: Self Insured

Expiration Date: Not reported

Y147 GEORGE S./ JEAN FUNAI HI UST U003222272 350 N MARKET ST North

9-503152

> 1 WAILUKU, HI 96793

1.164 mi. 6144 ft. Site 3 of 3 in cluster Y

Relative: UST: Lower Facility ID:

GEORGE S./ JEAN FUNAI Owner: Actual: 229 ft. c/o Bryan Funai900 Eha St. Suite 108 Owner Address:

Owner City,St,Zip: Wailuku, 96793 96793 Latitude: Not reported Longitude: Not reported

Horizontal Reference Datum Name: Not reported Horizontal Collection Method Name: Not reported

Tank ID:

Date Installed: 01/01/1953

Tank Status: Permanently Out of Use Date Closed: 02/08/1996

Map ID MAP FINDINGS Direction

FDR ID Number Distance Site Database(s) EPA ID Number Flevation

GEORGE S./ JEAN FUNAI (Continued) U003222272

Tank Capacity: 1000

Substance: Gasoline

Tank ID: R-2 01/01/1953 Date Installed:

Tank Status: Permanently Out of Use

Date Closed: 01/01/1986 Tank Capacity: 1000

Substance: Gasoline

MAUI SANDTORCHES HI SHWS \$106819015 X148 NE 46 TING DR

> 1 WAILUKU, HI 96793 1.168 mi.

6165 ft. Site 3 of 3 in cluster X

SHWS: Relative

Actual:

243 ft.

Organization: Not reported Lower Supplemental Location: Not reported

Island: Maui

Environmental Interest: Maui Sandtorches

HID Number: HID077670842 Facility Registry Identifier: 110005723217 Lead Agency: Not reported Program: State

Project Manager: Unassigned Hazard Priority:

Potential Hazards And Controls: Hazard Undetermined Organization: Not reported

Maui

Supplemental Location Text: Not reported SDAR Environmental Interest Name: Maui Sandtorches HID Number: HID077670842 Facility Registry Identifier: 110005723217 Lead Agency: Not reported

Progran Name: Potential Hazard And Controls: Hazard Undetermined

Priority:

Response Necessary Assessment: Response Complete

Response: Nature of Contamination: Not reported Nature of Residual Contamination: Not reported Use Restrictions: Undetermined Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control: Not reported

Within Designated Areawide Contamination: Not reported Site Closure Type: No Further Action - Type Undetermined

Document Date: 04/15/1996 Document Number: Not reported Document Subject: Not reported Project Manager: Unassigned

(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814 Contact Information:

 Map ID Direction Distance
 MAP FINDINGS
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

 Z149
 GENROLL EQUIPMENT SERVICES
 RCRA NonGen / NLR
 1000367387

 NNE
 1760 MILL ST
 FINDS
 HID981657166

> 1 WAILUKU, HI 96793 1.195 mi.

6309 ft. Site 2 of 2 in cluster Z

Relative: RCRA NonGen / NLR:

Lower Date form received by agency: 09/25/1986

Facility name: GENROLL EQUIPMENT SERVICES

 Actual:
 Facility address:
 1760 MILL ST

 206 ft.
 WAILUKU, HI 96793

 EPA ID:
 HID981657166

Mailing address: MILL ST

WAILUKU, HI 96793

Contact: ENVIRONMENTAL MANAGER
Contact address: 1760 MILL ST

WAILUKU, HI 96793
Contact country: US

Contact telephone: (808) 244-5581 Contact email: Not reported

EPA Region: 09

Land type: Facility is not located on Indian land. Additional information is not known.

Classification: Non-Generator

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: FUKU CONSTRUCTION Owner/operator address: NOT REQUIRED

NOT REQUIRED, ME 99999

Owner/operator country: Not reported Owner/operator telephone: Legal status: Owner/Operator Type: Owner/Operator Type: Owner/Op start date: Not reported Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED Owner/operator address: NOT REQUIRED

Owner/operator address: NOT REQUIRED NOT REQUIRED, ME 99999

Owner/operator country: Not reported (V15) 555-1212 Legal status: Private Owner/Operator Type: Operator Owner/Op start date: Not reported Not reported Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Nο Transporter of hazardous waste: Treater, storer or disposer of HW: Nο Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Map ID MAP FINDINGS

 Distance
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

GENROLL EQUIPMENT SERVICES (Continued)

1000367387

RCRA-SQG 1004689041

FINDS HIR000097352

Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 01/17/1996

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Not reported Date achieved compliance: Not reported

Evaluation lead agency: State

FINDS:

Registry ID: 110005725055

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit compliance, and

corrective action activities required under RCRA.

CLINICAL LABORATORIES OF HAWAII

ENE 221 MAHALANI ST > 1 WAILUKU, HI 96793 1 239 mi

6541 ft. Site 1 of 2 in cluster AA

Relative: RCRA-SQG:

AA150

Lower Date form received by agency: 12/26/2008

Facility name: CLINICAL LABORATORIES OF HAWAII

Actual: Facility address: 221 MAHAI ANI ST

Actual: Facility address: 221 MAHALANI ST 152 ft. 2ND FLOOR, HISTOLOGY

WAILUKU, HI 96793
EPA ID: HIR000097352
Contact: ANTHONY MARTIN

Contact address: 221 MAHALANI ST WAILUKU, HI 96793

Contact country: US

Contact telephone: (808) 242-2064
Contact email: Not reported

EPA Region: 09 Classification: Small Small Quantity Generator

Classification: Small Small Quantity Generator

Description: Handler: generates more than 100 and less than 1000 kg of hazardous

waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time, or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of

hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: SONIC HAWAII HOLDING, INC

Owner/operator address: 221 MAHALANI ST

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MAP FINDINGS Map ID Direction

FDR ID Number Distance Site Database(s) FPA ID Number Elevation

CLINICAL LABORATORIES OF HAWAII (Continued)

WAILUKU, HI 96793

1004689041

Owner/operator country:

Owner/operator telephone: Not reported

Legal status: Private

Owner/Operator Type: Operator 09/02/2008 Owner/Op start date:

Owner/Op end date: Not reported

Owner/operator name: SONIC HAWAII HOLDING, INC

Owner/operator address: 221 MAHALANI ST

WAILUKU, HI 96793

Owner/operator country: US

Not reported

Owner/operator telephone:

Legal status: Private Owner/Operator Type: Owner

Owner/Op start date: 09/02/2008 Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Transporter of hazardous waste: Treater, storer or disposer of HW: Underground injection activity: On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: User oil refiner: Used oil fuel marketer to burner: Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: No

Waste code:

Waste name: IGNITABLE WASTE

Waste code: D002

CORROSIVE WASTE Waste name:

Waste code: D009 Waste name: MERCURY

Waste code: D040

TRICHLORETHYLENE Waste name

Waste code: F003

Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL

ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS: AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL

BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT

Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Flevation

CLINICAL LABORATORIES OF HAWAII (Continued)

1004689041

MIXTURES.

Historical Generators:

Date form received by agency: 05/25/2001

CLINICAL LABS OF HAWAII Site name:

Classification: Conditionally Exempt Small Quantity Generator

DOOO Waste code: Waste name: Not Defined

Waste code: D001

IGNITABLE WASTE Waste name:

Waste code: D002

Waste name: CORROSIVE WASTE

Waste code: D003

REACTIVE WASTE Waste name:

Waste code: D009 Waste name: MERCURY

Violation Status: No violations found

FINDS:

110013767263 Registry ID:

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation

MAUI MEMORIAL MEDICAL CENTER HIUST 1000489324 AA151 221 MAHALANI STREET ENE MLTS N/A > 1

WAILUKU HI 96793 HI Financial Assurance

1.239 mi.

6541 ft. Site 2 of 2 in cluster AA

UST: Relative: Facility ID: Lower

9-501581 Owner: STATE DOH - MAUI MEMORIAL HOSPITAL

Actual: 152 ft. Owner Address: 221 MAHALANI St Wailuku, 96793 96793 Owner City,St,Zip: Latitude: 20.883999

-156.489151 Longitude: Horizontal Reference Datum Name: NAD83 Horizontal Collection Method Name: GPS

Tank ID: Date Installed: 04/10/1952

Tank Status: Permanently Out of Use

Date Closed: Not reported Tank Capacity: 2600 Substance: Other

Tank ID:

Date Installed: 04/10/1952

Tank Status: Permanently Out of Use

Date Closed: Not reported Tank Capacity: 300 Gasoline Substance:

Tank ID: R-M-4 06/30/1981 Date Installed

Permanently Out of Use Tank Status:

01/20/2000 Date Closed: Tank Capacity: 1000 Substance: Diesel

MLTS:

License Number: 53-13519-01 First License Date: 04/23/91 11/25/14 License Date: Lic. Expiration Date: 08/31/21 Contact Name: RONALD FRICK Contact Phone: 808-373-7009 Institution Code: 13519 Department/Bldg: Not reported States Allowing Use: Not reported Store Material Use: No Redistribution Use: Incinerate Use: No Burial Use: Nο Last Inspection Date: 09/15/14 Next Inspection Date: 09/15/17 Licensee Contact: Not reported PHILIP MANLY Inspector Name:

Map ID MAP FINDINGS Direction EDR ID Number Distance Database(s) EPA ID Number Elevation

MAUI MEMORIAL MEDICAL CENTER (Continued)

1000489324

HI SHWS S113230524

HI INST CONTROL N/A

HI Financial Assurance:

Alt Facility ID: 9-501581 Tank Id: P-1

Tank Status: Permanently Out of Use

FRTYPE: State Fund Expiration Date: Not reported

Alt Facility ID: 9-501581 Tank Id: P-2

Tank Status: Permanently Out of Use

FRTYPF. State Fund Expiration Date: Not reported

Alt Facility ID: 9-501581

Tank Id: R-M-4 Tank Status: Permanently Out of Use

FRTYPE: State Fund Expiration Date: Not reported

152 WAILUKU SUGAR AGRICULTURAL DEPARTMENT PESTICIDE MIXING North 2015 HOLOWAI PL

WAILUKU, HI 96793 1.242 mi.

6556 ft.

SHWS: Relative:

Organization: Not reported Lower Supplemental Location: Kahekili Terrace

Actual: Island: Maui 217 ft.

Environmental Interest: Wailuku Sugar Agricultural Department Pesticide Mixing

HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Site Discovery Program: Project Manager: Unassigned Hazard Priority: Medium

Hazard Managed With Controls Potential Hazards And Controls:

Organization: Not reported Island: Maui

Kahekili Terrace Supplemental Location Text:

SDAR Environmental Interest Name: Wailuku Sugar Agricultural Department Pesticide Mixing

HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Progran Name: Site Discovery

Hazard Managed With Controls Potential Hazard And Controls: Priority: Medium

Assessment: Assessment Ongoing

Response: Not reported

Nature of Contamination: Found: Arsenic, lead and dioxin in soil.

Nature of Residual Contamination: Not reported Use Restrictions: Controls Required to Manage Contamination

Engineering Control: Not reported

Description of Restrictions: Not reported

Institutional Control: Government - Hawaii Dept. of Health Letter Issued

Within Designated Areawide Contamination: Not reported

Site Closure Type: Not reported

TC4529586.2s Page 119 TC4529586.2s Page 120 Map ID MAP FINDINGS Direction

FDR ID Number Distance Site Database(s) EPA ID Number Elevation

WAILUKU SUGAR AGRICULTURAL DEPARTMENT PESTICIDE MIXING (Continued)

S113230524

Document Date: Not reported Document Number Not reported Document Subject: Not reported Project Manager: Unassigned

(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814 Contact Information:

INST CONTROL:

Island:

Potential hazards and controls: Hazard Managed With Controls

Supplemental Location: Kahekili Terrace Zip Suffix: Not reported

Maui Institutional Control: Government - Hawaii Dept. of Health Letter Issued

153 WAILUKU SUGAR COMPANY PESTICIDE MIXING AREA NNE 250 IMI KALA ST > 1

HI SHWS S110061652 N/A

WAILUKU, HI 96793

1.311 mi.

6921 ft. Relative: Lower

Actual:

183 ft.

SHWS:

Organization: Not reported Supplemental Location: Not reported Island: Maui Environmental Interest: Maui Disposal HID Number Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Program: State Project Manager: Cal Miyahara Hazard Priority: NFA

Potential Hazards And Controls: No Hazard Organization: Not reported leland: Maui Supplemental Location Text: Not reported SDAR Environmental Interest Name: Maui Disposal HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Progran Name: State Potential Hazard And Controls: No Hazard

Priority: Response Necessary Assessment Response: Response Complete

. Nature of Contamination: Found: TPH-O exceeds residential use levels in surface soils. Nature of Residual Contamination: Two of four DUs had minimal concentrations (563 and 767 mg/kg) of

Petroleum Hydrocarbon as motor oil exceeding residential use EALs of 500 mg/kg for gross contamination. However, there were no signs of

soil staining or petroleum odor. Use Restrictions: No Hazard Present For Unrestricted Residential Use

Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control: Not reported Within Designated Areawide Contamination: Not reported

Site Closure Type: No Further Action Letter - Unrestricted Residential Use

NFA

Document Date: 07/21/2011 Document Number: 2011-412-CMM

Document Subject: Removal Action Report, Maui Disposal - Wailuku Post Office Former Map ID MAP FINDINGS Direction

FDR ID Number Distance Database(s) EPA ID Number Flevation

WAILUKU SUGAR COMPANY PESTICIDE MIXING AREA (Continued)

S110061652

Parking Lot, 250 Imi Kala St, Wail

Project Manager: Cal Miyahara

Contact Information: (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

Organization: Not reported Supplemental Location: Not reported Island: Maui

Environmental Interest: Wailuku Sugar Company Pesticide Mixing Area

HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Program: Site Discovery Project Manager: Cal Miyahara Hazard Priority: NFA Potential Hazards And Controls: No Hazard Organization: Not reported Island: Maui Supplemental Location Text: Not reported

SDAR Environmental Interest Name: Wailuku Sugar Company Pesticide Mixing Area

HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Progran Name: Site Discovery Potential Hazard And Controls: No Hazard Priority: NFA

Response Necessary Assessment: Response: Response Complete

Nature of Contamination: Presumed: possible arsenic, organochlorine release in vicinity of

former PMA

Nature of Residual Contamination: Soils do not pose a threat to human health or the environment based on

three factors: the low concentrations relative to our unrestricted action levels, the small area impacted and the presence of clean soils

above and below the impacted soils

Use Restrictions: No Hazard Present For Unrestricted Residential Use

Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control Not reported Within Designated Areawide Contamination: Not reported

No Further Action Letter - Unrestricted Residential Use Site Closure Type:

03/06/2013 Document Date: 2013-128-CMM Document Number

No Further Action Determination for Pesticides and Metals Document Subject:

Contamination at the Wailuku Sugar Company

Project Manager: Cal Miyahara

Contact Information: (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

MECO POLE-MOUNT TRANSFORMER NO. 6748 HI SHWS S108859777 HI SPILLS N/A

East POLE E-9 AT AIAI ST KAHULUI, HI 96732

1.331 mi. 7029 ft.

121 ft.

154

SHWS: Relative:

Organization: Lower Not reported

Supplemental Location: Not reported Actual: Island: Maui

Environmental Interest: MECO Pole-Mount Transformer no. 6748

HID Number: Not reported Map ID MAP FINDINGS Direction

FDR ID Number Distance Elevation Site Database(s) EPA ID Number

S108859777

MECO POLE-MOUNT TRANSFORMER NO. 6748 (Continued)

Facility Registry Identifier: Not reported Lead Agency: HEER Program: Project Manager: Amelia Hicks Hazard Priority: Potential Hazards And Controls: No Hazard Organization: Not reported Island: Maui

Supplemental Location Text: Not reported SDAR Environmental Interest Name:

MECO Pole-Mount Transformer no. 6748 HID Number: Not reported

Facility Registry Identifier: Not reported Lead Agency: HEER Progran Name: State Potential Hazard And Controls: No Hazard Priority: NFA Assessment: Response Necessary

Response: Response Complete Nature of Contamination: Not reported

Nature of Residual Contamination: PCB detected at <0.2 mg/kg; TPH detected at 1,290 mg/kg

Use Restrictions: No Hazard Present For Unrestricted Residential Use

Engineering Control: No Engineering Control Required Description of Restrictions: Not reported

Institutional Control: Not reported Within Designated Areawide Contamination: Not reported

Site Closure Type: No Further Action Letter - Unrestricted Residential Use

Document Date: 05/10/2012 Document Number 2012-290-AH

Document Subject: No Further Action Determination for MECO Pad-Mount Transformer No.

15683 (Incident ID 20091125-1412)

Project Manager: Amelia Hicks

(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814 Contact Information:

Not reported Organization: Supplemental Location: Not reported Island: Maui

Environmental Interest MECO Pole-Mount Transformer No. 6930

HID Number: Not reported Facility Registry Identifier: Not reported HEER Lead Agency: Program: Project Manager: State Richard Palmer

Hazard Priority: Low Potential Hazards And Controls: Hazard Undetermined

Organization: Not reported Island: Maui

Supplemental Location Text: Not reported

MECO Pole-Mount Transformer No. 6930 SDAR Environmental Interest Name:

HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER

Progran Name: State Hazard Undetermined

Potential Hazard And Controls: Priority:

Assessment Assessment Ongoing

Response: Not reported

Nature of Contamination: Found: < 25 gallon mineral oil leak from a non-PCB pole-mounted Map ID MAP FINDINGS

Direction FDR ID Number Distance Database(s) EPA ID Number Flevation

MECO POLE-MOUNT TRANSFORMER NO. 6748 (Continued)

transformer. Awaiting lab test results.

S108859777

Nature of Residual Contamination: Not reported Use Restrictions: Undetermined Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control: Not reported Within Designated Areawide Contamination: Not reported Site Closure Type: Not reported Not reported Document Date: Document Number: Not reported Document Subject: Not reported

Proiect Manager: Richard Palmer (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814 Contact Information:

HI SPILLS:

Island: Maui Supplemental Loc. Text: Not reported Case Number: 20070108-1225 HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R

ER:

Units: MECO Pole-Mount Transformer No. 6930 Release

Substances: Mineral Oil Less Or Greater Than: Numerical Quantity: 25 Units: Gallons Activity Type: Response Activity Lead: Liz Galvez Assignment End Date: 2007-01-12 00:00:00

Refer to SDAR File Under: Maui Electric Co., Inc.

MAUI COUNTY POLICE DEPARATMENT

HI LUST U003402931 NE 55 MAHALANI DR HI UST KAHULUI, HI 96732 HI Financial Assurance

1.371 mi. 7240 ft.

LUST: Relative

Facility ID: 9-501698

Site Cleanup Completed (NFA) Facility Status: Actual:

Facility Status Date: 03/19/2002 Release ID: 990097 Shaobin Li Project Officer:

UST:

Facility ID: 9-501698

COUNTY OF MAUI - POLICE DEPT Owner:

55 MAHALANI ST Owner Address: Owner City,St,Zip: Kahului. 96732 96732 20.888040 Latitude: -156.488597 Longitude: Horizontal Reference Datum Name: NAD83

Horizontal Collection Method Name: GPS Tank ID: R-16

TC4529586.2s Page 123 TC4529586.2s Page 124 Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation

MAUI COUNTY POLICE DEPARATMENT (Continued) U003402931

Date Installed: 01/01/1987

Tank Status: Permanently Out of Use

Date Closed: 12/18/1998

Tank Capacity: 2000 Substance: Diesel

Tank ID: R-17

01/01/1987 Date Installed:

Tank Status: Permanently Out of Use 12/21/1998 Date Closed:

Tank Capacity: 5000 Gasoline Substance:

Tank ID: R-18

01/01/1987 Date Installed:

Tank Status: Permanently Out of Use

12/17/1998 Date Closed: Tank Capacity: 500 Used Oil Substance:

HI Financial Assurance:

Alt Facility ID: 9-501698

Tank Id: R-16

Tank Status: Permanently Out of Use FRTYPE: Self Insured

Expiration Date: Not reported

Alt Facility ID: 9-501698 Tank Id: R-17

Tank Status: Permanently Out of Use

FRTYPE: Self Insured

Expiration Date: Not reported

Alt Facility ID: 9-501698

Tank Id:

Tank Status: Permanently Out of Use

FRTYPE: Self Insured

Expiration Date: Not reported

AB156 HALE MAKUA NURSING HOME - WAILUK HI LUST U003222260 NNE 1540 LOWER MAIN ST HI UST N/A

WAILUKU, HI 96793 > 1 1.380 mi.

7284 ft. Site 1 of 2 in cluster AB

LUST: Relative: Lower

Facility ID: 9-502621

Facility Status: Site Cleanup Completed (NFA) Actual: 10/20/1997

Facility Status Date: 181 ft. 930098

Release ID: Project Officer: Jose Ruiz

UST: Facility ID: 9-502621 Owner: HALE MAKUA

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Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Flevation

HALE MAKUA NURSING HOME - WAILUK (Continued)

U003222260

Owner Address: 472 KAULANA ST Owner City,St,Zip: Wailuku, 96793 96793 Latitude: 20.893135 Longitude: -156.494916 Horizontal Reference Datum Name: NAD83

Horizontal Collection Method Name: Address Matching

R-1 01/01/1966 Date Installed:

Permanently Out of Use Tank Status:

Date Closed: 11/06/1992 Tank Capacity: 1000 Substance: Diesel

Tank ID: R-2 01/01/1966 Date Installed:

Tank Status: Permanently Out of Use

11/06/1992 Date Closed: Tank Capacity: 500 Substance: Diesel

Tank ID: R-3 Date Installed: 01/01/1966

Tank Status: Permanently Out of Use

11/06/1992 Date Closed: 500 Tank Capacity: Substance: Diesel

Tank ID: R-4 01/01/1967 Date Installed

Tank Status: Permanently Out of Use

Date Closed: 11/06/1992 500 Tank Capacity: Substance: Diesel

MECO TRANSFORMER 3358 HI SHWS S110061657 HI SPILLS N/A AB157 1540 E MAIN ST NNE

> 1 WAILUKU, HI 96793 1.380 mi.

7284 ft. Site 2 of 2 in cluster AB

SHWS: Relative:

Organization: Not reported Lower Supplemental Location: Hale Makua Island:

Environmental Interest: MECO Transformer 3358 Self Implementing PCB Cleanup

HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Program: State Project Manager: Paul Chong Hazard Priority: NFA Potential Hazards And Controls: No Hazard Organization: Not reported

Island: Maui

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Map ID MAP FINDINGS Direction Distance

FDR ID Number Site Database(s) EPA ID Number Elevation

MECO TRANSFORMER 3358 (Continued)

S110061657

Supplemental Location Text: Hale Makua SDAR Environmental Interest Name: MECO Transformer 3358 Self Implementing PCB Cleanup

HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Progran Name: State Potential Hazard And Controls: No Hazard

Priority: NFA Assessment Response Necessary

Response: Self Implementing TSCA Cleanup

Nature of Contamination: Found: PCBs in soil

Nature of Residual Contamination: Confirmation samples were collected beneath the excavated area and all samples were below HDOH environmental action levels for unrestricted

Use Restrictions: No Hazard Present For Unrestricted Residential Use Not reported

Engineering Control: Description of Restrictions: Not reported Institutional Control: Not reported Within Designated Areawide Contamination: Not reported

No Further Action Letter - Unrestricted Residential Use Site Closure Type: Document Date: 01/27/2011

Document Number 2011-043-PC

Document Subject: Pad Mount Transformer 3358 PCB Release

Project Manager: Paul Chong

(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814 Contact Information:

HI SPILLS:

Island: Maui Supplemental Loc. Text: Hale Makua Case Number: 20080714-1258 HID Number: Not reported Facility Registry Id: Not reported Lead and Program: HEER EP&R

None

MECO Pad-Mount Transformer no. 3358 Units:

Substances: Oil Lubricating Less Or Greater Than: Not reported

Numerical Quantity: Gallons Activity Type: Response Activity Lead: Liz Galvez Assignment End Date: Not reported Result: Not reported

File Under: Maui Electric Co., Inc.

158 RADIO STATION KMVI HI LUST U003541884 ENE 100 MAHALANI RD HI UST N/A WAILUKU, HI 96793 > 1

1.495 mi. 7895 ft.

LUST: Relative:

Facility ID: 9-500844 Lower

Facility Status: Site Cleanup Completed (NFA) Actual:

Facility Status Date: 06/01/1995 93 ft. Release ID: 950085 Project Officer: Roger Brewer Map ID MAP FINDINGS Direction

FDR ID Number Distance Site Database(s) EPA ID Number Flevation

RADIO STATION KMVI (Continued)

U003541884

LIST:

Facility ID: 9-500844

U.S. FEDERAL EMERGENCY MANAGEMENT AGENCY Owner:

Owner Address: 500 C St SW Wailuku, 96793 96793 Owner City, St, Zip: 20.886407 Latitude: -156 487342 Lonaitude: Horizontal Reference Datum Name:

NAD83 Horizontal Collection Method Name: Address Matching

Tank ID: R-1

01/01/1973 Date Installed Permanently Out of Use Tank Status:

Date Closed: 04/04/1994 Tank Capacity: 1000 Substance: Diesel

Tank ID: R-2 Date Installed: 01/01/1973

Tank Status: Permanently Out of Use

Date Closed: 04/04/1994 Tank Capacity: 750 Substance: Diesel

159 MECO PAD-MOUNT TRANSFORMER NO. 21813 HI SHWS S113230487 ESE 45 MOLEHULEHU PL HI INST CONTROL KAHULUI, HI 96732 HI SPILLS

> 1 1.826 mi. 9643 ft.

SHWS: Relative:

Lower Organization: Not reported Supplemental Location: Not reported Actual: Island: Maui

MECO Pad-Mount Transformer No. 21813 Environmental Interest:

HID Number Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Program: State Project Manager: Amelia Hicks Hazard Priority: NFA Potential Hazards And Controls: No Hazard Organization: Not reported Island: Maui

Supplemental Location Text: Not reported SDAR Environmental Interest Name: MECO Pad-Mount Transformer No. 21813

HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER Progran Name: State Potential Hazard And Controls: No Hazard Priority: NFA

Assessment: Response Necessary Response: Response Complete

Nature of Contamination: Not reported

Below HDOH EALs; TPH (<50 mg/kg), PCB (<0.5 mg/kg) Nature of Residual Contamination:

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TC4529586.2s Page 128

Map ID
Direction

MAP FINDINGS

 Distance
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

MECO PAD-MOUNT TRANSFORMER NO. 21813 (Continued)

Use Restrictions: No Hazard Present For Unrestricted Residential Use

Engineering Control: No Engineering Control Required

Description of Restrictions: Not reported

Institutional Control: Government - Hawaii Dept. of Health Letter Issued

Within Designated Areawide Contamination: Not reported

Site Closure Type: No Further Action Letter - Unrestricted Residential Use

 Document Date:
 04/23/2012

 Document Number:
 2012-254-AH

Document Subject: No Further Action Determination for MECO Pad-Mount Transformer No.

S113230487

8052 based upon review of Low Ris

Project Manager: Amelia Hicks

Contact Information: (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

INST CONTROL:

Potential hazards and controls: No Hazard
Supplemental Location: Not reported
Zip Suffix: Not reported
Island: Maui

Institutional Control: Government - Hawaii Dept. of Health Letter Issued

HI SPILLS:

 Island:
 Maui

 Supplemental Loc. Text:
 Not reported

 Case Number:
 20070619-0800

 HID Number:
 Not reported

 Facility Registry Id:
 Not reported

 Lead and Program:
 HEER EP&R

ER: None

Units: MECO Pad-Mount Transformer no. 21813

Substances: Oil Lubricating
Less Or Greater Than: Not reported
Numerical Quantity: 30
Units: Gallons
Activity Type: Response

Activity Lead: Liz Galvez
Assignment End Date: Not reported
Result: Refer to SDAR
File Under: MECO-Kahului Basevard

 160
 MAUI COMMUNITY COLLEGE
 RCRA-CESQG
 1000244815

 NE
 310 KAAHUMANU AVE
 HI SHWS
 HID981975170

NE 310 KAAHUMANU AVE > 1 KAHULUI, HI 96732 1.857 mi.

HI UST FINDS HI Financial Assurance CA HAZNET

HI LUST

9804 ft. Relative: Lower Actual: 32 ft.

RCRA-CESQG: Actual: Date form rec

Date form received by agency: 05/19/2000

Facility name: MAUI COMMUNITY COLLEGE

Facility address: 310 KAAHUMANU AVE KAHULUI, HI 96732

 EPA ID:
 HID981975170

 Contact:
 DAVID TAMANAHA

 Contact address:
 310 KAAHUMANU AVE

 KAHULUI, HI 96732

Contact country: US

Map ID MAP FINDINGS

 Direction
 4
 BCPR ID Number

 Distance
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

MAUI COMMUNITY COLLEGE (Continued)

1000244815

Contact telephone: (808) 984-3253
Contact email: Not reported
EPA Region: 09

Land type: State

Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar

month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time; 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from

the cleanup of a spill, into or on any land or water, of acutely

Owner/Operator Summary:

Owner/operator name: UNIVERSITY OF HAWAII
Owner/operator address: 2040 EAST WEST ROAD

HONOLULU, HI 96822

Owner/operator country: Not reported (808) 956-3198 Legal status: State Owner/Operator Type: Owner/Op start date: Not reported Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED Owner/operator address: NOT REQUIRED

NOT REQUIRED, ME 99999

Owner/operator country: Not reported Chronic/Operator telephone: (415) 555-1212 Legal status: State Owner/Operator Type: Operator Owner/Op start date: Not reported Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: Transporter of hazardous waste: Nο Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner. No Used oil processor: No User oil refiner No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No

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Map ID
Direction

 Distance
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

MAUI COMMUNITY COLLEGE (Continued) 1000244815

Used oil transporter: No
. Waste code: D000
. Waste name: Not Defined

. Waste name: Not Defined

. Waste code: D001
. Waste name: IGNITABLE WASTE

Waste code: D002

. Waste name: CORROSIVE WASTE

. Waste code: D003

. Waste name: REACTIVE WASTE

. Waste code: P012

. Waste name: ARSENIC OXIDE AS203 (OR) ARSENIC TRIOXIDE

. Waste code: P098

. Waste name: POTASSIUM CYANIDE (OR) POTASSIUM CYANIDE K(CN)

. Waste code: P106

. Waste name: SODIUM CYANIDE (OR) SODIUM CYANIDE NA(CN)

. Waste code: U012

. Waste name: ANILINE (I,T) (OR) BENZENAMINE (I,T)

. Waste code: U019
. Waste name: BENZENE (I,T)

. Waste code: U044

. Waste name: CHLOROFORM (OR) METHANE, TRICHLORO-

Waste code: U170

. Waste name: P-NITROPHENOL (I,T) (OR) PHENOL, 4-NITRO-

. Waste code: U201

. Waste name: 1,3-BENZENEDIOL (OR) RESORCINOL

. Waste code: U211

. Waste name: CARBON TETRACHLORIDE (OR) METHANE, TETRACHLORO-

. Waste code: U223

. Waste name: BENZENE, 1,3-DIISOCYANATOMETHYL- (R,T) (OR) TOLUENE DIISOCYANATE (R,T)

. Waste code: U239

. Waste name: BENZENE, DIMETHYL- (I,T) (OR) XYLENE (I)

Facility Has Received Notices of Violations: Regulation violated: F - 262.50-60

Area of violation: Generators - General
Date violation determined: 03/19/1999
Date achieved compliance: 06/26/2001
Violation lead agency: State
Enforcement action: Not reported

Enforcement action date: Not reported Enf. disposition status: Not reported Enf. disp. status date: Not reported

Map ID
Direction
Distance
EDR ID Number
Elevation Site
Database(s) EPA ID Number

1000244815

MAUI COMMUNITY COLLEGE (Continued)

Enforcement lead agency: Not reported Proposed penalty amount: Not reported Final penalty amount: Not reported Paid penalty amount: Not reported

Paid penalty amount: Not reported

Regulation violated: F - 270

Area of violation: TSD - General

Date violation determined: 03/19/1999
Date achieved compliance: 06/26/2001
Violation lead agency: Enforcement action: Not reported Enf. disposition status: Enf. disposition status: Not reported Not re

Enforcement lead agency: Not reported Proposed penalty amount: Not reported Final penalty amount: Not reported Paid penalty amount: Not reported

Regulation violated: F - 262.10-12.A

Area of violation: Generators - General

Date violation determined: 03/19/1999

Date achieved compliance: 06/26/2001
Violation lead agency: State
Enforcement action: Not reported
Enf. disposition status: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported

Proposed penalty amount: Not reported Final penalty amount: Not reported Paid penalty amount: Not reported

Regulation violated: F - 262.50-60
Area of violation: Generators - General

Date violation determined: 10/21/1998 Date achieved compliance: 06/26/2001 Violation lead agency: State Enforcement action: Not reported Enforcement action date: Not reported Enf. disposition status: Not reported Enf. disp. status date: Not reported Enforcement lead agency: Not reported Proposed penalty amount: Not reported

Final penalty amount:

Paid penalty amount:

Regulation violated: F - 262.10-12.A
Area of violation: Generators - General

Not reported

Not reported

Date violation determined: 10/21/1998
Date achieved compliance: 06/26/2001
Violation lead agency: State
Enforcement action: Control tenforcement action date: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Not reported Not re

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Map ID
Direction

MAP FINDINGS

 Distance
 EDR ID Number

 Elevation
 Site
 Database(s)
 EPA ID Number

MAUI COMMUNITY COLLEGE (Continued) 1000244815

Proposed penalty amount: Not reported Final penalty amount: Not reported Paid penalty amount: Not reported

Regulation violated: F - 270 Area of violation: TSD - General Date violation determined: 10/21/1998 Date achieved compliance: 06/26/2001 Violation lead agency: State Enforcement action: Not reported Enforcement action date: Not reported Enf. disposition status: Not reported Enf. disp. status date: Not reported Enforcement lead agency: Not reported Proposed penalty amount: Not reported Final penalty amount: Not reported Paid penalty amount: Not reported

Evaluation Action Summary:

Evaluation date: 08/27/2003

Evaluation: CASE DEVELOPMENT INSPECTION

Area of violation: Not reported Date achieved compliance: Not reported Evaluation lead agency: State

Evaluation date: 06/26/2001

Evaluation: NOT A SIGNIFICANT NON-COMPLIER

Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/18/2000

Evaluation: SIGNIFICANT NON-COMPLIER

Area of violation: Not reported Date achieved compliance: Not reported Evaluation lead agency: State

Evaluation date: 10/21/1998

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: TSD - General Date achieved compliance: 06/26/2001 Evaluation lead agency: State

Evaluation date: 10/21/1998

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Generators - General Date achieved compliance: 06/26/2001

Evaluation lead agency: State

Evaluation date: 05/12/1992

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported

Date achieved compliance: Not reported Evaluation lead agency: State

SHWS:

Organization: Not reported

Map ID MAP FINDINGS
Direction

MAUI COMMUNITY COLLEGE (Continued) 1000244815

Supplemental Location: Automotive Technology Building

Island: Maui

Environmental Interest: MCC-Lead Contamination from Washing Operations

 HID Number:
 Not reported

 Facility Registry Identifier:
 110013767593

 Lead Agency:
 Not reported

 Program:
 State

 Project Manager:
 Richard Palmer

 Hazard Priority:
 NFA

Potential Hazards And Controls: Hazard Undetermined

Organization: Not reported Island: Maui

Supplemental Location Text: Automotive Technology Building

SDAR Environmental Interest Name: MCC-Lead Contamination from Washing Operations

HID Number: Not reported Facility Registry Identifier: 110013767593 Lead Agency: Not reported Progran Name: State

Potential Hazard And Controls: Hazard Undetermined Priority: NFA
Assessment: Assessment Ongoing

Not reported Response: Nature of Contamination: Not reported Nature of Residual Contamination: Not reported Use Restrictions: Undetermined Engineering Control: Not reported Description of Restrictions: Not reported Institutional Control: Not reported Within Designated Areawide Contamination: Not reported

Site Closure Type: No Further Action - Type Undetermined

Document Date: 04/04/2003
Document Number: Not reported
Document Subject: Not reported
Project Manager: Richard Palmer

Contact Information: (808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

LUST:

Facility ID: 9-502687

Facility Status: Site Cleanup Completed (NFA)

Facility Status Date: 05/06/2005 Release ID: 990071 Project Officer: Chad Pritchard

UST:

Facility ID: 9-502687

Owner: STATE U.H. - MAUI COMMUNITY COLLEGE

Owner Address: 310 KAAHUMANU AVE Owner City,St,Zip: Kahului, 96732 96732

Latitude: 20.889787
Longitude: -156.477150
Horizontal Reference Datum Name: NAD83
Horizontal Collection Method Name: GPS

 Tank ID:
 R-1

 Date Installed:
 06/30/1980

Tank Status: Permanently Out of Use

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Map ID MAP FINDINGS Direction

EDR ID Number Distance Site Database(s) EPA ID Number Elevation

MAUI COMMUNITY COLLEGE (Continued) 1000244815

Date Closed: 11/19/1998 Tank Capacity: Substance: Used Oil

Tank ID: R-2

Date Installed: Not reported

Tank Status: Permanently Out of Use

Date Closed: 06/09/1998 Tank Capacity: 750 Substance: Gasoline

FINDS:

Registry ID: 110005725750

Environmental Interest/Information System

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

HI Financial Assurance:

9-502687 Alt Facility ID:

Tank Id: R-1

Permanently Out of Use Tank Status:

FRTYPE: Insurance Expiration Date Not reported

Alt Facility ID: 9-502687

Tank Id: R-2

Permanently Out of Use Tank Status:

FRTYPF-Insurance Expiration Date Not reported

HAZNET:

1000244815 envid: 2003 Year: GEPAID: HID981975170 DAVID TAMANAHA Contact: 8089843253 Telephone: Mailing Name: Not reported

Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Flevation

1000244815

MAUI COMMUNITY COLLEGE (Continued)

Mailing Address: 310 KAAHUMANU AVE Mailing City,St,Zip: KAHULUI, HI 96732 Gen County: Not reported TSD EPA ID: CAD059494310 TSD County: Not reported

Waste Category: Laboratory waste chemicals Disposal Method: Transfer Station

Tons:

Cat Decode: Laboratory waste chemicals Transfer Station

Method Decode: Facility County:

1000244815 envid: 2003 Year: GEPAID: HID981975170 DAVID TAMANAHA Contact: Telephone: 8089843253 Mailing Name: Not reported

Mailing Address: 310 KAAHUMANU AVE KAHULUI, HI 96732 Mailing City, St, Zip: Gen County: Not reported CAD059494310 TSD EPA ID: TSD County: Not reported

Waste Category: Unspecified solvent mixture Disposal, Other

Disposal Method: Tons: 0.15

Unspecified solvent mixture Cat Decode:

Method Decode: Disposal Other

Facility County:

1000244815 envid: Year 2003 GEPAID: HID981975170 DAVID TAMANAHA Contact: Telephone: 8089843253 Mailing Name: Not reported 310 KAAHUMANU AVE Mailing Address: KAHULUI, HI 96732

Mailing City,St,Zip: Gen County: Not reported TSD EPA ID: CAD059494310 TSD County: Not reported Waste Category: Paint sludge Disposal Method: Transfer Station Tons:

Cat Decode: Paint sludge Method Decode: Transfer Station

Facility County: 99

1000244815 envid 2001 GEPAID: HID981975170 Contact: DAVID TAMANAHA Telephone: 8089843253 Mailing Name: Not reported

310 KAAHUMANU AVE Mailing Address: Mailing City,St,Zip: KAHULUI, HI 96732 Gen County: Not reported

TC4529586.2s Page 135 TC4529586.2s Page 136 Map ID MAP FINDINGS Direction EDR ID Number Distance Site Database(s) EPA ID Number Elevation

MAUI COMMUNITY COLLEGE (Continued) 1000244815

TSD EPA ID: CAT000646117 TSD County: Not reported

Waste Category: Polychlorinated biphenyls and material containing PCBs

Disposal Method: Disposal, Land Fill

Tons:

Cat Decode: Polychlorinated biphenyls and material containing PCBs

Method Decode: Disposal, Land Fill

Facility County:

1000244815 envid: 2000 Year:

GEPAID: HID981975170 DAVID TAMANAHA Contact: Telephone: 8089843253

Mailing Name: Not reported Mailing Address: 310 KAAHUMANU AVE Mailing City,St,Zip: KAHULUI, HI 96732 Gen County: Not reported CAD088504881

TSD EPA ID: TSD County: Not reported Waste Category: Not reported Disposal Method: Transfer Station 0.01 Tons: Cat Decode: Not reported

Method Decode: Transfer Station

Facility County:

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

122 WEST AHULIU WAY HI SHWS S117391416 161 SSE 122 W AHULIU WAY HI INST CONTROL N/A

> 1 WAILUKU, HI 96793

1.994 mi.

SHWS:

10527 ft

Relative: Organization: Lower

Not reported Supplemental Location: Not reported Actual: 231 ft. Island:

Environmental Interest: 122 West Ahuliu Way HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER

State Program: Project Manager: Jordan Nakayama

Hazard Priority: NFA Potential Hazards And Controls: Hazard Managed With Controls

Organization: Not reported Island: Maui

Supplemental Location Text: Not reported SDAR Environmental Interest Name: 122 West Ahuliu Way

HID Number: Not reported Facility Registry Identifier: Not reported Lead Agency: HEER

Progran Name: State

Potential Hazard And Controls: Hazard Managed With Controls

Priority:

Map ID MAP FINDINGS

Direction EDR ID Number Distance Database(s) EPA ID Number Flevation

122 WEST AHULIU WAY (Continued) S117391416

Assessment: Response Necessary Response: Response Complete Nature of Contamination: Found: Oil stained soil.

Nature of Residual Contamination: Not reported

Use Restrictions: Controls Required to Manage Contamination

Engineering Control: Not reported Description of Restrictions: Not reported

Institutional Control: Government - Hawaii Dept. of Health Letter Issued

Within Designated Areawide Contamination: Not reported

No Further Action Letter - Restricted Use Site Closure Type: 08/19/2014

Document Date: Document Number: 2014-390-JQN

Interim No Further Action determination dated July 3, 2014, 122 West Document Subject:

Ahuliu Way, Wailuku, Hawaii Project Manager: Jordan Nakayama

(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814 Contact Information:

INST CONTROL:

Potential hazards and controls: Hazard Managed With Controls

Supplemental Location: Not reported Zip Suffix: Not reported Island:

Institutional Control: Government - Hawaii Dept. of Health Letter Issued

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Count: 9 records.		ORPHAN SUMMARY					
City	EDR ID	Site Name	Site Address	Zip	Database(s)		
KAHULUI	1003879111	WAIKAPU DUMP-MAUI COUNTY DUMP	CENTRAL MAUI	96732	CERCLIS-NFRAP		
KAHULUI		VECTOR CONTROL BRANCH, MAUI	54 HIGH ST. 641 MUA ST. KAHALE		HISHWS		
KAHULUI		A&B DUMP SITE	W PAPA AVE	96732	HI SHWS		
KAHULUI		ALEXANDER & BALDWIN DUMP SITE	WEST PAPA AVENUE		CERCLIS-NFRAP		
KAHULUI		WAIKAPU DUMP-MAUI COUNTY DUMP	WAIKAPU RD		HI SHWS		
WAILUKU	1015733377	VECTOR CONTROL BRANCH	54 HIGH ST	96793	CERCLIS-NFRAP, RCRA NonGi		
WAILUKU	1016404224	ALOHA KEHALANI VILLAGE	2565 KEHALANI VILLAGE DRIVE	96793	FINDS		
WAILUKU	U004196893	ALOHA KEHALANI VILLAGE	2565 KEHALANI VILLAGE DRIVE	96793	HI UST, HI Financial Assurance		
WAILUKU	1006819707	WAIALE ASH PILE	MAHALANI ST	96793	HI SHWS		

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GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/30/2015 Source: EPA
Date Data Arrived at EDR: 11/07/2015 Telephone: N/A

Date Made Active in Reports: 01/04/2016 Last EDR Contact: 01/26/2016

Number of Days to Update: 58 Next Scheduled EDR Contact: 04/18/2016

Data Release Frequency: Quarterly

NPL Site Boundaries

Sources

EPA's Environmental Photographic Interpretation Center (EPIC)

Telephone: 202-564-7333

EPA Region 1 EPA Region 6

Telephone 617-918-1143 Telephone: 214-655-6659

EPA Region 3 EPA Region 7

Telephone 215-814-5418 Telephone: 913-551-7247

EPA Region 4 EPA Region 8

Telephone 404-562-8033 Telephone: 303-312-6774

EPA Region 5 EPA Region 9

Telephone 312-886-6686 Telephone: 415-947-4246

EPA Region 10 Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/30/2015 Source: EPA
Date Data Arrived at EDR: 11/07/2015 Telephone: N/A

odate: 58 Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Lieus.

Date of Government Version: 10/15/1991 Source: EPA

Date Data Arrived at EDR: 02/02/1994 Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994 Last EDR Contact: 08/15/2011

Number of Days to Update: 56 Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

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Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/30/2015 Source: EPA
Date Data Arrived at EDR: 11/07/2015 Telephone: N/A

Date Made Active in Reports: 01/04/2016 Last EDR Contact: 01/26/2016

Number of Days to Update: 58 Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 64
Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/06/2016
Next Scheduled EDR Contact: 04/18/2016

Data Release Frequency: Varies

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities

List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013 Source: EPA

Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Telephone: 703-412-9810
Last EDR Contact: 11/23/2015
Next Scheduled EDR Contact: 03/07/2016
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014

Source: EPA Telephone: 703-412-9810 Last EDR Contact: 11/23/2015 Next Scheduled EDR Contact: 03/07/2016 Data Release Frequency: Quarterly

Number of Days to Update: 94 Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/09/2015 Date Data Arrived at EDR: 06/26/2015 Date Made Active in Reports: 09/16/2015 Number of Days to Update: 82 Source: EPA Telephone: 800-424-9346 Last EDR Contact: 12/18/2015 Next Scheduled EDR Contact: 04/11/2016 Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste.

Date of Government Version: 06/09/2015 Date Data Arrived at EDR: 06/26/2015 Date Made Active in Reports: 09/16/2015 Number of Days to Update: 82 Source: Environmental Protection Agency Telephone: (415) 495-8895 Last EDR Contact: 12/18/2015 Next Scheduled EDR Contact: 04/11/2016 Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/09/2015 Date Data Arrived at EDR: 06/26/2015 Date Made Active in Reports: 09/16/2015 Number of Days to Update: 82 Source: Environmental Protection Agency Telephone: (415) 495-8895 Last EDR Contact: 12/18/2015 Next Scheduled EDR Contact: 04/11/2016 Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1.000 kg of hazardous waste per month.

Date of Government Version: 06/09/2015 Date Data Arrived at EDR: 06/26/2015 Date Made Active in Reports: 09/16/2015 Number of Days to Update: 82 Source: Environmental Protection Agency Telephone: (415) 495-8895 Last EDR Contact: 12/18/2015 Next Scheduled EDR Contact: 04/11/2016 Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/09/2015 Date Data Arrived at EDR: 06/26/2015 Date Made Active in Reports: 09/16/2015 Number of Days to Update: 82 Source: Environmental Protection Agency Telephone: (415) 495-8895 Last EDR Contact: 12/18/2015 Next Scheduled EDR Contact: 04/11/2016 Data Release Frequency: Varies

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Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure

Date of Government Version: 05/28/2015 Source: Department of the Navy Date Data Arrived at EDR: 05/29/2015 Telephone: 843-820-7326 Date Made Active in Reports: 06/11/2015 Last FDR Contact: 11/13/2015 Next Scheduled EDR Contact: 02/29/2016 Number of Days to Update: 13 Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building

foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health

Date of Government Version: 09/10/2015 Source: Environmental Protection Agency Telephone: 703-603-0695 Date Data Arrived at EDR: 09/11/2015

Date Made Active in Reports: 11/03/2015 Last EDR Contact: 11/24/2015 Number of Days to Update: 53 Next Scheduled EDR Contact: 03/14/2016 Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures,

such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally

required as part of the institutional controls

Date of Government Version: 09/10/2015 Source: Environmental Protection Agency Telephone: 703-603-0695

Date Data Arrived at EDR: 09/11/2015 Date Made Active in Reports: 11/03/2015

Last EDR Contact: 11/24/2015 Next Scheduled EDR Contact: 03/14/2016

Number of Days to Update: 53 Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous

SHWS: Sites List

Date of Government Version: 06/22/2015 Source: National Response Center, United States Coast Guard Date Data Arrived at EDR: 06/26/2015 Telephone: 202-267-2180

Date Made Active in Reports: 09/16/2015

Last EDR Contact: 12/29/2015 Next Scheduled EDR Contact: 04/11/2016 Number of Days to Update: 82

Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has

investigated or may investigate under HRS 128D (includes CERCLIS sites)

Date of Government Version: 12/02/2014 Date Data Arrived at EDR: 12/22/2014

Date Made Active in Reports: 01/27/2015 Number of Days to Update: 36

Source: Department of Health Telephone: 808-586-4249 Last EDR Contact: 01/26/2016

Next Scheduled EDR Contact: 03/07/2016

Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SWF/LF: Permitted Landfills in the State of Hawaii

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal

Date of Government Version: 09/17/2012 Date Data Arrived at EDR: 04/03/2013 Date Made Active in Reports: 05/10/2013 Number of Days to Update: 37

Source: Department of Health Telephone: 808-586-4245 Last FDR Contact: 10/02/2015 Next Scheduled EDR Contact: 01/11/2016

Data Release Frequency: Varies

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 09/04/2015 Date Data Arrived at EDR: 09/25/2015 Date Made Active in Reports: 11/06/2015 Number of Days to Update: 42

Source: Department of Health Telephone: 808-586-4228 Last EDR Contact: 12/04/2015

Next Scheduled EDR Contact: 03/14/2016 Data Release Frequency: Semi-Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 11/04/2015 Date Data Arrived at EDR: 11/13/2015 Date Made Active in Reports: 01/04/2016 Number of Days to Update: 52

Source: EPA, Region 5 Telephone: 312-886-7439 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016

Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land

Date of Government Version: 10/27/2015 Date Data Arrived at EDR: 10/29/2015 Date Made Active in Reports: 01/04/2016

Number of Days to Update: 67

Number of Days to Update: 71

Source: EPA Region 1 Telephone: 617-918-1313 Last FDR Contact: 01/26/2016 Next Scheduled EDR Contact: 05/09/2016

Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma

Date of Government Version: 05/13/2015 Date Data Arrived at EDR: 08/03/2015 Date Made Active in Reports: 10/13/2015 Source: EPA Region 6 Telephone: 214-665-6597 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016

Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/30/2015 Date Data Arrived at EDR: 04/28/2015 Date Made Active in Reports: 06/22/2015 Number of Days to Update: 55

Source: EPA Region 7 Telephone: 913-551-7003 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016

Data Release Frequency: Varies

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INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming,

Date of Government Version: 04/30/2015 Date Data Arrived at EDR: 05/05/2015 Date Made Active in Reports: 06/22/2015 Number of Days to Undate: 48

Source: EPA Region 8 Telephone: 303-312-6271 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016

Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015 Date Data Arrived at EDR: 01/08/2015 Date Made Active in Reports: 02/09/2015 Number of Days to Update: 32

Source: Environmental Protection Agency Telephone: 415-972-3372 Last EDR Contact: 01/27/2016

Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 07/21/2015 Date Data Arrived at EDR: 07/29/2015 Date Made Active in Reports: 10/13/2015 Number of Days to Update: 76

Source: EPA Region 10 Telephone: 206-553-2857 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/24/2015 Date Data Arrived at EDR: 12/01/2015 Date Made Active in Reports: 01/04/2016 Number of Days to Undate: 34

Source: EPA Region 4 Telephone: 404-562-8677 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: Semi-Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010 Date Data Arrived at EDR: 02/16/2010 Date Made Active in Reports: 04/12/2010 Source: FFMA Telephone: 202-646-5797 Last EDR Contact: 01/08/2016

Number of Days to Update: 55 Next Scheduled EDR Contact: 04/25/2016 Data Release Frequency: Varies

UST: Underground Storage Tank Database

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 09/04/2015 Date Data Arrived at EDR: 09/25/2015 Date Made Active in Reports: 11/06/2015

Number of Days to Update: 42

Source: Department of Health Telephone: 808-586-4228 Last EDR Contact: 12/04/2015 Next Scheduled EDR Contact: 03/14/2016 Data Release Frequency: Semi-Annually

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Source: EPA Region 10

Date of Government Version: 07/21/2015 Date Data Arrived at EDR: 07/29/2015 Date Made Active in Reports: 10/13/2015

Telephone: 206-553-2857 Last EDR Contact: 01/25/2016 Number of Days to Update: 76

Next Scheduled EDR Contact: 05/09/2016

Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal

Date of Government Version: 10/20/2015 Date Data Arrived at EDR: 10/29/2015 Date Made Active in Reports: 01/04/2016 Number of Days to Update: 67

Source: EPA, Region 1 Telephone: 617-918-1313 Last EDR Contact: 01/26/2016 Next Scheduled EDR Contact: 05/09/2016

Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennesser and Tribal Nations)

Date of Government Version: 11/24/2015 Date Data Arrived at EDR: 12/01/2015 Date Made Active in Reports: 01/04/2016

Number of Days to Update: 34

Source: EPA Region 4 Telephone: 404-562-9424 Last EDR Contact: 01/25/2016

Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015 Source: EPA Region 5 Date Data Arrived at EDR: 11/13/2015 Telephone: 312-886-6136 Date Made Active in Reports: 01/04/2016 Last EDR Contact: 01/25/2016 Number of Days to Update: 52 Next Scheduled EDR Contact: 05/09/2016

Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/13/2015 Date Data Arrived at EDR: 08/03/2015 Date Made Active in Reports: 10/13/2015 Number of Days to Update: 71

Source: EPA Region 6 Telephone: 214-665-7591 Last EDR Contact: 01/25/2016

Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014 Date Data Arrived at EDR: 11/25/2014 Date Made Active in Reports: 01/29/2015 Number of Days to Update: 65

Source: EPA Region 7 Telephone: 913-551-7003 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

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Date of Government Version: 12/14/2014 Date Data Arrived at EDR: 02/13/2015 Date Made Active in Reports: 03/13/2015 Number of Days to Update: 28

Source: EPA Region 9 Telephone: 415-972-3368 Last EDR Contact: 01/27/2016 Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 07/28/2015 Date Data Arrived at EDR: 08/14/2015 Date Made Active in Reports: 10/13/2015 Number of Days to Update: 60

Source: EPA Region 8 Telephone: 303-312-6137 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: Quarterly

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Control Sites

A listing of sites with engineering controls in place.

Date of Government Version: 12/02/2014 Date Data Arrived at EDR: 12/22/2014 Date Made Active in Reports: 01/27/2015 Number of Days to Update: 36

Source: Department of Health Telephone: 404-586-4249 Last EDR Contact: 01/26/2016 Next Scheduled EDR Contact: 03/07/2016 Data Release Frequency: Varies

INST CONTROL: Sites with Institutional Controls

Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 12/02/2014 Date Data Arrived at EDR: 12/22/2014 Date Made Active in Reports: 01/27/2015 Number of Days to Update: 36

Source: Department of Health Telephone: 808-586-4249 Last EDR Contact: 01/26/2016 Next Scheduled EDR Contact: 03/07/2016

Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Response Program Sites

Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 12/02/2014 Date Data Arrived at EDR: 12/22/2014 Date Made Active in Reports: 01/27/2015 Number of Days to Undate: 36

Source: Department of Health Telephone: 808-586-4249 Last EDR Contact: 01/26/2016 Next Scheduled EDR Contact: 03/07/2016 Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/29/2014 Date Data Arrived at EDR: 10/01/2014 Date Made Active in Reports: 11/06/2014 Number of Days to Update: 36

Source: EPA, Region 1 Telephone: 617-918-1102 Last EDR Contact: 12/28/2015 Next Scheduled EDR Contact: 04/11/2016 Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/20/2008 Date Data Arrived at EDR: 04/22/2008 Date Made Active in Reports: 05/19/2008 Number of Days to Update: 27

Source: EPA, Region 7 Telephone: 913-551-7365 Last EDR Contact: 04/20/2009 Next Scheduled EDR Contact: 07/20/2009 Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites

With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment. or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant

Date of Government Version: 12/02/2014 Date Data Arrived at FDR: 12/22/2014 Date Made Active in Reports: 01/27/2015 Number of Days to Update: 36

Source: Department of Health Telephone: 808-586-4249 Last FDR Contact: 01/26/2016 Next Scheduled EDR Contact: 03/07/2016 Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs

Date of Government Version: 09/21/2015 Date Data Arrived at EDR: 09/23/2015 Date Made Active in Reports: 01/04/2016 Number of Days to Update: 103

Source: Environmental Protection Agency Telephone: 202-566-2777 Last EDR Contact: 12/21/2015 Next Scheduled FDR Contact: 04/04/2016 Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998 Date Data Arrived at EDR: 12/03/2007 Date Made Active in Reports: 01/24/2008 Number of Days to Update: 52

Source: Environmental Protection Agency Telephone: 703-308-8245 Last EDR Contact: 02/01/2016 Next Scheduled EDR Contact: 05/16/2016 Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California

Date of Government Version: 01/12/2009 Date Data Arrived at EDR: 05/07/2009 Date Made Active in Reports: 09/21/2009 Number of Days to Update: 137

Source: EPA, Region 9 Telephone: 415-947-4219 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: No Update Planned

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ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985 Date Data Arrived at EDR: 08/09/2004 Date Made Active in Reports: 09/17/2004 Number of Days to Update: 39 Source: Environmental Protection Agency Telephone: 800-424-9346 Last EDR Contact: 06/09/2004 Next Scheduled EDR Contact: N/A Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/12/2015 Date Data Arrived at EDR: 09/04/2015 Date Made Active in Reports: 11/03/2015 Number of Days to Update: 60 Source: Drug Enforcement Administration Telephone: 202-307-1000 Last EDR Contact: 08/31/2015 Next Scheduled EDR Contact: 12/14/2015 Data Release Frequency: No Undate Planned

CDL: Clandestine Drug Lab Listing
A listing of clandestine drug lab site locations.

Date of Government Version: 08/04/2010 Date Data Arrived at EDR: 09/10/2010 Date Made Active in Reports: 10/22/2010 Number of Days to Update: 42 Source: Department of Health Telephone: 808-586-4249 Last EDR Contact: 11/24/2015 Next Scheduled EDR Contact: 03/14/2016 Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/12/2015 Date Data Arrived at EDR: 09/04/2015 Date Made Active in Reports: 11/03/2015 Number of Days to Update: 60 Source: Drug Enforcement Administration Telephone: 202-307-1000 Last EDR Contact: 11/25/2015 Next Scheduled EDR Contact: 03/14/2016 Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA (Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014 Date Data Arrived at EDR: 03/18/2014 Date Made Active in Reports: 04/24/2014 Number of Days to Update: 37 Source: Environmental Protection Agency Telephone: 202-564-6023 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT

Date of Government Version: 06/24/2015 Date Data Arrived at EDR: 06/26/2015 Date Made Active in Reports: 09/02/2015 Number of Days to Update: 68 Source: U.S. Department of Transportation Telephone: 202-366-4555 Last EDR Contact: 12/30/2015 Next Scheduled EDR Contact: 04/11/2016 Data Release Frequency: Annually

SPILLS: Release Notifications

Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

Date of Government Version: 12/02/2014
Date Data Arrived at EDR: 12/22/2014
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 01/28/2015
Number of Days to Update: 37
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 01/26/2016
Next Scheduled EDR Contact:

Next Scheduled EDR Contact: 03/07/2016 Data Release Frequency: Varies

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 03/10/2012 Source: FirstSearch

Date of Government Version: 03/10/2012 Date Data Arrived at EDR: 01/03/2013 Date Made Active in Reports: 02/11/2013 Number of Days to Update: 39

Telephone: N/A Last EDR Contact: 01/03/2013 Next Scheduled EDR Contact: N/A Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/09/2015 Date Data Arrived at EDR: 06/26/2015 Date Made Active in Reports: 09/16/2015 Number of Days to Update: 82 Source: Environmental Protection Agency Telephone: (415) 495-8895 Last EDR Contact: 12/18/2015 Next Scheduled EDR Contact: 04/11/2016 Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015 Date Data Arrived at EDR: 07/08/2015 Date Made Active in Reports: 10/13/2015 Number of Days to Update: 97 Source: U.S. Army Corps of Engineers Telephone: 202-528-4285 Last EDR Contact: 12/11/2015 Next Scheduled EDR Contact: 03/21/2016 Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

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Date of Government Version: 12/31/2005 Date Data Arrived at EDR: 11/10/2006 Date Made Active in Reports: 01/11/2007 Number of Days to Update: 62

Source: USGS Telephone: 888-275-8747 Last EDR Contact: 01/15/2016 Next Scheduled EDR Contact: 04/25/2016 Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service,

Date of Government Version: 12/31/2005 Date Data Arrived at EDR: 02/06/2006 Date Made Active in Reports: 01/11/2007 Number of Days to Update: 339

Source: U.S. Geological Survey Telephone: 888-275-8747 Last FDR Contact: 01/15/2016 Next Scheduled EDR Contact: 04/25/2016 Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011 Date Data Arrived at EDR: 03/09/2011 Date Made Active in Reports: 05/02/2011 Number of Days to Undate: 54

Source: Environmental Protection Agency Telephone: 615-532-8599 Last EDR Contact: 11/19/2015 Next Scheduled EDR Contact: 02/29/2016 Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/01/2015 Date Data Arrived at EDR: 09/03/2015 Date Made Active in Reports: 11/03/2015 Number of Days to Update: 61

Source: Environmental Protection Agency Telephone: 202-566-1917 Last EDR Contact: 11/13/2015 Next Scheduled EDR Contact: 02/29/2016 Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013 Date Data Arrived at EDR: 03/21/2014 Date Made Active in Reports: 06/17/2014 Number of Days to Update: 88

Source: Environmental Protection Agency Telephone: 617-520-3000 Last FDR Contact: 11/10/2015 Next Scheduled EDR Contact: 02/22/2016 Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/22/2013 Date Data Arrived at EDR: 03/03/2015 Date Made Active in Reports: 03/09/2015 Number of Days to Update: 6

Source: Environmental Protection Agency Telephone: 703-308-4044 Last EDR Contact: 11/13/2015 Next Scheduled EDR Contact: 02/22/2016 Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant

Date of Government Version: 12/31/2012 Date Data Arrived at EDR: 01/15/2015 Date Made Active in Reports: 01/29/2015 Number of Days to Update: 14

Source: EPA Telephone: 202-260-5521 Last EDR Contact: 12/23/2015 Next Scheduled EDR Contact: 04/04/2016 Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2013 Source: EPA Date Data Arrived at EDR: 02/12/2015

Telephone: 202-566-0250 Last EDR Contact: 11/24/2015 Date Made Active in Reports: 06/02/2015 Next Scheduled EDR Contact: 03/07/2016 Number of Days to Update: 110 Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat, 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009 Date Data Arrived at EDR: 12/10/2010 Date Made Active in Reports: 02/25/2011

Source: EPA Telephone: 202-564-4203 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016

Data Release Frequency: Annually

ROD: Records Of Decision

Number of Days to Update: 77

Number of Days to Update: 74

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup. Source: EPA

Date of Government Version: 11/25/2013 Date Data Arrived at EDR: 12/12/2013 Date Made Active in Reports: 02/24/2014

Telephone: 703-416-0223 Last EDR Contact: 12/11/2015 Next Scheduled EDR Contact: 03/21/2016 Data Release Frequency: Annually

RMP: Risk Management Plans

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When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures for informing the public and response agencies (e.g. the fire department) should an accident occur.

Date of Government Version: 08/01/2015 Date Data Arrived at EDR: 08/26/2015 Date Made Active in Reports: 11/03/2015 Number of Days to Update: 69 Source: Environmental Protection Agency Telephone: 202-564-8600 Last EDR Contact: 01/25/2016 Next Scheduled EDR Contact: 05/09/2016 Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995 Date Data Arrived at EDR: 07/03/1995 Source: EPA Telephone: 202-564-4104 Last EDR Contact: 06/02/2008

Date Made Active in Reports: 08/07/1995 Number of Days to Update: 35

Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013 Source: EF

Date Data Arrived at EDR: 10/17/2014 Date Made Active in Reports: 10/20/2014 Number of Days to Update: 3 Telephone: 202-564-6023 Last EDR Contact: 11/13/2015

Next Scheduled EDR Contact: 02/22/2016 Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014

Source: EPA Telephone: 202-566-0500 Last EDR Contact: 01/12/2016

Number of Days to Update: 33 Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015 Date Data Arrived at EDR: 02/06/2015 Date Made Active in Reports: 03/09/2015 Number of Days to Update: 31 Source: Environmental Protection Agency Telephone: 202-564-5088 Last EDR Contact: 01/08/2016

Next Scheduled EDR Contact: 04/25/2016

Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA,
TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the
Agency on a quarterly basis.

Date of Government Version: 04/09/2009 Date Data Arrived at EDR: 04/16/2009 Date Made Active in Reports: 05/11/2009

Telephone: 202-566-1667 Last EDR Contact: 11/18/2015 Next Scheduled EDR Contact: 03/07/2016

Source: EPA/Office of Prevention, Pesticides and Toxic Substances

Number of Days to Update: 25 Next Scheduled EDR Contact: 03/07/201 Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009 Date Data Arrived at EDR: 04/16/2009 Date Made Active in Reports: 05/11/2009 Number of Days to Update: 25 Source: EPA Telephone: 202-566-1667 Last EDR Contact: 11/18/2015 Next Scheduled EDR Contact: 03/07/2016 Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/26/2015 Date Data Arrived at EDR: 07/10/2015 Date Made Active in Reports: 10/13/2015 Number of Days to Update: 95 Source: Nuclear Regulatory Commission Telephone: 301-415-7169 Last EDR Contact: 12/07/2015 Next Scheduled EDR Contact: 03/21/2016 Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds

Date of Government Version: 12/31/2005 Date Data Arrived at EDR: 08/07/2009 Date Made Active in Reports: 10/22/2009 Number of Days to Update: 76 Source: Department of Energy Telephone: 202-586-8719 Last EDR Contact: 01/13/2016 Next Scheduled FDR Contact: 04/25/2016

Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Percents: 10/20/2014

Source: Environmental Protection Agency Telephone: N/A

Date Made Active in Reports: 10/20/2014

Number of Days to Update: 40

Last EDR Contact: 12/11/2015 Next Scheduled EDR Contact: 03/21/2016

Next Scheduled EDR Contact: 03/3 Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012

Source: Environmental Protection Agency Telephone: 202-566-0517 Last EDR Contact: 01/29/2016

Number of Days to Update: 83 Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

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Date of Government Version: 07/07/2015 Date Data Arrived at EDR: 07/09/2015 Date Made Active in Reports: 09/16/2015 Number of Days to Update: 69

Source: Environmental Protection Agency Telephone: 202-343-9775 Last EDR Contact: 01/07/2016 Next Scheduled EDR Contact: 04/18/2016 Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006 Date Data Arrived at FDR: 03/01/2007 Date Made Active in Reports: 04/10/2007 Number of Days to Update: 40

Source: Environmental Protection Agency Telephone: 202-564-2501 Last EDR Contact: 12/17/2007 Next Scheduled EDR Contact: 03/17/2008 Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006 Date Data Arrived at EDR: 03/01/2007 Date Made Active in Reports: 04/10/2007 Number of Days to Update: 40

Source: Environmental Protection Agency Telephone: 202-564-2501 Last EDR Contact: 12/17/2008 Next Scheduled EDR Contact: 03/17/2008 Data Release Frequency: No Undate Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data

Date of Government Version: 07/31/2012 Date Data Arrived at EDR: 08/07/2012 Date Made Active in Reports: 09/18/2012 Source: Department of Transporation, Office of Pipeline Safety Telephone: 202-366-4595

Number of Days to Update: 42

Last EDR Contact: 02/03/2016 Next Scheduled EDR Contact: 05/16/2016 Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters

Date of Government Version: 12/31/2014 Date Data Arrived at EDR: 04/17/2015 Date Made Active in Reports: 06/02/2015 Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library Telephone: Varies Last EDR Contact: 12/23/2015 Next Scheduled EDR Contact: 04/11/2016

Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups; Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013 Date Data Arrived at EDR: 02/24/2015 Date Made Active in Reports: 09/30/2015 Number of Days to Update: 218

Source: EPA/NTIS Telephone: 800-424-9346 Last EDR Contact: 11/24/2015 Next Scheduled EDR Contact: 03/07/2016 Data Release Frequency: Biennially

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater

Date of Government Version: 12/31/2005 Date Data Arrived at EDR: 12/08/2006 Date Made Active in Reports: 01/11/2007 Number of Days to Update: 34

Source: USGS Telephone: 202-208-3710 Last EDR Contact: 01/15/2016 Next Scheduled EDR Contact: 04/25/2016

Data Release Frequency: Semi-Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized

Date of Government Version: 09/14/2010 Date Data Arrived at EDR: 10/07/2011 Date Made Active in Reports: 03/01/2012 Number of Days to Update: 146

Source: Department of Energy Telephone: 505-845-0011 Last EDR Contact: 11/19/2015 Next Scheduled EDR Contact: 03/07/2016

Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014 Date Data Arrived at EDR: 11/26/2014 Date Made Active in Reports: 01/29/2015 Number of Days to Update: 64

Source: Environmental Protection Agency Telephone: 703-603-8787 Last EDR Contact: 01/26/2016 Next Scheduled EDR Contact: 04/18/2016 Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001 Date Data Arrived at EDR: 10/27/2010 Date Made Active in Reports: 12/02/2010 Number of Days to Update: 36

Source: American Journal of Public Health Telephone: 703-305-6451 Last EDR Contact: 12/02/2009 Next Scheduled EDR Contact: N/A

Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015 Date Data Arrived at EDR: 10/27/2015 Date Made Active in Reports: 01/04/2016

Source: EPA Telephone: 202-564-2496 Last EDR Contact: 12/22/2015

Number of Days to Update: 69 Next Scheduled EDR Contact: 04/11/2016 Data Release Frequency: Annually

Source: FPA

US AIRS MINOR: Air Facility System Data A listing of minor source facilities.

Date of Government Version: 10/20/2015 Date Data Arrived at EDR: 10/27/2015

Telephone: 202-564-2496 Last EDR Contact: 12/22/2015 Date Made Active in Reports: 01/04/2016

Number of Days to Update: 69 Next Scheduled EDR Contact: 04/11/2016 Data Release Frequency: Annually

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US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes

Date of Government Version: 08/18/2015 Date Data Arrived at EDR: 09/01/2015 Date Made Active in Reports: 01/04/2016 Number of Days to Update: 125

Source: Department of Labor, Mine Safety and Health Administration Telephone: 303-231-5959 Last EDR Contact: 12/03/2015

Next Scheduled EDR Contact: 03/14/2016 Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molyhdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005 Date Data Arrived at EDR: 02/29/2008 Date Made Active in Reports: 04/18/2008 Number of Days to Update: 49

Source: USGS Telephone: 703-648-7709 Last EDR Contact: 12/04/2015 Next Scheduled EDR Contact: 03/14/2016 Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS

Date of Government Version: 04/14/2011 Source: USGS Date Data Arrived at EDR: 06/08/2011 Date Made Active in Reports: 09/13/2011 Number of Days to Update: 97

Telephone: 703-648-7709 Last EDR Contact: 12/04/2015 Next Scheduled EDR Contact: 03/14/2016 Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/20/2015 Date Data Arrived at EDR: 09/09/2015 Date Made Active in Reports: 11/03/2015 Number of Days to Update: 55

Source: EPA Telephone: (415) 947-8000 Last EDR Contact: 12/10/2015 Next Scheduled EDR Contact: 03/21/2016 Data Release Frequency: Quarterly

AIRS: List of Permitted Facilities

A listing of permitted facilities in the state

Date of Government Version: 10/06/2015 Date Data Arrived at EDR: 10/08/2015 Date Made Active in Reports: 11/06/2015 Number of Days to Update: 29

Source: Department of Health Telephone: 808-586-4200 Last EDR Contact: 01/04/2016 Next Scheduled EDR Contact: 04/18/2016 Data Release Frequency: Varies

DRYCLEANERS: Permitted Drycleaner Facility Listing

A listing of permitted drycleaner facilities in the state

Date of Government Version: 10/05/2015 Date Data Arrived at EDR: 10/08/2015 Date Made Active in Reports: 11/16/2015 Number of Days to Update: 39

Source: Department of Health Telephone: 808-586-4200 Last FDR Contact: 01/04/2016 Next Scheduled EDR Contact: 04/18/2016 Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Financial Assurance: Financial Assurance Information Listing

A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay

Date of Government Version: 09/28/2015 Date Data Arrived at EDR: 09/29/2015 Date Made Active in Reports: 11/06/2015 Number of Days to Update: 38

Source: Department of Health Telephone: 808-586-4226 Last EDR Contact: 12/23/2015 Next Scheduled EDR Contact: 03/28/2016 Data Release Frequency: Varies

UIC: Underground Injection Wells Listing

A listing of underground injection well locations.

Date of Government Version: 02/07/2013 Date Data Arrived at EDR: 02/12/2013 Date Made Active in Reports: 04/09/2013 Number of Days to Update: 56

Source: Department of Health Telephone: 808-586-4258 Last EDR Contact: 11/24/2015 Next Scheduled EDR Contact: 03/14/2016 Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production. such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A Source: EDR, Inc. Date Data Arrived at EDR: N/A Telephone: N/A Date Made Active in Reports: N/A Last EDR Contact: N/A

Next Scheduled EDR Contact: N/A

Number of Days to Update: N/A Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental con but may not show up in current government records searches

Date of Government Version: N/A Source: EDR. Inc. Date Data Arrived at EDR: N/A Telephone: N/A Date Made Active in Reports: N/A Last FDR Contact: N/A Number of Days to Update: N/A Next Scheduled EDR Contact: N/A Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

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Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Next Scheduled EDR Contact: N/A

Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A Date Data Arrived at EDR: 07/01/2013 Date Made Active in Reports: 01/08/2014 Number of Days to Update: 191 Source: Department of Health Telephone: N/A Last EDR Contact: 06/01/2012 Next Scheduled EDR Contact: N/A Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/17/2014

Number of Days to Update: 200

Source: Department of Health Telephone: N/A Last EDR Contact: 06/01/2012 Next Scheduled EDR Contact: N/A

Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents
derived from historical databases and includes many records that no longer appear in current government lists.

Compiled from Records formerly available from the Department of Health in Hawaii

Date of Government Version: N/A Date Data Arrived at EDR: 07/01/2013 Date Made Active in Reports: 01/03/2014 Number of Days to Update: 186 Source: Department of Health Telephone: N/A Last EDR Contact: 06/01/2012 Next Scheduled EDR Contact: N/A Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data

Source: PennWell Corporation

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GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services,

a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary

and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are

comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory Source: Office of Planning Telephone: 808-587-2895

Current USGS 7.5 Minute Topographic Map Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

KEHALANI PROPERTY 11 KEHALANI VILLAGE DR WAILUKU, HI 96793

TARGET PROPERTY COORDINATES

Latitude (North): 20.876029 - 20° 52' 33.70" Longitude (West): 156.505865 - 156° 30' 21.11"

Universal Tranverse Mercator: Zone 4 UTM X (Meters): 759491.6 UTM Y (Meters): 2310304.8

Elevation: 370 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map: 5941607 WAILUKU, HI

Version Date: 2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

- 1. Groundwater flow direction, and
- 2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic state

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

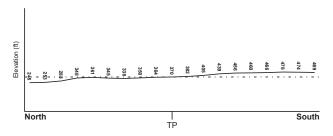
TOPOGRAPHIC INFORMATION

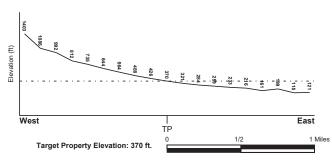
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ENE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

FEMA Flood

Target Property County Electronic Data
YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 1500030190D - FEMA Q3 Flood data

1500030170B - FEMA Q3 Flood data Additional Panels in search area:

NATIONAL WETLAND INVENTORY

NWI Flectronic NWI Quad at Target Property

Data Coverage

YES - refer to the Overview Map and Detail Map NOT AVAILABLE

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

> LOCATION GENERAL DIRECTION MAP ID FROM TP GROUNDWATER FLOW Not Reported

GEOCHECK[®] - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT GEOLOGIC AGE IDENTIFICATION

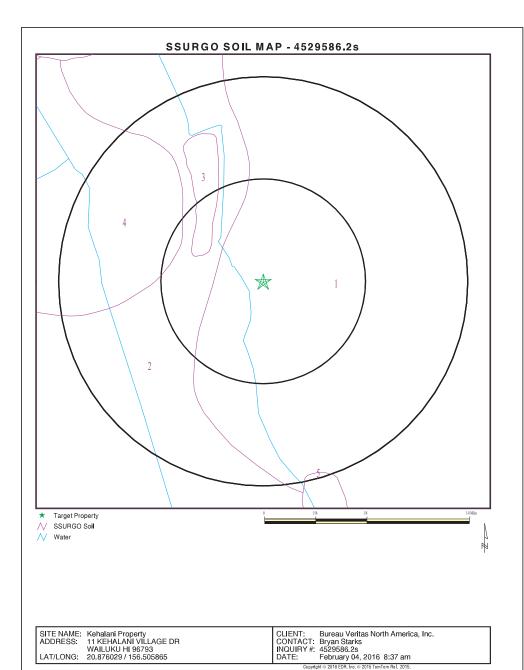
Era: Category: -

System: Series:

Code: N/A (decoded above as Era, System & Series)

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

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GEOCHECK[®] - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: lao Soil Surface Texture: clay

Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures. Hydrologic Group:

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate Depth to Bedrock Min: > 0 inches Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	conductivity micro m/sec	
1	0 inches	14 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6
2	14 inches	48 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
3	48 inches	59 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6

TC4529586.2s Page A-6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: lao Soil Surface Texture: clay

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward

movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate Depth to Bedrock Min: > 0 inches Depth to Watertable Min: > 0 inches

	Soil Layer Information						
	Boundary		Classification		Saturated hydraulic		
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	conductivity micro m/sec	
1	0 inches	14 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6
2	14 inches	48 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
3	48 inches	59 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 3

Soil Component Name: Water > 40 acres

Soil Surface Texture:

Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures. Hydrologic Group:

Soil Drainage Class:

GEOCHECK[®] - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Unknown

No Layer Information available.

Corrosion Potential - Uncoated Steel: Not Reported Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Map ID: 4

Soil Component Name: lao

Soil Surface Texture: cobbly silty clay

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward

movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	cobbly silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6
2	14 inches	48 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
3	48 inches	59 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6

TC4529586.2s Page A-7 TC4529586.2s Page A-8

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 5

Soil Component Name: lao

Soil Surface Texture: cobbly silty clay

Class C - Slow infiltration rates. Soils with layers impeding downward Hydrologic Group:

movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate Depth to Bedrock Min: > 0 inches Depth to Watertable Min: > 0 inches

	Soil Layer Information						
Boundary		ndary		Classification		Saturated hydraulic	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	conductivity Soil Reacti	
1	0 inches	14 inches	cobbly silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6
2	14 inches	48 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
3	48 inches	59 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK[®] - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE SEARCH DISTANCE (miles)

Federal USGS

Federal FRDS PWS Nearest PWS within 1 mile

State Database 1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP	
A1	USGS40000269100	1/4 - 1/2 Mile NNW	
A2	USGS40000269101	1/4 - 1/2 Mile NNW	
A3	USGS40000269102	1/4 - 1/2 Mile NNW	
B8	USGS40000269114	1/2 - 1 Mile NW	
C11	USGS40000269112	1/2 - 1 Mile NW	
D16	USGS40000269087	1/2 - 1 Mile ENE	
E18	USGS40000269149	1/2 - 1 Mile NNW	
E22	USGS40000269148	1/2 - 1 Mile NNW	
E25	USGS40000269152	1/2 - 1 Mile NNW	
E27	USGS40000269154	1/2 - 1 Mile NNW	
F28	USGS40000269052	1/2 - 1 Mile South	

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
E23	HI0000212	1/2 - 1 Mile NNW

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

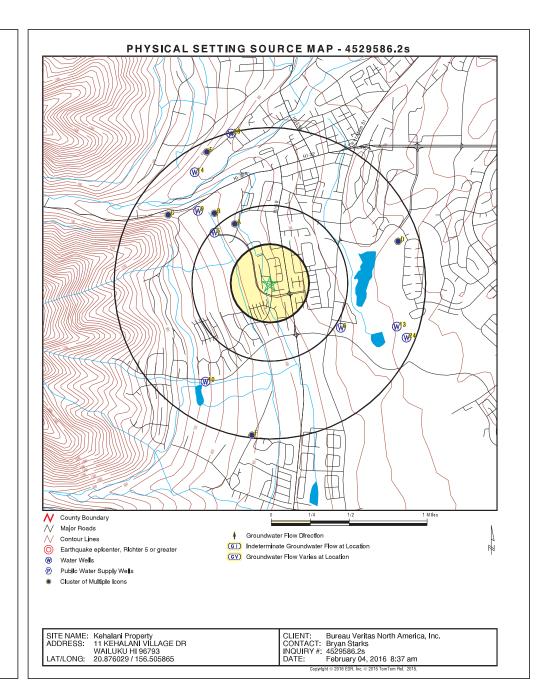
MAP ID	WELL ID	LOCATION FROM TP
A4	HI90000000003470	1/4 - 1/2 Mile NNW
5	HI900000003357	1/4 - 1/2 Mile NW
6	HI900000003354	1/2 - 1 Mile ESE
B7	HI900000003468	1/2 - 1 Mile NW
9	HI900000003356	1/2 - 1 Mile NW
10	HI900000003355	1/2 - 1 Mile SSW
C12	HI900000003478	1/2 - 1 Mile NW
13	HI900000003353	1/2 - 1 Mile ESE
14	HI900000003466	1/2 - 1 Mile NW
D15	HI900000003462	1/2 - 1 Mile ENE
D17	HI900000003348	1/2 - 1 Mile ENE
E19	HI900000003474	1/2 - 1 Mile NNW
E20	HI900000003475	1/2 - 1 Mile NNW
E21	HI900000003476	1/2 - 1 Mile NNW
24	HI900000003352	1/2 - 1 Mile ESE

TC4529586.2s Page A-9 TC4529586.2s Page A-10

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
E26	HI90000000003473	1/2 - 1 Mile NNW
29	HI900000003471	1/2 - 1 Mile NNW
F30	HI9000000003304	1/2 - 1 Mile South



Map ID Direction Distance Elevation

Database EDR ID Number A1 NNW 1/4 - 1/2 Mile FED USGS USGS40000269100

Vert measure val:

Countrycode:

Vertacc measure val:

401.51

.01

US

Higher

Org. Identifier: USGS-HI

Formal name: USGS Hawaii Water Science Center Monloc Identifier: USGS-205305156304401

6-5330-05 Shaft 33, well 1, Maui, HI Monloc name: Monloc type:

Monloc desc: well closest to portal(vs 2/3);v. well 310 ft deep

Huc code: 20020000 Drainagearea value: Not Reported Drainagearea Units: Not Reported Contrib drainagearea: Not Reported Contrib drainagearea units: Not Reported Latitude: 20.8815145 Longitude: -156.5094 Sourcemap scale: 24000 Horiz Acc measure: Horiz Acc measure units: seconds Horiz Collection method: Interpolated from map

Vert measure units: feet

Horiz coord refsys:

NAD83 Vert accmeasure units: Vertcollection method: Level or other surveying method

Vert coord refsys: HILOCAL Aquifername: Not Reported Formation type: Not Reported Aquifer type: Not Reported

Construction date: 19460101 Welldepth: Not Reported Welldepth units: Not Reported Wellholedepth: Not Reported

Wellholedepth units: Not Reported

Ground-water levels, Number of Measurements: 64

Feet below Feet to Feet below Feet to Date Surface Sealevel Sealevel

2004-08-18

Note: A nearby site that taps the same aquifer was being pumped. 2004-07-12 9.54

Note: A nearby site that taps the same aquifer was being pumped. 2004-05-13 9.51

Note: A nearby site that taps the same aquifer was being pumped. 2004-04-02 9.24

Note: A nearby site that taps the same aquifer was being pumped. 2004-02-10 8.89

Note: A nearby site that taps the same aquifer was being pumped. 2004-01-07 7.41

Note: A nearby site that taps the same aquifer was being pumped. 2003-11-13 8.15

Note: A nearby site that taps the same aquifer was being pumped. 2002-10-01 7.86

Note: A nearby site that taps the same aquifer was being pumped. 2002-08-20 10.34

Note: A nearby site that taps the same aquifer was being pumped.

2002-07-02 8.71 Note: A nearby site that taps the same aquifer was being pumped.

2002-05-14 9.19 Note: A nearby site that taps the same aquifer was being pumped. 2002-04-02 9.19

Note: A nearby site that taps the same aquifer was being pumped.

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Orouna-v	ater levels, cont Feet below			Feet below	Feet to
Date	Surface	Sealevel	Date	Surface	Sealeve
2002-02-	21	9.11			
		t taps the same aquifer was being pumpe	ed.		
2002-01-		8.66			
		t taps the same aquifer was being pumpe	ed.		
2001-12-		8.09			
2001-10-	16	t taps the same aquifer was being pumpe 7.83			
2001-08-	21	t taps the same aquifer was being pumpe 7.97			
		t taps the same aquifer was being pumpe	ed.		
2001-07-		7.97			
		t taps the same aquifer was being pumpe	ed.		
2001-05-		8.21			
		t taps the same aquifer was being pumpe	ed.		
2001-04-		8.49			
		t taps the same aquifer was being pumpe	ea.		
2001-03-		8.67			
2001-01-	09	t taps the same aquifer was being pumpe 8.87			
		t taps the same aquifer was being pumpe	ed.		
2000-12-		8.77			
		t taps the same aquifer was being pumpe	ea.		
2000-10-		8.51			
Note: 7 -2000-08		t taps the same aquifer was being pumpe 8.51	ea.		
2000-08 2000-07-1		8.90			
		t taps the same aquifer was being pumpe	nd.		
2000-05-		9.45	u.		
	he site was beir				
2000-04-		9.89			
2000-04-		10.90			
		t taps the same aquifer was being pumpe	hd		
2000-01-		11.97	2000-01-05		12.85
1999-12-		15.17	1999-12-03		15.04
1999-10-		14.25	1999-08-26		13.19
1999-08-		13.19	1999-07-01		9.55
1999-05-		10.29	1999-03-30		10.85
1999-03-	05	11.05	1999-01-05		10.83
1998-12-	01	12.00			
Note: 1	he site had beer	n pumped recently.			
1998-12-		10.33	1998-09-29		10.46
1998-08-	11	10.51	1998-06-19		10.44
1998-04-	03	10.68	1998-02-24		11.05
1998-01-	07	11.22	1997-11-17		11.05
1997-09-	25	11.57	1997-08-12		15.68
1997-06-	12	16.35	1997-04-24		16.28
1997-04-2		16.33	1997-03-20		15.98
1997-01-	30	15.09	1996-12-02		9.60
1996-10-2	21	9.21	1996-09-09		9.55
1996-07-		10.14	1996-06-10		10.71
1996-04-	02	11.55	1996-02-29		11.21

TC4529586.2s Page A-13 TC4529586.2s Page A-14

Map ID Direction Distance Elevation

Database EDR ID Number A2 NNW 1/4 - 1/2 Mile FED USGS USGS40000269101

Higher

Org. Identifier: USGS-HI

USGS Hawaii Water Science Center Formal name: USGS-205305156304402 Monloc Identifier

6-5330-05 Shaft 33, well 2, Maui, HI Monloc name:

Monloc type: Well

Monloc desc: middle well; see seq. no. 01 and 03

Huc code: 20020000 Drainagearea value: Not Reported Drainagearea Units: Not Reported Contrib drainagearea: Not Reported Contrib drainagearea units: Not Reported Latitude: 20.8815145 Longitude: -156.5094 Sourcemap scale: Not Reported Horiz Acc measure: Horiz Acc measure units: seconds Horiz Collection method: Interpolated from map 401.51

Horiz coord refsys: NAD83 Vert measure val: Vert measure units: feet Vertacc measure val: .01

Vert accmeasure units:

Vertcollection method: Level or other surveying method Vert coord refsys: HILOCAL

Aquifername: Not Reported Formation type: Not Reported Aquifer type: Not Reported

Construction date: Not Reported Welldepth: 310 Welldepth units: Wellholedepth: 310

Wellholedepth units:

Ground-water levels, Number of Measurements: 0

A3 NNW 1/4 - 1/2 Mile FED USGS USGS40000269102 Higher

Countrycode:

US

Not Reported

seconds

Org. Identifier:

USGS-HI Formal name: USGS Hawaii Water Science Center Monloc Identifier: USGS-205305156304403

Monloc name: 6-5330-05 Shaft 33, well 3, Maui, HI

Monloc type: Well Monloc desc:

well furthest from portal; see seq. no. 01 and 02 Huc code: 20020000 Drainagearea value: Not Reported Drainagearea Units: Not Reported Contrib drainagearea: Not Reported Contrib drainagearea units: Not Reported 20.8815145

Longitude: -156.5094 Sourcemap scale: Horiz Acc measure: Horiz Acc measure units:

Horiz Collection method: Interpolated from map

Horiz coord refsys: NAD83 Vert measure val: 401.51 Vert measure units: Vertacc measure val: .01 feet

Vert accmeasure units: Level or other surveying method Vertcollection method:

HILOCAL Countrycode: US Vert coord refsvs:

Not Reported Aquifername:

Not Reported Formation type:

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type: Not Reported Construction date: Not Reported Welldepth: 310 310 Welldepth units: Wellholedepth: Wellholedepth units:

Ground-water levels, Number of Measurements: 7

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1975-02-	 19	19.34	1974-04-29		23.42
1974-04-	08	23.45	1974-04-02		23.43
1974-04-	01	23.31	1974-02-28		22.56
1973-03-	29	22.90			

A4 NNW 1/4 - 1/2 Mile HI WELLS HI900000003470

1/4 - 1/2 Mile Higher			
Wid:	6-5330-005	Island:	Maui
Well name:	Wailuku Shaft 33	Old name:	Not Reported
Yr drilled:	1946		
Driller:	Not Reported		
Quad map:	5		
Long83dd:	-156.509211		
Lat83dd:	20.881781		
Gps:	-1	Utm:	0
Owner user:	Department of Water Sup	ply Maui, MDWS	
Land owner:	RCFC Kehalani, LLC		
Pump insta:	Not Reported		
Old number:	33-SH	Well type:	SHF
Casing dia:	23	Ground el:	30
Well depth:	310		
Solid case:	Not Reported	Perf case:	310
Use:	MUN - County		
Use year:	Not Reported		
Init head:	26	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0	- .	2022
Test date:	Not Reported	Test gpm: Test chlor:	3368 115
Test ddown: Test temp:	Not Reported Not Reported	Test unit:	Not Reported
	13500	rest unit.	Not Reported
Pump gpm: Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TW	WIII CHIOL	Not Reported
Pump yr:	1947		
Draft yr:	Not Reported	Bot hole:	-280
Bot solid:	Not Reported	Bot perf:	-280
Spec capac:	Not Reported	Bot pori.	200
Pump mgd:	19.44		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-5-001:089
Agui code:	60102		(2) 0 0 001.000
Latest hd:	Not Reported	Wcr:	26-SEP-49
Pir:	9/26/1949		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI900000003470

TC4529586.2s Page A-15 TC4529586.2s Page A-16

Mile	stance evation			Database	EDR ID Numbe
Wall name: Walluku Old name: Not Reported	- 1/2 Mile			HI WELLS	HI900000003357
rf drilled: 2012 Dialler: Alpha, Inc. Dual map: 0 .ong83dd: 20.880744 pb: 0 Dexmer user: Department of Water Supply Maui, MDWS 2.md owner: RCPC Kehalani, LLC Vump linsta: Not Reported Vill number: Not Reported Vell depth: 582 Solid case: 474.1 Jes: UNU - Unused Jese: Not Reported It head: 8 Init head2: 8 Init head3: 8.5					
Driller: Alpha, Inc. Dual and map: 0 Cong83dd: -156.511367 20.880744 20.880748 20.880744 20.880748 20.8807			Old name:	Not Reported	
Duad map:					
.ong83dd:					
20,880744 3ps:					
Department of Water Supply Maui, MDWS					
Department of Water Supply Maui, MDWS Aund owner: RCFC Kehalani, LLC Rump insta: Not Reported Well type: ROT Avenue Rot Reported			Utm:	0	
and owner: RCFC Kehalani, LLC Varping instalts Not Reported Well type: ROT		Department of Water Supply		-	
Did number:	and owner:		,		
Assing dia:	ump insta:	Not Reported			
Vell depth: 582 A74.1 Perf case: 108.9 Solid case: 474.1 Perf case: 108.9 Solid case: UNU - Unused See year: Not Reported Init head3: 8 Init head3: 8.5 Init head3: 8.5 Init head3: Not Reported Test down: Not Reported Test chlor: Test chlor: Not Reported Test chlor: Test chlor: Not Reported Test chlor: Not Reported Test chlor: T	Old number:	Not Reported	Well type:	ROT	
Solid case: 474.1 Perf case: 108.9			Ground el:	480	
Jse:					
Jse year: Not Reported			Perf case:	108.9	
nit head: 8 Init head2: 8 nit dead3: 8.5 nit d: 75 Fest date: Not Reported Test chlor: Not Reported Fest ddown: Not Reported Test chlor: Not Reported Pump pgm: Not Reported Test unit: Not Reported Pump pgm: 0 Unit reported Not Reported Boelogy: O Tao O Tao Not Reported Pump yr: 0 O Tao O Tao Pump yr: 0 O Tao O Tao Pump pgm: 0 O Tao O Tao Pump and: 0 O Tao O Tao Pump depth: Not Reported Tak: (2) 3-5-001:100 Not: Not Reported Wcr. 25-JUL-13 Pir:<					
nit head3: 8.5 rit cl: 75 Fest date: Not Reported Test chlor: Not Reported Fest date: Not Reported Test chlor: Not Reported Fest temp: Not Reported Test unit: Not Reported Pump gpm: 0 Doorst may: Not Reported Wax chlor: Not Reported Min chlor: Not Reported Wax chlor: Not Reported Min chlor: Not Reported Wax prize O O O Draft yr: Not Reported Bot hole: -102 301 solid: 5.9 Bot perf: 371.1 Spec capac: 540 Spec capac: Not Reported Pump getw: Not Reported Not Reported Pump getw: Not Reported Tmk: (2) 3-5-001:100 Aqui code: 60102 Site id: Hi WELLS Hi 9000000003357 Fr: Not Reported Wcr: 25-JUL-13 Site id: Hi WELLS Hi 9000000003357 Fr:			Init head?	Ω	
Test date: Not Reported Test gpm: Not Reported Test dolor: Not Reported Test dolor: Not Reported Test dolor: Not Reported Test tunit: Not Reported Test unit: Not Reported Test unit: Test u			IIII IIEauz.	O	
Test date:					
Test temp:			Test gpm:	Not Reported	
Pump gipm: O	Test ddown:	Not Reported	Test chlor:	Not Reported	
Draft mgy: 69.9			Test unit:	Not Reported	
Max chlor: Not Reported Min chlor: Not Reported Geology: QTao -102 Pump yr: 0 -102 Sot solid: 5.9 Bot perf: 371.1 Spec capac: 540 -9 -9 Pump mgd: Not Reported Pump elev: Not Reported Pump depth: Not Reported Tmk: (2) 35-001:100 Aqui code: 60102		-			
Care					
Pump yr: Onart yr: Not Reported			Min chlor:	Not Reported	
Draft yr: Not Reported Bot hole: -102					
Sot solid: 5.9 Bot perf: 371.1			Bot hole:	-102	
Spec capac: 540					
Draft mgd: Not Reported Pump elev: Not Reported Pump depth: Not Reported Tmk: (2) 3-5-001:100 Aqui code: 60102 50102 Latest hd: Not Reported Wcr. 25-JUL-13 Pir: Not Reported Surveyor: Ronald Fukumoto (Fukumoto Engineering, Inc.) T: 246000 Site id: HI900000003357 Hi WELLS Hi9000000003357 Wid: 6-5230-001 Island: Maui Well name: Ka Hale A Ke Ola Old name: Not Reported Yr drilled: 1997 Onther: Not Reported Quad map: 5 Cuoa map: 5 Long83dd: -156.498819 Lat83dd: 20.871875 Gps: 0 Utm: -1 Dwner user: Ka Hale O Ke Ola Old name: -1					
Pump depth:	Pump mgd:	0			
Aqui code: 60102 Latest hd: Not Reported Wcr: 25-JUL-13 Pir: Not Reported Wcr: 46000 Ti: 246000 Site id: Hi900000003357 HI WELLS Hi900000003357 HI WELLS Hi900000003357 HI WELLS Hi900000003357 HI WELLS Hi900000003357 Wid: 6-5230-001 Island: Maui Well name: Ka Hale A Ke Ola Old name: Not Reported Yr drilled: 1997 Driller: Wallani Drilling Services Inc Quad map: 5 Long83dd: -156.498819 Lat83dd: 20.871875 Gps: 0 Utm: -1 Dwner user: Ka Hale O Ke Ola	Draft mgd:	Not Reported	Pump elev:	Not Reported	
Alest hd: Not Reported Wcr: 25-JUL-13			Tmk:	(2) 3-5-001:100	
Pir: Not Reported Surveyor: Ronald Fukumoto (Fukumoto Engineering, Inc.) T: 246000 Site id: HI900000003357 HI WELLS HI900000003357 HI WELLS HI9000000003357 HIP WELLS HI9000000003357 HI WELLS HI9000000003357 HI WELLS HI9000000003357 HI WELLS HI9000000003357 HI WELLS HI9000000003357 HIP WELLS HI90000000003357 HIP WELLS HI900000000003357 HIP WELLS HI900000000003357 HIP WELLS HI9000000000000000000000000000000000000					
Ronald Fukumoto (Fukumoto Engineering, Inc.) 246000 Site id: Hi900000003357			Wcr:	25-JUL-13	
E -1 Mille Wer			F		
## HI WELLS HI90000000338 ## HI WELLS HI90000000338 ## Wer ## Wer ## Wallan				HI00000000033E7	
-1 Mile wer wer Wallani Drilling Services Inc Sugard: 4 Hale O Ke Ola Wile Sugard: 4 Hale O Ke Ola Wallani Drilling Services Inc Sugard: 4 Hale O Ke Ola Wile Sugard: 4 Hale O Ke Ola Wallani Drilling Services Inc Sugard: 4 Hale O Ke Ola Wile Sugard: 4 Hale O Ke Ola Wallani Drilling Services Inc Sugard: 4 Hale O Ke Ola Wallani Drilling		240000	one id.	111300000000000	
Wid: 6-5230-001 Island: Maui Well name: Ka Hale A Ke Ola Old name: Not Reported f' drilled: 1997 Vallani Drilling Services Inc Duad map: 5 0 Long83dd: -156.498819 Lat83dd: 20.871875 Sps: 0 Utm: -1 Dwner user: Ka Hale O Ke Ola	E - 1 Mile			HI WELLS	HI900000003354
Well name: Ka Hale A Ke Ola Old name: Not Reported yf drilled: 1997 prollier: Wallani Drilling Services Inc Quad map: 5 cong83dd: -156.498819 _at83dd: 20.871875 5ps: 0 Utm: -1 Owner user: Ka Hale O Ke Ola	wer				
\text{Yr drilled:} 1997 \text{Driller:} \text{Wallani Drilling Services Inc} \text{Duad map:} 5 \text{Long83dd:} -156.498819 \text{20.871875} \text{Sps:} 0 \text{Utm:} -1 \text{Dwner user:} \text{Ka Hale O Ke Ola}	Nid:	6-5230-001	Island:	Maui	
Driller: Wailani Drilling Services Inc Quad map: 5 ong83dd: -156.498819 a183dd: 20.871875 Sps: 0 Utm: -1 Owner user: Ka Hale O Ke Ola			Old name:	Not Reported	
Quad map: 5 .ong83dd: -156.498819 .at83dd: 20.871875 3ps: 0 Utm: -1 .ong82df: -1 .o					
Long83dd: -156.498819 Lat83dd: 20.871875 Sps: 0 Utm: -1 Owner user: Ka Hale O Ke Ola					
_atl83dd: 20.871875 3ps: 0 Utm: -1 Owner user: Ka Hale O Ke Ola					
Sps: 0 Utm: -1 Owner user: Ka Hale O Ke Ola					
Owner user: Ka Hale O Ke Ola			l ltm:	-1	
			oun.	-1	
and owner: County of Maui	and owner:	County of Maui			
				TC4529586.2s Pa	age A-17

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	10	Ground el:	249
Well depth:	300		
Solid case:	280	Perf case:	300
Use:	IRR - Landscape/Water Feature	s	
Use year:	Not Reported		
Init head:	4.09	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	30		
Test date:	9/19/1997	Test gpm:	270
Test ddown:	0.04	Test chlor:	30
Test temp:	22.8	Test unit:	С
Pump gpm:	230		
Draft mgy:	72	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	1998		
Draft yr:	Not Reported	Bot hole:	-51
Bot solid:	-21	Bot perf:	-41
Spec capac:	Not Reported		
Pump mgd:	.331		
Draft mgd:	Not Reported	Pump elev:	-19
Pump depth:	268	Tmk:	(2) 3-8-046:033
Aqui code:	60102		
Latest hd:	Not Reported	Wcr:	19-SEP-97
Pir:	2/27/2002		
Surveyor:	Edgardo Valera		
T:	894722	Site id:	HI9000000003354

7 W 2 - 1 Mile igher			HI WELLS	HI90000000346
Wid: Well name: Yr drilled: Driller: Quad map: Long83dd:	6-5330-003 Field 63 1945 W. Mullin 5 -156.511389	Island: Old name:	Maui Not Reported	
Lat83dd: Gps: Owner user: Land owner:	20.8825 0 Wailuku Sugar Not Reported	Utm:	-1	
Pump insta: Old number: Casing dia: Well depth:	Not Reported 112-TH 1 477	Well type: Ground el:	ROT 457	
Solid case: Use: Use year:	Not Reported OBS - Observation Not Reported	Perf case:	Not Reported	
Init head: Init head3: Init cl:	30.6 Not Reported 0	Init head2:	Not Reported	
Test date:	Not Reported	Test gpm:	Not Reported	

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Test ddown:	2.5	Test chlor:	15
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TW		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-20
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60102		
Latest hd:	Not Reported	Wcr:	01-JAN-45
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI900000003468

B8 NW FED USGS USGS40000269114 1/2 - 1 Mile Higher

457.07

.01

Org. Identifier: USGS-HI

Formal name: USGS Hawaii Water Science Center Monloc Identifier: USGS-205309156305101

Monloc name: 6-5330-03 Test Hole T-112, Maui, HI
Monloc type: Well: Test hole not completed as a well

Monloc desc: Not Reported

Huc code: 20020000 Drainagearea value: Not Reported Drainagearea Units: Not Reported Contrib drainagearea: Not Reported Contrib drainagearea units: Not Reported Latitude: 20.8826255 Longitude: -156.5113445 Sourcemap scale: 24000 Horiz Acc measure: Horiz Acc measure units: seconds Horiz Collection method: Interpolated from map

Horiz coord refsys: NAD83 Vert measure val:

Vert measure units: feet Vertacc measure val:

Vert accmeasure units: feet

Vertcollection method: Level or other surveying method

Vert coord refsys: HILOCAL Countrycode: US Aquifername: Not Reported

Aquifername: Not Reported Formation type: Not Reported Aquifer type: Not Reported

Construction date: 19450101 Welldepth: 477
Welldepth units: ft Wellholedepth: 477

Wellholedepth units: ft

Ground-water levels, Number of Measurements: 0

9 NV HI WELLS HI900000003356 1/2 - 1 Mile Higher

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Wid: Well name: Yr drilled:	6-5230-003 Iao Tank Site 2005	Island: Old name:	Maui Not Reported
Driller:	Michael Robertson (Wailani Drilli	ng Services Inc)	
Quad map:	5	,	
Long83dd:	-156.512989		
Lat83dd:	20.882785		
Gps:	-1	Utm:	0
Owner user:	Department of Water Supply Mau	ii. MDWS	
Land owner:	County of Maui	•	
Pump insta:	Beylik Drilling & Pump Service In	C.	
Old number:	Not Reported	Well type:	ROT
Casing dia:	20	Ground el:	506
Well depth:	608		
Solid case:	500	Perf case:	608
Use:	MUN - County		
Use year:	Not Reported		
Init head:	8.63	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	20		
Test date:	8/15/2005	Test gpm:	1400
Test ddown:	3.1	Test chlor:	25
Test temp:	70.3	Test unit:	F
Pump gpm:	1400		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TW		
Pump yr:	2011		
Draft yr:	Not Reported	Bot hole:	-102
Bot solid:	6	Bot perf:	-102
Spec capac:	Not Reported		
Pump mgd:	2.016		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-5-001:021
Aqui code:	60102		
Latest hd:	Not Reported	Wcr:	05-APR-06
Pir:	11/9/2011		
Surveyor:	Ken Nomura		
T:	100000	Site id:	HI9000000003356

10 SSW HI WELLS HI900000003355 1/2 - 1 Mile Higher

Wid: 6-5230-002 Island: Maui lao Deep Monitor Well name: Old name: Not Reported Yr drilled: 2006 Blaise Clay (Water Resources International, Inc.) Driller: Quad map: Long83dd: -156.512255 Lat83dd: 20.866855 Gps: Utm: Owner user: Commission on Water Resource Management, CWRM

County of Maui

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Land owner:

Pump insta: Not Reported ROT Old number: Not Reported Well type: 682 Casing dia: Ground el: Well depth: 1800 703 Perf case: Not Reported Solid case: Use: OBS - Deep (through transition zone) Use year: Not Reported 13.93 Init head: Init head2: Not Reported Init head3: Not Reported Init cl: Test date: Not Reported Test gpm: Not Reported Test ddown: Not Reported Test chlor: Not Reported Test temp: Not Reported Test unit: Not Reported Pump gpm: Not Reported Draft mgy: Not Reported Head feet: Max chlor: Not Reported Min chlor: Not Reported Geology: TW Pump yr: Draft yr: Not Reported Bot hole: -1118 Bot solid: Bot perf: Not Reported Spec capac: Not Reported Pump mgd: Draft mgd: Not Reported Pump elev: Not Reported Pump depth: Not Reported (2) 3-5-002:003 Aqui code: 60102 Latest hd: Not Reported Wcr: 27-JUN-06 Not Reported Surveyor: Reed Ariyoshi (Warren S. Unemori Engineering) Not Reported HI900000003355

C11 NW 1/2 - 1 Mile Higher FED USGS USGS40000269112

Vertacc measure val:

.01

Org. Identifier: USGS-HI

USGS Hawaii Water Science Center Formal name: Monloc Identifier: USGS-205308156310701 Monloc name: 6-5331-01 T-102, Maui, HI

Monloc type: Well: Test hole not completed as a well

Monloc desc: Not Reported 20020000 Huc code:

Not Reported Drainagearea value: Not Reported Contrib drainagearea: Not Reported Drainagearea Units: Contrib drainagearea units: Not Reported Latitude: 20.8823478 Longitude: -156.5157888 Sourcemap scale: 24000 Horiz Acc measure: Horiz Acc measure units: seconds Horiz Collection method: Interpolated from map NAD83 453.90 Horiz coord refsys: Vert measure val:

feet Vert accmeasure units: Vertcollection method: Level or other surveying method

Vert coord refsys: HILOCAL Countrycode: US

Aguifername Not Reported Formation type: Not Reported

Vert measure units:

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Not Reported Aquifer type: 475 Construction date: 19400101 Welldepth: Wellholedepth: 475 Welldepth units: Wellholedepth units:

Ground-water levels, Number of Measurements: 0

C12 NW 1/2 - 1 Mile Higher			HI WELLS	HI900000003478
Wid:	6-5331-001	Island:	Maui	
Well name:	Iao Valley TH	Old name:	Not Reported	
Yr drilled:	1940			
Driller:	JV Crews			
Quad map:	5			
Long83dd:	-156.516111			
Lat83dd:	20.8825			
Gps:	0	Utm:	-1	
Owner user:	Wailuku Sugar			
Land owner:	Not Reported			
Pump insta:	Not Reported			
Old number:	Not Reported	Well type:	Not Reported	
Casing dia:	1	Ground el:	454	
Well depth:	475			
Solid case:	465	Perf case:	Not Reported	
Use:	OBS - Observation			
Use year:	Not Reported			
Init head:	32.9	Init head2:	Not Reported	
Init head3:	Not Reported			
Init cl:	0			
Test date:	Not Reported	Test gpm:	Not Reported	
Test ddown:	Not Reported	Test chlor:	Not Reported	
Test temp:	Not Reported	Test unit:	Not Reported	
Pump gpm:	0			
Draft mgy:	Not Reported	Head feet:	Not Reported	
Max chlor:	Not Reported	Min chlor:	Not Reported	
Geology:	TW			
Pump yr:	0			
Draft yr:	Not Reported	Bot hole:	-21	
Bot solid:	-11 ·	Bot perf:	Not Reported	
Spec capac:	Not Reported			
Pump mgd:	0			
Draft mgd:	Not Reported	Pump elev:	Not Reported	
Pump depth:	Not Reported	Tmk:	Not Reported	
Agui code:	60102			
Latest hd:	Not Reported	Wcr:	01-JAN-40	
Pir:	Not Reported			
Surveyor:	Not Reported			
T:	Not Reported	Site id:	HI900000003478	

13 ESE 1/2 - 1 Mile HI WELLS HI900000003353

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Wid: Well name: Yr drilled: Driller: Quad map: Long83dd:	6-5229-006 Maui Lani 7 2006 Valley Well Drilling, LLC 5 -156 493266	Island: Old name:	Maui Not Reported
Lat83dd:	20.871991		
Gps:	-1	Utm:	0
Owner user:	Maui Lani Partners		
Land owner:	Maui Lani Partners		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	14	Ground el:	Not Reported
Well depth:	223		
Solid case:	181	Perf case:	211
Use:	MUN - County		
Use year:	Not Reported		
Init head:	4.5	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	22	- .	550
Test date:	5/12/2006	Test gpm:	550
Test ddown:	0.9	Test chlor:	39
Test temp:	72.5	Test unit:	F
Pump gpm:	0	Head feet:	N . D
Draft mgy: Max chlor:	Not Reported	Min chlor:	Not Reported
	Not Reported TK	Min Chior:	Not Reported
Geology: Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot note:	Not Reported
Spec capac:	Not Reported	Bot peri.	Not reported
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-8-007:153
Agui code:	60301		()
Latest hd:	Not Reported	Wcr:	26-JUL-06
Pir:	Not Reported		
Surveyor:	Darren Unemori		
T:	Not Reported	Site id:	HI900000003353

14 NW HI WELLS HI90000003466 1/2 - 1 Mile Lower

Wid: 6-5330-001 Island: Maui lao Tunnel 1900 Well name: Old name: Not Reported Yr drilled: Driller: Not Reported Quad map: Long83dd: 5 -156.513333 20.886389 Lat83dd: Gps: Owner user: Utm: Wailuku Sugar Not Reported Land owner:

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Pump insta:	Not Reported		
Old number:	9-TU	Well type:	TUN
Casing dia:	Not Reported	Ground el:	440
Well depth:	0		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, i	non-agriculture)	
Use year:	Not Reported		
Init head:	440	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	50	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Agui code:	60102		·
Latest hd:	Not Reported	Wcr:	02-JAN-00
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI900000003466
	*		

D15 ENE 1/2 - 1 Mile Lower			HI WELLS	HI900000003462
Wid:	6-5329-018	Island:	Maui	
Well name:	Waiale Obs	Old name:	Not Reported	
Yr drilled:	1977			
Driller:	Continental Drilling Hawaii, Inc			
Quad map:	5			
Long83dd:	-156.493333			
Lat83dd:	20.880278			
Gps:	0	Utm:	-1	
Owner user:	Astoria International Inc.			
Land owner:	Not Reported			
Pump insta:	Not Reported			
Old number:	Not Reported	Well type:	ROT	
Casing dia:	2	Ground el:	191	
Well depth:	450			
Solid case:	Not Reported	Perf case:	Not Reported	
Use:	OBS - Observation			
Use year:	Not Reported			
Init head:	Not Reported	Init head2:	Not Reported	
Init head3:	Not Reported			
Init cl:	0			
Test date:	Not Reported	Test gpm:	Not Reported	

TC4529586.2s Page A-23 TC4529586.2s Page A-24

Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-259
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	·	·
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Agui code:	60102		
Latest hd:	Not Reported	Wcr:	01-JAN-77
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI900000003462
	•		

Org. Identifier: USGS-HI

Formal name: USGS Hawaii Water Science Center

Monloc Identifier: USGS-205301156294601

Monloc name: 6-5329.07 -18

Monloc type: Well
Monloc desc: Not Reported

20020000 Drainagearea value: Not Reported Huc code: Drainagearea Units: Not Reported Contrib drainagearea: Not Reported Contrib drainagearea units: Not Reported Latitude: 20.8804033 Longitude: -156.4932896 Sourcemap scale: 24000 Horiz Acc measure: Horiz Acc measure units: seconds Horiz Collection method: Interpolated from map Horiz coord refsys: NAD83 192.45 Vert measure val:

Vert measure units: feet Vertacc measure val:

Vert accmeasure units: feet

Vertcollection method: Level or other surveying method
Vert coord refsys: HILOCAL Countrycode:

Aquifername: Not Reported

Formation type: Not Reported Aquifer type: Not Reported

Construction date: 19770301 Welldepth: 450
Welldepth units: ft Wellholedepth: 450

Ground-water levels, Number of Measurements: 1

Feet below Feet to Surface Sealevel

1978-02-17 3.77

Wellholedepth units:

US

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wid:	6-5229-001	Island:	Maui
Well name:	Waiale Prototype	Old name:	Not Reported
Yr drilled:	1978		
Driller:	Roscoe Moss Hawaii Inc		
Quad map:	5		
Long83dd:	-156.492778		
Lat83dd:	20.879167		
Gps:	0	Utm:	-1
Owner user:	Astoria International Inc.		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	PER
Casing dia:	20	Ground el:	136
Well depth:	441		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-305
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60102		
Latest hd:	Not Reported	Wcr:	01-JAN-78
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003348

E18 NNW FED USGS USGS40000269149 1/2 - 1 Mille Lower

Org. Identifier: USGS-HI

Formal name: USGS Hawaii Water Science Center
Monloc Identifier: USGS-205329156305502
Monloc name: 6-5330-09 Mokuhau Pump 2, Maui, HI

Monloc type: Well

Monloc desc: former local well no. W15A

 Huc code:
 20020000
 Drainagearea value:
 Not Reported

 Drainagearea Units:
 Not Reported
 Contrib drainagearea
 Not Reported

 Contrib drainagearea units:
 Not Reported
 Latitude:
 20.880556

 Longitude:
 -156.5120278
 Sourcemap scale:
 24000

TC4529586.2s Page A-25 TC4529586.2s Page A-26

Horiz Acc m Horiz Collect		.5 Global positioning system (GPS	Horiz Acc measure u	inits: sed	conds
Horiz coord Vert measur	refsys: e units:	NAD83 feet feet	Vert measure val: Vertacc measure val	350 : .1	3.2
Vert accmea Vertcollectio Vert coord re Aquifername Formation ty	n method: efsys: :: pe:	Level or other surveying method HILOCAL Hawaii volcanic-rock aquifers Wailuku Volcanic Series, Lava I	Countrycode:	US	
Aquifer type: Construction Welldepth ui Wellholedep	date: nits:	Not Reported 19530501 ft ft	Welldepth: Wellholedepth:	600 600	
Ground-wate	er levels, Numb Feet below	per of Measurements: 52		Feet below	Feet to
Date	Surface	Sealevel	Date	Surface	Sealevel
2004-08-18		6.93			
Note: A ne	earby site that	taps the same aquifer was being	pumped.		
2004-07-12		6.28			
Note: A no 2004-05-13	earby site that	taps the same aquifer was being 7.08	pumped.		
	earby site that	taps the same aquifer was being	pumped.		
2004-04-02	,	9.33			
	earby site that	taps the same aquifer was being	pumped.		
2004-02-10	arby aita that	8.69	numnad		
2004-01-05	earby site that	taps the same aquifer was being 7.62	pumpea.		
	earby site that	taps the same aquifer was being	pumped.		
2003-11-13	•	8.19			
	site had been	pumped recently.			
2003-10-02 Note: A pr	arby eita that	6.13 taps the same aquifer was being	numned		
2003-08-19	earby site triat	5.60	pumpeu.		
	earby site that	taps the same aquifer was being	pumped.		
2003-07-10		7.6			
Note: A ne 2003-05-14	earby site that	taps the same aquifer was being 7.30	pumped.		
Note: A ne	earby site that	taps the same aquifer was being	pumped.		
2003-03-31 Note: A ne	earby site that	8.32 taps the same aquifer was being	pumped.		
2003-02-11	-	9.21			
	er conditions e	xisted that would affect the meas	ured water level.		
2003-01-07	ar aanditiana a	9.91 xisted that would affect the meas	urad water laval		
2002-11-19	er conditions e	7.10	ureu water ievei.		
	er conditions e	xisted that would affect the meas	ured water level.		
2002-10-01		6.68			
	earby site that	taps the same aquifer was being 4.30	pumped.		
2002-08-20	earby site that	taps the same aquifer was being 8.11	pumped.		
Note: A ne					
Note: A ne 2002-07-02	earby site that	taps the same aquifer was being	pumped.		
Note: A no 2002-07-02 Note: A no 2002-05-14	-	taps the same aquifer was being 8.82			
Note: A no 2002-07-02 Note: A no 2002-05-14 Note: A no	-	taps the same aquifer was being 8.82 taps the same aquifer was being			
Note: A no 2002-07-02 Note: A no 2002-05-14	-	taps the same aquifer was being 8.82			

TC4529586.2s Page A-27

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-wat	er levels, conti					
Date	Feet below Surface	Feet to Sealevel		Date	Feet below Surface	Feet to Sealevel
2002-01-08		10.61				
			aquifer was being pun	nped.		
2001-12-04		9.84				
			aquifer had been pum	ped recently.		
2001-10-16		6.61				
Note: A n 2001-08-21		taps the same 5.74	aquifer was being pun	nped.		
Note: A n	earby site that	taps the same	aquifer was being pun	nped.		
2001-07-03		4.22				
			aquifer was being pun	nped.		
2001-05-15		7.26				
			aquifer was being pun	nped.		
2001-01-09		7.43				
			aquifer was being pun	nped.		
2000-12-07		7.39				
			aquifer was being pun	nped.		
2000-10-03		6.24				
			aquifer was being pun	nped.		
2000-08-24		6.42				
			aquifer was being pun	nped.		
2000-07-06		6.59				
2000-05-16		5.82				
2000-04-04		8.61	aquifer was being pun	2000-02-16		9.31
2000-04-04		7.89		1999-11-22		4.74
1999-10-01		3.97		1999-11-2		3.88
1999-10-01		4.62		1999-08-24		4.69
1999-07-30		4.02		1999-07-30		10.34
1999-07-01		11.50		1999-03-0		12.03
1999-01-05		12.04		1998-12-0		11.16
1998-09-29		9.12		1998-08-1		9.25
1998-06-19		9.53		1998-04-03		9.86
1998-01-07		10.07		.000 04-00	-	3.00

E19 NNW	HI WELLS	HI900000003474
1/2 - 1 Mile		
Lower		

Wid:	6-5330-009	Island:	Maui
Well name:	Mokuhau 1	Old name:	Not Reported
Yr drilled:	1953		
Driller:	Samson/Smock		
Quad map:	5		
Long83dd:	-156.512222		
Lat83dd:	20.888056		
Gps:	-1	Utm:	0
Owner user:	Department of Water St	upply Maui, MDWS	
Land owner:	Department of Water St	upply Maui, MDWS	
Pump insta:	Not Reported		
Old number:	15-A	Well type:	PER
Casing dia:	18	Ground el:	353
Well depth:	600		
Solid case:	411	Perf case:	Not Reported
Use:	MUN - County		
Use year:	Not Reported		
Init head:	23.3	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	16		
Test date:	Not Reported	Test gpm:	4584

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Test ddown: Test temp: Pump gpm:	2.3 Not Reported 2800	Test chlor: Test unit:	15 Not Reported
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor: Geology:	Not Reported TW	Min chlor:	Not Reported
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-247
Bot solid:	-58	Bot perf:	Not Reported
Spec capac:	1993		
Pump mgd:	4		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-3-002:024
Aqui code:	60102		
Latest hd:	Not Reported	Wcr:	01-JAN-53
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI900000003474

E20 NNW 1/2 - 1 Mile Lower HI WELLS HI900000003475

Wid:	6-5330-010	Island:	Maui
Well name:	Mokuhau 2	Old name:	Not Reported
Yr drilled:	1953		
Driller:	Samson/Smock		
Quad map:	5		
Long83dd:	-156.512222		
Lat83dd:	20.888056		
Gps:	-1	Utm:	0
Owner user:	Department of Water Si	upply Maui, MDWS	
Land owner:	County of Maui		
Pump insta:	Not Reported		
Old number:	15-B	Well type:	Not Reported
Casing dia:	18	Ground el:	353
Well depth:	600		
Solid case:	422	Perf case:	Not Reported
Use:	MUN - County		
Use year:	Not Reported		
Init head:	21.5	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	16		
Test date:	Not Reported	Test gpm:	4584
Test ddown:	2.4	Test chlor:	15
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	2800		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TW		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-247
Bot solid:	-69	Bot perf:	Not Reported
Spec capac:	1910		

Spec capac:

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Pump mgd:	4		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-3-002:024
Aqui code:	60102		
Latest hd:	Not Reported	Wcr:	01-JAN-53
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI900000003475

E21 NNW 1/2 - 1 Mile	HI WELLS	HI900000003476
Lower		

Wid: Well name:	6-5330-011 Mokuhau 3	Island: Old name:	Maui Not Reported
Yr drilled:	1967		
Driller:	Layne International		
Quad map:	5		
Long83dd:	-156.511667		
Lat83dd:	20.888333		
Gps:	-1	Utm:	0
Owner user:	Department of Water Su	pply Maui. MDWS	
Land owner:	County of Maui	,	
Pump insta:	Not Reported		
Old number:	15-F	Well type:	ROT
Casing dia:	18	Ground el:	354
Well depth:	605		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	MUN - County		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	30		
Test date:	Not Reported	Test gpm:	4584
Test ddown:	13.4	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	4250		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TW		
Pump yr:	1997		
Draft yr:	Not Reported	Bot hole:	-251
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	342		
Pump mgd:	6.12		
Draft mgd:	Not Reported	Pump elev:	-7
Pump depth:	361	Tmk:	(2) 3-3-002:024
Aqui code:	60102		
Latest hd:	Not Reported	Wcr:	01-JAN-67
Pir:	10/10/2011		
Surveyor:	Not Reported	0.1	1110000000000170
T:	Not Reported	Site id:	HI900000003476

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Map ID Direction Distance

EDR ID Number Database Elevation

E22 NNW 1/2 - 1 Mile FED USGS

Org. Identifier: USGS-HI Formal name: USGS Hawaii Water Science Center

Monloc Identifier USGS-205329156305501 6-5330-10 Mokuhau Pump 1, Maui, HI Monloc name

Monloc type:

Monloc desc: former local well no. W15B

Huc code: 20020000 Drainagearea value: Not Reported Drainagearea Units: Not Reported Contrib drainagearea: Not Reported Contrib drainagearea units: Not Reported Latitude: 20.8881806 Longitude: -156.5124555 Sourcemap scale: 24000 Horiz Acc measure: Horiz Acc measure units: seconds Horiz Collection method: Interpolated from map Horiz coord refsys: NAD83 Vert measure val: 353.20 Vert measure units: feet Vertacc measure val: .01

Vert accmeasure units:

Vertcollection method: Level or other surveying method Vert coord refsys: HILOCAL

Aquifername: Not Reported Formation type: Not Reported Aquifer type: Not Reported

Construction date 19530627 Welldepth: 600 Welldepth units: Wellholedepth: 600

Wellholedepth units:

Ground-water levels, Number of Measurements: 0

E23 NNW 1/2 - 1 Mile FRDS PWS HI0000212 Higher

Countrycode:

US

Epa region: State: Pwsid: HI0000212 Pwsname: WAILUKU City served: WAILUKU State served

Not Reported Zip served: Fips county: Not Reported Status: Active Pop srvd: 68054 20016 Surface_water Pwssvcconn: Source: Pws type: CWS Owner: Local Govt

TAYLOR, DAVID Contact: Contactor gname: TAYLOR, DAVID

808-270-7816 DEPT. OF WATER SUPPLY, COUNTY OF MAUI Contact phone: Contact address1: Contact address2: 200 SOUTH HIGH STREET Contact city: WAILUKU

Contact state: н Contact zip: 96793-2155

Activity code:

Facid: 1080 IAO DITCH WTP Facname:

Facility type: Treatment plant Activity code:

disinfection Treatment process: chlorination (frds-1.5) Treatment obi:

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Treatment obj: particulate removal Treatment process: filtration, ultrafiltration

Facid: 1084

Facname: KANOA WELL 2 Facility type: Treatment_plant

Activity code: Treatment obj: disinfection Treatment process: chlorination (frds-1.5)

Facid: 123

WAIHEE WELLS 1,2,3 CHLORINATOR Facname: Facility type: Treatment_plant Activity code:

Treatment obi: organics removal Treatment process: gaseous chlorination, pre

Facid:

Facname: NORTH WAIHEE WELL & KANOA WELL CHLORINAT Facility type: Treatment_plant Activity code:

Treatment obj: disinfection Treatment process: hypochlorination, post

Facid: 126

Facname: NORTH WAIHEE WELL #2

Facility type: Treatment_plant Activity code: Treatment obj: disinfection Treatment process: hypochlorination, post

Facid:

Facname: MOKUHAU WELLS 1, 3 CHLORINATOR

Facility type: Treatment_plant Activity code: Treatment obj: organics removal Treatment process: gaseous chlorination, pre

Facid:

Facname: MOKUHAU WELL 1, 2 Facility type: Treatment_plant

Activity code: Treatment obj: organics removal Treatment process: gaseous chlorination, pre

Facid: Facname: IAO TUNNEL UV

Treatment_plant Activity code: Facility type: disinfection Treatment process: chlorination (frds-1.5) Treatment obj:

Treatment obj: particulate removal Treatment process: filtration, ultrafiltration

Facid:

Facname: KEPANIWAI WELL CHLORINATOR

Treatment_plant Facility type: Activity code: gaseous chlorination, pre

Treatment obj: organics removal Treatment process:

Facid:

Facname: WAIEHU HEIGHTS WELLS 1, 2 CHLORINATOR Facility type: Treatment plant Activity code:

disinfection Treatment process: hypochlorination, post Treatment obj:

Facid: Facname:

WAIEHU HEIGHTS 2 Facility type: Treatment plant Activity code:

Treatment obj: disinfection Treatment process: hypochlorination, post

Facid: WAIHEE 1 Facname:

Facility type: Treatment plant Activity code:

gaseous chlorination, pre Treatment obi: organics removal Treatment process:

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USGS40000269148

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Facid: 134

WAIHEE 2 Facname: Facility type: Treatment_plant

Activity code: Treatment obi: organics removal Treatment process gaseous chlorination, pre

Facid:

WAILUKU AG. SHAFT 33 CHLORINATOR Facname:

Facility type: Treatment_plant Activity code:

chlorination (frds-1.5) Treatment obj: disinfection Treatment process:

Location Information:

Name: WAILUKU

Pwstypcd: CWS Primsrccd: SW

Popserved: 68976 DEPT. OF WATER SUPPLY, COUNTY OF MAUI Add1

Add2: 200 SOUTH HIGH STREET

City: WAILUKU State: Zip: 96793-2155 Phone:

808-270-7816 Cityserv: WAILUKU Cntyserv Not Reported Statesery: н Zipserv: Not Reported

Enforcement Information:

Violation id: 10229 Orig cd: Enf fy: 2011 Enf act date: 06/09/2011 Informal

Enf act detail: St Violation/Reminder Notice Enf act cat:

Enforcement Information: Violation id: 10229 Orig cd:

S Enf fy: Enf act date: 11/14/2011 Enf act detail: St Compliance achieved Enf act cat: Resolving

Enforcement Information:

Violation id: 10229 Orig cd: Enf fy: Enf act date: 06/30/2011

Enf act detail: St Public Notif received Enf act cat: Informal

Enforcement Information:

Violation id: 10226 Orig cd:

Enf fy: 2012 Enf act date: 11/16/2011 Enf act detail: St Compliance achieved Enf act cat: Resolving

Enforcement Information:

10226 Orig cd: Violation id:

Enf fy: 2011 Enf act date: 06/30/2011 Enf act detail: St Public Notif received Enf act cat: Informal

Enforcement Information:

Violation id: 10226 Orig cd:

05/23/2011 2011 Enf act date: Enf fv:

Enf act detail: St Violation/Reminder Notice Enf act cat: Informal

Enforcement Information: Violation id:

10224 Orig cd: Enf fy: 2011 Enf act date:

05/23/2011 Enf act detail: St Violation/Reminder Notice Enf act cat: Informal

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Enforcement Information 10224 Violation id: Orig cd: 06/30/2011 Enf fy: 2011 Enfact date Enf act detail: St Public Notif received Enf act cat: Informal Enforcement Information Violation id: 10224 Orig cd: 11/16/2011 Enf fy: 2012 Enf act date Enf act detail: St Compliance achieved Enf act cat: Resolving Enforcement Information Violation id: 10222 Orig cd: Enf fy: 2012 Enf act date 11/16/2011 Enf act detail: St Compliance achieved Enf act cat: Resolving Enforcement Information: Violation id: 10222 Orig cd: Enf fy: 2011 Enf act date: 05/23/2011 Enf act detail: St Violation/Reminder Notice Enf act cat: Informal Enforcement Information: Violation id: 10222 Orig cd: Enf fy: 2011 Enf act date 06/30/2011 Enf act detail: St Public Notif received Enf act cat: Informal Enforcement Information: Violation id: 10218 Orig cd: Enf fy: Enf act date 05/23/2011 Enf act detail: St Violation/Reminder Notice Enf act cat: Informal Enforcement Information: Violation id: 10218 Orig cd: Enf fy: Enf act date: 06/30/2011 Enf act detail: St Public Notif received Enf act cat: Informal Enforcement Information: Violation id: 10218 Orig cd: Enf act date: 11/16/2011 Enf fy: 2012 Enf act detail: St Compliance achieved Enf act cat: Resolving Enforcement Information: Violation id: 10217 Orig cd: S 05/23/2011 Enf fy: 2011 Enf act date: Enf act detail: St Violation/Reminder Notice Enf act cat: Informal Enforcement Information: Violation id: 10217 Orig cd: S Enf fy: 2011 Enf act date: 06/30/2011 Enf act detail: St Public Notif received Enf act cat: Informal Enforcement Information: Violation id: 10217 Orig cd: Enf fy: 2012 Enf act date: 11/16/2011 Enf act detail: St Compliance achieved Enf act cat: Resolving

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Enforcement Information: Violation id: Enf fy: Enf act detail:	10216 2012 St Compliance achieved	Orig cd: Enf act date: Enf act cat:	S 11/16/2011 Resolving
Enforcement Information: Violation id: Enf fy: Enf act detail:	10216 2011 St Public Notif received	Orig cd: Enf act date: Enf act cat:	S 06/30/2011 Informal
Enforcement Information: Violation id: Enf fy: Enf act detail:	10216 2011 St Violation/Reminder Notice	Orig cd: Enf act date: Enf act cat:	S 05/23/2011 Informal
Enforcement Information: Violation id: Enf fy: Enf act detail:	10215 2011 St Public Notif received	Orig cd: Enf act date: Enf act cat:	S 06/30/2011 Informal
Enforcement Information: Violation id: Enf fy: Enf act detail:	10215 2012 St Compliance achieved	Orig cd: Enf act date: Enf act cat:	S 11/16/2011 Resolving
Enforcement Information: Violation id: Enf fy: Enf act detail:	10215 2011 St Violation/Reminder Notice	Orig cd: Enf act date: Enf act cat:	S 05/23/2011 Informal
Enforcement Information: Violation id: Enf fy: Enf act detail:	10214 2012 St Compliance achieved	Orig cd: Enf act date: Enf act cat:	S 11/16/2011 Resolving
Enforcement Information: Violation id: Enf fy: Enf act detail:	10214 2011 St Violation/Reminder Notice	Orig cd: Enf act date: Enf act cat:	S 05/23/2011 Informal
Enforcement Information: Violation id: Enf fy: Enf act detail:	10214 2011 St Public Notif received	Orig cd: Enf act date: Enf act cat:	S 06/30/2011 Informal
Enforcement Information: Violation id: Enf fy: Enf act detail:	10213 2012 St Compliance achieved	Orig cd: Enf act date: Enf act cat:	S 11/16/2011 Resolving
Enforcement Information: Violation id: Enf fy: Enf act detail:	10213 2011 St Public Notif received	Orig cd: Enf act date: Enf act cat:	S 06/30/2011 Informal

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10213 2011 St Violation/Reminder Notice	Orig cd: Enf act date: Enf act cat:	S 05/23/2011 Informal
Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10212 2012 St Compliance achieved	Orig cd: Enf act date: Enf act cat:	S 11/16/2011 Resolving
Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10212 2011 St Violation/Reminder Notice	Orig cd: Enf act date: Enf act cat:	S 05/23/2011 Informal
Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10212 2011 St Public Notif received	Orig cd: Enf act date: Enf act cat:	S 06/30/2011 Informal
Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10211 2012 St Compliance achieved	Orig cd: Enf act date: Enf act cat:	S 11/16/2011 Resolving
Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10211 2011 St Public Notif received	Orig cd: Enf act date: Enf act cat:	S 06/30/2011 Informal
Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10211 2011 St Violation/Reminder Notice	Orig cd: Enf act date: Enf act cat:	S 05/23/2011 Informal
Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10210 2011 St Public Notif received	Orig cd: Enf act date: Enf act cat:	S 06/30/2011 Informal
Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10210 2012 St Compliance achieved	Orig cd: Enf act date: Enf act cat:	S 11/16/2011 Resolving
Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10210 2011 St Violation/Reminder Notice	Orig cd: Enf act date: Enf act cat:	S 05/23/2011 Informal
Enforcement Information Violation id: Enf fy: Enf act detail:	ation: 10202 2010 St Public Notif received	Orig cd: Enf act date: Enf act cat:	S 06/27/2010 Informal

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Enforcement Information:			
Violation id:	10202	Orig cd:	S
Enf fy:	2010	Enf act date:	05/07/2010
Enf act detail:	St Compliance achieved	Enf act cat:	Resolving
Enforcement Information:			
Violation id:	10202	Orig cd:	S
Enf fy:	2010	Enf act date:	04/28/2010
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal
Enforcement Information:			
Violation id:	10201	Orig cd:	S
Enf fy:	2001	Enf act date:	10/16/2000
Enf act detail:	St Violation/Reminder Notice	Enf act cat:	Informal
Enforcement Information:			
Violation id:	10201	Orig cd:	S
Enf fy:	2001	Enf act date:	10/16/2000
Enf act detail:	St Public Notif requested	Enf act cat:	Informal
Enforcement Information:	10001	0: 1	•
Violation id:	10201	Orig cd:	S
Enf fy:	2001	Enf act date:	10/19/2000
Enf act detail:	St Public Notif issued	Enf act cat:	Informal
Enforcement Information:	10101	0: 1	s
Violation id: Enf fy:	10101 2001	Orig cd:	10/19/2000
		Enf act date:	
Enf act detail:	St Public Notif issued	Enf act cat:	Informal
Enforcement Information:			
Violation id:	10101	Orig cd:	S
	2001	Enf act date:	10/16/2000
Enf fy:			
Enf act detail:	St Public Notif requested	Enf act cat:	Informal
Enf act detail:			
Enf act detail: Enforcement Information:	St Public Notif requested	Enf act cat:	Informal
Enf act detail: Enforcement Information: Violation id:	St Public Notif requested	Enf act cat: Orig cd:	Informal
Enf act detail: Enforcement Information: Violation id: Enf fy:	St Public Notif requested 10101 2001	Enf act cat: Orig cd: Enf act date:	Informal S 10/16/2000
Enf act detail: Enforcement Information: Violation id:	St Public Notif requested	Enf act cat: Orig cd:	Informal
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail:	St Public Notif requested 10101 2001	Enf act cat: Orig cd: Enf act date:	Informal S 10/16/2000
Enf act detail: Enforcement Information: Violation id: Enf fy:	St Public Notif requested 10101 2001	Enf act cat: Orig cd: Enf act date: Enf act cat:	Informal S 10/16/2000
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violation id:	St Public Notif requested 10101 2001 St Violation/Reminder Notice	Enf act cat: Orig cd: Enf act date: Enf act eat: Orig cd:	Informal S 10/16/2000 Informal
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information:	St Public Notif requested 10101 2001 St Violation/Reminder Notice	Enf act cat: Orig cd: Enf act date: Enf act cat:	Informal S 10/16/2000 Informal
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violations Information: State:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI	Enf act cat: Orig cd: Enf act date: Enf act eat: Orig cd:	Informal S 10/16/2000 Informal
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamod:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040	Enf act cat: Orig cd: Enf act date: Enf act eat: Orig cd:	Informal S 10/16/2000 Informal
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamacd: Contamm:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03	Enf act cat: Orig cd: Enf act date: Enf act eat: Orig cd:	Informal S 10/16/2000 Informal
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamed: Contamen: Viol ode:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate	Enf act cat: Orig cd: Enf act date: Enf act eat: Orig cd:	Informal S 10/16/2000 Informal
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamed: Contamned: Viol code: Viol name: Rule code:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331	Enf act cat: Orig cd: Enf act date: Enf act eat: Orig cd:	Informal S 10/16/2000 Informal
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamed: Contamnem: Viol code: Viol name: Rule code: Rule code: Rule name:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy:	Informal S 10/16/2000 Informal S 2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamed: Contamned: Viol code: Viol name: Rule code:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur:	Informal S 10/16/2000 Informal
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamnd: Contamnm: Viol code: Viol name: Rule code: Rule name: Violmeasur:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy:	Informal S 10/16/2000 Informal S 2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamed: Contamed: Viol name: Rule code: Rule name: Violmeasur: State md:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur:	Informal S 10/16/2000 Informal S 2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamed: Contamed: Viol name: Rule code: Rule name: Violmeasur: State md:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur:	Informal S 10/16/2000 Informal S 2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamod: Contamnem: Viol code: Viol name: Rule code: Rule name: Violmeasur: State mcl: Cmpedt:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur:	Informal S 10/16/2000 Informal S 2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamed: Contamen: Viol code: Viol name: Rule code: Rule name: Violmeasur: State mcl: Cmpedt:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported 12/31/2010	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur: Cmpbdt:	Informal S 10/16/2000 Informal S 2010 Not Reported 01/01/2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamnod: Contamnod: Viol code: Viol name: Rule code: Rule name: Viol mame: State mal: Compa	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported 12/31/2010	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur: Cmpbdt: Orig cd:	Informal S 10/16/2000 Informal S 2010 Not Reported 01/01/2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contammed: Contammed: Viol oode: Viol name: Rule code: Rule name: Violmeasur: State mcl: Cmpedt: Violations Information: Violations Informations Information: Violation	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported 12/31/2010 10226 HI	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur: Cmpbdt: Orig cd:	Informal S 10/16/2000 Informal S 2010 Not Reported 01/01/2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamed: Contamnm: Viol code: Viol name: Rule code: Rule name: Violmeasur: State mol: Cmpedt: Violations Information: Violoation id: State: Contamod: Contamod: Contamod: Violoation id: State: Contamod:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported 12/31/2010 10226 HI 2063	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur: Cmpbdt: Orig cd:	Informal S 10/16/2000 Informal S 2010 Not Reported 01/01/2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamod: Contamme: Viol code: Viol name: Rule code: Rule name: Violmeasur: State mcl: Cmpedt: Violation Information: Violations Information: Violations Information: Contamned: Contamned: Contamned: Contamned: Contamned: Contamnem:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported 12/31/2010 10226 HI 2063 2,3,7,8-TCDD	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur: Cmpbdt: Orig cd:	Informal S 10/16/2000 Informal S 2010 Not Reported 01/01/2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamcd: Contamnm: Viol code: Viol name: Rule code: Rule name: Violmeasur: State mcl: Cmpedt: Violations Information: Violoation id: State Contamcd: Contamcd: Contamcd: Contamcd: Contamcd: Violations Information: Violoation id: State: Contamcd: Contamcd: Contamcd: Viol code:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported 12/31/2010 10226 HI 2063 2,3,7,8-TCDD 03	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur: Cmpbdt: Orig cd:	Informal S 10/16/2000 Informal S 2010 Not Reported 01/01/2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contamnod: Contamnom: Viol code: Viol name: Rule code: Rule name: Viol mame: State mcl: Cmpedt: Violations Information:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported 12/31/2010 10226 HI 2063 2,3,7,8-TCDD 03 Monitoring, Regular	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur: Cmpbdt: Orig cd:	Informal S 10/16/2000 Informal S 2010 Not Reported 01/01/2010
Enf act detail: Enforcement Information: Violation id: Enf fy: Enf act detail: Violations Information: Violoation id: State: Contammed: Contammed: Viol name: Rule code: Rule name: Violmeasur: State mcl: Cmpedt: Violations Information: Violoation id: State code: Compedt: Violations Information: Violoation id: State: Contammed: Contammed: Contammed: Contammed: Viol code: Viol name: Rule code: Rule code: Rule code: Rule code: Rule code:	St Public Notif requested 10101 2001 St Violation/Reminder Notice 10229 HI 1040 Nitrate 03 Monitoring, Regular 331 Nitrates Not Reported Not Reported 12/31/2010 10226 HI 2063 42,37,8-TCDD 03 Monitoring, Regular 320	Enf act cat: Orig cd: Enf act date: Enf act cat: Orig cd: Viol fy: Unitmeasur: Cmpbdt: Orig cd:	Informal S 10/16/2000 Informal S 2010 Not Reported 01/01/2010

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

State mcl: Cmpedt:	Not Reported 12/31/2010	Cmpbdt:	01/01/2008
Violations Information:			
Violoation id:	10224	Orig cd:	S
State:	HI	Viol fy:	2008
Contamcd:	2032	,	
Contamnm:	Diquat		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	320		
Rule name:	SOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2008
Cmpedt:	12/31/2010		
Violations Information:			
Violoation id:	10222	Orig cd:	S
State:	HI	Viol fy:	2008
Contamcd:	2033		
Contamnm:	Endothall		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	320		
Rule name:	SOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2008
Cmpedt:	12/31/2010		
Violations Information:			
Violoation id:	10218	Orig cd:	S
State:	HI	Viol fy:	2008
Contamcd:	2306		
Contamnm:	Benzo(a)pyrene		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	320		
Rule name:	SOC		
Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2008
Cmpedt:	12/31/2010		
Violations Information:			
Violoation id:	10217	Orig cd:	S
State:	HI	Viol fy:	2008
Contamcd:	2039		
Contamnm:	Di(2-ethylhexyl) phthalate		
Viol code:	03		
Viol name:	Monitoring, Regular		
Rule code:	320 SOC		
Rule name: Violmeasur:	Not Reported	Unitmeasur:	Not Reported
State mcl:	Not Reported	Cmpbdt:	01/01/2008
Cmpedt:	12/31/2010	отприи.	01/01/2008
Ompout.	12/01/2010		

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Violations Information: 10216 Orig cd: S Violoation id: 2008 State: HI Viol fy: Contamed: 2035

Di(2-ethylhexyl) adipate Contamnm:

Viol code: Viol name: Monitoring, Regular

Rule code: 320

Rule name: SOC

Not Reported Not Reported Violmeasur: Unitmeasur: 01/01/2008 State mcl: Not Reported Cmpbdt:

Cmpedt: 12/31/2010

Violations Information:

Violoation id: 10215 Orig cd: S State: н Viol fy: 2008

Contamcd: 2326 Contamnm Pentachlorophenol

Viol code: 03

Viol name: Monitoring, Regular

Rule code: 320 Rule name: SOC

Violmeasur Not Reported Unitmeasur Not Reported Cmpbdt: 01/01/2008

State mcl: Not Reported Cmpedt: 12/31/2010

Violations Information:

Violoation id: 10214 Orig cd: State: н Viol fy: 2008

Contamcd: 2110 Contamnm 2,4,5-TP

Viol code: 03

Viol name: Monitoring, Regular

Rule code: 320 Rule name: SOC

Violmeasur: Not Reported Unitmeasur State mcl: Not Reported Cmpbdt:

12/31/2010 Cmpedt:

Violations Information:

Violoation id: 10213 Orig cd: State: Viol fy:

2105 Contamcd:

2,4-D Contamnm:

Viol code: 03

Viol name: Monitoring, Regular

320 Rule code: Rule name: SOC

Not Reported Violmeasur:

State mcl: Not Reported Cmpbdt: 01/01/2008

Unitmeasur:

Cmpedt: 12/31/2010

Violations Information:

Violoation id: 10212 Orig cd: 2008 State: н Viol fy:

2041 Contamcd:

Contamnm: Dinoseb

Viol code: 0.3 Monitoring, Regular Viol name:

Rule code: 320

SOC Rule name:

Violmeasur: Not Reported Unitmeasur: Not Reported

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Not Reported

Not Reported

01/01/2008

2008

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Not Reported 01/01/2008 State mcl: Cmpbdt: Cmpedt: 12/31/2010 Violations Information 10211 Orig cd: S Violoation id: State: Viol fy: 2008 Contamcd: 2040 Contamnm Picloram Viol code: 03 Monitoring, Regular Viol name: Rule code: 320 Rule name: SOC Violmeasur Not Reported Unitmeasur: Not Reported State mcl: Not Reported Cmpbdt: 01/01/2008 Cmpedt: 12/31/2010 Violations Information: Violoation id: 10210 Orig cd: S State: Viol fy: 2008 Contamcd: 2031 Contamnm: Dalapon Viol code: Viol name: Monitoring, Regular Rule code: 320 Rule name: SOC Violmeasur Not Reported Unitmeasur: Not Reported State mcl: Not Reported Cmpbdt: 01/01/2008 Cmpedt: 12/31/2010 Violations Information: Violoation id: 10202 Orig cd: S Viol fy: 2008 State: Contamcd: 1024 Contamnm CYANIDE Viol code: Viol name: Monitoring, Regular Rule code: 333 Other IOC Rule name: Violmeasur Not Reported Unitmeasur: Not Reported State mcl: Not Reported Cmpbdt: 01/01/2008 Cmpedt: 12/31/2010 Violations Information: Violoation id: 10201 Orig cd: State: Н Viol fy: 2000 Contamcd: 3100 Contamnm: Coliform (TCR) Viol code: MCL, Acute (TCR) Viol name: Rule code: 110 Rule name: TCR Violmeasur Not Reported Unitmeasur: Not Reported State mcl: Not Reported 10/01/2000

Cmpbdt:

10/31/2000

Cmpedt:

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Violations Information:

Violoation id: 10101 Orig cd: S 2000 State: н Viol fy:

Contamed: 3100 Coliform (TCR) Contamnm:

Viol code:

Viol name: MCL, Monthly (TCR)

Rule code: 110 Rule name:

Violmeasur Not Reported Unitmeasur: State mcl:

Cmpedt: 10/31/2000

PWS ID: HI0000212

Date Initiated: Not Reported PWS Name:

Addressee / Facility: System Owner/Responsible Party

MR. DAVID CRADDOCK, DIRECTOR DEPARTMENT OF WATER SUPPLY

P.O. BOX 1109 WAILUKU, HI 96793

Addressee / Facility: Laboratory

DEPARTMENT OF WATER SUPPLY

614 PALAPALA DRIVE KAHULUI, MAUI, HI 96732

Facility Latitude: 20 53 12.0000 Facility Longitude: 156 32 14.0000 Facility Latitude: 20 53 29.0000 Facility Longitude: 156 30 55.0000 Facility Latitude: 20 54 40.0000 Facility Longitude: 156 31 1.0000 Facility Latitude: 20 54 40.0000 Facility Longitude: 156 31 2.0000 Facility Latitude: 20 54 44.0000 Facility Longitude: 156 31 4.0000 Facility Latitude: 20 54 32.0000 Facility Longitude: Facility Latitude: 20 54 30.0000 Facility Longitude: 20 53 9.0000 Facility Latitude: Facility Longitude: Facility Latitude: 20 53 30.0000 Facility Longitude: 156 30 54.0000

City Served: Treatment Class:

Violations information not reported.

ENFORCEMENT INFORMATION:

03/31/2009 Pwsid: Truedate:

Retpopsrvd:

COLIFORM (TCR) Vioid: 10101 Contaminant:

Viol. Type: Complperbe:

Compleeren:

Enfaction: State Violation/Reminder Notice

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

HI0000212

HI0000212 Truedate: 03/31/2009 Pwsid: Pwsname WAILUKU

Retpopsrvd: 52200 Pwstypecod:

State Public Notif Requested

Not Reported

Vioid: 10101 Contaminant: COLIFORM (TCR) MCL, Monthly (TCR) Viol. Type:

Complperbe 10/1/2000 0:00:00 Complperen 10/31/2000 0:00:00 Enfdate: 10/16/2000 0:00:00

TCR Violmeasur Not Reported Not Reported

03/31/2009 HI0000212 Not Reported Cmpbdt: 10/01/2000 Truedate: Pwsid: Pwsname: WAILUKU

Retpopsrvd: 52200 Pwstypecod:

Vioid: 10101 Contaminant: COLIFORM (TCR) Date Deactivated: Not Reported Viol. Type: MCL, Monthly (TCR)

DWS WAILLIKLI Complperbe 10/1/2000 0:00:00 WAILUKU, MAUI, HI 96793 Complperent 10/31/2000 0:00:00 Enfdate: 10/19/2000 0:00:00 Enf action: State Public Notif Issued

Enf action:

Violmeasur

HI0000212 Truedate: 03/31/2009 Pwsid:

Pwsname: WAILUKU

Retpopsrvd: 52200 Pwstypecod: 10201 Contaminant: COLIFORM (TCR)

Viol. Type: MCL, Acute (TCR) MS. CARÍ CERIZO Complperbe: 10/1/2000 0:00:00 Complperent 10/31/2000 0:00:00 Enfdate: 10/16/2000 0:00:00

Enf action: State Violation/Reminder Notice Violmeasur Not Reported

Truedate: 03/31/2009 Pwsid:

WAILUKU Pwsname: Retpopsrvd: 52200 Pwstypecod: Contaminant: COLIFORM (TCR)

Viol. Type: MCL, Acute (TCR) 156 30 44.0000 Complperbe 10/1/2000 0:00:00 156 30 44.0000 Complperen: 10/31/2000 0:00:00 Enfdate: 10/16/2000 0:00:00 State Public Notif Requested 156 32 30.0000 Enf action: Violmeasur Not Reported

WAILUKU Population: 41691 03/31/2009 HI0000212 Treated Truedate: Pwsid:

WAILUKU Pwsname: Retpopsrvd: 52200 Pwstypecod:

COLIFORM (TCR) Vioid: 10201 Contaminant: Viol. Type: MCL, Acute (TCR) Complperbe 10/1/2000 0:00:00 HI0000212 10/31/2000 0:00:00 Enfdate: 10/19/2000 0:00:00

Complperen: Pwsname: WAILUKU Enf action: State Public Notif Issued

52200 Not Reported Pwstypecod: Violmeasur

MCL, Monthly (TCR) System Name: WAILUKU 10/1/2000 0:00:00 Violation Type: MCL, Monthly (TCR) COLIFORM (TCR) 10/31/2000 0:00:00 Enfdate 10/16/2000 0:00:00 Contaminant: 10/01/00 - 10/31/00 Compliance Period:

Not Reported Violmeasur Violation ID: 10101 Enforcement Date: 10/16/00 Enf. Action: State Public Notif Requested

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ENFORCEMENT INFORMATION:

WAILUKU System Name: Violation Type: MCL, Monthly (TCR) COLIFORM (TCR) Contaminant Compliance Period: 10/01/00 - 10/31/00

Violation ID: 10101

Enforcement Date: 10/16/00 Enf. Action: State Violation/Reminder Notice

System Name: WAILUKU Violation Type: MCL, Monthly (TCR) COLIFORM (TCR) Contaminant:

10/1/2000 0:00:00 - 10/31/2000 0:00:00 Compliance Period:

10101 Violation ID:

10/19/2000 0:00:00 Enf. Action: State Public Notif Issued Enforcement Date:

WAILUKU System Name Violation Type: MCL, Monthly (TCR)

Contaminant COLIFORM (TCR)

Compliance Period: 10/1/2000 0:00:00 - 10/31/2000 0:00:00 Violation ID: 10101

Enforcement Date: 10/16/2000 0:00:00 Enf. Action: State Public Notif Requested

WAILUKU System Name: MCL, Monthly (TCR) Violation Type:

COLIFORM (TCR) Contaminant: Compliance Period: 10/1/2000 0:00:00 - 10/31/2000 0:00:00

10101 Violation ID:

10/16/2000 0:00:00 Enf. Action: State Violation/Reminder Notice Enforcement Date:

System Name: WAILUKU

Violation Type: MCL, Monthly (TCR) Contaminant COLIFORM (TCR) 10/01/00 - 10/31/00 Compliance Period:

Violation ID: 10101 Enforcement Date: 10/19/00 Enf. Action: State Public Notif Issued

System Name: WAILUKU MCL Acute (TCR) Violation Type:

COLIFORM (TCR) Contaminant:

10/1/2000 0:00:00 - 10/31/2000 0:00:00 Compliance Period:

Violation ID: 10201

10/16/2000 0:00:00 Enforcement Date: Enf Action: State Public Notif Requested

System Name: WAILUKU MCL, Acute (TCR) Violation Type: COLIFORM (TCR) Contaminant

Compliance Period: 10/1/2000 0:00:00 - 10/31/2000 0:00:00

Violation ID: 10201

10/16/2000 0:00:00 Enf. Action: State Violation/Reminder Notice Enforcement Date:

System Name WAILUKU Violation Type: MCL, Acute (TCR) Contaminant: COLIFORM (TCR)

10/1/2000 0:00:00 - 10/31/2000 0:00:00 Compliance Period:

Violation ID: 10201

Enforcement Date: 10/19/2000 0:00:00 Enf. Action: State Public Notif Issued

System Name: WAILUKU MCL. Acute (TCR) Violation Type: COLIFORM (TCR) Contaminant: 10/01/00 - 10/31/00 Compliance Period:

10201 Violation ID:

Enforcement Date: 10/16/00 Enf. Action: State Public Notif Requested

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ENFORCEMENT INFORMATION:

WAILUKU System Name: Violation Type: MCL. Acute (TCR) COLIFORM (TCR) Contaminant: Compliance Period: 10/01/00 - 10/31/00 Violation ID: 10201

Enforcement Date: 10/16/00 Enf. Action: State Violation/Reminder Notice

System Name: WAILUKU Violation Type: MCL, Acute (TCR) Contaminant: COLIFORM (TCR) Compliance Period: 10/01/00 - 10/31/00 Violation ID: 10201

Enforcement Date: 10/19/00 State Public Notif Issued Enf. Action:

CONTACT INFORMATION:

Name: WAILUKU Population: 52200 Contact: ENG, JEFFREY Phone: 808-270-7816

Department of Water Supply Address: 200 South High Street Address 2: WAILUKU, HI 96793

ESE 1/2 - 1 Mile HI WELLS HI900000003352

Init head2:

Bot perf:

Wid: 6-5229-005 Island: Maui Well name Maui Lani 6 Old name Not Reported Yr drilled: 2006 Valley Well Drilling, LLC Driller:

Quad man -156.492296 Long83dd: 20.870958 Lat83dd:

Gps: Utm:

Maui Lani Partners Owner user Land owner: Maui Lani Partners

Pump insta: Not Reported Old number: Not Reported Well type: ROT Casing dia: 14 Ground el: 179 Well depth: 220 Solid case: 175 Perf case 205

Use: MUN - County Use year: Not Reported

Init head: 4.35 Init head3: Not Reported

Init cl: 45 Test date: 3/30/2006 Test gpm: 550 Test ddown 5.65 Test chlor 45 Test temp: 72.8 Test unit:

Pump gpm: Draft mgy: Not Reported Head feet Max chlor: Not Reported Min chlor:

Geology: TK Pump yr: Λ Draft yr: Not Reported Bot hole:

Bot solid: Spec capac: Not Reported

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0

Not Reported

Not Reported

Not Reported

-41

-26

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Pump mgd:

Not Reported Draft mgd: Pump elev: Not Reported Pump depth: Not Reported Tmk: (2) 3-8-007:153 Aqui code: 60301 Wcr 30-DEC-99 Latest hd: Not Reported

Not Reported Surveyor Darren Unemori

35400 Site id: HI9000000003352

E25 NNW 1/2 - 1 Mile Higher

FED USGS USGS40000269152

Org. Identifier: USGS-HI

Formal name: USGS Hawaii Water Science Center

Monloc Identifier USGS-205330156305401

Monloc name: 6-5330-11 Mokuhau Pump 3, Maui, HI Monloc type: Well

Monloc desc: former local no. W15F

20020000 Drainagearea value: Not Reported Huc code: Drainagearea Units: Not Reported Contrib drainagearea: Not Reported Contrib drainagearea units: Not Reported Latitude: 20.8884583 Longitude: -156.5121778 Sourcemap scale: 24000 Horiz Acc measure: Horiz Acc measure units: seconds

Horiz Collection method: Interpolated from map

Horiz coord refsys: NAD83 Vert measure val: 354 Vert measure units: Vertacc measure val:

Vert accmeasure units:

Vertcollection method: Interpolated from topographic map

HILOCAL US Vert coord refsys: Countrycode:

Aquifername: Not Reported Formation type: Not Reported

Not Reported Aquifer type: Construction date: 19670101 Welldepth:

580 Welldepth units: Wellholedepth: Not Reported

Not Reported Wellholedepth units:

Ground-water levels, Number of Measurements: 0

E26 NNW HIWFIIS HI9000000003473

1/2 - 1 Mile Lower

Wid: 6-5330-008 Island: Maui

Well name: Mokuhau TH 3 Old name: Not Reported Yr drilled: 1952

Mark Vaught (East Maui Irrigation Co., Ltd.) Driller:

Quad map

Long83dd: -156.511944 Lat83dd: 20.888611

Gps: Utm: Not Reported Owner user:

Hilaria Taborado Land owner

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Pump insta: Not Reported ROT Old number: 15-E TH Well type: Casing dia: Ground el: 364 Well depth 466 Not Reported Solid case: 364 Perf case OBS - Observation Use year: Not Reported Init head Not Reported Init head2: Not Reported Init head3: Not Reported Init cl: Not Reported Not Reported Test date: Test gpm: Test ddown: Not Reported Test chlor: Not Reported Test temp: Not Reported Test unit: Not Reported Pump gpm: Draft mgy: Not Reported Head feet: Not Reported Max chlor: Not Reported Min chlor: Not Reported Geology: TW Pump yr: Draft yr: Not Reported Bot hole: -102 Bot solid: Bot perf: Not Reported Spec capac: Not Reported Pump mgd: Draft mgd: Not Reported Pump elev: Not Reported Pump depth: Not Reported (2) 3-3-017:068 Tmk: Aqui code: 60102 Latest hd: Not Reported Wcr: 01-JAN-52 Not Reported Surveyor Not Reported

E27 NNW 1/2 - 1 Mile FED USGS USGS40000269154

Site id:

HI900000003473

Org. Identifier: USGS-HI

T:

USGS Hawaii Water Science Center Formal name:

Not Reported

Monloc Identifier: USGS-205331156305301 Monloc name: 6-5330-08 W15E

Monloc type:

Monloc desc: Not Reported

Huc code: 20020000 Drainagearea value: Not Reported Not Reported Drainagearea Units: Not Reported Contrib drainagearea: Contrib drainagearea units: Not Reported Latitude: 20.8887361 Longitude: -156.5119 Sourcemap scale: 24000 Horiz Acc measure: Horiz Acc measure units: seconds

Horiz Collection method: Interpolated from map

NAD83 364.00 Horiz coord refsys: Vert measure val: Vert measure units: feet Vertacc measure val: 5

Vert accmeasure units: feet Vertcollection method: Interpolated from topographic map

Vert coord refsys: HILOCAL US Countrycode:

Aquifername: Not Reported

Formation type: Not Reported

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Aquifer type: Not Reported

Construction date: 19520101 Welldepth: 466 Not Reported Welldepth units: Wellholedepth:

Wellholedepth units: Not Reported

Ground-water levels, Number of Measurements: 0

F28 South 1/2 - 1 Mile Higher FED USGS USGS40000269052

Org. Identifier: USGS-HI

Formal name: USGS Hawaii Water Science Center Monloc Identifier: USGS-205154156303801 Monloc name: 6-5130-02 Waikapu 2, Maui, HI

Monloc type: Well

Monloc desc: Not Reported Huc code: 20020000 Drainagearea value: Not Reported Drainagearea Units: Not Reported Contrib drainagearea: Not Reported Contrib drainagearea units: Not Reported Latitude: 20.8620556 Longitude: -156.5075 Sourcemap scale: 24000 Horiz Acc measure: Horiz Acc measure units: seconds Horiz Collection method: Global positioning system (GPS), uncorrected Horiz coord refsys: NAD83 Vert measure val: 517.97 Vert measure units: Vertacc measure val: .01 Vert accmeasure units:

Level or other surveying method Vertcollection method:

Vert coord refsys: HILOCAL Countrycode: US

Aquifername: Hawaii volcanic-rock aquifers Formation type: Wailuku Volcanic Series, Lava Flows

Aquifer type: Unconfined single aquifer

Construction date: 19740701 Welldepth: 1020 Welldepth units: Wellholedepth: 1020

Wellholedepth units:

Ground-water levels, Number of Measurements: 163

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2004-04-02		11.18	2004-02-10		11.02
2004-01-05		10.96	2003-11-13		10.70
2003-10-02 2003-07-10		10.93 11.12	2003-08-19		11.15

Note: Other conditions existed that would affect the measured water level.

2003-05-14 11.21

Note: Other conditions existed that would affect the measured water level. 11.34

2003-03-31

Note: Other conditions existed that would affect the measured water level. 11.15

2003-02-11

Note: Other conditions existed that would affect the measured water level. 2003-01-07 11.18

Note: Other conditions existed that would affect the measured water level. 2002-11-19 11.14

Note: Other conditions existed that would affect the measured water level.

2002-10-01 10.23 Note: Other conditions existed that would affect the measured water level.

2002-08-20

11.20 Note: Other conditions existed that would affect the measured water level.

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Date	Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealeve
2002-07-02		11.31			
			would affect the measured water level.		
2002-05-14		11.48			
Note: Oth	er conditions e	xisted that	would affect the measured water level.		
2002-04-02		11.55			
Note: Oth	er conditions e	xisted that	would affect the measured water level.		
2002-02-21		11.50			
Note: Oth	er conditions e	existed that	would affect the measured water level.		
2002-01-08		11.53			
	er conditions e		would affect the measured water level.		
2001-12-04		11.28			
	er conditions e		would affect the measured water level.		
2001-10-16		11.08	2001-08-		11.14
2001-07-03		11.10	2001-05-		11.16
2001-04-03		11.11	2001-03-		11.18
2001-01-09		11.43	2000-12-		11.45
2000-10-03		11.38	2000-08-		11.30
2000-07-06		11.41	2000-05-		11.58
2000-04-04		11.73	2000-02-		12.19
2000-01-04		12.66	1999-11-		12.53
1999-10-01		12.48	1999-08-		12.11
1999-07-02		11.76	1999-05-		12.08
1999-05-19		12.08	1999-03-		12.33
1999-03-09		12.21	1999-01-		12.38
1998-12-01		12.06	1998-09-		12.11
1998-09-29		12.11	1998-08-		12.11 12.20
1998-07-02		12.12 12.18	1998-05-		12.20
1998-04-01		12.16	1998-02-		12.30
1998-01-05 1997-10-01		12.51	1997-11- 1997-08-		12.84
1997-10-01		12.52	1997-06-		12.89
1997-06-00		12.97	1997-04-		12.09
1997-03-27		12.85	1997-04-		12.43
1997-02-24		11.94	1997-01-		11.88
1996-08-26		12.13	1996-07-		12.12
1996-05-28		12.20	1996-04-		12.50
1996-03-07		12.41	1996-01-		12.34
1995-10-02		12.41	1995-08-		12.53
1995-07-12		12.53	1995-05-		12.70
1995-01-18		13.01	1994-11-		13.09
1994-08-18		12.92	1994-06-		12.55
1994-05-05		12.72	1994-03-		12.62
1994-01-20		12.61	1993-12-	10	12.56
1993-11-08		12.55	1993-08-	27	12.66
1993-07-07		12.76	1993-05-	10	12.83
1993-04-01		12.84	1993-02-	16	12.83
1992-12-29		13.02	1992-11-	10	12.97
1992-09-15		13.03	1992-08-	05	12.98
1992-06-24		12.96	1992-04-	23	12.87
1992-02-28		13.10	1992-01-	30	13.04
1991-12-05		13.27	1991-10-	17	13.27
1991-09-06		13.57	1991-07-		13.52
1991-05-28		13.52	1991-04-	12	13.65
1991-03-05		13.73	1991-01-		13.83
1990-12-11		13.78	1990-10-		13.75

TC4529586.2s Page A-47 TC4529586.2s Page A-48

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1990-08-22		13.79	1990-06-27		13.89
1990-05-31		13.94	1990-04-20		13.93
1990-03-15		14.05	1990-01-31		14.08
1989-11-28		14.12	1989-10-31		14.05
1989-08-24		13.87	1989-07-25		13.83
1989-05-23		13.84	1989-05-02		13.93
1989-03-08		13.94	1989-01-18		13.88
1988-12-14		13.96	1988-10-13		13.80
1988-09-14		13.90	1988-07-22		13.98
1988-05-20		14.23	1988-04-19		14.27
1988-02-24		14.29	1988-01-12		14.39
1987-11-30		14.40	1987-10-14		14.41
1987-08-28		14.77	1987-07-15		15.03
1987-05-21		14.79	1987-04-10		14.69
1987-02-27		14.51	1987-01-16		14.26
1986-11-28		14.12	1986-10-14		13.96
1986-08-14		14.27	1986-07-09		14.38
1986-05-28		14.31	1986-04-21		13.98
1986-02-28		13.74	1986-01-13		13.57
1985-11-27		13.73	1985-10-23		13.56
1985-09-18		13.56	1985-08-30		13.58
1985-07-09		13.59	1985-05-20		13.51
1985-04-08		13.48	1985-02-20		13.55
1985-01-16		13.53	1984-11-23		13.63
1984-10-16		13.80	1984-08-29		14.07
1984-07-05		14.20	1984-05-23		14.15
1984-04-10		14.05	1984-02-27		13.83
1984-01-17		13.81	1983-12-07		13.79
1983-10-17		13.97			

29 NNW 1/2 - 1 Mile Lower	HI WELLS	HI900000003471
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6-5330-006	Island:	Maui
Mokuhau TH 1	Old name:	Not Reported
1950		
Mark Vaught (East Maui Irriga	ition Co., Ltd.)	
5		
-156.509722		
20.89		
0	Utm:	-1
Not Reported		
Igarta, Bernard Trust		
Not Reported		
15-C TH	Well type:	ROT
1	Ground el:	310
431		
391	Perf case:	431
OBS - Observation		
Not Reported		
27.3	Init head2:	Not Reported
Not Reported		
280		
Not Reported	Test gpm:	Not Reported
	Mokuhau TH 1 1950 Mark Vaught (East Maui Irrige 5 -156.509722 20.89 0 Not Reported Igarta, Bernard Trust Not Reported 15-C TH 1 431 391 OBS - Observation Not Reported 27.3 Not Reported 280	Mokuhau TH 1 Old name: 1950 Mark Vaught (East Maui Irrigation Co., Ltd.) 5 -156.509722 20.89 0 Utm: Not Reported Igarta, Bernard Trust Not Reported 15-C TH Well type: 1 1 Ground el: 431 391 Perf case: OBS - Observation Not Reported 27.3 Init head2: Not Reported 280

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS

Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TW .		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-121
Bot solid:	-81	Bot perf:	-121
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-4-035:023
Agui code:	60102		
Latest hd:	Not Reported	Wcr:	01-JAN-50
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI900000003471

F30		
South	HI WELLS	HI900000003304
1/2 - 1 Mile		
Higher		

Wid: Well name: Yr drilled: Driller: Quad map: Long83dd:	6-5130-002 Waikapu 2 1974 Roscoe Moss Hawaii Inc 5 -156.507778	Island: Old name:	Maui Not Reported
Lat83dd:	-156.507778 20.861667		
Gps:	0	Utm:	-1
Owner user:	Land Division Oahu, DLNR-LD		
Land owner:	State of Hawaii		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	PER
Casing dia:	20	Ground el:	518
Well depth:	1020		
Solid case:	520	Perf case:	570
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	10.3	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	13		
Test date:	7/9/1974	Test gpm:	500
Test ddown:	73	Test chlor:	50
Test temp:	21	Test unit:	С
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	PA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-502
Bot solid:	-2	Bot perf:	-52
Spec capac:	7		

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TC4529586.2s Page A-50

0 Not Reported Not Reported 60102 Not Reported Not Reported Pump mgd: Draft mgd: Pump depth: Aqui code: Latest hd:

Pump elev: Tmk:

Not Reported (2) 3-5-004:023

01-JUL-74 Wcr:

Not Reported Not Reported Surveyor:

Site id: HI9000000003304

GEOCHECK®-PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for MAUI County: 3

Note: Zone 1 indoor average level > 4 pCi/L. : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L. : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96793

Number of sites tested: 11

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.291 pCi/L		0%	0%
Living Area - 2nd Floor	Not Reported		Not Reported	Not Reported
Basement	Not Reported		Not Reported	Not Reported

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PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory Source: Office of Planning Telephone: 808-587-2895

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Well Index Database

Source: Commission on Water Resource Management

Telephone: 808-587-0214

CWRM maintains a Well Index Database to track specific information pertaining to the construction and installation of production wells in Hawaii

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency

(USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions

FPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor

radon levels

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters. Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

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PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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APPENDIX J MAUI ELECTRIC CORRESPONDENCE

TC4529586.2s Page PSGR-3

Maul Electric Company, Ltd. • 210 West Kamehameha Avenue • P. O. Box 398 • Kahului, Maui, Hi 96733 • (808) 871-8461



TSC 2.5.1 (MECO) Due Diligence inquiries February 16, 2016

Bryan Starks Bureau Veritas North America, Inc. 841 Bishop Street, Sulte 1100, Honolulu, Hawaii 96813

Bryan Starks:

Re: Transformer Information: Transformers located within Maul Electric Substation #22 TMK 235001089 (Walluku, HI)

In response to your inquiry, we provide the following information regarding Maui Electric Company, Ltd. transformers:

Туре	TSF No.	Address	Date Purchased	Serial No.	PCB Status
Pole Top	15208	TMK 235001089	December 1996	96A461610	Non PCB
Pole Top	15192	TMK 235001089	December 1996	96A461490	Non PCB
Pole Top	15193	TMK 235001089	December 1996	96A461491	Non PCB
Substation Class Padmount	1370	TMK 235001089	1948	3937424	34.8 ppm *
Substation Class Padmount	1371	TMK 235001089	1948	3937426	2.47 ppm *
Substation Class Padmount	1372	TMK 235001089	1948	3937425	4.08 ppm *

Pursuant to the Toxic Substances Control Act (TSCA), the U.S. Environmental Protection Agency (EPA) promulgated a prohibition against distribution in commerce of PCBs in 1979. Accordingly, Maui Electric does not consider units purchased after 1979 to contain PCBs. Maui Electric numbers transformers when it receives them from the manufacturer. Our transformers numbered above 7777 are considered non-PCB since they were purchased after 1979.

It should be noted that Maul Electric's transformer purchases have always specified mineral oil, rather than PCBs, as the insulating material. Although Maul Electric has always specified mineral oil, it is possible that incidental contamination of older transformers may have occurred in the manufacturing process prior to the 1979 prohibition. Furthermore, EPA regulations require that all untested mineral oil transformers (such as those utilized in Maul Electric's distribution system) manufactured prior to July 1, 1979 must be considered to contain between 50 and 500 parts per million PCBs. Maul Electric would like to emphasize our transformers are in compliance with the Toxic Substances Control Act and all applicable related regulations. All leaking transformers are replaced when discovered and any associated soil affected by PCBs is remediated (at our expense) in accordance with all applicable EPA and State Department of Health guidelines. In addition, all older transformers that fail in the field are tested and disposed of accordingly.

It is important to understand that EPA rules regarding PCBs allow their continued use (at any concentration) in transformers for the remainder of the transformers' useful lives subject to certain conditions. These rules do not require testing of the transformers while they are in use and in good working order.

Please note that this location information is based on the information provided in your request. If you have further questions, please contact me by phone at 808-872-3548.

Sincerely.

Brittani Capps-Balinbin Environmental Specialist

		Sample Co			
L. Project Site N	ame:		2. Project Site Add		72 Waite
			MECO DHEL	SUB.	10
3. Company: (Cl		HECO			
	ected/Form Completed E	y (Phone No.); , 268 795	5. Brief Summary	of Incident or Purp	oose of Sampling:
	ps-Balinbin			12	
Names of Ber	ticipating Field Personn	el:	54B#		
I)K	. Kaya		- suct	ace sample	e to see
2)	Reose		ic	75F 1377	impacted so
3)				131 1716	
The same of the sa	oment Used: (e.g., dis	posable scoops, et	c.) 7. Photographs:	Vec DNo	
	65 500	OP		Second State Control of	
I. Sketch of site	- Include scale, direction	nlof north, perma	nent landmark (i.e., but cavation including meas	liding, light pole,	hydrant), sample
grass, soil, cond	crete, asphalt)			urements, type o	ground cover (i.e.,
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77	r	0		>	
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	thes (each box)=2 fee	t Appea K	Sunny Partly Clour	dy Overcast [Rain Temp.: 80 c
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1. Sample Infor	mation AB-1-5	Approx 2 et 10.Weather: [15. Sample Infor	mation B-1a-5	dy Overcast [19. Sample No	Rain Temp.: 80 comation
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Sample Information Sample No. South	mation MB-1-5 9/12 Time: 1230	Approx 2 et 10.Weather: [15. Sample Infor	metion B-1a-5 14/12 Time: 1230	Overcast [19. Sample Info Sample No. 5 Date: 4//	Rain Temp.: 80 cmatter 16 - 5 1/12 Time /232 1 1/12 Trip
1. Sample Information Sample No Date:	mation (AB-1-5) 9/12 Time: 1230 :: DU1	t 10.Weather: [15. Sample Infor	mation B-1a-5 19/12 Time: 1230 1: DUL Dup	19. Sample Info Sample No. 5 Date: 4/	Rain Temp.: 80 cmatter 16 - 5 1/12 Time /232 1 1/12 Trip
1. Sample Information Sample No	mation (AB-1-5) 9/12 Time: 1230 :: DU1	t Appet K t 10.Weather: [15. Sample Infor Sample No. 34 Date: 4/2 Location/Source Depth Collected Depth Units: [mation B-1a-5 19/12 Time: 1230 1: DUL Dup	19. Sample Info Sample No. S Date: 4/2 Location/Source Depth Colleges Depth Units:	Rain Temp.: 80 cmatten 16 - 5 1/12 Time /232 1/12 TC:p
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1. Sample Information Sample No Date:		t t 10.Weather: [15. Sample Infor Sample No. 54] Date:	Teet Inches Inches Inches Image Im	19. Sample Info Sample No. 5 Date:	TRAIN Temp.: 80. TOTAL TEMP. 16 - 5 TOTAL TEMP. 23 TOTAL
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1. Sample Infor Sample No. S Date: White Location/Source Depth Collected Depth Units: Sample Type Grab Shu 2. Physical Prop Color:	mation ### -1 - 5	t 10. Weather: [15. Sample Infor	metion B-Ja-5 19-12-11me:12-50 :: D.U. 1-Dusp :	dy overcast [19. Sample Info Sample No	TRAIN Temp.: 80. TOTAL TEMP. 16 - 5 TOTAL TEMP. 23 TOTAL
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1. Sample Infor Sample No	mation ## 1 - 5	April X at 10.Weather: [15. Sample Infor Sample No. 34 Date:	mation B - In - 5 /G / 72 - Time:/230 :: D U 2 Dusp Feet Inches Iti-Increment Wipe erties y & Moist Wet No 18 Soil Type	dy Overcast [19. Sample No. 5] Date: 4// Location/Source Depth Collected Depth Units: [19. Sample Type Grab Units: [20. Physical Prot Color; [4] Moisture: [4] Dodor: [4] Sescribe 21. Matrix	Transition Transi
1. Sample Infor Sample No	mation ## -1 - 5 ##	April X at 10. Weather: [15. Sample Infor Sample No. 3M Date:	mation B - Ja - 5 /G / Z - Time:/250 :: D U 1 Dup Feet Inches iti-Increment Wipe erties / A Moist Wet No 18. Soil Type Gravel	dy overcast [19. Sample Info Sample No Date:	Rain Temp.: 80 cmallion Committee
1. Sample Infor Sample No. Sample No. Sample No. Sample No. Sample Toure Depth Collected Depth Collected Depth Units: Care Grab Sample Type Grab Sample Type Color: Moisture: Drodor: Prop Describe Sample Type Asphalt Gravel	mation ab -1 - 5 a/2 Time: /230 :: DLL1 :: Surfale Feet Inches Inches Inches Wipe Inches Inc	t 10. Weather: [15. Sample Infor Sample No. 3M Date: Location/Source Depth Loils: [Sample Type Grab Devis Depth Loils: [Sample Type Grab Devis Depth Loils: [Date: Dep	mation B-1a-5 /4/12_Time:/230 :: D.U.1_Duy Feet Inches Itt-Increment Wipe erties / A Moist Wet No 18. Soil Type Gravel Sand	dy overcast [19. Sample Info Sample No	Rain Temp.: 80 cmallion ### 11 - 5 ### 12 Time / 23/ ### 12 Time / 23/ ### 15 Time / 23/ #### 15 Time / 23/ #### 15 Time / 23/ #### 15 Time / 23/ ###################################
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11.01.

Note: 1) After sample drop-off, fax form and copy of chain of custody to the Environmental Dept. (543-4511).
2) Upon completion of project, forward original documentation to the Environmental Dept. (HPO-JW).

Form Revision Date: November 19, 2008



Hawaiian Electric Company, Inc.

12000636

Environmental Chemistry Laboratory Sample Analysis Report

Project/Site: Sample Classification: Substation 22 MECOT&D

Report Date: Received by Lab: 20-Apr-2012

26-Apr-2012

Sample Results in This Report:

Lab Sample ID **Date Collected** Location 12002188 04/19/2012 TSF 1372 TSF 1372 SUB-1a-S 12002189 04/19/2012 SUB-1b-S 12002190 04/19/2012 TSF 1372

ANALYSIS RESULTS

TPH by SW 846 Methods 3550B and 8015M; PCBs by SW 846 Methods 3550 and 8082. Results are reported on a dry weight basis.

Field ID: SUB-1-S	Location TSF 1372	Analyte PCB	All Arociors	esult <0.20	-	Analysis Date 4/25/12	Analyst slui
SUB-1-S	TSF 1372	TPH-TSF Oil (C			mg/Kg	4/24/12	sito
SUB-1a-S	TSF 1372	РСВ	All Aroclors	<0.20	mg/Kg	4/25/12	slui
SUB-1a-S	TSF 1372	TPH-TSF Oil (C	12-C28)	71	mg/Kg	4/24/12	sito
SUB-1b-S	TSF 1372	PCB	All Aroclors	<0.20	mg/Kg	4/25/12	slui
SUB-1b-S	TSF 1372	TPH-TSF Oil (C	12-C28)	67	mg/Kg	4/24/12	sito

Approved by: Dor la &

Supervisor, Environmental Chemistry Lab



HECO Environmental Chemistry Laboratory

P.O Box 2750, Honolulu, HI 96840-0001 E-mail: Chem Lab@heco.com

1 of 1

HECO ENVIRONMENTAL CHEMISTRY LABORATORY Sample Analysis Quality Report

Batch # 12000636

Units	Spike/ Blank Amount	Recovered Amount	Recovery Min.	Range Max.
mg/Kg	1.00	0.80	0.70	1.20
mg/Kg	1.00	0.73	0.70	1.20
mg/Kg	5,000	5,360	3,500	6,000
mg/Kg	5,000	5,023	3,500	6,000
%	100	108 - 120	70	120
%	100	89.4-98.0	70	130
	mg/Kg mg/Kg mg/Kg mg/Kg	Units Amount mg/Kg 1.00 mg/Kg 1.00 mg/Kg 5.000 mg/Kg 5,000 % 100	Units Amount Amount mg/Kg 1.00 0.80 mg/Kg 1.00 0.73 mg/Kg 5,000 5,360 mg/Kg 5,000 5,023 % 100 108 – 120	Units Amount Amount Min. mg/Kg 1.00 0.80 0.70 mg/Kg 1.00 0.73 0.70 mg/Kg 5,000 5,360 3,500 mg/Kg 5,000 5,023 3,500 % 100 108 – 120 70

^{*}MS = Matrix Spike LC = Lab Control LCS = Lab Control Sample LS = Lab Spike

version 7/21/2008

	d by:	Received by:	Time	Date					7.	Relinquished by:
- 1	d by:	Received by:	Time	Date					4.	account of the same of the sam
0,3 ag 11	Reding WINEHART	Receive	0830	Date 1/20/2		RRGO	JIR C	ALOHA AIR CARGO		Relinantshad by
2 Cargo	dby: Alpha (Received by:	Time 1330	Date 4/12/12	Edulia	Jan Jan	ant had	Rund	y (Sampio	Relinguished by:
Sludge (SL) Solid (SD)	Soil (SO) S	Liquid (L)		Oil, non-TSF (O)	(M),	Transformer Oil (T) Multi-increment	(C)	G) Composite (C)	Grab (G)	** Method:
Monday 2010										13732
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& Taken									-	
									100	
	*									
			<			<	6	Sub-16-5	3	0/90
W 144(2)	Material Solve 3.0	Side 3.0	-			-		SuB-2a-5	Su	2/89
T		00	50	1372	TSF 13	21/19/12	1250	SUB-1-5	Su	12004/88
Sampling Method**	Name of Sampler	Name	Type	rce	Source Source	Date	Time	Sample I.D.	1000	Lab Use Only
Q.),	AN.	TED	UBMI	SAMPLES SUBMITTED	SAM		2	Riold		Leave Blank
19 LA	l,				2		1			
17551	NOTE: if high priority, provide justification here: *Charge capital removal E0017551	narge cap	here: *Cl	justification	rity, provide	if high prio	NOTE:	ed: N	Yeeded:	Date Results Needed:
	1				268-7958	: 2	Number	Contact for Additional Info & Phone Number :	dditional	Contact for A
The state of the s	and the second second	-								Project Site :
Hall V Fare D Mari	anns-Balinbin u	B. C			DS 50	voltation	Sind			Project Name
Send Analysis Report to:	Send Analysis Renort to	Send			,	(ept: T&D	fant or D	Submitter's Plant or Dept :
W HECO Emineral	eiving Laborato	Rec		77	MECO HELCO Other:	TECO/ HE	HECO N	one)	mpany (c	Submitter Company (circle one)

687 - 0364 5250

FREIGHT

687 OGG 0364 5250

Shipper: MAUI ELECTRIC CO 42937 ATTN: ACCOUNTS PAYABLE HONOLULU, HI 96840 808, 532-5800

Consignee: HAWAIIAN ELECTRIC CO., INC. 41683 ATTN: ACCOUNTS PAYABLE HONOLULU, HI 96840 808, 5434297 Aloha Air Cargo ALOHA AIR CARGO P.O. BOX 30910 HONOLULU, HI 96820

It is agreed that the good described heirin are accepted in apparent good order and condition (except as noted) for carriege SUBJECT TO THE CONDITIONS OF CONTRACT ON THE EXPERSE REPROF. THE SUBPRESS ATTENTION IS DRAWN TO THE NOTICE CONCEINING CARRIESS (LINITATION OF LUBBLITY: Suppor may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.

Accounting Information GENERAL FREIGHT

Origin	OGG	Currency	USD	
Destination	HNL	Charge Code	PX	
Handling Information ATTN/DOUG	RINEHART	Declared Value for Carriage Declared Value for Customs	0	

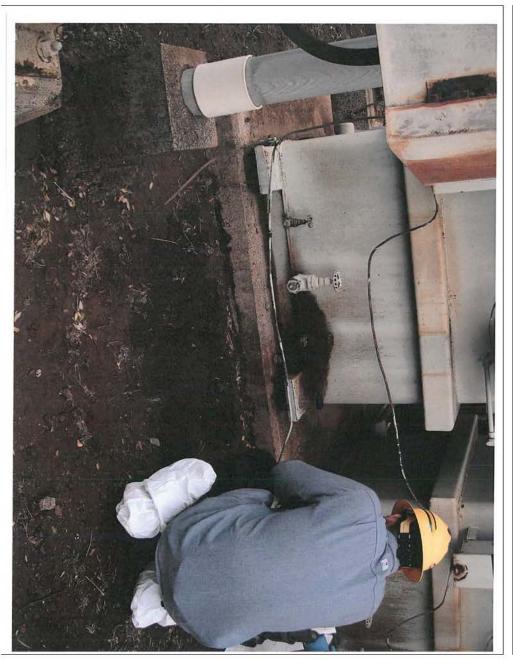
Pieces Gross Nature Chargeable Weight of Goods Weight Rate/Charge Total Length Width Height Dim Weight 1 SOIL SAMPLES/CHILL 12 9 10 6

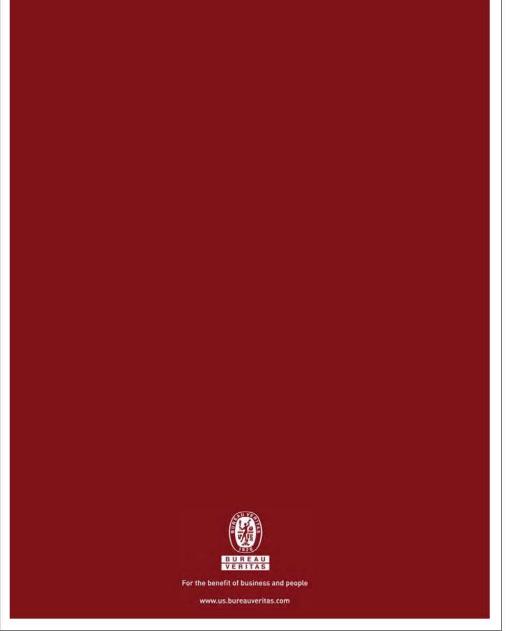
1 13

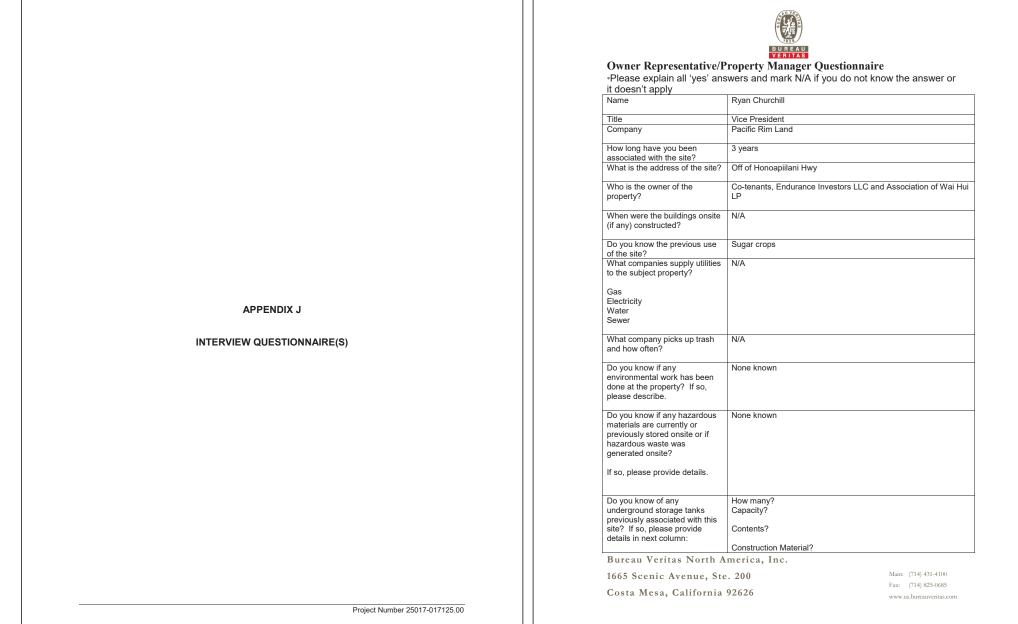
13

6

Fee	Prepaid	Collect		Other Ch	orges	
Weight Charge	30.00		FSC Fee	3.12	SSC Fee	0.00
Valuation Charge	0.00		DOC Fees	0.00	DG Fee	0.00
Tax	2.09		Oth Fees	0.00	P/U Fee	0.00
Total Other Charges Due Agent	0.00		DEL Fees	0.00	TSC Fees	0.26
Total Other Charges Due Carrier	3.38		The shipper certifies that the p not contain dangerous goods a	articulars on the face nd that all ITEMS AR	hereof are correct, and that E ACCEPTED AT SHIPPERS R	he shipment does SK
Total	35.47					
1000	55.17					
Signature of Issuing Carrier or its Agent	WB Date	WB Time	The consignee certifies that the		t in good order except where	









When were they installed? If removed, when were they removed and by what company? Were soil samples collected? Was an agency there to witness? How many? Location? Capacity? Contents? Construction Material? When were they installed? When were they removed? Time frame located onsite (when installed/removed)? Capacity? Capacity? What used for? Capacity? What used for? Capacity? Who serviced and how often? What company removed? Were soil samples collected? Was there regulatory agency oversight of removal? Time frame located onsite? Location? Do you know of any septic systems currently or formerly located onsite? If so, please provide details in next column: Do you know of any in-ground hydraulic equipment associated with this site, past or present? If so, please provide details in next column: Do you know of any in-ground hydraulic equipment associated with this site, past or present? If so, please provide details in next column: Time frame located onsite (when installed/removed)? What company removed them?		
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next column: Time frame located onsite (when installed/removed)?	with this site, past or present?	Location?
What company removed them?		Time frame located onsite (when installed/removed)?
		What company removed them?

Bureau Veritas North America, Inc.

1665 Scenic Avenue, Ste. 200 Costa Mesa, California 92626 Main: (714) 431-4100 Fax: (714) 825-0685 www.us.bureauveritas.com



	YERTINO
	Were samples collected from soil? Was there local agency oversight of removal?
Are you aware of any wells	When installed?
ever onsite (for example: Irrigation, groundwater,	How many?
groundwater monitoring, soil	M/hava landad?
vapor extraction)? If so, please provide details in next column:	Where located?
	Currently operating?
	Abandoned? If so, when? And was it in accordance with agency? Which one?

Are you aware of any of the following?

Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property.

Any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.

Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.

If you answered yes to any of the above three questions, will you please provide an explanation:

Bureau Veritas North America, Inc. 1665 Scenic Avenue, Ste. 200 Costa Mesa, California 92626

Main: (714) 431-4100 Fax: (714) 825-0685 www.us.bureauveritas.com

www.us.bureauventas.com





DATABASE REPORT

Project Property: Wailuku Maui

Honoapiilani Highway and Kuikahi Drive

Wailuku HI 96793 25018-018132.00

Project No: 25018-018132.00

Report Type: Database Report

Order No: 20181030092

Requested by: Bureau Veritas North America, Inc.

Date Completed: October 31, 2018

Environmental Risk Information Services A division of Glacier Media Inc.

P: 1.866.517.5204 E: info@erisinfo.com

www.erisinfo.com

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Reliance on information in Report: This report DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as database review of environmental records.

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Executive Summary

Property Information:

Project Property: Wailuku Maui

Honoapiilani Highway and Kuikahi Drive Wailuku HI 96793

Project No: 25018-018132.00

Coordinates:

 Latitude:
 20.864541

 Longitude:
 -156.504359

 UTM Northing:
 2,309,171.14

 UTM Easting:
 759,664.02

 UTM Zone:
 UTM Zone 04Q

Elevation: 438 FT

Order Information:

 Order No:
 20181030092

 Date Requested:
 October 30, 2018

Requested by: Bureau Veritas North America, Inc.

Report Type: Database Report

Historicals/Products:

Aerial Photographs Historical Aerials (Boundaries)
City Directory Search CD - 2 Street Search

 ERIS Xplorer
 ERIS Xplorer

 Excel Add-On
 Excel Add-On

Fire Insurance Maps US Fire Insurance Maps

Physical Setting Report (PSR) PSR

Topographic Maps

Topographic Maps

Executive Summary: Report Summary

Database		Searched	Search Radius	Project Property	Within 0.12mi	.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Standard En	vironmental Records			,,,,					
Federal									
NPL		Y	1	0	0	0	0	0	0
PROPO	SED NPL	Y	1	0	0	0	0	0	0
DELETE	ED NPL	Y	.5	0	0	0	0		0
SEMS		Υ	.5	0	0	0	0	-	0
ODI		Υ	.5	0	0	0	0	-	0
SEMS A	RCHIVE	Y	.5	0	0	0	0	-	0
CERCL	S	Y	.5	0	0	0	0	-	0
IODI		Y	.5	0	0	0	0	-	0
CERCL	S NFRAP	Y	.5	0	0	0	0	-	0
CERCL	S LIENS	Y	PO	0	-	-	-	-	0
RCRA C	CORRACTS	Y	1	0	0	0	0	0	0
RCRA T	SD	Y	.5	0	0	0	0	-	0
RCRA L	QG	Y	.25	0	0	0			0
RCRA S	eQG	Y	.25	0	0	0			0
RCRA C	ESQG	Y	.25	0	0	0			0
RCRA N	ION GEN	Y	.25	0	0	0			0
FED EN	G	Y	.5	0	0	0	0	-	0
FED IN	ST	Y	.5	0	0	0	0	-	0
ERNS 1	982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1	987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS		Y	PO	0	-	-	-	-	0
FED BR	OWNFIELDS	Y	.5	0	0	0	0	-	0
FEMA U	IST	Υ	.25	0	0	0	-	-	0
SEMS L	IEN	Υ	PO	0	-	-	-	-	0
SUPER	FUND ROD	Υ	1	0	0	0	0	0	0
State									
SHWS		Υ	1	0	0	0	1	4	5

Database	Searched	Search Radius	Project Property	Within 0.12mi	.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
DELISTED SHWS	Υ	1	0	0	0	0	0	0
SWF/LF	Υ	.5	0	0	0	1	-	1
LUST	Υ	.5	0	0	0	0	-	0
DELISTED LUST	Υ	.5	0	0	0	0	-	0
UST	Υ	.25	0	0	0	-	-	0
DTNK	Υ	.25	0	0	1	-	-	1
ENG	Υ	.5	0	0	0	0	-	0
INST	Υ	.5	0	0	0	0	-	0
VCP	Υ	.5	0	0	0	0	-	0
BROWNFIELDS	Υ	.5	0	0	0	0		0
ribal								
INDIAN LUST	Y	.5	0	0	0	0	-	0
INDIAN UST	Υ	.25	0	0	0	-	-	0
DELISTED ILST	Υ	.5	0	0	0	0	-	0
DELISTED IUST	Υ	.25	0	0	0	-	-	0
County	No Co	untv stani	dard enviror	montal ro	cord source	s availahlo	for this Sta	oto
ounty		unty otam			00.4 004.00	o a ranabio	707 11110 011	
Additional Environmental Records								
ederal								
FINDS/FRS	Υ	PO	0	-	-	-	-	0
TRIS	Υ	PO	0	-	-	-	-	0
HMIRS	Υ	.125	0	0	-	-	-	0
NCDL	Υ	PO	0	-	-	-	-	0
	Y	.125						
TSCA	,	. 125	0	0	-	-		0
TSCA HIST TSCA	Y	.125	0	0			-	0
						-		
HIST TSCA	Υ	.125	0	0	-	-		0
HIST TSCA FTTS ADMIN	Y Y	.125 PO	0	0			-	0
HIST TSCA FTTS ADMIN FTTS INSP	Y Y Y	.125 PO PO	o o o	0 -	-	-	-	0 0 0
HIST TSCA FTTS ADMIN FTTS INSP PRP	Y Y Y	.125 PO PO PO	0 0 0	0 -	- - -	-	-	0 0 0
HIST TSCA FTTS ADMIN FTTS INSP PRP SCRD DRYCLEANER	Y Y Y Y	.125 PO PO PO .5	0 0 0 0	0 0	- - - - 0	-	- - - -	0 0 0 0
HIST TSCA FTTS ADMIN FTTS INSP PRP SCRD DRYCLEANER ICIS	Y Y Y Y Y Y	.125 PO PO PO .5	0 0 0 0 0	0 0	- - - 0	- - 0		0 0 0 0 0
HIST TSCA FTTS ADMIN FTTS INSP PRP SCRD DRYCLEANER ICIS FED DRYCLEANERS	Y Y Y Y Y Y Y	.125 PO PO PO .5 PO	0 0 0 0 0 0	0 0 - 0	- - - 0	0	- - - - -	0 0 0 0 0
HIST TSCA FTTS ADMIN FTTS INSP PRP SCRD DRYCLEANER ICIS FED DRYCLEANERS DELISTED FED DRY	Y Y Y Y Y Y Y Y Y	.125 PO PO .5 PO .25	0 0 0 0 0 0	0	- - - 0 - 0	- 0	- - - - - -	0 0 0 0 0
HIST TSCA FTTS ADMIN FTTS INSP PRP SCRD DRYCLEANER ICIS FED DRYCLEANERS DELISTED FED DRY FUDS	Y Y Y Y Y Y Y Y Y Y Y	.125 PO PO .5 PO .25 .25	0 0 0 0 0 0	0 0 0 0 0	- - - 0 - 0	- 0 - - - 0	- - - - - - -	0 0 0 0 0 0
HIST TSCA FTTS ADMIN FTTS INSP PRP SCRD DRYCLEANER ICIS FED DRYCLEANERS DELISTED FED DRY FUDS MLTS	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	.125 PO PO .5 PO .25 .25 1		0 0 0 0 0	- - - 0 - 0 0	- 0 - - - 0		0 0 0 0 0 0 0 0 0 0
HIST TSCA FTTS ADMIN FTTS INSP PRP SCRD DRYCLEANER ICIS FED DRYCLEANERS DELISTED FED DRY FUDS MLTS HIST MLTS MINES	y y y y y y y y y y	.125 PO PO .5 PO .25 .25 1 PO	0 0 0 0 0 0 0	0 0 0 0	- - - 0 - 0 0	- 0 - 0		
HIST TSCA FTTS ADMIN FTTS INSP PRP SCRD DRYCLEANER ICIS FED DRYCLEANERS DELISTED FED DRY FUDS MLTS HIST MLTS	y y y y y y y y y y y	.125 PO PO .5 PO .25 .25 .1 PO PO .25		0 0 0 0 0	- - - 0 - 0 0			

Stat

Order No: 20181030092

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Order No: 20181030092

Database	Searched	Search Radius	Project Property	Within 0.12mi	.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
SPILLS	Υ	.125	0	0	-	-	-	0
DRYCLEANERS	Υ	.25	0	0	0	-	-	0
DELISTED DRYCLEANERS	Y	.25	0	0	0	-	-	0
Tribal	No Tri	ibal additio	onal environ	mental red	cord source	s available	for this Sta	te.
County	No Co	ounty addit	ional enviro	onmental r	ecord sourc	es availabl	e for this S	tate.
	Total:		0	0	2	2	4	8

Executive Summary: Site Report Summary - Project Property

Мар	DB	Company/Site Name	Address	Direction	Distance	Elev Diff	Page
Key					(mi/ft)	(ft)	Number

No records found in the selected databases for the project property.

^{*} PO – Property Only
* 'Property and adjoining properties' database search radii are set at 0.25 miles.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	ALT FUELS	Foodland	370 Kehalani Village Dr Wailuku HI 96793	N	0.20 / 1,066.33	-93	<u>16</u>
2_	DTNK	Aloha Kehalani Village	2565 Kehalani Village Drive Wailuku HI 96793	NNE	0.23 / 1,239.11	-120	<u>16</u>
3	SWF/LF	Waikapu Landfill	Waikapu HI	ESE	0.39 / 2,043.15	-119	<u>16</u>
<u>4</u>	SHWS	Waimaluhia Maui Meth / Drug Lab Act 170	115 Waimaluhia Ln Unit 202 Wailuku Hl 96793	NE	0.45 / 2,359.97	-194	. <u>17</u>
<u>5</u>	SHWS	Hawaii Land & Farming Company, Inc.	Wailuku HI 96732	NNE	0.53 / 2,808.34	-179	<u>18</u>
<u>6</u>	SHWS	Kehalani Development	Wailuku HI	NNW	0.59 / 3,098.63	67	<u>19</u>
7	SHWS	Maalaea 710 Acre and 906 Acre Site	Maalaea HI	sw	0.88 / 4,631.96	279	20
8	SHWS	Waiale Ash Pile	Mahalani St Wailuku HI 96793	NNE	0.95 / 5,015.46	-241	<u>21</u>

Executive Summary: Summary by Data Source

Standard

State

SHWS - HEER Sites of Interest

A search of the SHWS database, dated Sep 27, 2018 has found that there are 5 SHWS site(s) within approximately 1.00 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Kehalani Development	Wailuku HI	NNW	0.59 / 3,098.63	<u>6</u>
Maalaea 710 Acre and 906 Acre Site	Maalaea HI	SW	0.88 / 4,631.96	7
Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
Waimaluhia Maui Meth / Drug Lab Act 170	115 Waimaluhia Ln Unit 202 Wailuku Hl 96793	NE	0.45 / 2,359.97	4
Hawaii Land & Farming Company, Inc.	Wailuku HI 96732	NNE	0.53 / 2,808.34	<u>5</u>
Waiale Ash Pile	Mahalani St Wailuku HI 96793	NNE	0.95 / 5,015.46	<u>8</u>

SWF/LF - Landfill sites on the Hawaii Islands

A search of the SWF/LF database, dated Mar 28, 2017 has found that there are 1 SWF/LF site(s) within approximately 0.50 miles of the project property.

Lower Elevation	Address	<u>Direction</u>	Distance (mi/ft)	Map Key
Waikapu Landfill	Waikapu HI	ESE	0.39 / 2,043.15	<u>3</u>

DTNK - Delisted Sotrage Tank

A search of the DTNK database, dated Aug 31, 2018 has found that there are 1 DTNK site(s) within approximately 0.25 miles of the project property.

 Lower Elevation
 Address
 Direction
 Distance (mi/ft)
 Map Key

 Aloha Kehalani Village
 2565 Kehalani Village Drive Walluku HI 96793
 NNE
 0.23 / 1,239.11
 2

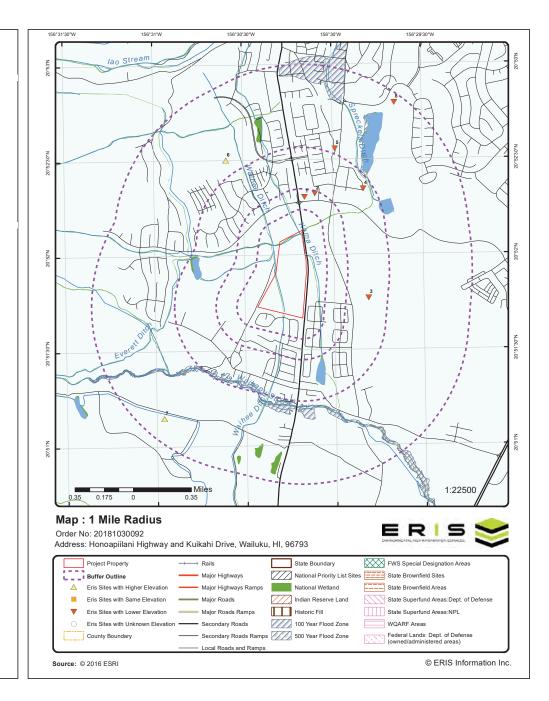
Non Standard

<u>Federal</u>

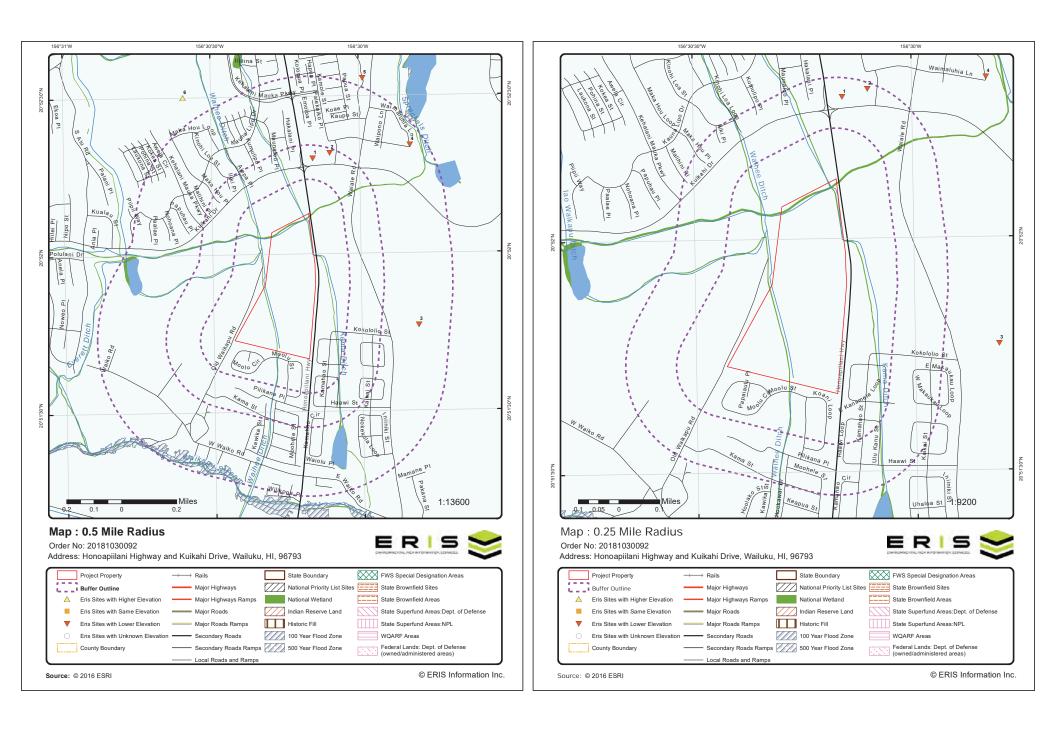
ALT FUELS - Alternative Fueling Stations

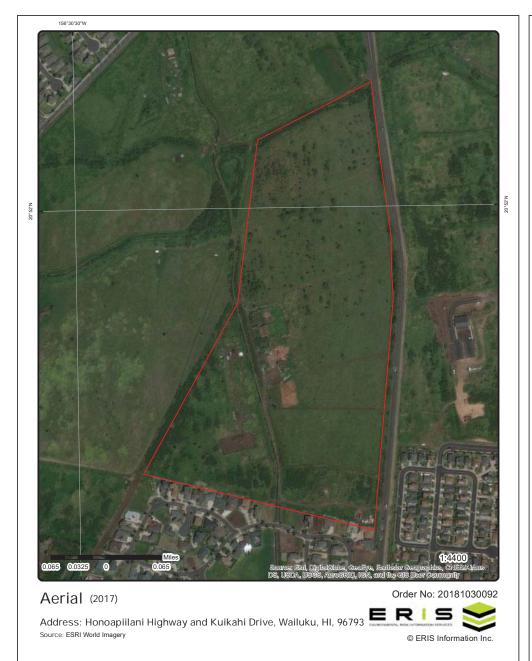
A search of the ALT FUELS database, dated Oct 16, 2018 has found that there are 1 ALT FUELS site(s) within approximately 0.25 miles of the project property.

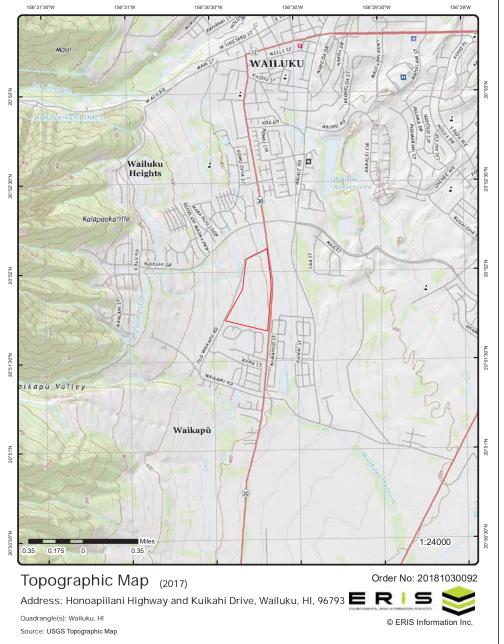
Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
Foodland	370 Kehalani Village Dr Wailuku HI 96793	N	0.20 / 1,066.33	<u>1</u>



Order No: 20181030092







Detail Report

Map Key	Number Records		Distance (mi/ft)	Elev/Diff (ft)	Site		DB
1	1 of 1	N	0.20 / 1,066.33	345.73 / -93	Foodland 370 Kehala Wailuku Hl	ni Village Dr 96793	ALT FUEL
ID:		65922		Dt Last C	onfirmed:	2018-03-08	
Fuel Type C Status: Open Date: Federal Age Federal Age Fed Agency	ncy ID: ncy:	ELEC: Electric Open: The station is open. 2015-01-01		Expected Updated Station P NG Vehic BD Blend NG Fill T	at: hone: :le Class:	2018-03-08 17:27:07 UTC 808-244-4460 855-885-9571	
	atus Desc: Directions:	Privately owned 20.872862 -156.502414 The location is fi	rom a real GPS r	NG PSI:	tion.		
LPG Primary Hydrogen Si LPG Primary E85 Blender E85 Blender NG Fill Type NG V Class Hydrogen is	tatus Link: y: r Pump: r Pump Desc Desc: Desc:	:					
2_	1 of 1	NNE	0.23 / 1,239.11	318.36 / -120		alani Village lani Village Drive 96793	DTNK
Facility ID: Latitude: Longitude: Locater Meti Hor Collecti		9-503929					
Original Sou Record Date	ırce:	UST 01-AUG-2017					
	1 of 1	ESE	0.39 / 2,043.15	319.00 / -119	Waikapu L		SWF/LF
3							
_					Waikapu H		
3 TMK: Status: Facility Type	e:	238007092 Neighbor Island Inactive L	Fs	Island: Latitude: Longitud		Maui 20.862845 -156.496890	
TMK: Status:	No: nt No: Type:		Fs	Latitude: Longitud Lining: Impact Pu Usgs Qu Nad 83 U Nad 83 U	e: ot Catgry:	Maui 20.862845	

	Number Records		Direction	Distance (mi/ft)	Elev/Diff (ft)	Site		
Sector: System: System: System: Sype A: Type B: Stat A: Stat B: Wed An Rain Capped: Capped: Capped: Comments:	Inch:	ALL First leas accordin by Ed Ke time, the 1970. Closure Approxin agricultu Waikapu The oper method" operation Access t Miles ea: Waikapu	se was signed Jag to an EPA sun. EPA sun. aggehiro, Chief, W first waste was completed be nately 30.04 acre al district (Opera Landfill. rations plan state landfill would be n	es and is in an ations Plan for es that the "area used for the m Waiko Road 2 lani Highway,	Operato Open D Close D Area: Current Previou Mn Wis Closest Closest Closest Waste 1	ate: ate: Owner: s Owner: Wi 1 MI: Well No: WI Name: WI Miles:	County of Maui 1970 August 1992 30,04 Unknown Unknown 0 5330-05 Wailuku Shaft 33 1.5 Municipal	
Map Location	Quality:	Closed b		giulations. Capped	Waste C	Category:	Municipal	
4	1 of 1		NE	0.45 / 2,359.97	244.52 / -194	Act 170	ia Maui Meth / Drug Lab aluhia Ln Unit 202 Il 96793	SHV
HID No: Fac Registry I Assessment: Response: Resp Act Con Potential Haz Date Issued: Priority: Engineer Con Institutional C Switch I Within Design	ID: mplete: /Ctrls: ntrol: Control: I Location: n. Area Cor	Respons 5/7/2007 No Haza NFA	se Necessary se Complete 1:16:34 AM rrd	0.107	Lead Ag Project Docume Docume Island: Loc Sta Loc Zip Latitude Longitu	Act 170 115 Waim Wailuku H yency: Manager: ent Date: ent No: te USPS Cd: Suffix:	aluhia Ln Unit 202	SHI
HID No: Fac Registry I Fac Registry I Fac Responet: Resp	ID: Inplete: //Ctrls: control: Control: I Location: I Location: Name: Document: mation: intaminatior idual Control flestriction	Respons 5/7/2007 No Haza NFA ntam.: ame:	waimaluhia M State No Hazard Pre No Further Act (808) 586-4245 Found: Methan Cleaned up to	2,359.97	Lead Ag Project Docume Docume Island: Loc Sta Loc Zip Latitude Longitu Act 170 dd Residential ted Residentian RR d, Pearl	Act 170 115 Waim Wailuku H yency: Manager: ent Date: ent No: te USPS Cd: Suffix: ede:	aluhia Ln Unit 202 Il 96793 HEER Anna Fernandez 5/7/2007 1:16:34 AM 2007-304-AF Maui HI	SHI
HID No: Fac Registry I Assessment: Response: Resp Act Con Potential Haz Date Issued: Priority: Engineer Con Institutional Con Supplemental Within Design SDAR Enviro Program Full Use Restrictif Site Closure I Contact Inforn Nature of Con Nature of Res Description of Res	ID: nplete: //Ctrls: ntrol: Control: I Location: I. Location: I. Area Cor Interest Ne Name: Document: mation: idual Cont if Restriction	Respons 5/7/2007 No Haza NFA ntam.: ame:	waimaluhia M State No Hazard Pre No Further Act (808) 586-4245 Found: Methan Cleaned up to	2,359.97 2,359.97 aui Meth / Drug Lab. sent For Unrestricte ion Letter - Unrestric to Letter - Unrestric to be under the constant of the con	Lead Ag Project Docume Docume Island: Loc Sta Loc Zip Latitude Longitu Act 170 dd Residential ted Residentian RR d, Pearl	Act 170 115 Waim Wailuku H yency: Manager: ent Date: ent No: te USPS Cd: Suffix: ede:	aluhia Ln Unit 202 Il 96793 HEER Anna Fernandez 5/7/2007 1:16:34 AM 2007-304-AF Maui HI	SHV

	Number Records	of	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site		DI
Longitude: Comments:			-156.498347					
Coordinate for Latitude: Longitude: Comments:	Mapping:		Yes 20.876447 -156.498333 XTRA_ADD: Pr	rimaryTemp LOC	ATION_1: Addres	sses were geoc	oded in ArcGIS using basemap St	reetmap_SOH_
TMK Information	<u>on</u>							
TMK: Acres from TM Description of			238046021 11.42516985					
<u>5</u> 1	of 1		NNE	0.53 / 2,808.34	259.12 / -179	Hawaii Lan Inc.	d & Farming Company,	SHWS
						Wailuku HI	96732	
HID No: Fac Registry IE Assessment: Response: Response: Resp Act Comp Potential Haz/C Date Issued: Priority: Engineer Contr Institutional Cc Supplemental I Within Design. SDAR Enviro In Program Full N Use Restriction Site Closure Dc Contact Inform Nature of Resis Description of Doc Subject:	plete: Ctrls: rol: ontrol: Location: Area Con nterest Na lame: ns: ocument: nation: amination dual Conta	Respons 3/15/200 Hazard N 3/15/200 NFA Engineer tam.: me:	Hawaii Land & State Controls Requii No Further Acti (808) 586-4249 Found: Arsenic	uired Hawaii Dept. of H Farming Compar red to Manage Co on Letter - Restri 2385 Waimano in soil	Docume Docume Island: Loc Stat Loc Stat Loc Zip Latitude Longitu ealth Letter Issue ny, Inc. ontamination cted Use Home Rd, Pearl 0	Manager: nt Date: nt No: e USPS Cd: Suffix: : d City, HI 96782	HEER Mark Sutterfield 3/15/2004 1:13:22 AM 2004-096-MS Maui HI 20.87594 -156.499869	
Geographic Inf			Additional coord	dinates				
Latitude: Longitude: Comments:	маррину.		20.878671 -156.511194	uniates.				
Coordinate for Latitude: Longitude: Comments:	Mapping:		Additional coord 20.872671 -156.503984 XTRA_ADD: W		Hwy, TMK: 23500	11067 (March L	OCATION_1: Honoapiilani Hwy &	Kehalani
Coordinate for Latitude: Longitude: Comments:	Mapping:		Additional coord 20.876209 -156.458365	dinates.				
Coordinate for Latitude: Longitude: Comments:	Mapping:		Additional coord 20.875518 -156.50015	dinates.				
Coordinate for Latitude: Longitude:	Mapping:		Yes 20.87594 -156.499869					

Map Key	Number Records		Direction	Distance (mi/ft)	Elev/Diff (ft)	Site		DI
Comments:			XTRA_ADD: P	rimaryTemp W of	intersection, TMI	K: 235001066 I	LOCATION_1: Waiale Rd & Waim	aluhia
TMK Informa	ation .							
TMK: Acres from Description			235001067 1.17224436 Module 20					
TMK: Acres from Description			235001066 11.12119398 Module C6/10					
<u>6</u>	1 of 1		NNW	0.59 / 3,098.63	505.81 / 67	Kehalani D	Development	SHWS
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Wailuku H	I	
HID No: Fac Registry Assessmen: Response: Resp Act Co Potential Ha Date Issued. Priority: Engineer Co Institutional	t: omplete: nz/Ctrls: : ontrol:		ise Not Necessary 11 2:16:06 AM ard	,	Docume Docume Island:	Manager: nt Date: nt No: e USPS Cd: Suffix:	HEER Melody Calisay 2/28/2011 2:16:06 AM 2011-114-MGC Maui HI 20.875 -156.51	
Within Design SDAR Environment Program Fu. Use Restrict Site Closure Contact Info Nature of Contact Info Nature of Rescription Doc Subject	o Interest N II Name: tions: Document: mation: ontamination of Restriction	ame: : n: tam.:	No Action Lette (808) 586-4249 Found: No con	sent For Unrestricer 9 2385 Waimano I taminants.	Home Rd, Pearl 0	City, HI 96782	nt Project, Wailuku, Maui	
Geographic	Information	!						
Coordinate : Latitude: Longitude: Comments:	for Mapping	ı:	Yes 20.875 -156.51					
TMK Informa	ation							
TMK: Acres from Description			235001067 1.17224436					
TMK: Acres from Description			235001080 13.06919528					
TMK: Acres from Description			235001063 19.37207034					
TMK: Acres from	TMK: of Portion:		235001075 25.37321531					

Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
7	1 of 1	SW	0.88 / 4.631.96	717.41 / 279	Maalaea 710 Acre and 906 Acre Site	SHWS

Maalaea HI

HEER

HI

20.852452

-156 516071

Laura Young 5/22/2008 12:56:03 AM

Lead Agency: Project Manager:

Document Date:

Loc State USPS Cd:

Document No:

Loc Zip Suffix:

Latitude:

Longitude:

HID No: Fac Registry ID: Response Not Necessary Assessment Response: Resp Act Complete: 5/22/2008 12:56:03 AM Potential Haz/Ctrls:

No Hazard Date Issued: Priority: NFA Engineer Control: Institutional Control:

Supplemental Location: Within Design. Area Contam.: SDAR Enviro Interest Name:

Maalaea 710 Acre and 906 Acre Site Program Full Name:

Use Restrictions: No Hazard Present For Unrestricted Residential Use Site Closure Document None - Phase I Only

(808) 586-4249 2385 Waimano Home Rd, Pearl City, HI 96782 Contact Information: Presumed: Pesticide.

Nature of Contamination: Nature of Residual Contam.:

Description of Restrictions:

Doc Subject: Water Treatment Sites Maalaea 710-Acre and 906-Acre Sites Wailuku, Maui HI

Geographic Information

Additional coordinates. Coordinate for Mapping: Latitude: 20 840552 -156.49962 Longitude:

Comments:

Additional coordinates. Coordinate for Mapping: Latitude: 20.825172 Longitude: -156.500652

Coordinate for Mapping: Additional coordinates. Latitude: 20.846027 Lonaitude: -156.508481

Coordinate for Mapping: Yes 20.852452 Latitude:

-156.516071 Longitude: Comments:

TMK Information

Description of Portion:

20

TMK:

Acres from TMK: 281.36088115 Description of Portion: 906 Acre Site 236002003 TMK-Acres from TMK 547.61039754 Description of Portion: 906 Acre Site 236004003 Acres from TMK: 744.31659513 Description of Portion: 710 Acre Site 236004006 TMK-63 00069322 Acres from TMK:

Number of

Records

1 of 1

110013775575 Response Necessary Response Ongoing

Hazard Present

Direction

NNE

Distance

(mi/ft)

0.95/

5,015.46

Elev/Diff

197.12 /

Lead Agency:

Project Manager:

Loc State USPS Cd:

Document Date:

Document No:

Loc Zip Suffix:

Island:

Latitude:

Longitude:

-241

(ft)

Site

Waiale Ash Pile

Wailuku HI 96793

HEER

Maui

20.879899

-156.494286

Anna Fernandez

Mahalani St

Resp Act Complete: Potential Haz/Ctrls: Date Issued: Priority: Engineer Control:

Institutional Control:

Supplemental Location:

Fac Registry ID:

Assessment

Response:

Map Key

HID No:

Order No: 20181030092

Within Design. Area Contam.: SDAR Enviro Interest Name: Program Full Name:

Doc Subject:

Use Restrictions:

Controls Required to Manage Contamination Site Closure Document:

Waiale Ash Pile

(808) 586-4249 2385 Waimano Home Rd, Pearl City, HI 96782 Contact Information: Presumed: TPH, metals, pesticides, heterogenous mixture associated with landfills in soil Nature of Contamination:

Nature of Residual Contam : Description of Restrictions:

Geographic Information

Coordinate for Mapping: 20.879899 Longitude: -156.494286 XTRA_ADD: PrimaryTemp E of intersection, TMK: 238007131 LOCATION_1: Waiinu Rd & Mahalani St

Coordinate for Mapping: Additional coordinates. Latitude: 20.880134 -156.494346 Longitude:

TMK Information

TMK: 238007145 Acres from TMK: 6.8490738

TMK location based on plotted location in ArcGIS, base map mautmk. TMK owner Maui Lani Partners. Primary. Description of Portion:

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710 Acre Site

236002001

erisinfo.com | Environmental Risk Information Services

Order No: 20181030092

DB

SHWS

Unplottable Summary

Total:	10	Ung	lottable	sites
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DB	Company Name/Site Name	Address	City	Zip	ERIS ID
FINDS/FRS	KEHALANI - SITE 10	WESTERLY SIDE OF HONOAPILILANI	WAILUKU HI	96793	815140309
FINDS/FRS	MEADOW GOLD DAIRIES	HONOAPIILANI HWY	HONOLULU HI	96814	815135654
FINDS/FRS	WAIKAPU & SANDALWOOD GOLF COUR	WEST OF HONOAPIILANI HIGHWAY	WAILUKU HI	96793	815132566
FINDS/FRS	MAUI BLOCKS	WAIKAPU-OFF HONOAPIILANI HWY	WAILUKU HI	96793	815141789
FINDS/FRS	KEHALANI COMMERCIAL CENTER	BOUNDED BY HONOAPIILANI HWY, KUIKAHI DR., KAUPO S	WAILUKU HI	96793	815140310
HMIRS		HONOAPLLANI HWY	MAALAEA HI		818104975
LUST	HAWAIIAN CEMENT - WAIKAPU QUARRY	HONOAPIILANI HWY Facility ID: 9-502529 Event ID Latest Status Status Date: 95 5/16/1995	Wailuku HI 50015 Site Cleanup Comp	96793 leted (NFA)	821090079
SPILLS	Wailuku Irrigation Reservoir #74	Honoapiilani Hwy Case No: 20001211-1635	Wailuku HI	96793	822913881
SPILLS	Honoapiilani Highway - Field 747 - sugar fields	Field 747 Honoapiilani Highway Case No: 20100609-1609	Waikapu HI		822916576
UST	MAUI BLOCKS	WAIKAPU-OFF HONOAPIILANI HWY Facility ID: 9-500399 Tank ID Tank Status Desc Date Close 11/12/1993	Wailuku HI d: R-1 Permanently Out of	96793 Use	821091509

Unplottable Report

Site: KEHALANI - SITE 10

WESTERLY SIDE OF HONOAPILILANI WAILUKU HI 96793

FINDS/FRS

110022910992 Reaistry ID: FIPS Code: HI009 Program Acronyms: NPDES HUC Code: STATIONARY Site Type Name:

Location Description: Supplemental Location: NORTHERLY SIDE OF KUIKA 24-OCT-2005 17:26:10 Create Date: Update Date: 11-JAN-2016 15:21:31

Interest Types: SIC Codes: ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION

SIC Code Descriptions: NAICS Codes: NAICS Code Descriptions: Conveyor: Federal Facility Code: Federal Agency Name: Tribal Land Code: Tribal Land Name: Congressional Dist No.: Census Block Code:

EPA Region Code:

MAUI

County Name: US/Mexico Border Ind: Latitude: Longitude: Reference Point: Coord Collection Method: Accuracy Value:

NAD83 Datum:

Source:

Facility Detail Rprt URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110022910992

Site: MEADOW GOLD DAIRIES

HONOAPIILANI HWY HONOLULU HI 96814

FINDS/FRS

Registry ID: 110020734703 FIPS Code: HI003 NPDES Program Acronyms: HUC Code: STATIONARY Site Type Name: Location Description: (CLOSED)

Create Date: 01-MAR-2005 15:53:38 Update Date: 11-JAN-2016 14:47:02 ICIS-NPDES NON-MAJOR Interest Types:

SIC Codes:

NONCLASSIFIABLE ESTABLISHMENTS SIC Code Descriptions: NAICS Codes:

NAICS Code Descriptions: Conveyor: Federal Facility Code: Federal Agency Name: Tribal Land Code: Tribal Land Name Congressional Dist No.:

Supplemental Location:

Census Block Code:

EPA Region Code:

County Name: HONOLULU

US/Mexico Border Ind:

Latitude: Longitude:

Reference Point: Coord Collection Method:

Accuracy Value:

NAD83 Source:

Facility Detail Rprt URL: $http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110020734703$

WAIKAPU & SANDALWOOD GOLF COUR

WEST OF HONOAPIILANI HIGHWAY WAILUKU HI 96793

FINDS/FRS

110022912428 Reaistry ID: 15009 FIPS Code:

HI-EHW, NPDES Program Acronyms:

HUC Code: Site Type Name: STATIONARY

Location Description: Supplemental Location:

Create Date: 24-OCT-2005 17:26:44

11-JAN-2016 12:52:21 Update Date:

ICIS-NPDES NON-MAJOR, STATE MASTER Interest Types: SIC Codes:

SIC Code Descriptions: NAICS Codes: NAICS Code Descriptions:

Conveyor: Federal Facility Code: Federal Agency Name: Tribal Land Code: Tribal Land Name: Congressional Dist No.:

Census Block Code: EPA Region Code: MAUI

County Name: US/Mexico Border Ind:

Latitude: Longitude: Reference Point: Coord Collection Method:

Accuracy Value:

NAD83 Datum: Source:

Facility Detail Rprt URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110022912428

MAUI BLOCKS Site:

WAIKAPU-OFF HONOAPIILANI HWY WAILUKU HI 96793

FINDS/FRS

Order No: 20181030092

Registry ID: 110046188264 FIPS Code. Program Acronyms: HI-EHW HUC Code: STATIONARY

Site Type Name: Location Description:

Supplemental Location:

25-JUL-2012 10:03:28 Create Date: Update Date: 27-OCT-2015 16:08:08 Interest Types: STATE MASTER

SIC Codes SIC Code Descriptions: NAICS Codes: NAICS Code Descriptions:

Conveyor:

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Federal Facility Code: Federal Agency Name: Tribal Land Code: Tribal Land Name: Congressional Dist No.: Census Block Code:

EPA Region Code:

County Name: MAUI COUNTY

US/Mexico Border Ind:

Longitude: Reference Point:

Coord Collection Method:

Accuracy Value: Datum:

NAD83

Source:

Facility Detail Rprt URL: $http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110046188264$

Site: KEHALANI COMMERCIAL CENTER

BOUNDED BY HONOAPIILANI HWY, KUIKAHI DR., KAUPO S WAILUKU HI 96793

FINDS/FRS

HMIRS

110044254384 Registry ID: FIPS Code: 15009 NPDES Program Acronyms: HUC Code:

STATIONARY Site Type Name: Location Description:

Supplemental Location:

Create Date: 28-NOV-2011 13:00:23 Update Date:

03-MAY-2015 09:58:58 ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION Interest Types:

SIC Codes: SIC Code Descriptions: NAICS Codes: NAICS Code Descriptions: Conveyor: Federal Facility Code: Federal Agency Name: Tribal Land Code: Tribal Land Name. Congressional Dist No.: Census Block Code:

EPA Region Code: County Name: MAUI

US/Mexico Border Ind: Latitude: Lonaitude:

Reference Point: Coord Collection Method: Accuracy Value:

Datum: NAD83

Source:

Facility Detail Rprt URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110044254384

HONOAPLLANI HWY MAALAEA HI

MAUI Incident County:

HMIR Incident Reports

I-1999081028 Fed DOT Agency Nm: Report No: A hazardous material incident Fed DOT Report No: Report Type:

Date of Incident: 07/14/1999 Report Submit Src: Paper Time of Incident: 1245 Inc Multiple Rows:

Haz Class Code: Inc Non US State:

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25

Hazardous Class: Commodity Short Nm: Commodity Long Nm: Trade Name: ID No: Haz Waste Ind: Haz Waste EPA No: HHMS Tox Inhalation?: TIH Hazard Zone: Qty Released: Unit of Measure: What Failed: What Failed Desc: How Failed Desc: Failure Cause Code: Failure Cause Code:	FLAMMABLE - COMBUSTIBLE LIQUID GAS OIL CHEVRON HS DIESEL UN1202 No No 200 LGA 103; Basic Material; 301; Abraded; 531; 537 Rollover Accident; Vehicular Crash or Accident Damage	Mode Transport: Transport Phase: Incident Occrrnce: Mat Ship Approval?: Mat Ship Approv No: Undeci Hazmat Ship?: Packaging Type: Packing Group: Carrier Reporter: CR Street Name: CR City: CR State: CR Postal Code: CR Non US State: CR Fed DOT ID: CR Hazmat Reg ID: CR Country:	Highway IN TRANSIT No No Cargo Tank Motor Vehicle (CTMV) MAUI OIL CO INC 16 HOBRON AVE STE 202 KAHULUI HI 96732-2103 1791195 US
Ident. Markings: Cont1 Pigling Type: Cont1 Const Mat: Cont1 Head Type: Cot11 Pigling Type: Cot11 Pigl Capacity: C1 Capacity UOM: Cot11 Pigl Amt: C1 Pigl Amt: C1 Pigl MinCtr: Cot11 Pigl Serial NO: C1 Valve/Device Fail?: C1 Device Minctr: C1 Device Model: NRC No:	4500 LGA 1 1 BEAL TRAILERS T20523 6/1/1998 12:00:00 AM	Shipper Name: Shipper Street Name: Shipper Street Name: Shipper Gity: Shipper State: Shipper Sostal: Shipper Sostal: Shipper Country: Shipper Waybill: Ship Hazmat Reg ID: Origin City: Origin State: Origin Non US St: Origin Non US St: Origin Non US St: Origin Non US St: Origin Non US: Destination City: Destination City: Destination Postal: Destination Non US: Destination Country: Cont2 Package Type: Cont2 Const Mat: Cont2 Pkg Capacity: Cont2 Cont2 Consacity UOM: Cont2 Pkg Amount: Cont2 Pkg Am UOM: Cont2 Pkg Am UOM: Cont2 Pkg Nor Falled:	CHEVRON U.S.A. INC. 100 HOBRON AVE KAHULUI HI 96732-2119 US KAHULUI HAWAII 96732 US KAHULUI HAWAII 96732 US KAHULUI HAWAII US KAHULUI HAWAII
RAM Pkg Category: RAM Pkg Cert.: RAM Pkg Cert. NBR: RAM Nuclide S: RAM Transport Index: RAM Undex: RAM Undex: RAM Undex: RAM Undex: RAM Undex: RAM Undex: RAM Lativity: RAM Activity: RAM Activity: RAM Activity: RAM Activity: RAM Activity: RAM Cativity: RA	Yes No	Haz NonHosp Public: Haz NonHosp Old: Tot Haz Non Hosp Inj: Total Hazmat Injuries: Evacuation Indicator: Public Evacuated: Employees Evac: Total Evacuated: Total Evacuated: Major Artery Closed: Major Artery Closed: Material Involved: Estimated Speed: Weather Conditions: Vehicle Corditions: Vehicle Left Roadway: Passenger Aircraft: Cargo Baggage: Ship Non Transport: Ship Air First Flight: Ship Air Subflight: Ship Ini Transport: Ship Phase Transfer: Contact Name:	0 0 0 0 0 0 0 0 0 0 0 0 0 Yes 40 No No No No No No No No No No No No No

Damage > 500: Material Loss: Carrier Damage: Property Damage: Response Cost: Remediation Cost: Damage Old Form: Total Damages Amt: Hazmat Fatality: Haz Fatal Gen Public: Tot Hazmat Fatality: Non Hazmat Fatality: Non Hazmat Fatality: Haz Hospiral Empl: Haz Hospiral Empl: Haz Hospiral Empl: Haz Hosp Old Form: Total Haz Hosp Inj: Haz Non Hosp Empl: Haz Rom	SLOWED SO I WENT AND APPLIE KNEW WAS NOT GOING TO BE A SWIPE JEEP CAR AND VAN BEFO	D MY BRAKED WITH MY RIBLE TO STOP IN TIME. I PU	US Yes No No No No No No OHMIR.Ref_Container.descr_txt MC306 Cargo tanks Yes No No Stanta Triangle CAR UP AHEAD GHT LEG THEN WITH BOTH LEGS THEN I LLED TRK 6 INTO GUARD RAIL THEN SIDE
	MENT - WAIKAPU QUARRY I HWY Wailuku HI 96793		LUST
Facility ID: Project Officer:	9-502529 Roger Brewer		
LUST Status Informatio	<u>n</u>		
Event ID: Latest Status: Status Date:	950015 Site Cleanup Completed (NFA) 5/16/1995		
	ion Reservoir #74 wy Wailuku HI 96793		SPILLS
HID No: Fac. Registry ID: NRC Inc. ID: Case No: Lead And Progr: EPR Envir. Interest:	550663 20001211-1635 HEER EP&R Walluku Irrigation Reservoir #74	Coord Need: Organization: Suppl Loc.: Loc Island:	No Maui
Spill Information Activity Typ: Activity Rslt: Activity End Dt: Activity Lead:	Response SOSC NFA Bill Perry	Substances: Less/Greater than: Numeric Qty: Units:	Unknown 3 Drums
	ighway - Field 747 - sugar fields apiilani Highway Waikapu Hl		SPILLS
HID No: Fac. Registry ID: NRC Inc. ID: Case No: Lead And Progr: EPR Envir. Interest:	943435 20100609-1609 HEER EP&R Hazardous waste dumping	Coord Need: Organization: Suppl Loc.: Loc Island:	None Honoapiilani Highway - Field 747 - Waikapu Maui

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Spill Information

Activity Typ: Response Activity Rslt:

Activity End Dt:

9-500399

TC Activity Lead:

Activity Typ: Response Activity Rslt:

Activity End Dt: TC Activity Lead:

Substances: water-based paints Less/Greater than:

oil-based paints

UST

Numeric Qty: Units:

Substances:

Less/Greater than: Numeric Qty:

Site: MALII BLOCKS

WAIKAPU-OFF HONOAPIILANI HWY Wailuku HI 96793

Horiz. Ref. Datum: Horiz, Coll. Method:

Facility ID: Latitude: Longitude:

Organization and Tank Information

P O BOX 985 Tank ID: Tank Status Desc: Org. Address: Org. Formal Name:

MAUI BLOCKS AKA R&M SERVICE CO., INC. Permanently Out of Use Installed Date: 4/30/1974 Wailuku Ora. Citv:

Date Closed: 11/12/1993 Org. State: 1000 96793 Tank Capacity: Org. Zip Code: Substance Desc: Gasoline

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

National Priority List:

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

Government Publication Date: Jul 3, 2018

National Priority List - Proposed: PROPOSED NPL

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment Government Publication Date: Jul 3, 2018

Deleted NPL: DELETED NPI

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Government Publication Date: Jul 3, 2018

SEMS List 8R Active Site Inventory: SEMS The Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted.

Government Publication Date: Aug 13, 2018

Inventory of Open Dumps, June 1985: ODI

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257). Government Publication Date: Jun 1985

SEMS List 8R Archive Sites:

The Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

Government Publication Date: Aug 13, 2018

Comprehensive Environmental Response, Compensation and Liability Information System -

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

EPA Report on the Status of Open Dumps on Indian Lands:

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiquous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

CERCLIS - No Further Remedial Action Planned:

CERCLIS NERAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL

Government Publication Date: Oct 25, 2013

CERCUS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA). Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action:

RCRA CORRACTS

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Aug 2, 2018

RCRA non-CORRACTS TSD Facilities:

RCRA TSD

PCPA SOC

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Government Publication Date: Aug 2, 2018

RCRA Generator List: RCRA LOG

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LOGs) generate 1.000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Aug 2, 2018

RCRA Small Quantity Generators List:

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Government Publication Date: Aug 2, 2018

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RCRA Conditionally Exempt Small Quantity Generators List:

RCRA CESOG

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Conditionally Exempt Small Quantity Generators (CESQG) generate 100 kilograms or less per month of hazardous waste or one kilogram or less per month of acutely hazardous waste Government Publication Date: Aug 2, 2018

RCRA Non-Generators:

RCRA NON GEN

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste. Government Publication Date: Aug 2, 2018

Federal Engineering Controls-ECs:

FED ENG

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jan 20, 2016

Federal Institutional Controls- ICs:

FED INST

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

Government Publication Date: Jan 20, 2016

Emergency Response Notification System:

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System:

FRNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System:

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories. This database is made available by the United States Environmental Protection Agency (EPA). Government Publication Date: Feb 12, 2018

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database:

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Feb 20, 2018

FEMA Underground Storage Tank Listing:

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage

Government Publication Date: Dec 31, 2017

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LIEN on Property: SEMS LIEN

The EPA Superfund Enterprise Management System (SEMS) provides LIEN information on properties under the EPA Superfund Program. Government Publication Date: Aug 13, 2018

Superfund Decision Documents: SUPERFUND ROD

This database contains a listing of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD), along with other associated memos and files. This information is maintained and made available by the US EPA (Environmental Protection Agency)

Government Publication Date: Aug 13, 2018

State

HEER Sites of Interest: SHWS

A listing of facilities, sites or areas in which Hazard Evaluation and Emergency Response (HEER) Office has an interest, has investigated or may investigate under HRS 128D (including CERCLIS sites). This list includes all sites for which the SDAR section has an environmental interest, including military sites and older, inactive sites that have insufficient available information to make regulatory determinations about closure. This list has been made available by Hawaii Department of Health HEER Office. This database is state equivalent CERCLIS.

Government Publication Date: Sep 27, 2018

Delisted HEER Sites of Interest:

DELISTED SHWS

This database contains a list of Hazard Evaluation and Emergency Response sites that were removed from the Hawaii Department of Health's Hazard Evaluation and Emergency Response (HEER) Office.

Government Publication Date: Sep 27, 2018

Landfill sites on the Hawaii Islands:

SWF/LF

A list of active and inactive Solid Waste Facilities, Landfills & Transfer Stations on Hawaii Islands. This list has been made available by Hawaii Department of Health Solid and Hazardous Waste Branch.

Government Publication Date: Mar 28, 2017

Leaking Underground Storage Tanks:

LUST

A list of Leaking Underground Storage Tanks in the state of Hawaii. This list has been made available by Hawaii Department of Health Solid and Hazardous Waste Branch.

Government Publication Date: Aug 31, 2018

Delisted Leaking Underground Storage Tanks:

DELISTED LUST

This database contains a list of closed Leaking Underground Storage Tanks that were removed from the Hawaii Department of Health Solid and Hazardous Waste Branch.

Government Publication Date: Aug 31, 2018

Underground Storage Tanks:

UST

A list of registered Underground Storage Tanks in the state of Hawaii. This list has been made available by Hawaii Department of Health Solid and Hazardous Waste Branch

Government Publication Date: Aug 31, 2018

Delisted Sotrage Tank:

DTNK

This database contains a list of registered Underground Storage Tanks in the state of Hawaii that were removed from the Hawaii Department of Health Solid and Hazardous Waste Branch storage tank database.

Government Publication Date: Aug 31, 2018

Facilities with Engineering Controls:

ENG

Order No: 20181030092

A list of sites having Engineering Controls registered with Hazard Evaluation and Emergency Response (HEER) Office. This list has been made available by Hawaii Department of Health HEER Office.

Government Publication Date: Sep 27, 2018

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Facilities with Institutional Controls:

A list of sites having Institutional Controls registered with Hazard Evaluation and Emergency Response (HEER) Office. This list has been made available by Hawaii Department of Health HEER Office.

Government Publication Date: Sep 27, 2018

Voluntary Response Program List:

VCP

A list of sites registered under Voluntary Response Program with Hazard Evaluation and Emergency Response (HEER) Office. This list has been made available by Hawaii Department of Health HEER Office.

Government Publication Date: Sep 27, 2018

Brownfields Sites: BROWNFIELDS

A list of brownfields sites registered with Hazard Evaluation and Emergency Response (HEER) Office in the state of Hawaii. This list has been made available by Hawaii Department of Health HEER Office.

Government Publication Date: Sep 27, 2018

Tribal

Leaking Underground Storage Tanks (LUSTs) on Indian Lands:

INDIAN LUST

LUSTs on Tribal/Indian Lands in Region 9, which includes Hawaii. There are no LUST records in Hawaii at this time.

Underground Storage Tanks (USTs) on Indian Lands:

INDIAN UST

USTs on Tribal/Indian Lands in Region 9, which includes Hawaii. There are no UST records in Hawaii at this time.

Government Publication Date: Dec 31, 2017

Delisted Tribal Leaking Storage Tanks:

DELISTED ILST

Leaking Underground Storage Tank facilities which have been removed from the Regional Tribal LUST lists made available by the EPA.

Government Publication Date: Oct 14, 2017

Delisted Tribal Underground Storage Tanks:

DELISTED JUST

Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.

Government Publication Date: Oct 14, 2017

County

No County standard environmental record sources available for this State.

Additional Environmental Record Sources

Federal

Facility Registry Service/Facility Index:

FINDS/FRS

The US Environmental Protection Agency (EPA)'s Facility Registry System (FRS) is a centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from gram national systems, state master facility records, data collected from EPA's Central Data Exchange registrations and data management personnel.

Government Publication Date: Apr 17, 2018

Toxics Release Inventory (TRI) Program:

TRIS

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: Dec 31, 2016

erisinfo.com | Environmental Risk Information Services Order No: 20181030092

Hazardous Materials Information Reporting System:

MIDC

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

Government Publication Date: May 23, 2018

National Clandestine Drug Labs:

NCDL

The U.S. Department of Justice ("the Department") provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

Government Publication Date: Jul 18, 2018

Toxic Substances Control Act:

TSCA.

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Rusiness Information (CRI)

Government Publication Date: Jun 30, 2017

Hist TSCA:

HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing:

ETTE ADMIN

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing:

FTTS IN

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List:

PRE

Early in the cleanup process, the Environmental Protection Agency (EPA) conducts a search to find the potentially responsible parties (PRPs). EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site.

Government Publication Pate: Jul 17. 2018

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State Coalition for Remediation of Drycleaners Listing:

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS):

ICIS

The Integrated Compliance Information System (ICIS) is a system that provides information for the Federal Enforcement and Compliance (FE&C) and the National Pollutant Discharge Elimination System (NPDES) programs. The FE&C component supports the Environmental Protection Agency's (EPA) Civil Enforcement and Compliance Positional Environmental Protection Agency's (EPA) Civil Enforcement and Compliance Positional Environmental Protection Agency's (EPA) Civil Enforcement and Compliance Assistance, Compliance Monitoring and Enforcement. The NPDES program supports tracking of NPDES permits, limits, discharge monitoring data and other program reports.

erisinfo.com | Environmental Risk Information Services Order No: 20181030092

Government Publication Date: Nov 18, 2016

Drycleaner Facilities: FED DRYCLEANERS

A list of drycleaner facilities from the Integrated Compliance Information System (ICIS). The Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

Government Publication Date: May 29, 2018

Delisted Drycleaner Facilities:

DELISTED FED DRY

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

Government Publication Date: May 29, 2018

Formerly Used Defense Sites:

FUDO

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DoD) is responsible for an environmental restoration. This list is published by the U.S. Army Corps of Engineers.

Government Publication Date: Nov 22, 2016

Material Licensing Tracking System (MLTS):

MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

Historic Material Licensing Tracking System (MLTS) sites:

HIST MLTS

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

Government Publication Date: Jan 31, 2010

Mines Master Index File:

The Master Index File (MIF) contains mine identification numbers issued by the Department of Labor Mine Safety and Health Administration (MSHA) for mines active or opened since 1971. Note that addresses may or may not correspond with the physical location of the mine itself.

Government Publication Date: Jan 30.2018

Convernment Publication Date: Jan 30.2018

The Publication Date: Jan 30.2018

Alternative Fueling Stations: ALT FUELS

List of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE). The National Renewable Energy Laboratory (NREL) obtains information about new stations from trade media, Clean Cities coordinators, a Submit New Station form on the Station Locator website, and through collaborating with infrastructure equipment and fuel providers, original equipment manufacturers (OEMs), and industry groups.

Government Publication Date: Oct 16, 2018

Registered Pesticide Establishments:

5515

List of active EPA-registered foreign and domestic pesticide-producing and device-producing establishments based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that facilities producing pesticides, active ingredients, or devices be registered. The list of establishments is made available by the EPA.

Government Publication Date: Mar 1. 2018

Polychlorinated Biphenyl (PCB) Notifiers:

PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Nov 30, 2017

State

erisinfo.com | Environmental Risk Information Services Order No: 20181030092

HEER Emergency Response Listing:

SPILL

A list of all releases reported historically and managed by the Emergency Preparedness and Response section of Hazard Evaluation and Emergency Response (HEER) Office. This list has been made available by Hawaii Department of Health HEER Office.

Government Publication Date: Mar 16, 2017

Government Fublication Date. Mai 10, 201

Drycleaning Facilities:

DRYCLEANERS

A list of permitted drycleaner facilities (active and closed) in the state of Hawaii; made available by the Department of Health. Government Publication Date: Sep 4, 2018

Delisted Drycleaners:

DELISTED DRYCLEANERS

List of sites removed the list of permitted drycleaners made available by the Hawaii Department of Health.

Government Publication Date: Sep 4, 2018

Tribal

No Tribal additional environmental record sources available for this State.

County

No County additional environmental record sources available for this State.

Definitions

<u>Database Descriptions:</u> This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

<u>Detail Report</u>. This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

<u>Distance:</u> The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

<u>Direction:</u> The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

<u>Elevation</u>: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

<u>Map Key</u>: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for the property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

<u>Unplottables:</u> These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

ECONOMIC AND FISCAL IMPACTS REPORT

APPENDIX



Report to

DDC LLC

Covering the

ECONOMIC AND FISCAL IMPACTS OF THE PROPOSED PU'UNANI HOMESTEAD

Wailuku, Maui, Hawaii

As of August 20, 2019





Karen Char, MAI, CRE Paul D. Gool, MAI, CRE Shelly H. Tarnka, MAI, AI-GRS

October 16, 2019

Mr. Everett R. Dowling DDC LLC 2005 Main Street Wailuku, Hawaii 96793

Dear Mr. Dowling:

Re: Economic and Fiscal Impacts of the Proposed Pu'unani Homestead

At your request, John Child & Company has estimated the economic and fiscal impacts of the proposed Pu'unani Homestead. This letter summarizes the study background, objective, intended use and user, effective date, scope of work, and the economic and fiscal impacts presented in the accompanying report.

STUDY BACKGROUND

DDC LLC and Department of Hawaiian Home Lands (DHHL) are working together to develop the Pu¹unani Homestead. The site is identified as a portion of tax map key (2) 3-5-002:002 and includes approximately 48.230 acres that is currently in the State Land Use Agricultural district and County Agricultural zoning district. However, DHHL can use its authority under the Hawaiian Homes Commission Act, 1920, to use the lands not subject to county zoning requirements. The project is proposed as the Pu¹unani Homestead with 137 turnkey homes and 24 vacant lots that will be accessed from Honoapillani Highway (State land). In addition, DHHL funds (State funds) will be used to finance the development.

Because the subdivision will require intersections with Honoapiilani Highway (State land) and DHHL (State) funds will be used, the State requires an environmental assessment. In this regard, you have asked us to assist you.

PU'UNANI HOMESTEAD

Pu'unani Homestead will include 161 improved single-family and vacant residential lots. 137 lots to be sold as turnkey homes and 24 vacant lots to be awarded to lessees. DHHL currently has a waitlist of 3,838 beneficiaries for a residential homestead on Maui. The salable properties are expected to have strong demand and be sold to beneficiaries.

Subdivision Design

The 161 lots will have a minimum lot area of 7,500gf. The salable lots will include 137 turnkey homes and 24 vacant residential lots which will be awarded to lessees by DHHL.

733 Bishop Street, Suite 2500 • Honolulu, Hawaii 96813 T 808.533.2951 • F 808.523.7672 • email: info@johnchild.com



The proposed unit mix of the turnkey homes is described as follows:

Model name	Home type	No. of homes	Home size (⊈)	Total
Plumeria	3BD/2BA	15	1,088	16,320
Kamani	3BD/2BA	20	1,193	23,860
Maile	3BD/2BA	28	1,462	40,936
Lawaia	3BD/2.5BA	18	1,280	23,040
Wailele	4BD/2.5BA	32	1,646	52,672
Pikake	4BD/3BA	24	1,674	40,176
Total		137		197,004
Average			1,438	

Development Schedule

Planning, design and construction of the subdivision and homes are projected to take five years.

Direct and Indirect Construction Costs

The direct and indirect construction costs for the on- and off-site improvements (land development) are projected to average \$123,600 per lot and total about \$19,900,000.

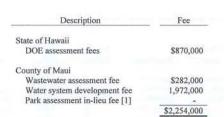
The direct and indirect construction costs for the turnkey homes are projected to average about 226/p of living area. The average home is 1,438p. Therefore, the average cost of the turnkey houses is projected to be about \$326,000.

The homes on the 24 vacant lots will constructed by the lessees.

Impact Fees

Traditional subdivisions are required to pay impact and assessment fees to the State of Hawaii and Maui. However, DHHL has historically requested and received exemptions for all of the fees, except DOE assessment fees, Maui wastewater assessment fee, and water system development fee, shown as follows:

DDC LLC October 16, 2019 Page 3



[1] DHHL exemption.

Sale Prices

The projected sale prices of the six models range from \$308,000 to \$412,000. The average sale price is about \$359,300, shown as follows:

Model name	Sale price	No. of homes	Total
Plumeria	\$308,000	15	\$4,620,000
Kamani	322,000	20	6,440,000
Maile	348,000	28	9,744,000
Lawaia	338,000	18	6,084,000
Wailele	388,930	32	12,445,760
Pikake	412,000	24	9,888,000
Total		137	\$49,221,760
Average	\$359,300	HI CANCEL CO.	

STUDY OBJECTIVE

The objective of our assistance is to estimate the economic and fiscal impacts of the proposed Pu'unani Homestead to the County of Maui and State of Hawaii in terms of:

- Projected direct, indirect and induced expenditures from land development and building construction
- · Projected employment income





- · Net fiscal impacts to the State of Hawaii
- · Net fiscal impacts to the County of Maui.

INTENDED USE AND USER

The intended use of our assistance is to provide projections of economic and fiscal impacts that can be used in the Environmental Assessment being prepared by Munckiyo Hiraga.

As a result, our assistance is intended for insertion in the Environmental Assessment for Pu'unani Homestead. In accepting this report, DDC LLC specifically agrees that our assistance is not intended for any other purpose or users and is not to be relied upon by any third parties for any purpose, whatsoever.

EFFECTIVE DATE OF REPORT

The effective date of this report is August 20, 2019.

SCOPE OF WORK

The scope of work to complete this assignment is outlined as follows:

- Obtained the proposed Pu'unani Homestead subdivision plan, on- and off-site, building construction and other costs, impact fees, and phasing.
- Reviewed the "Hawaii State Input-Output Study: 2012 Benchmark Report" prepared by the State of Hawaii Department of Business, Economic Development & Tourism (DBEDT).
- Projected the direct, indirect and induced expenditures from land development and building construction.
- 4. Projected jobs and employment income.
- Estimated the net fiscal impacts of the Pu'unani Homestead to the State of Hawaii and the County of Maui.

SIGNIFICANT REPORT ASSUMPTIONS AND STUDY CONDITIONS

The economic and fiscal impacts of the Pu'unani Homestead are based on the following assumptions and study conditions:

DDC LLC October 16, 2019 Page 5



- The estimated construction costs, sales price, project phasing and absorption assumptions were
 provided by the Client. If the actual development cost and sales prices are significantly
 different from the assumptions, the economic and fiscal impacts could change.
- The Pu'unani Homestead Project consists of 161 subdivided residential lots. 137 turn-key homes will be sold and 24 vacant lots will be awarded to lessees. The analysis assumes the 24 vacant lots will be immediately improved by the lessees. The cost of the 24 homes is estimated based on the average construction cost of the turn-key homes.
- 3. The buyers in Pu'unani Homestead are assumed to be existing Maui residents.
- The economic and fiscal impacts are estimated in 2019 dollars using 2012 multipliers prepared by DBEDT.

The complete study assumptions and conditions are included in Section I of the accompanying report.

ESTIMATED ECONOMIC AND FISCAL IMPACTS

The proposed Pu'unani Homestead will have positive economic and fiscal impacts to the State of Hawaii and Maui during and after construction.

Because the residents are expected to be existing residents on Maui, incremental expenditures associated with utilization of roadways, schools, parks, and State and County services are projected to be negligible. The client and DHHL intend to request exemptions of fees that have historically been granted for DHHL properties. However, a school impact fee is budgeted to be paid to DOE.

Projected Direct, Indirect and Induced Expenditures from Land Development and Building Construction

Pu'unani Homestead will include 161 residential lots improved with a single-family residence. The direct and indirect and induced expenditures total \$147,120,000 over the five-year construction period, shown as follows:

	Lot development	Building construction	Total
Projected output (expenditures):	COLUMN TO THE OWNER OF THE OWNER	The second secon	
Direct expenditures	\$19,900,000	52,400,000	72,300,000
Indirect and induced expenditures	20,610,000	54,210,000	74,820,000
Total	\$40,510,000	106,610,000	147,120,000 [1]

[1] Discrepancy with Addendum 1 due to rounding.



Projected New Jobs and Employment Income

During the construction period, 634 jobs, including full-time and part-time wage and salary jobs, would be created. These jobs are projected to result in additional employment income of about \$45,500,000, shown as follows:

	Construction Period			
	Lot development	Building construction	Total	
Projected new jobs: [1]				
Construction/maintenance jobs	106	279	385	
Other jobs	72	177	249	
Total	178	456	634	
Projected employment income:				
Construction/maintenance earnings	\$7,200,000	19,000,000	26,200,000	
Other earnings	5,300,000	14,000,000	19,300,000	
Total	\$12,500,000	33,000,000	45,500,000 [2]	

- [1] Includes proprietors' jobs and full-time and part-time wage and salary jobs. About 106 full-time and part-time construction jobs are projected during the site development period and another 279 one-time construction jobs will be created when homes are constructed.
- [2] Discrepancy with Addendum 3 due to rounding.

FISCAL IMPACTS TO STATE OF HAWAII

The fiscal impacts to the State of Hawaii include revenue from taxes and impact fees and costs associated with additional services, if any, to be provided.

Revenues

The development will result in increased general excise and income tax revenues to the State of Hawaii. Based on the anticipated land and building construction expenditures, State tax revenues are projected to increase by about \$8.93 million as a result of the new construction.

The State would also receive revenue from the Department of Education (DOE) school impact fees. These fees are payable at the time building permits for the homes are obtained. Based on the client's budget, the DOE could receive school impact fees of about \$870,000.

Altogether, the development is projected to generate an additional \$9.8 million in tax revenues and impact fees for the State.

DDC LLC October 16, 2019 Page 7



Expenditures

The developer will incur all of the costs of the subdivision. The State will not build any new roads or schools.

Net Fiscal Impact

Lot development and home construction at the Pu'unani Homestead Project is projected to generate about \$9.8 million in additional revenues to the State with no anticipated expenditures, as follows:

Net Fiscal Impact to State of Hawaii

Construction period impacts
\$8,930,000
870,000
9,800,000
- 400 1 2000
\$9,800,000

 Includes general excise taxes, individual and corporate income taxes, and other business taxes.

FISCAL IMPACTS TO COUNTY OF MAUI

The fiscal impacts to the County of Maui include revenue from any impact fees and the additional property taxes the property will generate and the cost, if any, to provide any additional services.

Revenues

The County would receive revenue from wastewater assessment and water system development fees. The client has budgeted assessment and development fees totaling about \$2,254,000.

The Hawaiian Homes Commission Act provides a seven-year property tax exemption to DHHL lessees. Therefore, the development will generate additional property tax revenues in the eighth year after each home is constructed.



After all the homes are constructed, the tax assessed value per property is projected based on the average home sale price of about \$359,000 less homeowner exemption of \$200,000. Without including any other exemptions that may be available, the net taxable value would average about \$159,000. The net taxable value multiplied by the current homeowner tax rate of \$2.90 per \$1,000 for the 161 homes could result in increased real property tax revenues of about \$74,000 annually, as follows:

	Property taxes
Average sale price	\$359,000
Less homeowner exemption	200,000
Net taxable value	159,000
Homeowner tax rate	\$2.90/1,000
Real property tax per property	461
Number of properties	x 161
Annual tax, rounded	\$74,000

The development is projected to generate an additional \$2,328,000 in tax revenues and impact fees for the County.

Expenditures

The Pu'unani Homestead will be served by existing infrastructure and will not require expansion of any public services or facilities. Students in the Pu'unani Homestead will be attending nearby Pu'u Kukui Elementary School, Maui Waena Intermediate School and Maui High School. The homestead will be serviced by nearby police and fire stations and existing parks and recreation facilities. No expenditures are required.

DDC LLC October 16, 2019 Page 9

Net Fiscal Impact

The net fiscal impact to the County of Maui is summarized as follows:

Net Fiscal Impact to the County of Maui

	Construction period impacts	Long-term annual impacts
Revenues:		
Wastewater assessment fee	\$282,000	
Water system development fee	1,972,000	-
Net increase in real property taxes		74,000
Park assessment fee		
Total	2,254,000	74,000
Expenditures		
Net fiscal impact	\$2,254,000	\$74,000
Charles and Company and the State of the Company of	The state of the s	The state of the s

We appreciate having the opportunity to assist you on this interesting assignment. Please contact us if you have any questions.

Sincerely,

JOHN CHILD & COMPANY, INC.

Karen Char, MAI, CRE

President

Certified General Appraiser License No. 184

State of Hawaii

Expires December 31, 2019

Masayo K. Allen, Esq.

Appraiser

Certified General Appraiser License No. 1350

State of Hawaii Expires December 31, 2019

I - STUDY BACKGROUND

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This section presents the background, study objective and intended use and user, effective date of the report, scope of work and significant assumptions, and study conditions.

STUDY BACKGROUND

DDC LLC and Department of Hawaiian Home Lands (DHHL) are working together to develop the Pu'unani Homestead. The site is identified as a portion of tax map key (2) 3-5-002:002 and includes approximately 48.230 acres that is currently in the State Land Use Agricultural district and County Agricultural zoning district. However, DHHL can use its authority under the Hawaiian Homes Commission Act, 1920, to use the lands not subject to county zoning requirements. The project is proposed as the Pu'unani Homestead with 137 turnkey homes and 24 vacant lots that will be accessed from Honoapillani Highway (State land). In addition, DHHL funds (State funds) will be used to finance the development.

Because the subdivision will require intersections with Honoapiilani Highway (State land) and DHHL (State) funds will be used, the State requires an environmental assessment. In this regard, you have asked us to assist you.

PU'UNANI HOMESTEAD

Pu'unani Homestead will include 161 improved single-family and vacant residential lots. 137 lots to be sold as turnkey homes and 24 vacant lots to be awarded to lessees. DHHL currently has a waitlist of 3,838 beneficiaries for a residential homestead on Maui. The salable properties are expected to have strong demand and be sold to beneficiaries.

Subdivision Design

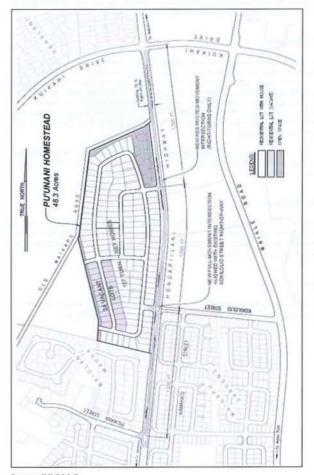
The 161 lots will have a minimum lot area of 7,500th. The salable lots will include 137 turnkey homes and 24 vacant residential lots will be awarded to lessees, as shown in Exhibit I-A.

1-1

Pu'unani Homestead

Exhibit I-A

SITE MAP



Source: DDC LLC.



The proposed unit mix of the turnkey homes is described as follows:

Model name	Home type	No. of homes	Home size (#)	Total
Plumeria	3BD/2BA	15	1,088	16,320
Kamani	3BD/2BA	20	1,193	23,860
Maile	3BD/2BA	28	1,462	40,936
Lawaia	3BD/2.5BA	18	1,280	23,040
Wailele	4BD/2.5BA	32	1,646	52,672
Pikake	4BD/3BA	24	1,674	40,176
Total		137		197,004
Average			1,438	

Development Schedule

Planning, design and construction of the subdivision and homes are projected to take five years.

Direct and Indirect Construction Costs

The direct and indirect construction costs for the on- and off-site improvements (land development) are projected to average \$123,600 per lot and total about \$19,900,000.

The direct and indirect construction costs for the turnkey homes are projected to average about \$226/ft of living area. The average home is 1,438ft. Therefore, the average cost of the turnkey houses is projected to be about \$326,000.

The homes on the 24 vacant lots will constructed by the lessees.

Impact Fees

Traditional subdivisions are required to pay impact and assessment fees to the State of Hawaii and Maui. However, DHHL has historically requested and received exemptions for all of the fees, except DOE assessment fees, Maui wastewater assessment fee, and water system development fee, shown as follows:

The developer has budgeted impact and other fees as follows:

Description	Fee	
State of Hawaii DOE assessment fees	\$870,000	
County of Maui Wastewater assessment fee Water system development fee Park assessment in-lieu fee [1]	\$282,000 1,972,000 \$2,254,000	

[1] DHHL exemption.

Sale Prices

The projected sale prices of the six models range from \$308,000 to \$412,000. The average sale price is about \$359,300, shown as follows:

Model name	Sale price	No. of homes	Total
Plumeria	\$308,000	15	\$4,620,000
Kamani	322,000	20	6,440,000
Maile	348,000	28	9,744,000
Lawaia	338,000	18	6,084,000
Wailele	388,930	32	12,445,760
Pikake	412,000	24	9,888,000
Total	11.500#865305	137	\$49,221,760
Average	\$359,300	-	

STUDY OBJECTIVE

The objective of our assistance is to estimate the economic and fiscal impacts of the proposed Pu'unani Homestead to the County of Maui and State of Hawaii in terms of:



- Projected direct, indirect and induced expenditures from land development and building construction
- · Projected employment income
- · Net fiscal impacts to the State of Hawaii
- · Net fiscal impacts to the County of Maui.

INTENDED USE AND USER

The intended use of our assistance is to provide projections of economic and fiscal impacts that can be used in the Environmental Assessment being prepared by Munckiyo Hiraga.

As a result, our assistance is intended for insertion in the Environmental Assessment for Pu'unani Homestead. In accepting this report, DDC LLC specifically agrees that our assistance is not intended for any other purpose or users and is not to be relied upon by any third parties for any purpose, whatsoever.

EFFECTIVE DATE OF REPORT

The effective date of this report is August 20, 2019.

SCOPE OF WORK

The scope of work to complete this assignment is outlined as follows:

- Obtained the proposed Pu'unani Homestead subdivision plan, on- and off-site, building construction and other costs, impact fees, and phasing.
- Reviewed the "Hawaii State Input-Output Study: 2012 Benchmark Report" prepared by the State of Hawaii Department of Business, Economic Development & Tourism (DBEDT).
- Projected the direct, indirect and induced expenditures from land development and building construction.
- 4. Projected jobs and employment income.
- Estimated the net fiscal impacts of the Pu'unani Homestead to the State of Hawaii and the County of Maui.

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SIGNIFICANT REPORT ASSUMPTIONS AND STUDY CONDITIONS

The economic and fiscal impacts of the Pu'unani Homestead are based on the following assumptions and study conditions:

- The estimated construction costs, sales price, project phasing and absorption assumptions
 were provided by the Client. If the actual development cost and sales prices are significantly
 different from the assumptions, the economic and fiscal impacts could change.
- The Pu'unani Homestead Project consists of 161 subdivided residential lots. 137 turn-key homes will be sold and 24 vacant lots will be awarded to lessees. The analysis assumes the 24 vacant lots will be immediately improved by the lessees. The cost of the 24 homes is estimated based on the average construction cost of the turn-key homes.
- 3. The buyers in Pu'unani Homestead are assumed to be existing Maui residents.
- The economic and fiscal impacts are estimated in 2019 dollars using 2012 multipliers prepared by DBEDT.

Property Description

A legal description of the property that is the subject of this report was not reviewed.

The appraiser is familiar with the Wailuku neighborhood and site of the Pu'unani Homestead. However, the site was not specifically visited for this assignment.

Basis of Analyses, Opinions, and Conclusions

The analyses, opinions, and conclusions of this report rely on data and information provided by others. The information is believed to be reliable; however, no responsibility is assumed for the accuracy of information provided by others.

The analyses, opinions, and conclusions assume:

- No hidden or unapparent surface or subsurface conditions of the property, structures, soils, subsoils, geological formations, ground water, or drainage conditions exist that would render the property more or less valuable.
- Existing improvements comply with all applicable public and private zoning codes, regulations and covenants, unless stated otherwise.



The client has provided us with all significant, relevant information covering the subject of this report.

No responsibility is assumed for matters legal in nature affecting the property or its title, which is assumed to be good and merchantable.

Properties in Hawaii typically include a reservation in favor of the State of Hawaii of all mineral and metallic mines. Our analyses, opinions, and conclusions assume these reservations do not have an impact on the value or use of the property.

Any drawings, maps, photographs, and similar exhibits accompanying this report are included to assist the reader in visualizing the property. No responsibility is assumed for the accuracy of these exhibits.

Hazardous Substances

The existence of hazardous substances (actual, alleged or threatened discharge, disposal, seepage, migration, release, growth, infestation, spread or escape of mold(s), mildew(s), fungi and/or spores or any materials, goods or products containing, harboring or nurturing these substances) that could be present on the property, or other environmental conditions that could impact the property, were not brought to the attention of the appraisers nor observed during the site visit.

The appraisers are not trained or qualified to detect hazardous substances or conditions even if these hazards, or evidence of potential presence of these hazards, are visible on the property.

This report assumes no hazardous substance or condition exists that would impact the analyses, opinions or conclusions. If a hazardous substance or condition exists, it could have a negative effect on the value of the property.

Archaeological or Historically Significant Conditions

The existence of archaeological or historically significant conditions that could be present on the property were not identified nor observed during the site visit. The appraisers are not trained or qualified to recognize archaeological or historically significant conditions, even if these conditions are visible on the property.

This report assumes no archaeological or historically significant condition exists that would impact the analyses, opinions or conclusions. If an archeological or historically significant condition exists, it could impact the value of the property.

Endangered Species

The presence of flora and/or fauna on the property qualified for protection under the Endangered Species Act of 1973 was not identified. The appraisers are not trained or qualified to recognize endangered flora or fauna, even if visible on the property.

This report assumes no endangered species are present on the property. The presence of endangered species could impact the value of the property.

Terms of Assignment

We have no obligation to update our report because of events and transactions occurring subsequent to the effective date of the report.

Neither our fees nor payment were contingent upon the results of the report.

Use of Report

This report is valid only if presented in whole, with original photographs and exhibits, if any, and the official seal of John Child & Company embossed on the letter of transmittal and certification.

This report or any portion of this report may not be reproduced or published without the prior written consent of John Child & Company, and then only with proper qualification.

The contents of this report or portions of this report, the identity of the appraisers or any reference to John Child & Company, the Appraisal Institute, the Counselors of Real Estate, or the American Society of Appraisers, or to their respective designations may not be disseminated to the public through advertising media, public relations media, news media, sales media, or any other public means of communication.

Limitation on Liability

John Child & Company shall not be liable to Client or to any third party (including without limitation lenders and other persons to whom Client may show this report for the purposes of obtaining credit, insurance or any other benefit or promise) in the event that the use or value of the subject property is or becomes different from the use or value estimates, analyses, opinions or conclusions in this report unless it is established by clear and convincing evidence that John Child & Company acted in bad faith or willfully and recklessly failed to exercise an appropriate standard of care in the community while performing this assignment. In any event, John Child & Company's liability to Client or to any third party shall be limited to the amount of the fees to complete this assignment.

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This report may not be shown to any third party without our consent and without receiving a written acknowledgement from any person to whom it is shown that such person has read, understands and agrees to be bound by the limitation of liability in this paragraph.

II - ECONOMIC IMPACTS



This section evaluates the economic impacts of Pu'unani Homestead to the State of Hawaii and County of Maui,

OUTPUT IMPACTS

Output impacts measure the dollar change in the output of the State's economy and represent total expenditures, or sales. The Pu'unani Homestead will generate direct, indirect and induced output impacts (expenditures) in Hawaii and, particularly, Maui County.

Direct Construction Expenditures

The direct impact of the development is measured by the total construction expenditures.

Site work, landscaping and offsite improvement costs to develop the 161 lots are budgeted at about \$19.9 million before financing costs and impact fees. The direct construction costs will be incurred over an approximately 18-month construction period, and the indirect site development costs will be incurred over approximately four years.

The Pu'unani Homestead consists of 161 salable lots that will be developed with 137 turn-key homes and 24 vacant lots. The 24 vacant lots will be improved by the lessees. The cost is based on the average construction costs of the proposed salable turnkey homes of about \$326,000 per dwelling. Home construction is estimated at about \$52 million. The total construction expenditures resulting from the project are estimated to be about \$72 million.

Indirect and Induced Expenditures

The direct construction expenditures will create additional expenditures in other industries as suppliers of construction materials and equipment are required to purchase goods and services from other vendors in the State. These latter expenditures are an indirect effect.

Based on multipliers reported by DBEDT, every \$1 in construction spending generates another \$0.45 in sales in other industries. Therefore, the \$72 million in direct construction expenditures are projected to create another \$32 million in sales in other industries.

In addition, the direct and indirect expenditures induce further productive activity through consumption expenditures. These induced expenditures are projected to total about \$43 million. The indirect and induced expenditures are projected to total about \$75 million, as shown in Addendum I.

I-8

II-1



EMPLOYMENT IMPACTS

The development will generate short-term (one-time) construction jobs and long-term employment. According to DBEDT, about 5.3 full-time and part-time jobs are created for every \$1.0 million in new construction. These jobs include onsite laborers, operatives and craftsmen, as well as professional, managerial, sales and clerical workers who may be employed elsewhere in the State. Based on the budgeted construction costs to develop the 161 lots, about 106 full-time and part-time construction jobs will be created within the site development period. [1]

Additional construction jobs will be created as the individual homes are built. Based on the typical construction cost per dwelling, a total of 279 construction jobs would be created, for a total of 385 jobs.

Labor earnings from these jobs will ripple through the economy and increase employment in other sectors. Based on DBEDT's employment multipliers, a total of 249 new jobs in other sectors are projected, as shown in Addendum 2.

INCOME IMPACTS

Income impacts measure the effect of the development on household income consisting of wages, salaries, proprietors' (self-employment) income, and fringe benefits.

The new construction is projected to generate labor earnings of about \$46 million, including \$26 million for the construction industry alone. Based on the projected employment, the average income per full-time and part-time employee (including benefits) would be about \$68,000, as shown in Addendum 3.

6

SUMMARY OF ECONOMIC IMPACTS

The economic impacts from the site development and home construction period are summarized as follows:

Economic Impacts to State of Hawaii and County of Maui

	Construction Period			
	Lot development	Building construction	Total	
Projected output (expenditures):				
Direct expenditures	\$19,900,000	52,400,000	72,300,000	
Indirect and induced expenditures	20,610,000	54,210,000	74,820,000	
Total	\$40,510,000	106,610,000	147,120,000 [1]	
Projected new jobs: [2]				
Construction/maintenance jobs	106	279	385	
Other jobs	72	177	249	
Total	178	456	634	
Projected employment income:				
Construction/maintenance earnings	\$7,200,000	19,000,000	26,200,000	
Other earnings	5,300,000	14,000,000	19,300,000	
Total	\$12,500,000	33,000,000	45,500,000 [3]	

[1] Discrepancy with Addendum 1 due to rounding

^[1] DBEDT does not distinguish between full-time and part-time jobs.

^[2] Includes proprietors' jobs and full-time and part-time wage and salary jobs. About 106 full-time and part-time construction jobs are projected during the site development period and another 279 one-time construction jobs will be created when homes are constructed.

^[3] Discrepancy with Addendum 3 due to rounding.

III - FISCAL IMPACTS



This section evaluates the fiscal impacts of the proposed Pu'unani Homestead by projecting the revenues and expenditures and net fiscal impacts to the State of Hawaii and County of Maui.

FISCAL IMPACTS TO STATE OF HAWAII

The fiscal impacts to the State of Hawaii include revenue from taxes and impact fees and costs associated with additional services, if any, to be provided.

Revenues

The development will result in increased general excise and income tax revenues to the State of Hawaii. Based on the anticipated land and building construction expenditures, State tax revenues are projected to increase by about \$8.9 million as a result of the new construction, as shown in Addendum 4.

The State would receive revenue from the Department of Education (DOE) school impact fees. These fees are payable at the time building permits for the homes are obtained. Based on the client's budget, the DOE could receive school impact fees of about \$870,000.

The State would not receive revenue from Department of Transportation (DOT) traffic impact fees because DHHL has historically received a waiver of this fee.

The development is projected to generate an additional \$9.8 million in tax revenues and impact fees for the State.

Expenditures

The developer will incur all of the costs of the subdivision. The State will not build any new roads or schools.

Net Fiscal Impact

Lot development and home construction at the Pu'unani Homestead Project is projected to generate about \$9.8 million in additional revenues to the State with no anticipated expenditures, as follows:

Ш-1

Net Fiscal Impact to State of Hawaii

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 Includes general excise taxes, individual and corporate income taxes, and other business taxes.

FISCAL IMPACTS TO COUNTY OF MAUI

The fiscal impacts to the County of Maui include revenue from any impact fees and the additional property taxes the property will generate and the cost, if any, to provide any additional services.

Revenues

The County would receive revenue from wastewater assessment and water system development fees. The client has budgeted assessment and development fees totaling about \$2,254,000.

The Hawaiian Homes Commission Act provides a seven-year property tax exemption to DHHL lessees. Therefore, the development will generate additional property tax revenues in the eighth year after each home is constructed.

After all the homes are constructed, the tax assessed value per property is projected based on the average home sale price of about \$359,000 less homeowner exemption of \$200,000. Without including any other exemptions that may be available, the net taxable value would average about \$159,000. The net taxable value multiplied by the current homeowner tax rate of \$2.90 per \$1,000 for the 161 homes could result in increased real property tax revenues of about \$74,000 annually, shown as follows:





	Property taxes
Average sale price	\$359,000
Less homeowner exemption	200,000
Net taxable value	159,000
Homeowner tax rate	\$2.90/1,000
Real property tax per property	461
Number of properties	x 161
Annual tax, rounded	\$74,000

Expenditures

The Pu'unani Homestead will be served by existing infrastructure and will not require expansion of any public services or facilities. Students in the Pu'unani Homestead will be attending nearby Pu'u Kukui Elementary School, Maui Waena Intermediate School and Maui High School. The homestead will be serviced by nearby police and fire stations and existing parks and recreation facilities. No expenditures are required,

Net Fiscal Impact

The net fiscal impact to the County of Maui is summarized as follows:

Net Fiscal Impact to the County of Maui

	Construction period impacts	Long-term annual impacts
Revenues:		
Wastewater assessment fee	\$282,000	2
Water system development fee	1,972,000	
Net increase in real property taxes	+	74,000
Park assessment fee	-	
Total	2,254,000	74,000
Expenditures		-
Net fiscal impact	\$2,254,000	\$74,000

III-3

CERTIFICATION



We certify, to the best of our knowledge and belief:

- · Reported statements of fact are true and correct.
- · Reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are our unbiased professional analyses, opinions, and conclusions.
- · We have no present or prospective interest in the property that is the subject of this report, and we have no personal interest or bias with respect to the parties involved.
- · Within the past three years, we have not provided real estate appraisal and/or appraisal review services relating to an ownership interest in the property that is the subject of this report and have informed the client prior to acceptance of this assignment.
- · Our engagement was not contingent upon developing or reporting predetermined results.
- · Our compensation is not contingent on the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event and is not contingent on an action or event resulting from the analyses, opinions or conclusions in, or use of, this report.
- · The reported analysis, opinions, and conclusions were developed, and the report has been prepared, in conformity with the requirements of the Code of Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, and the Appraisal Foundation's Uniform Standards of Professional Appraisal Practice (USPAP).
- . The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives, and to the requirements relating to review by duly authorized representatives of the State of Hawaii, Counselors of Real Estate, and the American Society of Appraisers.
- · As of the date of this report, Karen Char, MAI has completed the continuing education program for Designated Members of the Appraisal Institute.
- · As of the date of this report, Masayo K. Allen has completed the Standards and Ethics Education Requirements for Candidates of the Appraisal Institute.
- · ASA has a mandatory recertification program. Karen Char, ASA is currently certified under this program.
- · Karen Char is familiar with the Wailuku neighborhood and site of Pu'unani Homestead. However, the site was not specifically visited for this assignment. Masayo K. Allen did not visit the real estate for the purpose of this assignment,
- . No one other than the undersigned prepared the analysis, opinions, and conclusions in this report.

JOHN CHILD & COMPANY, INC.

Karen Char, MAI, CRE, ASA President Certified General Appraiser License No. 184 State of Hawaii

Expires December 31, 2019

Masayo K. Allen, Esq.

Certified General Appraiser License No. 1350

State of Hawaii

Expires December 31, 2019

Addendum 2

Pu'unani Homestead

ECONOMIC IMPACTS OF CONSTRUCTION
In 2019 Dollars Using 2012 Multipliers

SITE IMPROVEMENTS

Year	Construction expenditures	Type I output multiplier	Direct & indirect impacts	Direct construction expendicures	Indirect impact only	Type II output multiplier	Direct output impact	Total	Indirect output impact	Induced output impact
1	\$909,757	1.45	1,315,672	909,757	405,915	2.03	909,757	1,850,000	410,000	530,000
2	3,976,989	1.45	5,751,444	3,976,989	1,774,454	2.03	3,976,989	8,090,000	1,770,000	2,340,000
3	12,095,417	1.45	17,492,154	12,095,417	5,396,737	2.03	12,095,417	24,610,000	5,400,000	7,110,000
4	2,894,947	1.45	4,186,615	2,894,947	1,291,668	2.03	2,894,947	5,890,000	1,290,000	1,710,000
	41,945	1.45	60,660	41,945	18,715	2.03	41,945	90,000	20,000	30,000
Total	\$19,919,054		28,806,545	19,919,054	8,887,490		19,900,000	40,530,000	8,890,000	11,720,000

HOME CONSTRUCTION

Year	Construction expenditures	Type I output multiplier	Direct & indirect impacts	Direct construction expenditures	Indirect impact only	Type II output maltiplier	Direct output impact	Total	Indirect output impact	Induced output impact
1	\$665,393	1.45	962,278	665,393	296,885	2.03	665,393	1,350,000	300,000	380,000
2	406,343	1.45	587,645	406,343	181,302	2.03	406,343	830,000	180,000	240,000
. 3	9,484,468	1.45	13,716,251	9,484,468	4,231,783	2.03	9,484,468	19,300,000	4,230,000	5,590,000
-4	27,411,093	1.45	39,641,383	27,411,093	12,230,290	2.03	27,411,093	35,770,000	12,210,000	16,130,000
5	14,435,219	1.45	20,875,929	14,435,219	6,440,710	2.03	14,435,219	29,370,000	6,440,000	8,490,000
Total	\$52,402,516		75.783.487	52,402,516	23.380,972		52,400,000	106.620.000	23 380 000	30.830.000

TOTAL SITE IMPROVEMENTS AND HOME CONSTRUCTION

Year	Construction expenditures	Type I output multiplier	Direct & indirect impacts	Direct construction expenditures	Indirect impact only	Type II output multiplier	Direct output impact	Total	Indirect output impact	Induced output impact
1	\$1,575,150	1,45	2,277,950	1,575,150	702,801	2.03	1,575,150	3,200,000	700,000	920,000
2	4,383,332	1.45	6,339,089	4,383,332	1,955,757	2.03	4,383,332	8,920,000	1,960,000	2,580,000
3	21,579,885	1.45	31,208,405	21,579,885	9,628,520	2,03	21,579,885	43,910,000	9,630,000	12,700,000
4	30,306,040	1.45	43,827,999	30,306,040	13,521,959	2.03	30,305,040	61,660,000	13,520,000	17,830,000
5	14,477,163	1.45	20,936,589	14,477,163	6,459,425	2,03	14,477,163	29,460,000	6,460,000	8,520,000
Total	\$72,321,570		104,590,032	72,321,570	32,268,462		72,300,000	147,150,000	32,270,000	42,550,000

Source: John Child & Company, based on Developer's Project Budget and Cashflow.

Pu'unani Homestead
EMPLOYMENT IMPACTS OF CONSTRUCTION
In 2019 Dollars Using 2012 Multipliers

SITE IMPROVEMENTS

Year	Direct construction expenditures (mils \$ 2019)	Employment coefficient	Direct employment impact	Type I employment multiplier	Indirect impact	Type II employment multiplier	Induced impact	Total	Implied household income per job [1]
3	\$0.91	5.3	4.85	6.33	0.91	9.58	2.96	8.72	68,135.31
2	3.98	5.3	21.19	6.10	3.06	9.25	12.54	36.79	68,135.23
3	12,10	5.3	64,44	5.88	6.64	8.93	36.94	108.03	68,135.24
4	2.89	5.3	15.42	5.67	0.98	8.62	8.57	24.97	68,135.26
5	0.04	5.3	0.22	5,67	0.01	8,62	0.12	0.36	
	\$19,92		106.12		11.60		61.13	178.86	

Year	Direct construction expenditures (mils \$ 2019)	Employment coefficient	Direct employment impact	Type I employment multiplier	Indirect impact	Type II employment multiplier	Induced impact	Total	Implied household income per job [1]
1	\$0.67	5.3	3.54	6.33	0.66	9.58	2.17	637	68,135.33
2	0.41	5.3	2.16	6.10	0.31	9.25	1.28	3.76	68,135,46
3	9,48	5.3	50.53	5.88	5.21	8.93	28,97	84.71	68,135.24
4	27,41	5.3	146,04	5.67	9.26	8.62	81.10	236,40	68,135.24
5	14,44	5.3	76.91	5.67	4.87	8.62	42.71	124.49	68,135.24
	\$52.40		279.18		20.32		156.23	455.73	

Year	Direct construction expenditures (mils \$ 2019)	Employment coefficient	Direct employment impact	Type I employment multiplier	Indirect impact	Type II employment multiplier	Induced impact	Total	Implied household income per job. [1]
1	\$1.58	5.3	8.39	6.33	1.57	9.58	5,13	15.09	68,135.20
2	\$4.38	5.3	23.35	6.10	3.37	9.25	13.82	40.55	68,135.25
3	\$21.58	5.3	114.97	5.88	11.86	8.93	65.91	192.74	68,135.24
4	\$30,31	5.3	161.46	5.67	10.23	8.62	89.67	251.36	68,135.24
5	\$14.48	5.3	77.13	5.67	4.89	8.62	42.84	124.85	68,135.24
	\$72.32		385.30		31.92		217.36	634.59	

[1] Bureau of Labor Statistics estimates 68% of costs are for salaries and wages. 32% for fringe benefits.

Source: John Child & Company, based on Developer's Project Budget and Cashflow.

Addendum 4

Pu'unani Homestead EARNINGS IMPACTS OF CONSTRUCTION In 2019 Dollars Using 2012 Multipliers

SITE IMPROVEMENTS

Year	Direct construction expenditures	Income coefficient	Direct income impacts	Type I income multiplier	Indirect income impacts	Type II income multiplier	Induced income impacts	Total
1	\$909,757	0.36	330,242	0.47	100,061	0.63	139,697	570,000
2	3,976,989	0.36	1,443,647	0.47	437,415	0.63	618,938	2,500,000
3	12,095,417	0.36	4,390,636	0.47	1,330,333	0.63	1,889,031	7,610,000
4	2,894,947	0.36	1,050,866	0.47	318,405	0.63	450,729	1,820,000
5	41,945	0.36	15,226	0.47	4,613	0,63	10,161	30,000
	\$19,919,054		7,230,617		2,190,828		3,108,555	12,530,000

HOME CONSTRUCTION

Vear	Direct construction expenditures	Income	Direct income inmacts	Type I income multiplier	Indirect income impacts	Type II income multiplier	Induced income impacts	Total
	- Top to a second					alatan dana.		
1	\$665,393	0.36	241,538	0:47	73,184	0.63	105,278	420,000
2	406,343	0.36	147,503	0.47	44,692	0.63	67,805	260,000
3	9,484,468	0.36	3,442,862	0.47	1,043,164	0.63	1,483,974	5,970,000
4	27,411,093	0.36	9,950,227	0.47	3,014,851	0.63	4,284,922	17,250,000
5	14,435,219	0.36	5,239,984	0.47	1,587,680	0.63	2,252,336	9,080,000
	\$52,402,516		19.022.114		5.763.571		# 104 315	32,980,000

TOTAL SITE IMPROVEMENTS AND HOME CONSTRUCTION

Year	Direct construction expenditures	Income coefficient	Direct income impacts	Type I income multiplier	Indirect income impacts	Type II income multiplier	Induced income impacts	Total
1	\$1,575,150	0.36	571,779	0.47	173,246	0.63	244,975	990,000
2	4,383,332	0.36	1,591,150	0.47	482,107	0.63	686,743	2,760,000
3	21,579,885	0.36	7,833,498	0.47	2,373,497	0.63	3,373,005	13,580,000
4	30,306,040	0.36	11,001,092	0.47	3,333,257	0.63	4,735,651	19,070,000
5	14,477,163	0.36	5,255,210	0.47	1,592,293	0.63	2,262,497	9,110,000
	\$72,321,570		26.252.729		7,954,401		11,302,870	45,510,000

Source: John Child & Company, based on Developer's Project Budget and Cashflow.

Pu'unani Homestead FISCAL IMPACTS TO STATE OF HAWAII In 2019 Dollars Using 2012 Multipliers

SITEIMPROVEMENTS

Year	Direct construction expenditures	Taxcoef	Direct tax impacts	Type I tax multiplier	Indirect tax impacts	Type II tax multiplier	Induced tax	Total
1	\$909,757	0.0731	66,470	0.0945	\$19,526	0.12	24,004	110,000
2	3,976,989	0.0731	290,575	0.0945	85,357	0.12	114,068	490,000
3	12,095,417	0.0731	883,740	0.0945	259,601	0.12	346,659	1,490,000
4	2,894,947	0.0731	211,516	0.0945	62,134	0.12	86,350	360,000
5	\$41,945	0.0731	3,065	0.0945	900	0.12	6,035	10,000
	\$19,919,054		1,455,366		427,519		577,115	2,460,000

HOME CONSTRUCTION

Year	Direct construction expenditures	Taxcoef	Direct tax	Type I tax multiplier	Indirect tax impacts	Type II tax multiplier	Induced tax impacts	Total
1	\$665,393	0.0731	\$48,616	0.0945	\$14,281	0.12	17,103	80,000
2	406,343	0.0731	29,689	0.0945	8,721	0.12	11,590	50,000
3	9,484,468	0.0731	692,973	0.0945	203,564	0.12	273,463	1,170,000
4	27,411,093	0.0731	2,002,764	0.0945	588,320	0.12	798,916	3,390,000
5	14,435,219	0.0731	1,054,695	0.0945	309,820	0.12	415,485	1,780,000
	\$52,402,516		3,828,737		1,124,707		1,516,556	6,470,000

TOTAL SITE IMPROVEMENTS AND HOME CONSTRUCTION

Year	Direct construction expenditures	Taxcoef	Direct tax impacts	Type I tax multiplier	Indirect tax impacts	Type II tax multiplier	Induced tax impacts	Total
i	\$1,575,150	0.0731	115,087	0.0945	\$33,807	0.12	41,106	190,000
2	4,383,332	0.0731	320,264	0.0945	94,079	0.12	125,657	540,000
3	21,579,885	0.0731	1,576,713	0.0945	463,165	0.12	630,122	2,670,000
4	30,306,040	0.0731	2,214,280	0.0945	650,454	0.12	875,266	3,740,000
5	14,477,163	0.0731	1,057,759	0.0945	310,721	0.12	421,520	1,790,000
	\$72 321 570		5.284 103		1 552 226		2.093.671	8,930,000

Source: John Child & Company, based on Developer's Project Budget and Cashflow.



SCOPE OF PROFESSIONAL SERVICES

Background

John Child & Company is a professional corporation that specializes in real estate appraisal and consulting and business valuation. It is the only company in Hawaii with expertise and professional designations in both real estate appraisals and business valuations.

John Child & Company was established by John F. Child, Jr. in 1937. The Company was the first firm to specialize in market research in Hawaii. Since 1937, the Company has provided critical knowledge of real estate market conditions and trends gained from the strength of its market research. As a result, its clients have confidence that John Child & Company real estate appraisal and business valuation assignments are based on competent analysis and careful documentation, and its consulting assignments focus on the key issues and provide sound alternatives.

The Company's professional team members' past and current local, regional, and national leadership positions in their professional organizations help to establish and promote the highest standards of professional practice and ethics for the industry.

Real Estate Appraisal and Consulting

The Company's real estate consulting and appraisal practice includes a range of specialized services covering real estate in Hawaii and the Pacific area. Professional services include:

- · Valuation of real estate
- Litigation support
- Arbitration
- Market rent analysis
- · Highest and best use studies
- Market and financial feasibility analyses
- · Economic and fiscal impact assessments
- · Purchase price allocation.

Its assignments include all types of real estate interests such as fee simple, leasehold, leased fee, and other partial rights and fractional interests. Its assignments cover a variety of land uses and property types such as:

- · Office buildings and commercial property
- Industrial property
- Telecommunications facilities
- Hotels and resort properties
- · Agricultural, conservation, and vacant land
- Conservation easements
- Shopping centers and retail facilities
- · Residential developments (single family, multifamily, and condominium)

Qualifications of John Child & Company

QUALIFICATIONS OF JOHN CHILD & COMPANY



- · Master-planned and mixed-use projects
- · Golf courses
- · Healthcare facilities
- · Redevelopment projects
- Special-purpose property
- Timeshare properties.

Business Valuation

The Company's business valuation practice focuses on the valuation of closely-held businesses, including controlling and minority interests in corporations, partnerships, limited liability companies, and family limited partnerships. Its business valuation practice provides assistance in:

- Estate planning
- Tax reporting
- · Mergers, acquisitions, and sales
- · Stock transfers and redemptions
- · Financial reporting
- · Internal accounting
- Litigation support.

REPRESENTATIVE ASSIGNMENTS

The Company has provided real estate appraisal and consulting and business valuations for more than 80 years.

Real Estate Appraisal and Consulting

The Company's real estate appraisal and consulting practice covers a variety of properties and property interests. Real estate interests include fee simple, leasehold, leased fee, and other partial rights and fractional interests. Representative projects are listed as follows:

Redevelopment

Aloha Tower	
Honolulu Waterfront	
Master Development	
Plan	

Kakaako Redevelopment Plan Kakaako Waterfront Park Kapalama Development Complex Pawaa Redevelopment Masterplan Puck's Alley/Moiliili Gateway

Resorts

Hualalai Ka'anapali North Beach Kapalua Kauai Lagoons Ka'upulehu Kiahuna Plantation Ko Olina Makena Manini'owali Mauna Kea Princeville Turtle Bay Waikoloa Beach Resort Wailea Resort

Qualifications of John Child & Company



Hotels

Embassy Suites Ka'anapali Four Seasons Resort Hualalai Halekulani Hotel Hilton Hawaiian Village Hotel Hana Maui Hyatt Regency Maui

Hyatt Regency Waikiki Kahala Hilton Kea Lani Hotel Koa Kea Hotel King Kamehameha Kona Beach Hotel

Kona Village

Maui Marriott

Maui Prince Princeville Hotel Sheraton Kauai Resort Sheraton Waikiki W Hotel Wailea Beach Resort Waikiki Resort Hotel

Shopping Centers Ala Moana

Aloha Tower Marketplace Coconut Grove Downtown Kihei (proposed) Ewa Pointe Marketplace Hawaii Kai Shopping Center Hawaii Kai Towne

Kahala Mall Center Kamehameha Shopping Center Keauhou Shopping Center Keeaumoku Shopping Center King's Village Koko Marina Kukui Mall Lanihau Center Mililani Nimitz Business Center

Pearl City Pearl City Shops Pearl Kai Center Piilani Shopping Center Princeville Royal Hawaiian Wailea Shopping Village Windward City Windward Mall

Golf Courses

Center

Asahi Kanko Olomana Course Dunes at Maui Lani Hawaii Country Club Hawaii Kai Golf Course Ka'anapali Kauai Lagoons (Kiele and Lagoons)

Pearl Country Club Princeville (Makai and Prince) Sandalwood Golf Course Silversword Golf Course Waikapu Country Club

Mid-Pac Country Club

Ko Olina

Waikele Golf Course Waikoloa (Kings) Waikoloa Village (two proposed) Wailea (Blue, Emerald, and Gold)

Office Buildings

1164 Bishop Aina Haina Professional Building Ala Moana Building Ala Moana Pacific Center Amfac Towers ANA Kalakaua Center Arcade Building C. Brewer Building

Castle Professional Center Commerce Tower Davies Pacific Center Financial Plaza of the Pacific Grosvenor Center Harbor Court Hawaii National Bank Hawaiian Life Building HMSA Building

James Campbell Building Kailua Professional Center I and II Leilehua Building Pan Am Building Waialae Building Waikiki Bank of Hawaii Building Waikiki Trade Center

Qualifications of John Child & Company

QUALIFICATIONS OF JOHN CHILD & COMPANY

Industrial Properties

Airport Industrial Subdivision Airport Trade Center Barbers Point Bougainville Bougainville Commercial Center Campbell Industrial Park Ewa Drum & Varona

Kona Industrial Subdivision La Tour Plaza Lihue Industrial Park Village Makalapua Business Center Halawa Center Manana

Residential

Ewa by Gentry Harbor Court Honolulu Park Place Imperial Plaza Kalele Kai Kamaole Heights Kamehame Ridge

Discovery Bay

Ko Olina Fairways Lahaina Residential Healthcare

Adventist Health Arcadia Retirement Residence Castle Medical Center Clinical Laboratories of Hawaii Diagnostic Laboratories Services Hale Mahaolu

Campbell Palehua and

Systems Corporation Kahuku Medical Center Kapiolani Medical Center for Women and Children Kauai Care Center Pali Momi Medical Center Palolo Chinese Home

Kona Forest Unit Access

Kukaiau Ranch Conservation

Halawa Industrial Subdivision

Iwilei & Iwilei Business Center

Hawaii Business Center

Honokohau Harbor

Kapolei Business Park

Kalaeloa

Makakilo

Mililani

Napili Kai

Nauru Tower

Royal Kuhio

One Archer Lane

Royal Capitol Plaza

The Kahala Beach

Hawaii Health Care

Maui Eldorado

Mawaena Kai

Agricultural, Conservation, and Conservation Easements

Kahe Ranch Dunbar Ranch Galbraith Trust Lands Hana Ranch Honouliuli Forest Reserve Kainalu Ranch Kalauao Valley Kanepuu Conservation Easement Kaupo Ranch Wai'u and Nu'u Lands

Easement Lipoa Point Maka'alae Conservation Easement May's Landing McCandless Ranch Conservation Easement Moanalua Valley Palmyra Atoll

Kealia Pond

Kuamo'o Point

Mapunapuna Mill Town Panasonic/Technics Center Pier 38 Domestic Commercial Fishing Village Sand Island Business Park Waiau Waikele Storage Park

Waipahu

Waipio Business Center

The Kalia, Inc. Uplands at Mauna Kea Victoria Tower Village Park

Vineyard Court Wailea Golf Vistas Wailea Pualani Estate Yacht Harbor Tower

Ponds at Punalu'u Queen's Health Systems Regency at Hualalai Roselani Place St. Francis Healthcare Systems

Straub Hospital & Clinic Wilcox

Paradise Park Ponoholo Ranch Pupukea Property Conservation Easement Pu'u O Hoku Ranch Turtle Bay Ulupalakua Ranch Conservation Easements Waikapuna Waimea Valley Wao Kele O Puna

Qualifications of John Child & Company





Special Purpose

Cemeteries/Memorial Hawaii Newspaper Agency Outrigger Canoe Club Building Parks Ouarries Chinese Cultural Plaza Hawaiian Home Land Claims Schools Kapaa Land Fill Churches State of Hawaii Airports Kaumalapau Harbor Convents Telecommunications sites Condominium and NAS Barbers Point Electrical Tokai University Residential Distribution System Visitor attractions Lease-to-Fee Conversions Oahu Club Wedding chapels

Business Valuation

The Company's business valuation practice focuses on closely-held businesses in Hawaii. Business valuation assignments typically estimate the market value of controlling and minority interests in closely-held corporations, limited liability companies, and partnerships.

These assignments are prepared to assist in estate planning and estate and gift tax reporting to the Internal Revenue Service, litigation, mergers, stock repurchase/redemptions, and acquisitions.

Valuations of closely-held businesses include:

Corporations

Adla Produce, Inc.

Advanced Fresh Concepts Food Service
Dowling Company, Inc.

Finance Investment, Ltd.

Gay & Robinson, Inc.
Industrial Investors, Inc.

Ins W. Glover Holding Company, Ltd.

K. Inouye Properties, Inc.

Loyalty Development Company, Inc.
Loyalty Development Company, Inc.
Loyalty Development Company, Inc.

Palani Ranch Company, Inc.
Palani Ranch Company, Inc.
Ponoholo Ranch Limited
Royal Phoenix Corporation
Sen Plex Corporation
Sen Plex Corporation
SSFM Engineers

Limited Partnerships and Limited Liability Companies

Aaron Properties Partners of Hilo Leong Brothers Baruch Bakar and Beth-El Livingston Family Limited Partnership BFFP Incorporated Loyalty Associates Caroline J. Robinson LLC Loyalty Investments CGB Partners Maui Quest, LLC Fernandez Properties MLB Inc. Pawaa Court LLC Hawaii Aina Management Honolulu Open Medical Imaging, LLC Pohaku Koloa J.L.P. Robinson LLC Robinson Kunia Land LLC K.J.L. Associates Royal Phoenix KSM Associates LLC SCF Limited Partnership KVH Partners Second City Kaha Kai LLC Taihook Associates Kamali'i Family Limited Partnership Taira Family Limited Partnership Lanihau Properties LLC The Mark A. Robinson Trusts

Qualifications of John Child & Company

QUALIFICATIONS OF JOHN CHILD & COMPANY



CLIENTS

The Company provides professional services to a range of clients representing private, non-profit, and public interests. Selected clients in private industry, non-profit organizations, and public agencies are listed.

PRIVATE INDUSTRY

Attorneys

Alston Hunt Floyd & Ing Kobayashi Sugita & Goda Ashford & Wriston Law Offices of Thomas Watts MacDonald Rudy O'Neill & Yamauchi Bays Lung Rose & Holma Bendet Fidell McCorriston Miller Mukai McKinnon Cades Schutte Ning, Lily & Jones Carsmith Ball Oshia Chuh Fong & Chung Case & Lynch Price Okamoto Himeno & Lum Case Lombardi & Pettit Rush Moore Chun Kerr LLP Schneider Tanaka Radovich Andrew & Tanaka Cox Wooten Lerner Settle Law Crockett & Nakamura Starn O'Toole Marcus & Fisher Tom Petrus & Miller, LLLC Damon Key Leong Kupchack Hastert Ekimoto & Morris Torkildson Katz Moore Hetherington & Harris Goodsill Anderson Quinn & Stifel Tsugawa Biehl Lau & Muzzi Huilin Dong, Attorney at Law Van Buren & Shimizu, LP Imanaka & Asato Wagner Choi Verbrugge Ing Horikawa, Jorgensen & Endo Watanabe Ing LLP Joy Miyasaki

Banks/Lenders

American Savings Bank
Bank of Hawaii
Bank of Hawaii
The Chuo Mitsui Trust & Banking Co., Ltd.
Central Pacific Bank
Citibank, N.A.
The Long-Term Credit Bank of Japan, Ltd.
First Hawaiian Bank
Wells Fargo Bank
Wells Fargo Bank

Closely Held Corporations/Limited Partnerships/Family Trusts

Baruch Bakar and Beth-el Associate Lanihau Properties, LLC BFFP Incorporated Leong Brothers Livingston Family Limited Partnership Caroline J. Robinson LLC Gay & Robinson Loyalty Development Hawaii Aina Management Co. LL Loyalty Investments Jas. W. Glover Holding Company, Ltd. Maui Quest LLC J.L.P. Robinson LLC MLB, Inc. Norman & Amy Hirohata-Goto LLC Kaha Kai LLC Kamalii Family Limited Partnership Nua Family Limited Partnership K.J.L. Associates Palani Ranch KVH Partners and CGB Partners Pawaa Court LLC Knudsen Trusts Pohaku Koloa LLC

Qualifications of John Child & Company

Closely Held Corporations/Limited Partnerships/Family Trusts, Continued

Ponoholo Ranch, Limited Sheridan Ing Marital Trust Royal Phoenix Corporation Taira Family Limited Partnership SCF Limited Partnership The Mark A. Robinson Trusts Second City Property Management Inc. WBL, Inc.

Sen Plex Corp.

Developers/Landowners

A&B Properties, Inc. Hemmeter/Tokyu Waterfront Joint Venture James Campbell Company Aloha Tower Associates Kaneohe Ranch Bedford Properties, Inc. (fka Kaiser National Housing Kapolei Property Development, LLC

Corporation Development Company) Krausz Properties McCandless Land & Cattle Company Cuzco Development U.S.A. LLC

Dowling Company, Inc. MW Group, Ltd. Elleair Hawaii, Inc. Niu Pia Farms Pauahi Management Corp. Finance Realty Gentry Companies Queen Emma Land Company Sam Koo Pacific, LLC Hana Ranch Partners Hanalei Land Company Tesoro Hawaii Corporation Haseko (Hawaii), Inc. Ulupalakua Ranch Inc.

Resort Operators/Owners

Princeville Development Company Alpha U.S.A., Inc. Kapalua Land Company, Ltd. Shinwa International Kaupulehu Makai Venture (Hualalai Turtle Bay Resort

Wailea Resort Company, Inc. Resort)

Retailers

7-Eleven (Hawaii), Inc. Safeway, Inc. Sears Holding Corporation

Kyotaru International McDonald's Restaurants of Hawaii

Namalu LLC (Makena Resort)

Trust Companies and Trusts

Bank of Hawaii Trust Department Knudsen Trusts Lili'uokalani Trust First Hawaiian Trust Mark A. Robinson Trusts Hawaiian Trust Co., Ltd.

NON-PROFIT ORGANIZATIONS

Hawaii Pacific Health Adventist Health Hawaii Pacific University Bobby Benson Center

Honolulu Community Action Program, Castle Medical Center Chaminade College Inc. (HCAP)

Hawaii Health Systems Corporation Iolani School

Hawaii Opera Theatre Japan Association of Real Estate Appraisers

Qualifications of John Child & Company

QUALIFICATIONS OF JOHN CHILD & COMPANY

NON-PROFIT ORGANIZATIONS, Continued

Kamehameha Schools KCAA Pre-Schools of Hawaii Manoa Valley Theatre Maui Coastal Land Trust National Tropical Botanical Garden Pacific Buddhist Academy Punahou School

Kahuku Medical Center

(YWCA) Queen's Health Systems

PUBLIC AGENCIES

City & County of Honolulu Honolulu Authority for Rapid Transportation Honolulu Public Transit Authority Department of Housing and Community Development

County of Hawaii Department of Finance

County of Kauai

Department of Water

Federal Agencies

Internal Revenue Service National Business Center, Appraisal Services Directorate U.S. Attorney General

U.S. Department of Agriculture, Forest Service

Aloha Solar Energy Fund Citizens Utilities Company - Kauai Electric D.R. Fortress

Eurus Energy America Corporation Hawaiian Electric Industries (HEI, Inc.)

Segull Schools, Inc. The Fathers of the Sacred Hearts The Sisters of the Sacred Hearts

St. Francis Healthcare Systems of Hawaii The Nature Conservancy The Trust for Public Land Young Women's Christian Association

Bank Regulatory Agencies

Federal Depository Insurance Corporation (FDIC)

Federal Home Loan Bank Board (FHLBB)

Department of Design and Construction Department of the Corporation Counsel

Department of Public Works

U.S. Department of Agriculture, Natural Resource Conservation Service

U.S. Department of the Army U.S. Department of the Navy

U.S. Department of Interior, Fish & Wildlife Service

Utilities

Pacific Resources, Inc.







State of Hawaii

Attorney General
Department of Hawaiian Home Lands
Department of Land & Natural Resources
Department of Transportation

Hawaii Community Development Authority Hawaii Housing Finance and Development Corporation Office of Hawaiian Affairs

PROFESSIONAL TEAM QUALIFICATIONS

The professional team has a wide range of real estate experience gained through a variety of field experience, professional accomplishments, training, and education. Team members have earned their reputation for quality work and professional service.

Professional Designations

Team members hold designations earned from the major professional organizations. Team members have earned the MAI designation from the Appraisal Institute, the CRE (Counselor of Real Estate) from The Counselors of Real Estate, and ASA (Accredited Senior Appraiser) from the American Society of Appraisers.

State Certification

Members of the professional team are Certified General Appraisers under the State of Hawaii license and certification program.

Other Qualifications and Training

Professional team members are qualified as expert witnesses in the courts of Hawaii; actively participate in and serve as arbitrators and review appraisers; and continue to attend courses, seminars and workshops to strengthen their own specialized appraisal skills and education.

Professional Team Members

Professional team members include:

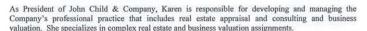
- · Karen Char, MAI, CRE, ASA, President
- · Paul D. Cool, MAI, CRE, Vice President
- · Shelly H. Tanaka, MAI, AI-GRS, Vice President
- · Masayo Allen, Esq. (MAI Candidate)

The education and professional experiences of team members are outlined in their accompanying

Qualifications of John Child & Company

QUALIFICATIONS OF JOHN CHILD & COMPANY

KAREN CHAR, MAI, CRE, ASA President



Karen originally joined the Company in 1973 and has over 40 years of professional experience. She has served in elected and appointed national and international leadership positions in the Counselors of Real Estate and the Appraisal Institute. In 2010 she received the prestigious James Felt Creative Counseling Award from The Counselors of Real Estate.

Education

- · Master of Business Administration, University of Hawaii, 1972
- · Bachelor of Business Administration, University of Hawaii, 1970
- Punahou School, 1967
- Successfully completed various courses, workshops, and seminars sponsored by the Appraisal Institute and The Counselors of Real Estate

Professional Associations

- · Member, The Counselors of Real Estate (CRE designation)
 - 2010 James Felt Creative Counseling Award
 - Chief Delegate to the Pan Pacific Congress of Real Estate Appraisers, Valuers, and Counselors: New Zealand, 2000; Singapore, 1998; Sydney, 1996; Yokohama, 1994; Speaker: New Zealand, 1988 and Korea, 1990
- Member, National Board of Governors, 1995 2000
- National Vice President, 1997
- Vice Chair, National Ethics & Professional Practice Committee, 1995; Member, 1993 -1998 and 2000 - 2002
- Member, National Finance Committee, 1995 1997
- Member, International Task Force (fka International Activities Committee), 1992 1999
- Member, National Communications Committee, 1993 1995, 2001; National Public Relations, 1998 - 2001, Technology Committee, 2001
- Chair, Honolulu Convention Committee, 1992
- Member, Appraisal Institute (MAI designation)
 - Member (representing Region VII, Arizona, Hawaii, Southern California, and Southern Nevada), National Appellate Division (serves as National Ethics Appeal Board), 1997 -1999
 - Vice Chair, National Admissions Committee of the General Appraisal Board, 1991
 - Governing Councilor, 1986 1988
 - Vice Chair, National Bylaws Committee, 1986 1989
 - Vice Chair, Organizing Committee, Pan Pacific Congress of Real Estate Appraisers, Valuers and Counselors, Honolulu, 1986
 - Member, National Bylaws Committee, 1985
 - Member, National Admissions Committee, 1982 1990
 - Chairman, National Evaluation Report Subcommittee, 1982



KAREN CHAR, MAI, CRE, ASA President



- President, 1986; Vice President, 1985; Secretary, 1984; Honolulu Chapter No. 15
- Grader, National Board of Examiners, 1982 1983
- Admissions Chairman, Southwest Region, 1983
- Accredited Senior Appraiser, American Society of Appraisers, (ASA designation, specializing in business valuation)
- . Member, Aloha Chapter of Lambda Alpha International, an Honorary Land Economics Society

Other Real Estate and Charitable Associations and Community Activities

- Nonlawyer Member, Magistrate Judge Merit Selection Panel, District of Hawaii, 2018
- · Director, Board of Directors, Hawaii Women's Legal Foundation, 2002 to present
- · Vice President and Director, Board of Directors, Hawaii Opera Theatre, 2004 to present
- Author, "Creative Counseling: Preserving the Hawaii Opera Theatre" Real Estate Issues, Volume 36, November 1, 2011; 41-45
- President, Hawaii Chapter of the National Association of Office and Industrial Properties (NAIOP Hawaii), 1998
 - Member, Board of Directors, 1996 1998
 - Chair, Leasehold Issues Committee, 1996 1997
 - Responsible for writing NAIOP's reports as follows:
 - Ground Lease Renegotiation Issues and Practical Alternatives, September, 1996
 - Lease Rent Arbitration and USPAP, January, 1997

Professional Experience

- · President and Chief Executive Officer, John Child & Company, Inc., 1984 to present
- Senior Manager, Peat, Marwick, Mitchell & Co. (now known as KPMG Peat Marwick), 1979-1984
- · Appraiser, John Child & Company, Inc., 1973 1978

Professional Designations

- The Appraisal Institute conducts a voluntary program of continuing education for its designated members. Members who meet the standards of this program are awarded periodic educational certification. Karen Char, MAI is certified under this program.
- The American Society of Appraisers conducts a mandatory program of recertification through continuing education and/or participation in professional activities every five years. Karen Char, ASA, is certified under this program.

State Certification

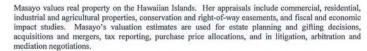
 Certified General Appraiser, State of Hawaii, License Number CGA-184, expiring December 31, 2019.

Court Testimony

 Qualified as an expert witness in the valuation of real property and closely-held businesses in the Courts of the State of Hawaii.

QUALIFICATIONS OF JOHN CHILD & COMPANY

MASAYO K. ALLEN, ESQ. (MAI CANDIDATE) Appraiser



Education

- Master of Science in Real Estate, University of San Diego, San Diego 2015
- Appraisal Institute courses between 2015 and 2018:
 - Basic Appraisal Principles
 - Basic Appraisal Procedures
 - 15-Hour National USPAP
 - Supervisory Appraiser/Trainee Appraiser
 - Advanced Residential Applications and Case Studies
 - Real Estate Finance, Statistics, and Valuation Modeling
 - General Appraiser Site Valuation and Cost Approach
 - General Appraiser Sales Comparison Approach
 - General Appraiser Income Approach/Part I
 - General Appraiser Income Approach/Part II
 - General Appraiser Market Analysis and Highest & Best Use
 - General Appraiser Report Writing and Case Studies
 - 7-Hour National USPAP Update Course
 - Quantitative Analysis
 - General Demonstration Report Writing
 - Advanced Income Capitalization
 - Advanced Method Capitalization
 Advanced Market Analysis and Highest & Best Use
 - Advanced Concepts and Case Studies
 - Business Practices and Ethics
 - General Demonstration Report-Capstone
 - Condemnation Appraising: Principles & Applications
- Juris Doctor, Loyola Law School, Los Angeles, 2000
- · Bachelor of Arts, Business Economics, University of California, Los Angeles, 1996

Professional Associations

- · Appraisal Institute
 - Hawaii Chapter, 2019 Present
 - Northern California Chapter, 2015 2019
 - Co-Chair, East Bay Branch, 2018
 - San Diego Chapter, 2014 2019
- Hawaii State Bar Association (2013 Present)
- The State Bar of California (2001 Present)



MASAYO K. ALLEN, ESQ. (MAI CANDIDATE) Appraiser



Professional Experience

- Appraiser, John Child & Company, Inc., Hawaii (2019 Present)
 Appraiser, Valbridge Property Advisors, Northern California (2017 2019)
- Research Analyst, Valbridge Property Advisors, Northern California (2015 2017)
- Intern, Jones, Roach & Caringella, San Diego (2015)
- Senior Associate Attorney, Anderson, McPharlin & Conners LLP, Los Angeles (2007-2013)
 Associate Attorney, Garrett & Tully, APC, (2002 2007)

Professional Designation

Masayo Allen is a candidate for the MAI designation with an estimated completion date of January 2020.

- · Certified General Appraiser, State of Hawaii, License Number CGA-1350, expiring December 31, 2019.
- · Certified General Appraiser, State of California, License Number AG-3003579, expiring February 18, 2020.

TRAFFIC IMPACT ANALYSIS REPORT

APPENDIX



TRAFFIC IMPACT ANALYSIS REPORT PUUNANI HOMESTEAD PROJECT

WAILUKU, MAUI, HAWAII

FINAL DRAFT

August 31, 2020

Prepared for:

DDC LLC 2005 Main Street Wailuku, Hawaii 96793



Austin, Tsutsumi & Associates, Inc. Civil Engineers • Surveyors 501 Sumner Street, Suite 521 Honolulu, Hawaii 96817-5031 Telephone: (808) 533-3646 Facsimile: (808) 526-1267 E-mail: atahnl@atahawaii.com

Honolulu • Wailuku • Hilo, Hawaii

TRAFFIC IMPACT ANALYSIS REPORT PUUNANI HOMESTEAD PROJECT

Wailuku, Maui, Hawaii

FINAL DRAFT

Prepared for

DDC LLC

Prepared by

Austin, Tsutsumi & Associates, Inc.

Civil Engineers • Surveyors Honolulu • Wailuku • Hilo, Hawaii

August 31, 2020

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AUSTIN, TSUTSUMI & ASSOCIATES, INC.

CIVIL ENGINEERS . SURVEYORS

CONTINUING THE ENGINEERING PRACTICE FOUNDED BY H. A. R. AUSTIN IN 1934

TERRANCE S. ARASHIRO, P.E.
ADRIENNE W.L.H. WONG, P.E., LEED AP
DEANNA M.R. HAYASHI, P.E.
PAUL K. ARITA, P.E.
ERIK S. KAMESHIRO, L.P.L.S., LEED AP
MATT K. NAKAMOTO, P.E.
GARRETT K. TOKUOKA, P.E.

PUUNANI HOMESTEAD TRAFFIC IMPACT ANALYSIS REPORT

Wailuku, Maui, Hawaii

1. INTRODUCTION

This report documents the findings of a traffic study conducted by Austin, Tsutsumi & Associates, Inc. (ATA) to evaluate the potential traffic impacts resulting from the proposed Department of Hawaiian Home Lands (DHHL) Puunani Homestead development (hereinafter referred to as the "Project") located in Wailuku, Maui, Hawaii.

1.1 Location

The Project is located in Wailuku on the island of Maui on a vacant parcel of land more specifically identified as TMK: (2) 3-5-002:002 (por.). The Project will be bounded by Honoapiilani Highway to the east and the Waiolani residential subdivision to the south. See Figure 1.1 for Project location.

1.2 Project Description

The Project proposes to develop 137 turn-key homes and 24 vacant residential lots, for a total of 161 single-family dwelling units for DHHL beneficiaries. Accessory dwelling units or ohana units will not be permitted. Access to the site will occur via two (2) new driveways off of Honoapiilani Highway. The southern access will provide primary access with permitted left-turns along the eastbound and northbound approaches. The northern access will provide secondary access limited to right-in, right-out (RIRO) access only.

Representatives from ATA and the Puunani Homestead Project team met with the State of Hawaii Department of Transportation (HDOT) on October 23, 2019 and the County of Maui Department of Public Works (DPW) on December 12, 2019 to provide an overview of the Project. Project land use, conclusions and recommendations presented in this TIAR are consistent with what was presented at both meetings with HDOT and DPW.

REFLETTU. 501 SUMNER STREET, SUITE 521 ● HONDLULU, HAWAII 96817-5031 PHDNE (808) 533-3646 ● FAX (808) 526-1267 EMAIL : dighth@dighowdii.com OFFICES IN: HONOLULU, HAWAII WAILUKU, MAUI, HAWAII HILO, HAWAII

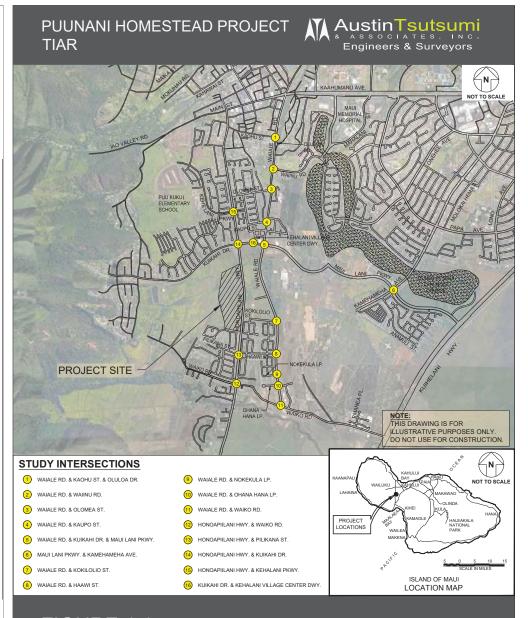
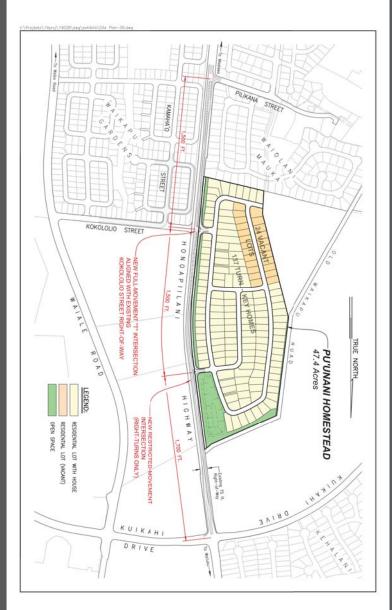


FIGURE 1.1

LOCATION MAP









2. METHODOLOGY

This study will address the following:

- Assess existing traffic operating conditions during the weekday AM and PM peak hours of traffic within the study area.
- Traffic Projections for Base Year 2024 (without the Project).
- Estimate the vehicular trips that will be generated by the Project.
- Traffic projections for the Project for Future Year 2024 (with Project).
- Recommendations for roadway improvements or other mitigative measures, as appropriate, to reduce or eliminate the adverse impacts resulting from traffic generated by the Project.

2.1 Intersection Methodology

Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow at intersections, with values ranging from free-flow conditions at LOS A to congested conditions at LOS F. <u>The Highway Capacity Manual (HCM).</u> 6th <u>Edition</u>, includes methods for calculating volume to capacity ratios, delays, and corresponding Levels of Service that were utilized in this study. See Appendix B for Level of Service Criteria.

Analyses for the study intersections were performed using the traffic analysis software Synchro, which is able to prepare reports based on the methodologies described in the HCM. These reports contain control delay results as based on intersection lane geometry, signal timing, and hourly traffic volumes. Based on the vehicular delay at each intersection, a LOS is assigned to each approach and intersection movement as a qualitative measure of performance. These results, as confirmed or refined by field observations, constitute the technical analysis that will form the basis of the recommendations outlined in this report.



AUSTIN, TSUTSUMI & ASSOCIATES, INC. CIVIL ENGINEERS . SURVEYORS

EXISTING TRAFFIC CONDITIONS

3.1 Roadway Network

The following are brief descriptions of the existing roadways studied within the vicinity of the

Honoapiilani Highway is a north-south, two-way, two-lane, undivided arterial highway with posted speed limits ranging between 30 miles per hour (mph) and 45 mph. Honoapiilani Highway begins as the continuation of South High Street near Kahookele Street and continues southward through Waikapu, Maalaea, and wraps around the "Pali" to West Maui. Right turn channelization is provided at all of its major intersections within the study area.

Kuikahi Drive is an east-west, two-way, two-lane, undivided collector roadway with posted speed limits ranging between 25 mph and 30 mph. Kuikahi Drive begins approximately 1.2 miles west of Honoapiilani Highway within the Wailuku Heights development and extends eastward past Honoapiilani Highway, terminating near The Church of Jesus Christ of Latter Day Saints, where Kuikahi Drive becomes Maui Lani Parkway.

Maui Lani Parkway is an east-west, two-way, two-lane, divided roadway which provides connection for the Waiale area to regional roadways. Maui Lani Parkway begins to the east at it's T-intersection with Kuihelani Highway and terminates to the west at its intersection with Waiale Road, where it transitions into Kuikahi Drive.

Waiale Road is a north-south, two-way, two-lane, undivided collector roadway. To the north, Waiale Road serves as the southern connection to Lower Main Street and extends past the Maui Community Correctional Center. Kehalani Village Center and various residential subdivisions. eventually terminating at a T-intersection with East Waiko Road. Waiale Road has a posted speed limit of 20 mph from Lower Main Street and transitions to 25 mph from Waiinu Road to Maui Lani Parkway/Kuikahi Drive and increased again to 30 mph from Maui Lani Parkway/Kuikahi Drive to its southern terminus at Waiko Road.

East Waiko Road is an east-west, two-way, two-lane, undivided collector roadway with a posted speed limit of 20 mph in the Project study area. East Waiko Road extends westward from Kuihelani Highway to Honoapiilani Highway where it continues as West Waiko Road within the Waikapu residential neighborhood.

Kehalani Parkway is an east-west, two-way, four-lane, divided collector roadway with posted speed limits ranging between 20 mph and 30 mph on either side of Honoapiilani Highway. Kehalani Parkway extends east of Honoapiilani Highway from the lower Kehalani residential subdivision at Kamole Street and continues in the mauka direction, curving north past Puu Kukui Elementary School in the upper Kehalani residential subdivisions.

Nokekula Loop, Haawi Street & Kokololio Street are east-west, two-way, two-lane, undivided local roadway to the west of Waiale Road with a posted speed limit of 20 mph. These three roads service the Waikapu Gardens Phase I residential neighborhood

Ohana Hana Loop is an east-west, two-way, two-lane, undivided local roadway to the west of Waiale Road with a posted speed limit of 20 mph. Ohana Hana Loop extends from Waiale Road and services the Waikapu Gardens Phase II residential neighborhood.

AUSTIN, TSUTSUMI & ASSOCIATES, INC. CIVIL ENGINEERS · SURVEYORS

Kaohu Street is an east-west, two-way, two-lane, undivided local roadway on the northern side of the Project Site that extends from High Street to the west and ends at Waiale Road to the east, before turning into Oluloa Drive, to serve a residential subdivision. Kaohu Street provides access to various residential homes, various businesses and the Maui County Building.

Olomea Street is an east-west, two-way, two-lane, undivided local roadway that services the Kehalani residential subdivision consisting of various single family and multi-family dwellings.

Kaupo Street is an east-west, two-way, two-lane, undivided local roadway that services the Kehalani residential subdivision consisting of various single family and multi-family dwellings. Kaupo Street also provides northerly access to the Kehalani Village Center.

Kamehamea Avenue is generally a north-south, two-way, two lane undivided roadway which provides connectivity between the Wailuku and Kahului areas. Kamehameha Ave begins to the north with its intersection with Hana Highway near the Kanaha Pond, extends westward and then curves southward where it currently terminates near the Pomaikai Elementary School.

3.2 Existing Traffic Volumes

Intersection analysis within the study area was performed on the following intersections due to their proximity to the Project. Turning movement volumes were collected at each of the following Study Intersections on the dates noted:

- Honoapiilani Highway/Kehalani Parkway (Signalized) May 10, 2018
- Honoapiilani Highway/Kuikahi Drive (Signalized) March 13, 2019
- Honoapiilani Highway/Pilikana Street (Signalized) May 10, 2018
- Kuikahi Drive/Kehalani Village Center Driveway (Unsignalized) April 9, 2019
- Waiale Road/Kuikahi Drive & Maui Lani Parkway (Signalized) March 13, 2019
- Maui Lani Parkway/Kamehameha Avenue (Unsignalized) March 13, 2019
- Waiale Road/Kaupo Street (Unsignalized) April 9, 2019
- Waiale Road/Olomea Street (Unsignalized) March 14, 2019
- Waiale Road/Waiinu Road (Unsignalized) March 14, 2019
- Waiale Road/Kaohu Street & Oluloa Drive (Unsignalized) April 9, 2019
- Honoapiilani Highway/Waiko Road (Signalized) May 10, 2018
- Waiale Road/Waiko Road (Unsignalized) April 4, 2019
- Waiale Road/Ohana Hana Loop (Unsignalized) April 4, 2019
- Waiale Road/Nokekula Loop (Unsignalized) April 4, 2019
- Waiale Road/Haawi Street (Unsignalized) April 4, 2019
- Waiale Road/Kokololio Street (Unsignalized) April 4, 2019

Based on the traffic count data, the weekday AM peak hour of traffic was determined to occur between 7:00 AM and 8:00 AM, while the weekday PM peak hour of traffic was determined to occur between 4:00 PM and 5:00 PM. The traffic count data is provided in Appendix A for the existing intersections studied.

3.3 Existing Traffic Conditions Analysis and Observations

<u>Waiale Road/Kaohu Street/Oluloa Drive</u> is a four-way stop intersection with shared left-turn/through/right-turn lanes along Waiale Road and the westbound approach along Oluloa Drive. An exclusive left-turn lane and shared through/right-turn lane is provided along the eastbound approach on Kaohu Street.

Traffic was generally observed to progress unimpeded along Waiale Road during the AM peak hour, except between 7:30-7:50 AM, where southbound traffic on Waiale Road could queue back near to Wells Street. More critically, northbound traffic on Waiale Road was observed to slowly progress through the intersection. For a brief 5-10 minute period starting from 7:30 AM, northbound traffic spilled back at varying lengths from this four-way stop to the Waiale Road/Waiinu Road intersection, causing congestion that stretched back towards Kuikahi Drive. Operationally, the northbound and southbound approaches along Waiale Road operate at or over-capacity conditions with LOS F during the AM peak hour. Congestion and queuing along Waiale Road generally dissipated around 7:50-7:55 AM. During the PM peak hour, the southbound approach also operates at LOS F and overcapacity conditions and the northbound left-turn/through movement operates at LOS E during the PM peak hour.

Various constraints limit options to implement mitigative measures to curb congestive conditions at this intersection and along Waiale Road. Based on the Four-Hour signal warrant in the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) 2009 Edition, a signal is warranted based on existing traffic volumes. However, installation of a traffic signal system will be challenging given the existing alignment of the roadway, right-of-way constraints and skewed approach for Oluloa Drive. The lane striping along Waiale Road is currently adjacent to the westernmost limits of the County's right-of-way. Some undeveloped rightof-way is available on the easternmost limits of the County's right-of-way, so Waiale Road may need to be realigned to fit a traffic signal system at this intersection. Waiale Road may also require widening to provide exclusive left-turn lanes, given the relatively high volume of through traffic to reduce blocking of through vehicles by queued left-turn vehicles. A roundabout is likely infeasible due to the existing right-of-way constraints as well as the skewed approach from Oluloa Drive that inhibits perpendicular intersection approaches necessary for roundabouts. Mitigation to remove stop control along the Waiale Road approach (creating a two-way stop controlled intersection) will also be negatively impacted by the skewed approach from Oluloa Drive, making it difficult for vehicles along Oluloa Drive to detect approaching free flowing northbound vehicles along Waiale Road. Right-of-way acquisition may be needed to provide more space for the options of a traffic signal, roundabout, widening improvements and/or the realignments of Waiale Road and Oluloa Drive to provide perpendicular intersection approach angles.

<u>Waiale Road/Waiinu Road</u> is an unsignalized T-intersection that is stop-controlled on the westbound Waiinu Road approach. In both the AM and PM peak hours the westbound shared left-turn/through lane operates at LOS F and overcapacity conditions with lengthy delays.

As noted above, northbound congestion can spill back into this intersection from the Waiale Road/Kaohu Street/Oluloa Drive four-way stop intersection during portions of the AM peak hour, causing congestion that stretches back towards Kuikahi Drive. Northbound congestion is further impacted at this intersection due to a heavy northbound right-turn movement as turning vehicles slow in anticipation of the turn, also slowing all vehicles in the single-lane northbound approach.

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Some northbound vehicles along Waiale Road also stopped within the through travel lane to allow southbound left-turn and westbound left-turn vehicles (ranging from 1-6 vehicles at a time) to turn onto or off of Waiale Road, which contributed to the lengthy platoons along Waiale Road. During the PM peak hour, traffic along Waiale Road operated smoothly, but queues continued to be observed along the westbound leg of Waiinu Road. Queues along the westbound approach was variable throughout the peak period, and depended on gaps in traffic and the occurrence of northbound and southbound Waiale Road vehicles stopping within the through lane to allow westbound vehicles from Waiinu Road to turn onto Waiale Road.

The need for roadway widening and/or traffic control mitigations at this intersection were previously identified by the County, however the design and timeline of completion of any improvements are currently unknown.

<u>Waiale Road/Olomea Street</u> is an unsignalized intersection which is stop-controlled on the eastbound Olomea Street approach. The driveway for the Maui Community Correctional center (MCCC) is slightly offset to the south of the Olomea Street intersection. This driveway was considered to be the westbound approach. During the AM and PM peak hours of traffic, the eastbound left-turn/through movement operates at LOS F and overcapacity conditions. During the AM peak hour, due to northbound congestion along Waiale Road, some northbound vehicles along Waiale Road were observed to stop within the through travel lane to allow eastbound left-turn vehicles to turn onto Waiale Road, which contributed to the northbound congestion. Based on a signal warrant, a signal is warranted with existing conditions. However, as a temporary mitigative measure, a median refuge lane may help reduce eastbound left-turn vehicle delays by allowing vehicles to turn onto Waiale Road with a two-stage approach; turning left into the refuge lane after finding gaps in southbound traffic, then merging into the Waiale Road through lane after finding gaps in northbound traffic.

This 4-legged intersection is unconventional in that the east-leg of the intersection consists of two (2) full movement driveways separated by a utility pole. The northernmost east-leg driveway appears to be within the Maui Memorial Park property, providing access at its southwest corner of the site. The southernmost east-leg driveway services MCCC as it's sole access to Waiale Road. Existing vehicles currently utilize both driveways, with traffic primarily generated by the MCCC. Ideally, it would be best to remove the southernmost east-leg driveway to MCCC and have MCCC work with Maui Memorial Park to allow a shared easement access to the northernmost east-leg driveway that services Maui Memorial Park. This consolidates multiple turning movements at two closely spaced driveways, better lines up with the Olomea Street leg of the intersection and would remove the southbound left-turners that can queue up in the northbound left-turn lane to access MCCC using the southernmost east-leg. Left-turn restrictions could have negative effects since this is the sole access to MCCC and southbound left-turners would need to continue further south ¼ mile to Waimaluhia Lane and circulate back up to turn right into the MCCC. Illegal u-turn movements will likely be made to avoid the detour to Waimaluhia Lane. If agreements cannot be made for a shared easement, the southernmost eastleg driveway should be restricted to right-in, right-out only to remove southbound left-turner from encroaching into the existing northbound left-turn lane.

<u>Waiale Road/Kaupo Street</u> is an unsignalized T-intersection with exclusive left-turn and right-turn lanes along the Kaupo Street approach and shared northbound through/left-turn and shared southbound through/right-turn lanes along Waiale Road. Eastbound left-turn movements operate at LOS F with overcapacity conditions during the AM peak hour and LOS F during the PM peak hour. Similar to the Waiale Road/Olomea Street intersection, observations indicated that some



northbound vehicles along Waiale Road stopped within the through travel lane to allow eastbound left-turn vehicles to turn onto Waiale Road, which contributed to the northbound congestion spilling back to Kuikahi Drive during the AM peak hour. An exclusive northbound left-turn lane and/or a median refuge lane may be considered to improve operations at this intersection and reduce vehicle spill back into Kuikahi Drive. A signal is not warranted with existing conditions.

<u>Waiale Road/Kuikahi Drive/Maui Lani Parkway</u> is a signalized intersection with exclusive left-turn lanes on all approaches and an exclusive right-turn lane on the westbound approach. All movements at this intersection currently operate at LOS C or better during the AM and PM peak hours of traffic. However, for about 20-30 minutes during the AM peak hour, vehicles were observed to queue beyond the length of the eastbound left-turn storage lane to the Kehalani Village Drive or as far as Honoapiilani Highway. These queues occur at variable lengths and are dependent on existing northbound queues that spill back from Waiale Road into the Waiale Road/Kuikahi Drive intersection, which limits full progression for eastbound left-turning vehicles.

Kamehameha Avenue/Maui Lani Parkway is a four-way stop controlled intersection with exclusive left-turn lanes on both approaches on Kamehameha Avenue and is located 700 feet northeast of Pomaikai Elementary School. Each approach includes flashing beacons with stop signs, and marked crosswalks are provided on the southwest leg of Kamehameha Avenue and the northwest leg of Maui Lani Parkway.

The eastbound approach and the southbound through/right-turn movement operates at LOS F during the AM peak hour, and the eastbound approach, westbound approach, and the southbound through/right-turn movement operates at LOS F with overcapacity conditions during the PM peak hour of traffic. This is primarily due to relatively high volumes of regional traffic between the Waikapu-Wailuku-Kahului regions. Queues were inconsistent and varied in length throughout the peak hours, with a short period of extensive southbound queuing during the AM peak hour and periodic eastbound queuing during the AM and PM peak hours of traffic.

<u>Waiale Road @ Kokololio Street, Haawi Street, Nokekula Loop, and Ohana Hana Loop</u> are unsignalized T-intersections servicing the Walikapu Gardens Phase I and II developments. All movements at these intersections currently operate at LOS B or better with no significant delays during the AM and PM peak hours of traffic.

<u>Waiale Road/Waiko Road</u> is an unsignalized T-intersection with shared lanes on all approaches and the southbound approach stop-controlled. All movements at this intersection currently operate at LOS D or better with no significant delays or queues during the peak hours of traffic.

<u>Honoapillani Highway/Waiko Road</u> is a signalized intersection with exclusive left-turn lanes on the northbound and southbound approaches, and exclusive right-turn lanes on the eastbound and southbound approaches. All movements at this intersection currently operate at LOS C or better with no significant delays or queuing during the AM and PM peak hours of traffic.

<u>Honoapiilani Highway/Pilikana Street</u> is a signalized intersection with an exclusive left-turn lane on the northbound approach and a channelized right-turn lane on the southbound approach. All movements at this intersection operate at LOS D or higher for both peak hours.

<u>Honoapiilani Highway/Kuikahi Drive</u> is a signalized intersection with exclusive left-turn and right-turn lanes on all approaches. The channelized northbound right-turn movement also includes an

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exclusive eastbound acceleration lane. All movements at this intersection currently operate at LOS D or better during both AM and PM peak hours.

Honoapiilani Highway/Kehalani Parkway is a signalized intersection with exclusive left-turn and right-turn lanes on all approaches. The channelized northbound and southbound right-turn movements also include exclusive eastbound and westbound receiving lanes, respectively. All movements at this intersection currently operate at LOS D or better during the AM and PM peak hours of traffic. For a portion of the AM peak hour, the eastbound left-turn movement operates with queues that extend to or beyond the existing left-turn storage lane and some vehicles may require two cycle lengths to clear the intersection. Heavy traffic during a short period of time is reflective of typical school traffic conditions, as these queuing conditions were observed to last about 30 minutes during the AM peak hour, generally between 7:15-7:45 AM and primarily stem from traffic generated by the Puu Kukui Elementary School.

In addition, northbound traffic queues along Honoapiilani Highway were observed to primarily stem from Wailuku Elementary School. At Aupuni Street, northbound traffic queued back to Kehalani Parkway for about 5-10 minutes during the AM peak hour where a police officer controls traffic at Aupuni Street to service Wailuku Elementary School traffic in the morning. It should be noted that if Aupuni Street was left uncontrolled, the heavy morning congestion along Honoapiilani Highway would likely just continue unimpeded and shift to the Main Street/High Street intersection, continuing to spill back to Kehalani Parkway.

<u>Kuikahi Drive/Kehalani Village Center Access</u> is an unsignalized T-intersection with exclusive leftturns in the eastbound and southbound directions. All movements at this intersection currently operate at LOS D or better during the AM and PM peak hours of traffic with the exception of the southbound left-turn movement which operates at LOS E during the PM peak hour of traffic.

Figure 3.1 illustrates the existing lane configuration, existing traffic volumes, and LOS for each study intersection. Table 3.1 summarizes the existing LOS at the study intersections. LOS worksheets are provided in Appendix C. Signal warrants are provided in Appendix D.

| |

FIGURE 3.1

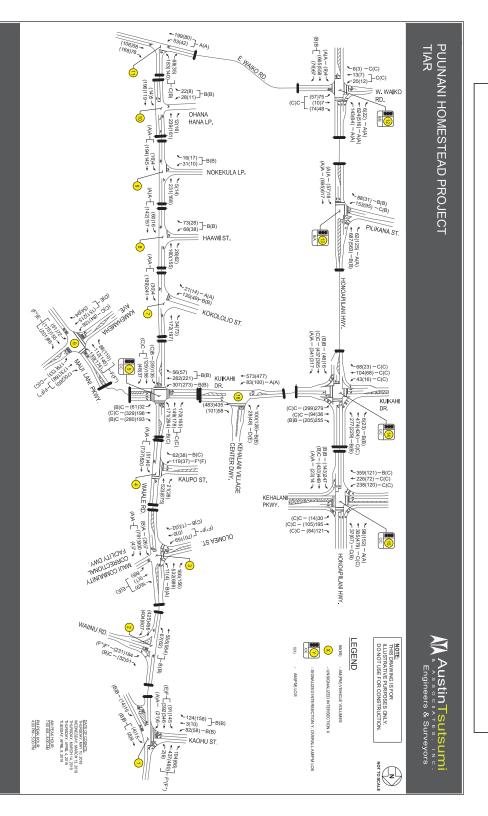


Table 3.1 : Existing Conditions Level of Service Summary

Intersection		E	Existing C	onditions	5	
intersection		AM			PM	
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Waiale Rd & Kaohu St/Oluloa Dr					1 1	
NB LT/TH	54.8	0.97	F	49.9	0.95	E
NB RT EB LT	8.6 13.4	0.01 0.21	A B	8.7 12.6	0.04 0.15	A B
EB TH/RT	12.7	0.21	В	13.9	0.15	В
WB LT/TH/RT	12.7	0.28	В	12.6	0.37	В
SB LT/TH/RT	76.9	1.04	F*	84.2	1.06	F*
Overall	55.8	-	F	56.7	-	F
2: Waiale Rd & Waiinu Rd						
WB LT	563.7	2.02	F*	496.1	1.92	F*
WB RT	16.4	0.15	С	13.7	0.08	В
SBLT	11.8	0.12	В	10.2	0.09	В
Overall	54.9	-	-	67.7	-	-
3: Waiale Rd & Olomea St/Maui Community Co						_
NB LT	9.3	0.01	A	10.1	0.04	В
EB LT/TH	887.0	2.66	F*	330.3	1.29	F*
EB RT	13.6	0.08	В	15.3	0.04	C E
WB LT/TH/RT SB LT	38.6 10.3	0.20	E B	42.6 9.6	0.15	A
Overall Overall	77.6	0.02	В	13.8	0.01	А
4: Waiale Rd & Kaupo St	77.0			13.0	_	_
NB LT	8.8	0.04	Α	9.6	0.07	Α
EBLT	205.9	1.16	F*	72.7	0.44	F
EB RT	13.1	0.13	В	15.0	0.10	Ċ
Overall	16.2	-	-	2.4	-	-
5: Waiale Rd & Kuikahi Dr/Maui Lani Pkwy						
NB LT	19.1	0.44	В	23.4	0.16	С
NB TH/RT	24.1	0.55	С	30.5	0.70	С
EB LT	17.0	0.70	В	16.7	0.66	В
EB TH/RT	18.0	0.57	В	16.8	0.46	В
WB LT	21.5	0.11	С	17.7	0.15	В
WB TH	28.3	0.70	С	27.4	0.80	С
WB RT	23.1	0.11	С	19.9	0.15	В
SB LT SB TH/RT	17.9	0.43 0.79	B C	21.0 24.8	0.64	C
Overall	27.7	0.79	C	22.3	0.73	C
6: Kamehameha Ave & Maui Lani Pkwy	21.0		U	22.3	_	C
NB LT	18.8	0.38	С	17.8	0.28	С
NB TH/RT	47.5	0.86	Ē	27.4	0.64	D
EB LT/TH/RT					1.19	F*
	58.4	0.92	F	118.7	1.19	
WB LT/TH/RT	58.4 48.3	0.92 0.85	F E	118.7 108.4	1.18	F*
SBLT	48.3 23.2	0.85 0.53	E C	108.4 19.3		F* C
SB LT SB TH/RT	48.3 23.2 58.1	0.85	E C F	108.4 19.3 109.5	1.18	F* C F*
SB LT SB TH/RT Overall	48.3 23.2	0.85 0.53	E C	108.4 19.3	1.18 0.41	F* C
SB LT SB TH/RT Overall 7: Waiale Rd & Kokololio St	48.3 23.2 58.1 47.2	0.85 0.53 0.92	E C F	108.4 19.3 109.5 90.1	1.18 0.41 1.19	F* C F*
SB LT SB TH/RT Overall 7: Waiale Rd & Kokololio St NB LT	48.3 23.2 58.1 47.2	0.85 0.53 0.92 -	E C F E	108.4 19.3 109.5 90.1 7.9	1.18 0.41 1.19 -	F* C F* F
SB LT SSB TH/RT Overall 7: Waiale Rd & Kokololio St NB LT EB LT	48.3 23.2 58.1 47.2 7.7 13.9	0.85 0.53 0.92 - 0.00 0.26	E C F E A B	108.4 19.3 109.5 90.1 7.9 12.8	1.18 0.41 1.19 - 0.03 0.10	F* C F* F
SB LT SB TH/RT Overall 7: Waiale Rd & Kokololio St NB LT EB LT EB RT	48.3 23.2 58.1 47.2 7.7 13.9 9.4	0.85 0.53 0.92 - 0.00 0.26 0.03	E C F E	108.4 19.3 109.5 90.1 7.9 12.8 9.7	1.18 0.41 1.19 - 0.03 0.10 0.02	F* C F* F
SB LT SB TH/RT Overall 7: Walale Rd & Kokololio St NB LT EB LT EB RT Overall	48.3 23.2 58.1 47.2 7.7 13.9	0.85 0.53 0.92 - 0.00 0.26	E C F E A B	108.4 19.3 109.5 90.1 7.9 12.8	1.18 0.41 1.19 - 0.03 0.10	F* C F* F
SB LT SB TH/RT Overall 7: Waiale Rd & Kokololio St NB LT EB LT EB RT Overall 8: Waiale Rd & Haawi St	48.3 23.2 58.1 47.2 7.7 13.9 9.4 3.4	0.85 0.53 0.92 - 0.00 0.26 0.03	E C F E A B A	108.4 19.3 109.5 90.1 7.9 12.8 9.7 1.9	1.18 0.41 1.19 - 0.03 0.10 0.02	F* C F* A B A -
\$B LT \$B TH/RT Overall 7: Waiale Rd & Kokololio St NB LT EB LT EB RT Overall 8: Waiale Rd & Haawl St NB LT	48.3 23.2 58.1 47.2 7.7 13.9 9.4 3.4	0.85 0.53 0.92 - 0.00 0.26 0.03 -	E C F E A B A	108.4 19.3 109.5 90.1 7.9 12.8 9.7 1.9	1.18 0.41 1.19 - 0.03 0.10 0.02 -	F* C F* F A B A -
SB LT SB TH/RT Overall 7: Waiale Rd & Kokololio St NB LT EB LT EB RT Overall 8: Waiale Rd & Haawi St	48.3 23.2 58.1 47.2 7.7 13.9 9.4 3.4	0.85 0.53 0.92 - 0.00 0.26 0.03	E C F E A B A	108.4 19.3 109.5 90.1 7.9 12.8 9.7 1.9	1.18 0.41 1.19 - 0.03 0.10 0.02	F* C F* A B A -
\$B LT \$B TH/RT Overall 7: Waiale Rd & Kokololio \$t NB LT EB LT EB RT Overall 8: Waiale Rd & Haawi St NB LT EB LT TOVERALL BE TOUT THE ST T	48.3 23.2 58.1 47.2 7.7 13.9 9.4 3.4 7.7 11.5	0.85 0.53 0.92 - 0.00 0.26 0.03 -	E C F E A B A	108.4 19.3 109.5 90.1 7.9 12.8 9.7 1.9 7.8 11.7	1.18 0.41 1.19 - 0.03 0.10 0.02 -	F* C F* F A B A -
SB LT SB TH/RT Overall 7: Waiale Rd & Kokololio St NB LT EB LT EB RT Overall 8: Waiale Rd & Haawi St NB LT EB LT/RT Overall Overall	48.3 23.2 58.1 47.2 7.7 13.9 9.4 3.4 7.7 11.5	0.85 0.53 0.92 - 0.00 0.26 0.03 -	E C F E A B A	108.4 19.3 109.5 90.1 7.9 12.8 9.7 1.9 7.8 11.7	1.18 0.41 1.19 - 0.03 0.10 0.02 -	F* C F* F A B A -
SB LT SB TH/RT Overall 7: Waiale Rd & Kokololio St NB LT EB LT EB LT Overall 8: Waiale Rd & Haawi St NB LT EB LT/RT Overall 9: Waiale Rd & Nokekula Lp	48.3 23.2 58.1 47.2 7.7 13.9 9.4 3.4 7.7 11.5 3.5	0.85 0.53 0.92 - 0.00 0.26 0.03 - 0.01 0.22	E C F E A B A A B B -	108.4 19.3 109.5 90.1 7.9 12.8 9.7 1.9 7.8 11.7 2.6	1.18 0.41 1.19 - 0.03 0.10 0.02 - 0.05 0.12	F* C F* F A B A A B

^{*} Denotes overcapacity condition, v/c ≥ 1.

Table 3.1: Existing Conditions Level of Service Summary Cont'd

Intersection				Existing C	onditions	5	
Delay Vic Natio LOS Delay Vic Natio LOS	Intersection		AM			PM	
NB LT				LOS			LOS
EB LT/RT		7.0			7.0		
Tite Walko Rd & Walale Rd EB LT 7.6 0.04 A 8.0 0.04 A SB LT/RT 15.3 0.44 C 13.2 0.30 B Overall 6.6 - 4.6 - -							
BELT			-	-		-	
SB LT/RT	11: E Waiko Rd & Waiale Rd						
Overall G.6 - - 4.6 - -							
12: Honoapillani Hwy & W Waiko Rd/E Waiko Rd NB LT			0.44	С		0.30	В
NB LT			-	-	4.0	-	-
EB LT/TH			0.01	Α	5.4	0.02	Α
EBRT	NB TH/RT			В			В
WB LT/TH/RT 24.7 0.44 C 28.6 0.49 C SB LT 7.7 0.34 A 7.7 0.18 C SB LT 8.3 0.60 A 6.7 0.47 A SB RT 4.6 0.00 A 4.3 0.01 A 4.3 0.01 A 4.5 0.00 A 4.3 0.01 A 4.5 A 4.5 0.01 A 4.5 A 4.							
SB LT							
SB TH							
SBRT							
Overall							
NB LT			-			-	
NB TH							
EBLT							
BBRT							
SB TH							
SBRT							
Overall							
NB LT		10.2	-	В	9.1	-	Α
NB TH			1 1	_		1	_
NB RT							
EB LT							
BB TH							
WB LT							
WB TH	EB RT		0.04		29.1	0.01	
WB RT							
SB LT							
SB TH							
SB RT							
Overail 23.2 - C 23.7 - C C							
NB LT			-			-	
NB TH							1
NB RT							
EB LT							
EB TH							
EB RT							
WB LT							
WB RT 27.3 0.07 C 24.6 0.04 C SB LT 20.3 0.15 C 13.2 0.19 B SB TH 30.2 0.72 C 22.5 0.75 C SB RT 0.0 0.00 A 0.0 0.00 A Overall 26.1 - C 20.3 - C		25.5	0.10		23.6	0.04	С
SB LT 20.3 0.15 C 13.2 0.19 B SB TH 30.2 0.72 C 22.5 0.75 C SB RT 0.0 0.00 A 0.0 0.00 A Overall 26.1 - C 20.3 - C 16: Kuikahi Dr & Kehalani Village Center Dr EB LT 8.8 0.09 A 9.3 0.12 A SB LT 31.1 0.18 D 36.9 0.32 E							
SB TH 30.2 0.72 C 22.5 0.75 C SB RT 0.0 0.00 A 0.0 0.00 A Overall 26.1 - C 20.3 - C 16: Kuikahi Dr & Kehalani Village Center Dr EB LT 8.8 0.09 A 9.3 0.12 A SB LT 31.1 0.18 D 36.9 0.32 E							
SB RT 0.0 0.00 A 0.0 0.00 A							
Overall 26.1 - C 20.3 - C							
16: Kulkahi Dr & Kehalani Village Center Dr EB LT 8.8 0.09 A 9.3 0.12 A SB LT 31.1 0.18 D 36.9 0.32 E			-			-	
SBLT 31.1 0.18 D 36.9 0.32 E							
I 125 I 0.19 I B I 13.8 I 0.25 I B							
Overall 2.2 3.3			0.19	В		0.25	В

^{*} Denotes overcapacity condition, $v/c \ge 1$.



4. BASE YEAR 2024 TRAFFIC CONDITIONS

4.1 Defacto Growth Rate

Projections for Base Year 2024 traffic were based upon existing traffic counts performed by ATA, the Maui Regional Travel Demand Model (MRTDM) growth for forecast years of 2024 and 2035, and nearby developments in the immediate vicinity of the Project. The resulting growth rate along study roadways was approximately 1.9 percent per year.

4.2 Traffic Forecasts for Known Developments

By Year 2024, the following developments shown in Figure 4.1 and Table 4.1 may be constructed. Appendix E shows the general trip distribution/assignment percentages associated with each development either based on existing traffic patterns or their respective Project TIAR's. The Kehalani Village Center and Maui Lani Village Center are currently constructed. The associated growth in occupancy for these two centers is described below.

- Wailuku Apartments Proposed 324 multi-family dwelling units upon 14.4 acres of
 undeveloped land bound by Kuikahi Drive to the north, the proposed Emmanuel Lutheran
 Pre-School to the south, Waiale Road to the east, and Honoapiilani Highway to the west.
 Vehicular access is anticipated to be provided by two new project accesses; one along
 Kuikahi Drive directly across the Kehalani Village Center driveway and one along Waiale
 Road.
- Emmanuel Lutheran Pre-School Proposed relocation of Emmanuel Lutheran Church Maui church and school facilities to a currently unoccupied lot bound by the proposed Wailuku Apartments to the north, proposed Waikapu Ventures Affordable Housing to the south, Waiale Road to the east, and Honoapiilani Highway to the west. At full build-out this development envisions a new preschool, K-8 school and buildings for church/office related functions, dependent on funding. In December 2018, State Land Use Commission (LUC) approved a 10-year time extension for developers with a condition to obtain funding and build a multi-purpose building for the preschool/church activities within six (6) years. This TIAR assumes the preschool, with its current 30-student enrollment, will be completed by Year 2024. All remaining components of the development are anticipated to occur beyond Year 2024.
- Waikapu Light Industrial Project Proposed 8.5-acre industrial development along Waiko Road. Forecast traffic growth generated by this development was obtained from the Project's TIAR dated April 2013 and was added to the roadway network.
- <u>Waiale Business Park</u> Formerly known as "Waiko Light Industrial Subdivision", this
 industrial park along Waiko Road will include approximately 102,414 SF of commercial
 space and 215,195 SF of light industrial uses. Forecast traffic growth was based on the
 latest land use breakdown and was added to the roadway network.
- Kehalani Village Center Infill development of the existing retail center in the Kehalani subdivision currently occupied by Longs Drugs, Foodland, Foodland Gas, American Savings Bank, Coffee Bean Tea & Leaf, McDonalds and Fabmac Homes. It is anticipated that the Kehalani Village Center will be expanded with infill commercial space and 56



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multi-family dwelling units. The forecast AM and PM peak hour trips for the remaining development were estimated based on current forecasts and were added to the roadway network.

- Maui Lani Village Center Expansion of the existing retail center in the Maui Lani subdivision currently occupied by Walgreen and a mix of various commercial, office, residential and warehouse uses. Based on the historic growth of this site, approximately 19,700 SF of commercial, 62,400 SF of office and 75,500 SF of warehouse space may be completed by year 2024. The forecast AM and PM peak hour trips were generated based on the cumulative ITE Trip generation and added to the roadway network.
- <u>Waiale Elua</u> Proposed 70-unit single-family residential subdivision and a neighborhood park, currently being constructed. It will be located adjacent to the Valley Isle Fellowship Church along Waiale Road. One access will be provided along Waiale Road. The forecast AM and PM peak hour trips were obtained from the Project's TIAR dated 2015 and was added to the roadway network.
- Kehalani Mauka Expansion of the existing residential subdivision located north of Kuikahi Drive, west of Honoapiilani Highway and east of Wailuku Heights. Kehalani Mauka is partially developed with residential homes and the Puu Kukui Elementary School. Based on the latest projections, approximately 304 single-family homes and 54 multi-family units may be completed by year 2024. The Kehalani Mauka Parkway Loop is also anticipated to be completed by year 2024.
- Waikapu Country Town This future development is currently going through the
 entitlement process to obtain permits for construction. For purposes of this TIAR, it is
 assumed that permit approval and infrastructure construction will be complete by Year
 2024 and the initial phase that includes 150 single-family residential units (identified in the
 project EIS) will be constructed and occupied.
- Ag Subdivision Lots Proposed five (5) Ag lots, adjacent and to the west of the Project site. Build-out and occupancy is unknown, but for purposes of this TIAR, was assumed to be occupied by Year 2024. Ohana units will be permitted and access to the site will occur temporarily by the existing dirt road easement just north of the Waiolani Subdivision. Permanent access will occur via the future Project South Access.
- <u>Waikapu Ventures Affordable Housing</u> Proposed residential subdivision with 68 single-family units and 12 multi-family units on land bound by Emmanuel Lutheran Pre-School to the north, Waiale Elua to the south, Waiale Road to the east, and Honoapiilani Highway to the west. The forecast AM and PM peak hour trips were obtained from the Project's TIAR dated 2018 and added to the roadway network.
- Heritage at Maui Lani Proposed residential subdivision with 25 single-family homes, currently being constructed on lands adjacent and to the north of Pomaikai Elementary School. Access will be provided along Kamehameha Avenue.

Maui Lani Parkways Phase 3 – Proposed additional 74 single-family units to the existing Maui Lani Parkways Phase 1 and 2 residential subdivision bound by Maui Lani Parkway to the south and The Dunes at Maui Lani Golf Course to the north.



Table 4.1: Total Trips Generated by Known Developments in Project Vicinity 1

Known			Α	M Peak Ho	our	Pi	M Peak Ho	ur
Development	Land Use	Units	Enter	Exit	Total	Enter	90 51 1 21 79 1 183 253 4 133 138 2 63 116 1 49 28 3 208 123 3 95 56 1 8 4 54 32 8	Total
Wailuku Apartments	Multi-Family Residential	324 MF units	36	103	139	90	51	141
Waikapu Light Industrial Project	Industrial Park	8.5 Acres	74	15	89	21	79	100
Waiale Business Park	Retail/Light Industrial	102,414 SF ret 215,195 SF ind	187	79	266	183	253	436
Kehalani Village Center ²	Commercial, Residential	100,000 SF 56 MF units	37	41	78	133	138	271
Maui Lani Village Center (formerly VMX) ³	Commercial, Office, Warehouse	157,500 SF	64	14	78	63	116	179
Waiale Elua	Single-Family Residential	70 SF units	15	44	59	49	28	77
Kehalani Mauka ⁴	Single-Family, Multi-Family Residential	304 SF units 54 MF units	72	223	295	208	123	331
Waikapu Country Town ⁵	Single-Family Residential	150 SF units	28	84	112	95	56	150
Ag Subdivision Lots	Single-Family Residential	10 SF units	3	9	12	8	4	12
Waikapu Ventures Affordable Housing	Single-Family, Multi-Family Residential	68 SF units 12 MF units	17	51	68	54	32	86
Heritage at Maui Lani	Single-Family	25 SF units	6	17	23	17	10	27
Emmanuel Lutheran Pre-School	Daycare	30 Students	15	14	29	12	14	26
Maui Lani Parkways Phase 3	Single-Family	74 SF units	14	43	57	48	28	76

Note

- Table 4.1 shows trips generated by known developments in the vicinity of the Project. Not all traffic generated by these
 developments travel through the study area of this TIAR, since some traffic will be routed to various roadways and
 intersections that were not included in this TIAR. See Appendix E for more detailed assessment of trip
 distribution/assignment patterns.
- Kehalani Village Center is already partially completed with Longs Drugs, Foodland, Foodland Gas and McDonalds.
 Trips shown accounts for the additional 100,000 SF of commercial space and multi-family low-rise units anticipated to
 be completed by Year 2024. ITE recommended 34% pass-by reduction applied to new retail.
- Maui Lani Village Center projections are based on historic growth rate. Majority of expansion attributed to lower trip generating office and warehouse land uses.
- Kehalani Mauka projections based on latest assumptions for growth.
- Initial residential phase as identified in the Waikapu Country Town Final EIS dated December 2016, assumed to be completed by Year 2024.

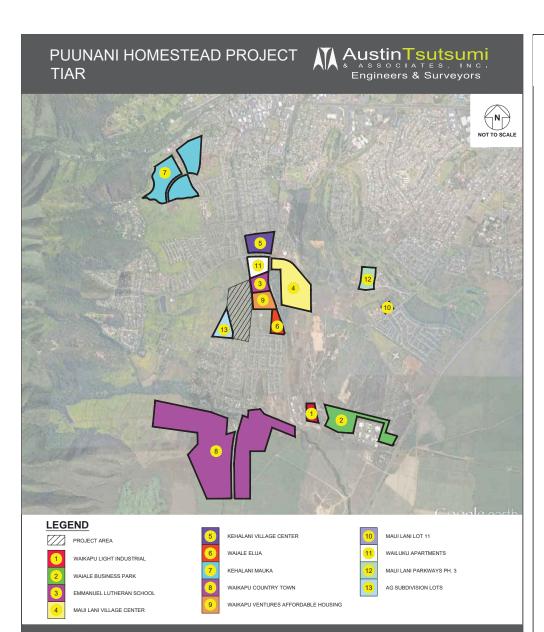


FIGURE 4.1

BACKGROUND DEVELOPMENTS IN PROJECT VICINITY

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4.3 Planned Roadway Projects

At the Maui Lani Parkway/Kamehameha Avenue intersection, a single-lane roundabout is planned to be constructed by the County and was included in this TIAR.

The Waiale Road Extension and Waiko Road Improvements are planned roadway improvements to be constructed in the future. However, since they are unlikely to be built by Year 2024 given their current status, these roadway improvements were not included in this TIAR.

Traffic along Waiale Road will continue to be congested during the AM peak hour of traffic from existing commuter and school traffic. As noted in the latest Statewide Transportation Improvement Program (STIP), the County is planning to install a signal or roundabout at the Waiale Road/Waiinu Road intersection which could help the flow of traffic through the corridor. However, since it's unknown when this improvement will be constructed, it was not included in this TIAR. At various stages of occupancy of the Wailuku Apartments project, the signal timing at the Waiale Road/Kuikahi Drive intersection will be optimized to accommodate traffic increases on the southern end. The County could also consider providing median refuge lanes at various intersections along Waiale Road to assist side street left-turners get onto Waiale Road.

4.4 Base Year 2024 Analysis

With additional traffic generated by nearby developments and defacto growth in the study area, delay and LOS of turning movements at various intersections throughout the network are anticipated to worsen from existing conditions.

At the Waiale Road/Kaohu Street intersection, the northbound left-turn/through movement and the southbound approach will operate at LOS F and overcapacity conditions. As previously discussed in Section 3.3, signal warrant was met at this intersection for Existing conditions, but due to right-of-way and alignment constraints, a signal may be difficult to implement.

The westbound shared left-turn/through approach at Waiale Road/Waiinu Road is anticipated to operate at LOS F and overcapacity conditions for both peak hours as in existing conditions. As previously stated, improvements to the Waiale Road/Waiinu Road intersections are planned to occur, but the traffic control type, widening and timeline of this improvement is unknown.

Signal warrants were met for existing conditions at the Waiale Road/Olomea Street intersection, however no improvements are planned for this intersection. As a result, the intersection will continue to operate with overcapacity conditions on the eastbound left-turn/through movement with Base Year conditions. As stated in Section 3.3, a median refuge lane may help reduce eastbound left-turn vehicle delays by allowing vehicles to turn onto Waiale Road with a two-stage approach; turning left into the refuge lane after finding gaps in southbound traffic, then merging into the Waiale Road through lane after finding gaps in northbound traffic.

At the Waiale Road/Kaupo Street intersection, the eastbound left-turn movement is anticipated to continue operating at LOS F and overcapacity conditions during the AM peak hour, and the PM peak hour will worsen from existing conditions to become overcapacity during the PM peak hour as well. A signal would not be warranted based on projected Base Year volumes.

With the roundabout installed at the Kamehameha Avenue/Maui Lani Parkway intersection, all movements are anticipated to operate at LOS D or higher for both peak hours.

At the Waiale Road/E Waiko Road intersection, the southbound shared left-turn/right-turn movement is anticipated to operate at LOS F during the AM peak hour. A signal is anticipated to be warranted with projected Base Year volumes. However, if the southbound Waiale Road approach is provided with separate left-turn and right-turn lanes, the four-hour warrant would fall short by 1 hour, making a signal not warranted.

At the Honoapiilani Highway/Kehalani Parkway intersection, the eastbound left-turn movement will operate at LOS E conditions during the AM peak hour. As noted in Section 3.3, heavy traffic during a short period of time is reflective of typical school traffic conditions, as these queuing conditions were observed to last about 30 minutes during the AM peak hour and primarily stem from traffic generated by the Puu Kukui Elementary School. There are currently no identified or planned roadway improvements likely to occur at this intersection.

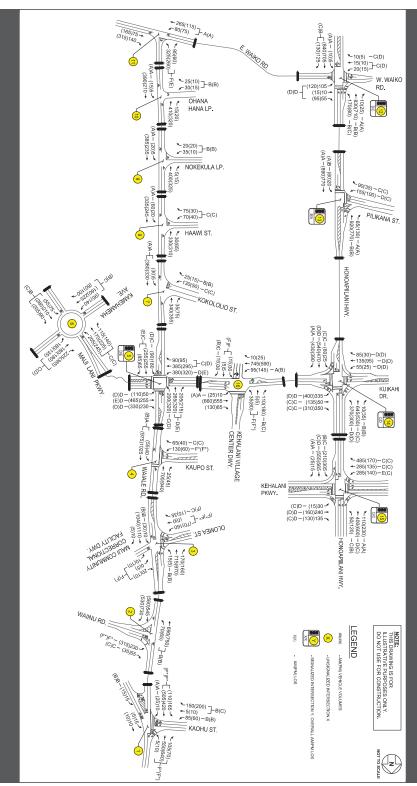
With build-out of the Wailuku Apartments project, the Kuikahi Drive/Kehalani Village Center Driveway intersection will add a fourth leg to service Wailuku Apartments. The minor street northbound and southbound shared left-turn/through movements are anticipated to operate at LOS F during both peak hours, with the shared southbound left/through movement operating with overcapacity conditions during the PM peak hour. A signal warrant was not met with the projected Base Year volumes.

Figure 4.2 illustrates the Base Year 2024 forecast traffic volumes and LOS for the study intersection movements. Table 4.2 summarizes the Base Year 2024 LOS at the study intersections compared to existing conditions. LOS worksheets are provided in Appendix C.

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FIGURE 4.2

BASE YEAR CONDITIONS



PUUNANI HOMESTEAD PROJECT TIAR

Table 4.2: Existing and Base Year 2024 Level of Service Summary

		E	Existing C	onditions	3			Base	Year 20	24 Condit	ions	
Intersection		AM			PM			AM			PM	
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Waiale Rd & Kaohu St/Oluloa												
NB LT/TH	54.8	0.97	F	49.9	0.95	E	123.0	1.22	F*	149.4	1.32	F*
NB RT	8.6	0.01	A	8.7	0.04	A	9.0	0.02	A	9.5	0.05	A
EB LT EB TH/RT	13.4 12.7	0.21 0.28	B B	12.6 13.9	0.15 0.37	B B	14.4 14.6	0.23 0.37	B B	13.7 17.3	0.17 0.51	B C
WB LT/TH/RT	12.7	0.20	В	12.6	0.07	В	14.1	0.12	В	14.4	0.10	В
SB LT/TH/RT	76.9	1.04	E+	84.2	1.06	E+	174.9	1.35	F*	235.4	1.49	E+
Overall	55.8	-	F	56.7	-	F	124.8	-	F	160.5	-	F
2: Waiale Rd & Waiinu Rd												
WB LT	563.7	2.02	F*	496.1	1.92	F*	1669.7	4.39	F*	2125.5	5.44	F*
WB RT	16.4	0.15	С	13.7	0.08	В	20.1	0.20	С	17.0	0.11	С
SB LT	11.8	0.12	В	10.2	0.09	В	13.6	0.15	В	11.9	0.12	В
Overall	54.9	-	-	67.7	-	-	166.4	-	-	297.5	-	-
3: Waiale Rd & Olomea St/Waim NB T	9.3	0.01	A	10.1	0.04	В	10.1	0.02	В	11.8	0.06	В
EB LT/TH	9.3 887.0	2.66	F*	330.3	1 29	F*	2518.0	6.00	F*	1358.5	2.98	F*
EB RT	13.6	0.08	В	15.3	0.04	C	16.6	0.00	C	588.5	1.54	F
WB LT/TH/RT	38.6	0.20	E	42.6	0.15	Ē	101.7	0.49	F	266.0	0.80	F
SB LT	10.3	0.02	В	9.6	0.01	Ā	11.5	0.03	В.	10.9	0.01	В.
Overall	77.6	-	-	13.8	-	-	180.4	-	-	40.1	-	-
4: Waiale Rd & Kaupo St												
NB LT	8.8	0.04	Α	9.6	0.07	Α	9.6	0.05	A	11.2	0.09	В
EB LT	205.9	1.16	F*	72.7	0.44	F	805.5	2.44	F*	654.2	1.86	F*
EB RT	13.1	0.13	В	15.0	0.10	С	16.1	0.18	С	20.9	0.16	С
Overall 5: Waiale Rd & Kuikahi Dr/Maui	16.2	-	-	2.4	-	-	53.5	-	-	19.2	-	-
NB LT	19.1	0.44	В	23.4	0.16	С	30.5	0.71	С	46.3	0.55	D
NB TH/RT	24.1	0.55	Č	30.5	0.70	c	34.0	0.61	c	58.7	0.81	Ē
EBLT	17.0	0.70	В	16.7	0.66	В	43.2	0.92	D	67.6	0.93	Ē
EB TH/RT	18.0	0.57	В	16.8	0.46	В	33.4	0.75	c	36.7	0.58	D
WB LT	21.5	0.11	С	17.7	0.15	В	37.1	0.22	D	35.5	0.33	D
WB TH	28.3	0.70	C	27.4	0.80	С	54.7	0.85	D	68.3	0.92	E
WB RT	23.1	0.11	С	19.9	0.15	В	39.4	0.10	D	43.5	0.36	D
SB LT	17.9	0.43	В	21.0	0.64	С	25.1	0.54	С	53.5	0.89	D
SB TH/RT	27.7	0.79	С	24.8	0.73	С	43.1	0.89	D	58.5	0.92	E
Overall	21.5	-	С	22.3	-	С	38.6	-	D	55.4	-	Е
6: Kamehameha Ave & Maui La NB LT	18.8	0.38	С	17.8	0.28	С	ı	1 1		ı	1 - 1	
NB TH/RT	47.5	0.86	E	27.4	0.26	D	-	-	-	-	-	-
NB LT/TH/RT	47.5	0.00	-	21.4	0.04		19.3	0.70	c	12.9	0.50	В
EB LT/TH/RT	58.4	0.92	F	118.7	1.19	F*	15.3	0.65	c	18.6	0.75	c
WB LT/TH/RT	48.3	0.85	Ė	108.4	1.18	F*	14.6	0.58	В	21.8	0.76	Č
SB LT	23.2	0.53	c	19.3	0.41	c	-	-	-	-	-	-
SB TH/RT	58.1	0.92	F	109.5	1.19	F*	-	-	-	-	-	-
SB LT/TH/RT		-	-	-	-	-	20.5	0.76	С	32.3	0.89	D
Overall	47.2	-	E	90.1	-	F	17.7	-	С	22.9	-	С
7: Waiale Rd & Kokololio St			i .								1	
NB LT	7.7	0.00	A	7.9	0.03	A	8.1	0.01	A	8.4	0.03	A
EB LT FB RT	13.9	0.26	В	12.8	0.10	В	20.4	0.38	С	19.4	0.18	С
Overall Coverall	9.4	0.03	A	9.7	0.02	A	10.7 3.4	0.04	В	10.9	0.03	В
8: Waiale Rd & Haawi St	U.T			1.0			0.4			1.0		
NB LT	7.7	0.01	Α	7.8	0.05	Α	8.1	0.02	Α	8.3	0.06	Α
EB LT/RT	11.5	0.22	В	11.7	0.12	В	15.2	0.31	C	16.3	0.19	c
Overall	3.5	-	-	2.6	-	-	3.1	-	-	2.0	-	-
9: Waiale Rd & Nokekula Lp												
NB LT	7.8	0.00	Α	7.7	0.01	Α	8.2	0.01	Α	8.1	0.02	Α
EB LT/RT	11.1	0.08	В	10.3	0.04	В	14.0	0.13	В	12.6	0.07	В
Overall	1.3	-	-	1.0	-	-	1.2	-	-	0.7	-	-
10: Waiale Rd & Ohana Hana Lo	7.8	0.00	Α	7.6	0.01	Α	8.3	0.01	Α	8.1	0.01	А
ND LT			B	10.2	0.01	B	12.4	0.01	B	12.2	0.01	B
NB LT	10 E					D	12.4	0.11	D	12.2	0.00	ь
EB LT/RT	10.6	0.08					1.0			0.6		
EB LT/RT Overall	10.6	0.08	-	0.7	-	-	1.0	-	-	0.6	-	-
EB LT/RT	1.3	0.08	-	0.7	0.04			0.07	- A		0.08	- A
EB LT/RT Overall 11: E Waiko Rd & Waiale Rd		-			0.04 0.30	A B	7.9 62.3			8.7 38.4	0.08 0.80	

^{*} Denotes overcapacity condition, v/c ≥ 1.

Table 4.2: Existing and Base Year 2024 Level of Service Summary

		E	xisting C	ondition	s			Base	Year 20	24 Condit	tions	
Intersection		AM		1	PM			AM			PM	
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LO
Honoapiilani Hwy & W Wail								1 1			1 1	
NB LT	7.0	0.01	A	5.4	0.02	A	9.1	0.02	A	8.7	0.03	Α
NB TH/RT	12.1 22.9	0.70 0.12	B C	11.5 26.3	0.74	B C	16.5 31.7	0.81 0.13	B C	25.2 35.6	0.90	Г
EB LT/TH EB RT	22.9	0.12	C	25.9	0.08	C	31.7	0.13	C	35.6	0.09	
WB LT/TH/RT	24.7	0.01	c	28.6	0.49	C	35.5	0.60	D	43.1	0.00	
SBLT	7.7	0.44	A	7.7	0.49	A	14.6	0.55	B	20.8	0.72	
SB TH	8.3	0.60	A	6.7	0.16	A	11.4	0.55	В	11.1	0.41	E
SB RT	4.6	0.00	A	4.3	0.47	A	4.8	0.73	A	5.8	0.02	Ä
Overall	11.3	0.00	В	11.0	0.01	В	15.9	0.01	В	21.8	0.02	
Honoapiilani Hwy & Pilikan				11.0			10.0			21.0		
NB LT	8.2	0.06	Α	7.2	0.15	Α	11.6	0.09	В	9.2	0.19	A
NB TH	5.7	0.57	Â	6.0	0.66	Ä	5.4	0.62	A	6.5	0.75	,
EB LT	22.4	0.63	c	18.6	0.44	В	35.2	0.77	D	25.9	0.53	(
EB RT	18.3	0.06	В	16.4	0.00	В	27.0	0.04	Č	22.4	0.02	ò
SB TH	11.6	0.79	В	11.5	0.75	В	12.9	0.86	В	12.2	0.82	E
SB RT	6.2	0.05	Α	7.2	0.11	Α	5.2	0.06	Α	6.3	0.11	-
Overall	10.2	-	В	9.1	-	Α	11.6	-	В	9.9	-	- 1
Honoapiilani Highway & Ku	ikahi Driv	e										
NB LT	18.9	0.06	В	17.4	0.14	В	22.3	0.11	С	22.5	0.21	(
NB TH	29.2	0.75	С	28.9	0.77	С	35.3	0.81	D	40.7	0.85	
NB RT	0.0	0.00	Α	0.0	0.00	Α	0.0	0.00	Α	0.0	0.00	- /
EB LT	28.2	0.13	С	30.9	0.06	С	38.5	0.20	D	46.6	0.12	
EB TH	32.3	0.43	С	33.4	0.30	С	45.4	0.71	D	52.0	0.58	[
EB RT	29.0	0.04	С	29.1	0.01	С	38.5	0.05	D	44.5	0.01	
WB LT	23.4	0.62	С	24.7	0.62	С	41.4	0.81	D	43.9	0.82	
WB TH	22.4	0.08	С	22.6	0.19	С	29.1	0.12	С	31.4	0.27	(
WB RT	15.3	0.13	В	15.9	0.11	В	20.0	0.31	С	21.0	0.19	(
SB LT	17.4	0.70	В	17.8	0.65	В	39.6	0.91	D	41.1	0.91	
SB TH	20.5	0.66	С	21.2	0.61	С	26.5	0.79	С	26.6	0.67	(
SB RT	11.6	0.01	В	13.9	0.02	В	11.8	0.01	В	15.5	0.02	E
Overall	23.2	-	С	23.7	-	С	33.5	-	С	36.2	-	[
Honoapiilani Hwy & Kehala												
NB LT	17.7	0.63	В	14.2	0.43	В	34.9	0.87	С	18.7	0.69	E
NB TH	25.6	0.76	C	18.8	0.64	В	41.6	0.86	D	23.2	0.73	(
NB RT	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	- /
EB LT	31.8	0.82	С	20.4	0.36	С	60.7	0.96	E	26.9	0.52	(
EB TH	21.0	0.43	С	21.6	0.18	С	26.9	0.47	С	28.4	0.36	(
EB RT	19.3	0.20	В	21.0	0.08	С	24.8	0.28	С	26.6	0.10	(
WBLT	25.5	0.10	С	23.6	0.04	С	35.9	0.11	D	30.6	0.06	(
WB TH	32.1	0.76	С	26.3	0.38	С	53.8	0.86	D	36.1	0.69	[
WB RT	27.3	0.07	C	24.6	0.04	C B	38.2	0.07	D C	32.0	0.07	(E
SB LT	20.3	0.15		13.2	0.19		29.0	0.27		15.8	0.38	
SB TH SB RT	30.2 0.0	0.72	C A	22.5 0.0	0.75	C A	50.1 0.0	0.86	D A	31.7 0.0	0.86	(
Overall	26.1	0.00	C	20.3	0.00	C	43.3	0.00	D D	26.7	0.00	
Kuikahi Dr & Kehalani Villa		- Dr	U	20.3		U	43.3	-	U	20.7	-	
NB LT/TH	de Celitei		-	Ι.	1 - 1		203.4	0.79	F	358.8	0.87	
NB RT	1 .		-	1 .	1 1		15.5	0.79	C	13.0	0.04	Ė
EB LT	8.8	0.09	Ā	9.3	0.12	Ā	9.4	0.09	A	10.8	0.04	F
WBLT	0.0	0.09	^	9.3	0.12	^	9.4	0.11	A	9.0	0.20	7
SBLT	31.1	0.18	D	36.9	0.32	Ē	9.0	0.01	^	9.0	0.03	,
SB LT/TH	31.1	0.10		30.9	0.32	_	147.0	0.70	F	578.0	1.85	F
SB RT	12.5	0.19	В	13.8	0.25	В	147.0	0.70	В	20.5	0.46	
										20.0		

^{*} Denotes overcapacity condition, v/c ≥ 1.



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FUTURE YEAR 2024 TRAFFIC CONDITIONS

The Future Year 2024 scenario represents the traffic conditions within the Project study area with the full build-out of the Project.

5.1 Background

The Project proposes to develop 137 turn-key homes and 24 vacant residential lots, for a total of 161 single-family dwelling units. Accessory dwelling units or ohana units will not be permitted. Access to the site will occur via two (2) new driveways off of Honoapiilani Highway. The southern access will provide primary access with permitted left-turns along the eastbound and northbound approaches. The northern access will provide secondary access limited to right-in, right-out (RIRO) access only.

5.1.1 Trip Generation

The Institute of Transportation Engineers (ITE) publishes a book based on empirical data compiled from a body of more than 4,250 trip generation studies submitted by public agencies, developers, consulting firms, and associations. This publication, titled Trip Generation Manual, 10th Edition, provides trip rates and/or formulae based on graphs that correlate vehicular trips with independent variables. The independent variable can range from Dwelling Units (DU) for singlefamily attached homes to Gross Floor Area (GFA) for commercial and office development. See Tables 5.1 and 5.2 for Trip Generation formulae and projections for the Project.

Table 5.1: Project Trip Generation Rates

	Independent	AM Pea	ık Hour	PM Peak Hour		
Land Use Type	Variable	Rate	% Enter	Rate	% Enter	
Single Family Detached Housing (ITE 210)	Dwelling Units (DU)	[a]	25%	[b]	63%	

 $\overline{[a]} T = 0.71 * (X) + 4.8$

[b] T = EXP(0.96 * Ln(X) + 0.2)

Table 5.2: New Project-Generated Trips

Land Use	Quantity	Al	M Peak Ho	ur	Р	M Peak H	our
Туре	Quantity	Enter	Exit	Total	Enter	Exit	Total
Single Family Detached Housing (ITE 210)	161 DU	30	89	119	101	60	161

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5.1.2 Trip Distribution

At the two (2) Project intersections, trips were distributed based on percentages derived from existing turning movement volumes entering/exiting the mauka subdivisions at the Honoapiilani Highway intersections with Pilikana Street and W. Waiko Road. Since these mauka developments are currently occupied and in close proximity to the Project, trips will likely be distributed similar to trip patterns from these two developments.

Beyond the Project intersections, trips were assigned based upon existing travel patterns in the remaining study area. A portion of trips were distributed to the nearby Puu Kukui Elementary School, lao Middle School based on student enrollment and population information. Turning movements were based on anticipated destinations either to commercial/business areas or back home to primary residence. The traffic generated by the Project was added to the forecast Base Year 2024 traffic volumes within the vicinity of the Project to constitute the traffic volumes for the Future Year 2024 traffic conditions. Figure 5.1 illustrates the Project-generated trip volumes.

5.2 Future Year 2024 Analysis

Upon completion of the Project, all study intersections are forecast to operate with LOS similar to Base Year 2024 conditions.

At the Waiale Road/Kaohu Street intersection, the northbound shared left-turn/through movement and the southbound approach will continue to operate at LOS F and overcapacity conditions for both peak hours, as in Base Year conditions.

At the intersections of Waiale Road/Waiinu Road and Waiale Road/Olomea Street, turning movements from the minor streets will continue to operate at LOS F and overcapacity conditions as in Base Year. As previously stated, improvements to the Waiale Road/Waiinu Road intersection are anticipated, but the exact nature and timeline are not yet known. Also, a signal warrant is met with existing conditions; however there are no planned improvements at the Waiale Road/Olomea Street intersection. As stated in Section 3.3, a median refuge lane may help reduce eastbound left-turn vehicle delays by allowing vehicles to turn onto Waiale Road with a two-stage approach; turning left into the refuge lane after finding gaps in southbound traffic, then merging into the Waiale Road through lane after finding gaps in northbound traffic. Synchro analysis suggests that median refuge lanes at this intersection will improve the LOS for the westbound approach from LOS F(F) to LOS D(D) during the AM(PM) peak hours. The eastbound approach will continue to operate at LOS F for both peak hours, though it will operate under capacity compared to overcapacity conditions during both peak hours.

At the Wajale/Kaupo Street intersection, the eastbound left turn movement will continue to operate at LOS F and overcapacity conditions as in Base Year conditions. A signal will not be warranted with projected Future Year volumes. Synchro analysis suggests that with the addition of a median refuge lane for the westbound left-turn movement, the movement will continue to operate at LOS F, though it will operate under capacity compared to overcapacity conditions during both AM and PM peak hours in Year 2024.

At the Waiale Road/Kuikahi Drive/Maui Lani Parkway intersection, increases of a few seconds to several movements is anticipated to result in LOS E conditions on the westbound through movement during the AM peak hour, and LOS E conditions on the northbound through/right-turn, eastbound left-turn, westbound through, southbound left-turn and southbound through/right-turn

movements. PM peak hour. All other movements are anticipated to operate similarly to Base Year conditions. Overall, the intersection will operate at LOS D(E).

The southbound approach at the Waiko Road/Waiale Road intersection will continue to operate at LOS F(E) during the AM and PM peak hours, respectively. The Project is not anticipated to add any trips to the critical southbound approach. As stated in Section 4.4, a signal is anticipated to be warranted with projected Base Year volumes. However, if the southbound Waiale Road approach is provided with separate left-turn and right-turn lanes, the four-hour warrant would fall short by 1 hour, making a signal not warranted.

At Honoapiilani Highway/Kehalani Parkway intersection, all movements are anticipated to operate similarly to Base Year conditions, with the eastbound left-turn movement operating at LOS E. The westbound through movement is also anticipated to experience an increase of 3 seconds from Base Year conditions and will operate at LOS E during the AM peak hour.

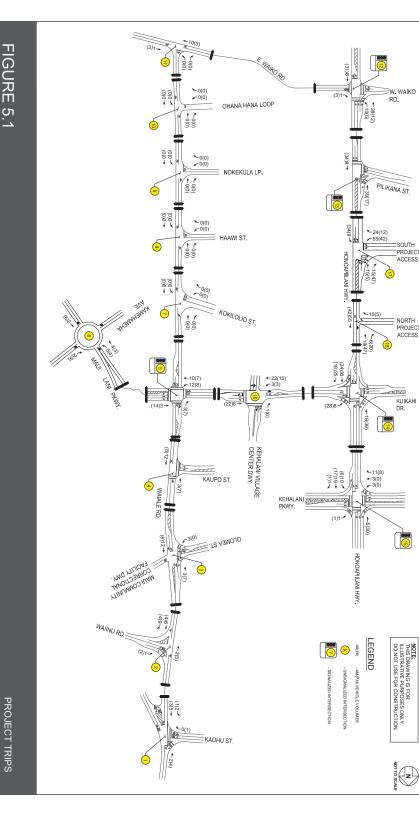
The Kuikahi Drive/Kehalani Village Center Driveway intersection will continue to operate at LOS F for the minor street northbound and southbound shared left-turn/through movements during both peak hours, with the shared southbound left/through movement operating with overcapacity conditions during the PM peak hour. A signal warrant was not met with the projected Future Year

The new RIRO North Project Access approach is anticipated to operate acceptably at LOS C(C) conditions during the AM and PM peak hours, respectively.

All movements at the new South Project Access are anticipated to operate acceptably at LOS D or better for both peak hours, with the exception of the eastbound left-turn movement, which will operate at LOS E during the AM peak hour. However, all movements will operate adequately below capacity. Based on the MUTCD's Eight-Hour Vehicle Volume Signal Warrant 1 and Four-Hour Vehicle Volume Signal Warrant 2, a signal is not warranted from forecast Future Year volumes. Project generated vehicles exiting the site, which is the critical criteria to warrant a signal, is not high enough to meet any of the minimum warrant thresholds. In lieu of a signal, a median refuge lane may help reduce eastbound left-turn vehicle delays by allowing vehicles to turn onto Honoapiilani Highway with a two-stage approach; turning left into the refuge lane after finding gaps in southbound traffic, then merging into the Honoapiilani Highway through lane after finding gaps in northbound traffic. A crosswalk is not proposed at either the North Project Access or South Project Access, so pedestrian and bike connectively will be maintained along the shoulder of Honoapiilani Highway and any highway crossings will be permitted at the existing traffic signals at the Pilikana Street and Kuikahi Drive intersections.

Figure 5.2 illustrates the Future Year 2024 forecast traffic volumes and LOS for the study intersection movements. Table 5.3 summarizes the Future Year 2024 LOS at the study intersections compared to Base Year 2024 conditions. LOS worksheets are provided in Appendix

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PROJECT TRIPS

FIGURE 5 is

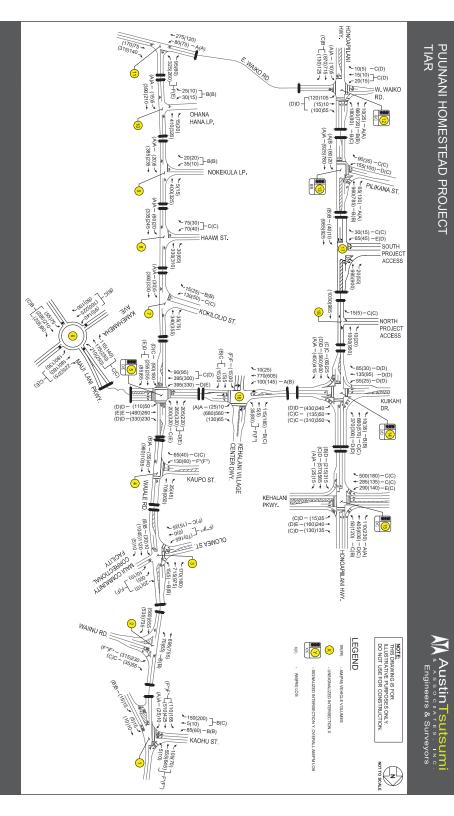


Table 5.3: Base Year 2024 and Future Year 2024 Conditions Level of Service Summary

Intersection		Base	Year 20	24 Condi	tions			Futur	e Year 2	024 Cond	itions	
intersection		AM			PM			AM			PM	
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Waiale Rd & Kaohu St/Oluloa					1 1			1 1			1 1	
NB LT/TH	123.0	1.22	F*	149.4	1.32	F*	126.8	1.24	F*	153.4	1.34	F*
NB RT	9.0	0.02	A	9.5	0.05	A	9.0	0.02	A	9.5	0.05	A
EB LT EB TH/RT	14.4 14.6	0.23 0.37	B B	13.7 17.3	0.17 0.51	B C	14.4 14.6	0.23	B B	13.7 17.4	0.17 0.51	B C
WB LT/TH/RT	14.1	0.12	В	14.4	0.10	В	14.0	0.37	В	14.5	0.10	В
SB LT/TH/RT	174.9	1.35	F*	235.4	1.49	F*	179.1	1.35	F*	240.1	1.52	F*
Overall	124.8	1.00	F	160.5	1.43	F	128.2	1.00	F	164.3	1.02	F
2: Waiale Rd & Waiinu Rd						-						
WB LT	1669.7	4.39	F*	2125.5	5.44	F*	1745.8	4.55	F*	2166.8	5.52	F*
WB RT	20.1	0.20	С	17.0	0.11	С	20.5	0.21	С	17.0	0.11	С
SB LT	13.6	0.15	В	11.9	0.12	В	13.8	0.16	В	12.0	0.12	В
Overall	166.4	-	-	297.5	-	-	172.5	-	-	301.9	-	-
3: Waiale Rd & Olomea St/Waim												
NB LT	10.1	0.02	В	11.8	0.06	В	10.1	0.02	В	11.8	0.06	B
EB LT/TH FB RT	2518.0	6.00 0.11	F* C	1358.5 588.5	2.98 1.54	F*	2709.8	6.41 0.11	F* C	1466.3 660.2	3.17	F*
EB RT WB LT/TH/RT	16.6 101.7	0.11	C F	588.5 266.0	0.80	F	16.6 101.7	0.11	C F	660.2 279.3	1.67 0.82	F
SB LT	101.7	0.49	В	10.9	0.80	B	101.7	0.49	B	11.0	0.82	В
Overall	180.4	0.03	-	40.1	0.01	-	198.7	0.03	-	43.4	0.01	
4: Waiale Rd & Kaupo St	100.1			-10.1			100.7					
NB LT	9.6	0.05	Α	11.2	0.09	В	9.6	0.05	Α	11.3	0.10	В
EB LT	805.5	2.44	F*	654.2	1.86	F*	848.5	2.52	F*	683.6	1.92	F*
EB RT	16.1	0.18	С	20.9	0.16	С	16.2	0.18	С	21.2	0.16	С
Overall	53.5	-	-	19.2	-	-	55.9	-	-	19.9	-	-
5: Waiale Rd & Kuikahi Dr/Maui												
NB LT	30.5	0.71	С	46.3	0.55	D	32.9	0.73	С	51.3	0.59	D
NB TH/RT	34.0	0.61	С	58.7	0.81	E	35.7	0.61	D	65.6	0.81	E
EB LT	43.2	0.92	D	67.6	0.93	E	49.1	0.94	D	78.9	0.94	E
EB TH/RT	33.4	0.75	С	36.7	0.58	D	34.4	0.75	С	38.5	0.57	D
WB LT WB TH	37.1 54.7	0.22 0.85	D D	35.5 68.3	0.33 0.92	D E	38.6 59.3	0.22 0.87	D E	38.4 79.3	0.32 0.94	D E
WB RT	39.4	0.65	D	43.5	0.92	D	41.1	0.87	D	47.4	0.94	D
SBLT	25.1	0.10	C	53.5	0.89	D	26.5	0.10	C	61.8	0.91	E
SB TH/RT	43.1	0.89	D	58.5	0.92	E	46.2	0.89	D	67.1	0.93	Ē
Overall	38.6	-	D	55.4	-	E	41.6	-	D	63.0	-	E
6: Kamehameha Ave & Maui Lar	ni Pkwy									•——		
NB LT/TH/RT	19.3	0.70	С	12.9	0.50	В	19.9	0.71	С	13.2	0.51	В
EB LT/TH/RT	15.3	0.65	С	18.6	0.75	С	15.8	0.66	С	19.3	0.76	С
WB LT/TH/RT	14.6	0.58	В	21.8	0.76	С	14.8	0.58	В	22.7	0.77	С
SB LT/TH/RT	20.5	0.76	С	32.3	0.89	D	20.5	0.76	С	35.1	0.91	E
Overall	17.7	-	С	22.9	-	С	18.0	-	С	24.3	-	С
7: Waiale Rd & Kokololio St NB LT		0.01		8.4	1 000 1		0.4	0.01		1 04	0.03	
EB LT	8.1 20.4	0.01	A C	8.4 19.4	0.03 0.18	A C	8.1 20.4	0.01	A C	8.4 19.4	0.03	A C
EB RT	10.7	0.38	В	19.4	0.18	В	10.7	0.38	В	19.4	0.18	В
Overall	3.4	-	-	1.5	0.00	-	3.4		-	1.5	- 0.00	-
8: Waiale Rd & Haawi St												
NB LT	8.1	0.02	Α	8.3	0.06	Α	8.1	0.02	Α	8.3	0.06	Α
EB LT/RT	15.2	0.31	С	16.3	0.19	С	15.2	0.31	С	16.3	0.19	С
Overall	3.1	-	-	2.0	-	-	3.1	-	-	2.0	-	-
9: Waiale Rd & Nokekula Lp												
NB LT	8.2	0.01	A	8.1	0.02	A	8.2	0.01	A	8.1	0.02	A
EB LT/RT	14.0	0.13	В	12.6	0.07	В	14.0	0.13	В	12.6	0.07	В
Overall	1.2	-		0.7	-	-	1.2	-	-	0.7	-	-
10: Waiale Rd & Ohana Hana Lo		1 004		I 04	1 004 1			1 004 1		1 04	1 004 1	
NB LT	8.3	0.01	A B	8.1 12.2	0.01 0.05	A B	8.3 12.4	0.01 0.11	A B	8.1 12.2	0.01 0.05	A B
CD LT/DT	10.4					D		U. I I	D	12.2	U.U0	D
EB LT/RT Overall	12.4	0.11	В		0.00		1.0			0.6		
Overall	12.4	0.11	-	0.6	-	-	1.0	-	-	0.6	-	-
		0.11	- A		0.08	- A	1.0 7.9	0.07	- A	0.6	0.08	- A
Overall 11: E Waiko Rd & Waiale Rd	1.0	-	-	0.6	-	A E		0.07 0.98	A F		0.08 0.81	A E

^{*} Denotes overcapacity condition, v/c ≥ 1.

Table 5.2: Base Year 2024 and Future Year 2024 Conditions Level of Service Summary

Base Year 2024 Conditions												
Intersection		AM			PM			AM			PM	
		v/c Ratio	LOS		v/c Ratio	LOS		v/c Ratio	LOS		v/c Ratio	LOS
			1 .					1 1			1 1	
												A
												D
												D
												D
	14.6	0.55	В	20.8	0.41	С	15.6	0.59	В	23.6	0.46	С
												В
		0.01			0.02			0.01			0.02	A
		-	В	21.8	-	C	16.5	-	В	24.0	-	С
		0.00	l B	0.2	0.10	Δ.	12.8	0.00	В	0.4	l n 10 l	Α
												A
												C
												č
SB TH	12.9		В	12.2	0.82	В			В	12.3	0.82	В
		0.06			0.11						0.11	Α
		-	В	9.9	-	Α	12.4	-	В	10.1	-	В
			1 0	00.5	1 004		04.0	1 044 1		1 00 0	1 000 1	
												C D
												A
												Ď
												D
EB RT	38.5	0.05	D	44.5	0.01	D	39.8	0.04	D	46.5	0.01	D
	41.4	0.81		43.9	0.82	D	47.4	0.85		54.5	0.90	D
WB TH	29.1	0.12	С	31.4	0.27	С	30.5	0.12	С	32.7	0.27	С
WB RT	20.0	0.31	С	21.0	0.19	С	21.5	0.34	С	21.9	0.19	С
SB LT	39.6	0.91	D	41.1	0.91	D	43.9	0.93	D	46.1	0.92	D
SB TH SB RT	26.5	0.79	C B	26.6	0.67	С	26.2	0.79	С	28.1	0.70	C B
Overall	11.8 33.5	0.01	C	15.5 36.2	0.02	B D	11.5 35.2	0.01	B D	15.5 39.9	0.03	D
15: Honoapiilani Hwy & Kehalar		_		30.2			35.2			33.3	_	
NB LT	34.9	0.87	С	18.7	0.69	В	39.7	0.90	D	19.8	0.74	В
NB TH	41.6	0.86	D	23.2	0.73	С	44.8	0.88	D	23.5	0.73	С
NB RT	0.0	0.00	Α	0.0	0.00	Α	0.0	0.00	Α	0.0	0.00	Α
EB LT	60.7	0.96	E	26.9	0.52	С	64.0	0.97	E	27.9	0.53	С
EB TH	26.9	0.47	С	28.4	0.36	С	27.5	0.46	С	29.4	0.37	С
EB RT	24.8	0.28	С	26.6	0.10	С	25.6	0.29	С	27.6	0.11	С
WB LT WB TH	35.9 53.8	0.11 0.86	D D	30.6 36.1	0.06	C D	36.8 56.3	0.13 0.87	D E	31.7 37.4	0.06	C D
WB RT	38.2	0.00	D	32.0	0.09	C	39.3	0.07	D	33.1	0.09	C
SBLT	29.0	0.07	c	15.8	0.38	В	30.2	0.29	C	16.0	0.38	В
SB TH	50.1	0.86	D	31.7	0.86	c	53.5	0.88	D	34.3	0.88	c
SB RT	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A
Overall	43.3	-	D	26.7	-	С	46.0	-	D	28.0	-	С
16: Kuikahi Dr & Kehalani Villaç												
NB LT/TH	203.4	0.79	F	358.8	0.87	F	247.2	0.89	F	407.5	0.95	F
NB RT EB LT	15.5	0.09	С	13.0	0.04	В	15.9	0.09	C	13.2	0.04	В
WBLT	9.4 9.5	0.11	A A	10.8 9.0	0.20	B A	9.5 9.6	0.12 0.01	A	11.0 9.1	0.21	B A
SB LT/TH	9.5 147.0	0.01	F	9.0 578.0	1.85	F*	9.6 171.4	0.01	F	9.1 659.8	2.01	F*
SB RT	14.5	0.70	В	20.5	0.46	c	14.7	0.75	В	21.7	0.49	Ċ
Overall	9.5	-	-	33.1	-	-	10.8	-	-	36.7	-	
17: Honoapiilani Highway/Hono	apiilani H	wy & Sout	th Project	Access								
NB LT	-	-	-	-	-	-	10.8	0.02	В	10.7	0.07	В
EB LT	-	-	-	-	-	-	38.5	0.40	E	34.8	0.29	D
EB RT	-	-	-	-	-	-	20.5	0.12	С	17.5	0.05	С
Overall		- Nort	- Project	Α00000	-	-	1.6	-	-	1.1	-	
							1					
18: Honoapiilani Highway/Hono WB LT/TH/RT		-	-	-	-	-	19.6	0.06	С	18.0	0.02	С



6. CONCLUSIONS

The Project proposes to develop 137 turn-key homes and 24 vacant residential lots, for a total of 161 single-family dwelling units for DHHL beneficiaries. Accessory dwelling units or ohana units will not be permitted. Access to the site will occur via two (2) new driveways off of Honoapiilani Highway. The southern access will provide primary access with permitted left-turns along the eastbound and northbound approaches. The northern access will provide secondary access limited to right-in, right-out (RIRO) access only.

Representatives from ATA and the Puunani Homestead development team met with the State of Hawaii Department of Transportation (HDOT) on October 23, 2019 and the County of Maui Department of Public Works (DPW) on December 12, 2019 to provide an overview of the Project. Project land use, conclusions and recommendations presented in this TIAR is consistent with what was presented at both meetings with HDOT and DPW.

6.1 Existing Conditions

During the AM peak hour, between 7:30-7:50AM, northbound traffic congestion is observe to occur from the Waiale Road/Kaohu Street/Oluloa Drive intersection and can spill back beyond the Waiale Road/Kuikahi Drive intersection. During the PM peak hour, the southbound approach also operates at LOS F and overcapacity conditions and the northbound left-turn/through movement operates at LOS E during the PM peak hour. As a result, many side street movements and approaches that intersect Waiale Road between Kaohu Street and Kaupo Street, experience lengthy delays and some over-capacity conditions during both peak hours of traffic. Based on existing volumes, a signal is warranted at the Waiale Road/Colomea intersection and the Waiale Road/Kaohu Street intersection, though the Waiale Road/Kaohu Street intersection has existing geometric constraints that may make installation of a signal difficult.

At the Kamehameha Avenue/Maui Lani Parkway four-way stop controlled intersection, various movements operate at LOS F conditions during the peak hours. Queues were inconsistent and varied in length throughout the peak hours, with a short period of extensive southbound queuing during the AM peak hour and periodic eastbound queuing during the AM and PM peak hours of traffic.

The Honoapiilani Highway/Kehalani Parkway intersection provides access to the Puu Kukui Elementary School. As a result, the eastbound left-turn movement queues beyond the existing left-turn storage lane and some vehicles may require two cycle lengths to clear the intersection during the AM peak hour. Heavy traffic during a short period of time is reflective of typical school traffic conditions, as these queuing conditions were observed to last about 30 minutes during the AM peak hour, generally between 7:15-7:45 AM.

Northbound traffic queues along Honoapiilani Highway were observed to primarily stem from Wailuku Elementary School. At Aupuni Street, northbound traffic queued back to Kehalani Parkway for about 5-10 minutes during the AM peak hour due to a police officer directing traffic at Aupuni Street to service Wailuku Elementary School traffic in the morning. The police officer is observed to stop mainline northbound and southbound traffic for as much as 30-40 seconds at a time, creating lengthy mainline queues. This impacted the vehicular progression through the Honoapiilani Highway/Kehalani Parkway intersection.

^{*} Denotes overcapacity condition, v/c ≥ 1.



6.2 Base Year 2024 Conditions

Various nearby developments are anticipated to be completed by Year 2024 and were included as part of this study. These developments are discussed in greater detail in Section 4.2

The Waiale Road Extension, Waiko Road Improvements are planned roadway improvements to be constructed in the future. However, since they are unlikely to be built by Year 2024 given their current status, these roadway improvements were not included in this TIAR.

A traffic signal or roundabout is also planned at the Waiale Road/Waiinu Road intersection. However, since it is unknown if this improvement will be constructed by Year 2024, it was not included in this TIAR.

At the Maui Lani Parkway/Kamehameha Avenue intersection, a single-lane roundabout is planned to be constructed and was included in this TIAR. The roundabout is anticipated to improve conditions and all movements are anticipated to operate at LOS D or higher for both peak hours.

A signal warrant was met with existing volumes at the Waiale Road/Kaohu Street intersection, though a signal may be difficult to implement due to right-of-way and alignment constraints. There are currently no planned improvements at this intersection, and it will operate with LOS F and overcapacity conditions on the northbound and southbound approaches. A signal warrant was also met with existing conditions for the Waiale Road/Olomea Street intersection; however no improvements are planned for the intersection and the eastbound left-turn/through movement will continue to operate with overcapacity conditions. A median refuge lane described in Section 3.3 may help reduce vehicle delays.

The eastbound left-turn movement at the Waiale Road/Kaupo Street intersection is anticipated to continue to operate at LOS F and overcapacity conditions during the AM peak hour, and worsen to become overcapacity during the PM peak hour from existing conditions. A signal is not anticipated to be warranted.

A signal is anticipated to be warranted at the Waiale Road/E Waiko Road intersection with Base Year conditions; however if the southbound Waiale Road approach is provided with separate left-and right-turn lanes, the four-hour signal warrant would fall short by 1 hour, making the signal not warranted.

At the Honoapiilani Highway/Kehalani Parkway intersection, the eastbound left-turn movement will operate at LOS E conditions during the AM peak hour. This heavy traffic and queueing are reflective of typical school traffic conditions stemming from the nearby Puu Kukui Elementary School. There are currently no identified or planned roadway improvements likely to occur at this intersection.

With build-out of the Wailuku Apartments project, the Kuikahi Drive/Kehalani Village Center Driveway intersection will add a fourth leg to service Wailuku Apartments. The minor street northbound and southbound shared left-turn/through movements are anticipated to operate at LOS F during both peak hours, with the shared southbound left/through movement operating with overcapacity conditions during the PM peak hour. A signal warrant was not met with the projected Base Year volumes.



6.3 Trip Generation

The Project is anticipated to generate approximately 119(161) new trips during the AM and PM peak hours. These trips were distributed throughout the network based upon trip distribution from similar existing residential subdivisions at the Honoapiilani Highway intersections with Pilikana and W. Waiko Road.

6.4 Future Year 2024 Conditions

Future Year 2024 conditions were generally similar to Base Year 2024 conditions. The North Project Access, which is anticipated to have RIRO access only, is projected to operate at LOS C for both peak hours.

All movements at the new South Project Access are anticipated to operate acceptably at LOS D or better for both peak hours, with the exception of the eastbound left-turn movement, which will operate at LOS E during the AM peak hour. However, all movements will operate adequately below capacity. Based on the MUTCD's Eight-Hour Vehicle Volume Signal Warrant 1 and Four-Hour Vehicle Volume Signal Warrant 2, a signal is not warranted from forecast Future Year volumes. Project generated vehicles exiting the site, which is the critical criteria to warrant a signal, is not high enough to meet any of the minimum warrant thresholds. In lieu of a signal, a median refuge lane may help reduce eastbound left-turn vehicle delays by allowing vehicles to turn onto Honoapiilani Highway with a two-stage approach; turning left into the refuge lane after finding gaps in the southbound traffic, and then merging into the Honoapiilani Highway through lane after finding gaps in the northbound traffic. A crosswalk is not proposed at either the North Project Access or South Project Access, so pedestrian and bike connectively will be maintained along the shoulder of Honoapiilani Highway and any highway crossings will be permitted at the existing traffic signals at the Pilikana Street and Kuikahi Drive intersections.



7. RECOMMENDATIONS

The following Base Year 2024 recommendations are roadway improvements that can be considered WITHOUT the Project:

Waiale Road Corridor

- For future planning purposes along Waiale Road:
 - o Traffic control treatment at Waiale Road/Kaohu Street intersection
 - Intersection improvements at the Waiale Road/Waiinu Road intersection (as identified on the STIP)
 - Median refuge lanes along Waiale Road could be considered to help mitigate Waiale Road northbound flows in the AM peak hour of traffic.

The following Future Year 2024 recommendations are roadway improvements that can be considered WITH the Project:

Honoapiilani Highway/South Project Access

• Provide a median refuge lane to allow eastbound left-turn vehicles to turn onto Honoapiilani Highway with a two-stage approach.



8. REFERENCES

- Austin, Tsutsumi & Associates, Central Maui Regional Sports Complex TIAR, 2014.
- Austin, Tsutsumi & Associates, Waiale Affordable Housing TIAR, 2016.
- Austin, Tsutsumi & Associates, Waikapu Light Industrial Project TIAR, 2013.
- Federal Highway Administration, Manual on Uniform Traffic Control Devices, 2009.
- Fehr & Peers, Waikapu Country Town TIAR, December 2016.
- Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017.
- Phillip Rowell & Associates, Waiko Road Light Industrial Park TIAR, 2014.
- Transportation Research Board, <u>Highway Capacity Manual</u>, 6th Edition.

33 34



APPENDICES



APPENDIX A

TRAFFIC COUNT DATA

501 Sumner Street, Suite 521 Honolulu, HI 96817-5031 Phone: 533-3646 Fax: 526-1267

File Name: Honoapiilani Hwy - Kehalani Pkwy Site Code: 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

Page No : 1

Groups Print	ed- Moto	rcycles	- Cars &	Light G	oods - E	suses - L	Init Truc	ks - Arti	culated 1	Γrucks -	Bicycles	on Roa	d - Bicy	cles on (Crosswa	lk - Ped	estrians
	HOI	NOAPIIL	ANI HV	/Y	K	EHALAN	II PKWY	1			LANI HW	Y	K	EHALAN	II PKWY	,	
		SOUTHE	BOUND			WESTB	OUND			NORTHE	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	7	109	16	0	10	21	11	1	18	59	1	0	32	17	43	0	345
06:45	15	82	29	0	4	35	17	1	41	85	2	1	54	24	57	0	447
Total	22	191	45	0	14	56	28	2	59	144	3	1	86	41	100	0	792
07:00	9	77	26	1	4	56	31	1	69	89	3	o I	84	54	77	0	581
07:15	4	85	28	0	8	67	47	4	90	136	3	0	74	57	98	0	701
07:30	9	44	25	1	11	57	30	0	67	126	5	n l	55	86	133	0	649
07:45	15	99	19	o l	7	15	13	ő	21	98	3	ő	25	29	51	0	395
Total	37	305	98	2	30	195	121	5	247	449	14	0	238	226	359	0	2326
08:00	10	93	18	0	8	13	16	0	17	96	4	0	34	19	22	0	350
08:15	11	84	17	2	5	16	17	0	16	92	1	0	20	16	19	0	316
Grand Total	80	673	178	4	57	280	182	7	339	781	22	1	378	302	500	0	3784
Apprch %	8.6	72	19	0.4	10.8	53.2	34.6	1.3	29.7	68.3	1.9	0.1	32	25.6	42.4	0	
Total %	2.1	17.8	4.7	0.1	1.5	7.4	4.8	0.2	9	20.6	0.6	0	10	8	13.2	0	
Motorcycles	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	5
% Motorcycles	0	0.1	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0.1
Cars & Light Goods	75	650	175	0	56	278	176	0	331	763	20	0	376	300	497	0	3697
% Cars & Light Goods	93.8	96.6	98.3	0	98.2	99.3	96.7	0	97.6	97.7	90.9	0	99.5	99.3	99.4	0	97.7
Buses	2	16	. 1	0	. 1	2	3	0	5	8	2	0	2	2	. 1	0	45
% Buses	2.5	2.4	0.6	0	1.8	0.7	1.6	0	1.5	1_	9.1	0	0.5	0.7	0.2	0	1.2
Single-Unit Trucks	3	6	2	0	0	0	3	0	3	6	0	0	0	0	2	0	25
% Single-Unit Trucks	3.8	0.9	1.1	0	0	0	1.6	0	0.9	0.8	0	0	0	0	0.4	0	0.7
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 4
Bicycles on Crosswalk		•										٠ ١					
% Bicycles on Crosswalk Pedestrians	0	0	0	25	0	0	0	42.9	0	0	0	0	0	0	0	0	0.1
	0	0	0	3 75	0	0	0	57.1	0	0	0	100	0	0	0	0	8 0.2
% Pedestrians	0	U	0	/5	0	U	U	5/.1	0	U	0	100	0	0	0	U	0.2

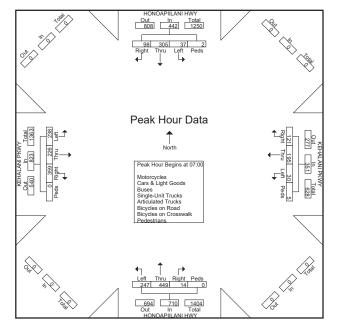
Austin Tsutsumi & Associates

501 Sumner Street, Suite 521 Honolulu, HI 96817-5031 Phone: 533-3646 Fax: 526-1267

File Name: Honoapiilani Hwy - Kehalani Pkwy Site Code: 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

	H		APIILA		/Y				PKWY	,	ŀ		APIILA		ſΥ			ALANI		,]
		SOL	JTHBC	DUND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From (07:00 to	o 07:4	5 - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 07:00)															
07:00	9	77	26	1	113	4	56	31	1	92	69	89	3	0	161	84	54	77	0	215	581
07:15	4	85	28	0	117	8	67	47	4	126	90	136	3	0	229	74	57	98	0	229	701
07:30	9	44	25	1	79	11	57	30	0	98	67	126	5	0	198	55	86	133	0	274	649
07:45	15	99	19	0	133	7	15	13	0	35	21	98	3	0	122	25	29	51	0	105	395
Total Volume	37	305	98	2	442	30	195	121	5	351	247	449	14	0	710	238	226	359	0	823	2326
% App. Total	8.4	69	22.2	0.5		8.5	55.6	34.5	1.4		34.8	63.2	2	0		28.9	27.5	43.6	0		
PHF	.617	.770	.875	.500	.831	.682	.728	.644	.313	.696	.686	.825	.700	.000	.775	.708	.657	.675	.000	.751	.830



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Start Date : 5/10/2018

Page No : 1

Groups Print	ed- Moto	rcycles	- Cars 8	Light G	oods - E	Buses - L	Jnit Truc	cks - Arti					ıd - Bicyo	cles on (Crosswa	lk - Ped	estrians
	HOI	NOAPIII	LANI HV	/Y	K	EHALAN	NI PKW	Y	HO	NOAPII	LANI HW	/Y	KI	EHALAN	NI PKWY	1	
		SOUTHE	BOUND			WESTB	OUND		1	NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
15:15	19	98	21	0	4	32	19	2	23	101	6	0	31	27	37	0	420
15:30	10	106	31	3	7	33	15	0	33	118	7	0	24	28	35	0	450
15:45	10	77	35	4	1	23	19	0	33	136	4	0	33	21	27	2	425
Total	39	281	87	7	12	88	53	2	89	355	17	0	88	76	99	2	1295
16:00	20	121	37	2	2	25	17	0	23	122	6	0	33	21	32	2	463
16:15	14	104	27	0	5	18	22	0	39	110	4	0	30	17	26	0	416
16:30	12	141	40	2	2	32	20	0	43	108	5	0	28	13	28	0	474
16:45	21	113	48	2	5	30	25	0	38	93	8	0	29	21	35	0	468
Total	67	479	152	6	14	105	84	0	143	433	23	0	120	72	121	2	1821
17:00	25	127	48	0	5	34	14	0	36	102	5	0	19	17	24	1	457
Grand Total	131	887	287	13	31	227	151	2	268	890	45	0	227	165	244	5	3573
Apprch %	9.9	67.3	21.8	1	7.5	55.2	36.7	0.5	22.3	74	3.7	0	35.4	25.7	38.1	0.8	
Total %	3.7	24.8	8	0.4	0.9	6.4	4.2	0.1	7.5	24.9	1.3	0	6.4	4.6	6.8	0.1	
Motorcycles	2	1	0	0	0	2	0	0	0	2	0	0	1	0	0	0	8
% Motorcycles	1.5	0.1	0	0	0	0.9	0	0	0	0.2	0	0	0.4	0	0	0	0.2
Cars & Light Goods	129	871	287	0	29	224	148	0	267	878	44	0	226	165	243	0	3511
% Cars & Light Goods	98.5	98.2	100	0	93.5	98.7	98	0	99.6	98.7	97.8	0	99.6	100	99.6	0	98.3
Buses	0	11	0	0	0	1	3	0	0	4	0	0	0	0	0	1	20
% Buses	0	1.2	0	0	0	0.4	2	0	0	0.4	0	0	0	0	0	20	0.6
Single-Unit Trucks	0	4	0	0	1	0	0	0	1	6	1	0	0	0	1	0	14
% Single-Unit Trucks	0	0.5	0	0	3.2	0	0	0	0.4	0.7	2.2	0	0	0	0.4	0	0.4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
% Bicycles on Road	0	0	0	0	3.2	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
% Bicycles on Crosswalk	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	13	0	0	0	1	0	0	0	0	0	0	0	4	18
% Pedestrians	0	0	0	100	0	0	0	50	0	0	0	0	0	0	0	80	0.5

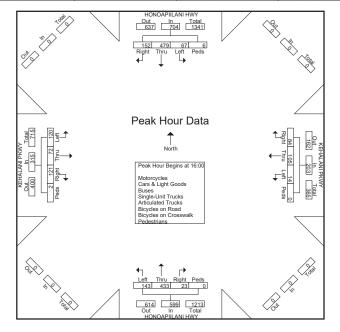
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File Name: Honoapiilani Hwy - Kehalani Pkwy Site Code: 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

	H		APIILA		/Υ				PKWY	,	H		APIILA		/Y			ALANI		,]
		SOL	JTHBC	UND			WE	STBO	UND			NOF	RTHBC	DUND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From '	15:15 to	o 17:00) - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 16:00)															
16:00	20	121	37	2	180	2	25	17	0	44	23	122	6	0	151	33	21	32	2	88	463
16:15	14	104	27	0	145	5	18	22	0	45	39	110	4	0	153	30	17	26	0	73	416
16:30	12	141	40	2	195	2	32	20	0	54	43	108	5	0	156	28	13	28	0	69	474
16:45	21	113	48	2	184	5	30	25	0	60	38	93	8	0	139	29	21	35	0	85	468
Total Volume	67	479	152	6	704	14	105	84	0	203	143	433	23	0	599	120	72	121	2	315	1821
% App. Total	9.5	68	21.6	0.9		6.9	51.7	41.4	0		23.9	72.3	3.8	0		38.1	22.9	38.4	0.6		
PHF	.798	.849	.792	.750	.903	.700	.820	.840	.000	.846	.831	.887	.719	.000	.960	.909	.857	.864	.250	.895	.960



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Honoapiilani Hwy - Kuikahi Dr Site Code: 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

Page No : 1

Groups Printed- Motorcycles - Cars & Light Goods - Buses - Unit Trucks - Articulated Trucks - Bicycles on Road - Bicycles on Crosswalk - Pedestrians HONOAPIILANI HWY KUIKAHI DR HONOAPIILANI HWY KUIKAHI DR SOUTHBOUND WESTBOUND NORTHBOUND EASTBOUND Left Thru Right Peds Left Thru Right Peds Left Thru Right Peds Left Thru Right Peds Int. Total Start Time 53 48 33 332 22 06:45 2 0 0 54 72 78 77 81 77 27 29 26 22 60 70 70 79 67 110 9 17 10 513 07:00 68 07:15 69 70 70 100 569 139 12 130 78 640 07:30 5 20 07:45 08:00 435 08:15 61 36 399 Grand Total 24 3810 53.7 13.8 39 10.1 66.1 0.2 50.2 47.8 55.5 30.3 0.3 22.1 Total % 15.6 2.9 13 Motorcycles % Motorcycles 584 Cars & Light Goods % Cars & Light Goods 97.5 93.5 97.2 96.3 98.2 98.8 98 97.2 Buses 34 % Buses 0.9 Single-Unit Trucks 27 5.1 1.3 % Single-Unit Trucks Articulated Trucks 0.1 % Articulated Trucks Bicycles on Road 0 % Bicycles on Road Pedestrians % Pedestrians

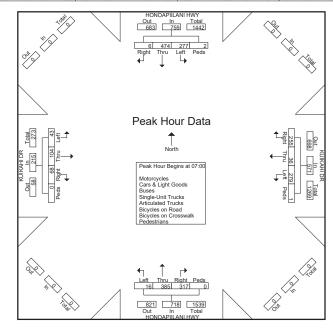
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> File Name: Honoapiilani Hwy - Kuikahi Dr Site Code: 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

	H	ONO	APIILA	NH IN	ſΥ		Κl	JIKAHI	DR		H	ONO	APIILA	NI HW	/Y		Κl	JIKAHI	DR		
		SOL	JTHBC	DUND			WE	STBO	UND			NOF	RTHBC	DUND			EA	STBO	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Tota
Peak Hour Ar	nalysis	From (06:30 to	o 08:1	5 - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 07:00)															
07:00	68	118	0	2	188	60	4	54	0	118	3	67	77	0	147	9	27	24	0	60	513
07:15	69	100	0	0	169	70	8	72	1	151	4	110	81	0	195	17	29	8	0	54	569
07:30	70	139	3	0	212	70	12	78	0	160	5	130	77	0	212	10	26	20	0	56	640
07:45	70	117	3	0	190	79	12	51	0	142	4	78	82	0	164	7	22	16	0	45	541
Total Volume	277	474	6	2	759	279	36	255	1	571	16	385	317	0	718	43	104	68	0	215	2263
% App. Total	36.5	62.5	0.8	0.3		48.9	6.3	44.7	0.2		2.2	53.6	44.2	0		20	48.4	31.6	0		
PHF	.989	.853	.500	.250	.895	.883	.750	.817	.250	.892	.800	.740	.966	.000	.847	.632	.897	.708	.000	.896	.884



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Start Date : 3/13/2019

Page No : 1

Groups Printed- Motorcycles - Cars & Light Goods - Buses - Unit Trucks - Articulated Trucks - Bicycles on Road - Bicycles on Crosswalk - Pedestrians HONOAPIILANI HWY KUIKAHI DR HONOAPIILANI HWY KUIKAHI DR SOUTHBOUND WESTBOUND NORTHBOUND EASTBOUND Left Thru Right Peds Left Thru Right Peds Left Thru Right Peds Left Thru Right Peds Int. Total Start Time 48 64 101 125 226 16 463 497 59 57 47 0 0 56 81 63 66 7 14 14 532 16:00 103 77 73 85 37 27 20 90 16:15 28 25 22 501 16:30 113 110 101 528 16:45 63 77 518 17:00 83 453 17:15 32 13 76 473 Grand Total 3983 53.3 18.4 53.5 41.8 65.2 Total % Motorcycles 14 % Motorcycles 0.4 842 Cars & Light Goods % Cars & Light Goods 99.4 100 98.9 100 98.5 Buses 13 % Buses 0.3 Single-Unit Trucks 25 0.6 % Single-Unit Trucks Articulated Trucks % Articulated Trucks Bicycles on Road 0.1 % Bicycles on Road Pedestrians % Pedestrians

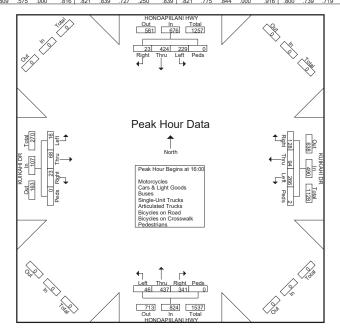
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> File Name: Honoapiilani Hwy - Kuikahi Dr Site Code: 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

	H	ONO	APIILA	NI HW	Υ		Κl	JIKAHI	DR		1	ONO	APIILA	NH IN	/Y		Κl	JIKAHI	DR		
		SOL	JTHBO	UND			WE	STBO	UND			NOF	RTHBC	DUND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. To
Peak Hour A	nalysis	From '	15:30 to	17:15	- Peak	1 of 1															
Peak Hour fo	r Entire	Inters	ection I	Begins	at 16:0	D															
16:00	59	103	2	0	164	56	19	44	2	121	7	141	73	0	221	2	17	7	0	26	53
16:15	57	77	4	0	138	81	28	37	0	146	14	90	85	0	189	5	19	4	0	28	50
16:30	47	113	7	0	167	63	25	27	0	115	14	110	101	0	225	4	9	8	0	21	52
16:45	66	131	10	0	207	66	22	20	0	108	11	96	82	0	189	5	23	4	0	32	53
Total Volume	229	424	23	0	676	266	94	128	2	490	46	437	341	0	824	16	68	23	0	107	209
% App. Total	33.9	62.7	3.4	0		54.3	19.2	26.1	0.4		5.6	53	41.4	0		15	63.6	21.5	0		
DHE	967	000	E7E	000	046	004	020	707	250	020	024	775	044	000	046	000	720	740	000	026	0.



Austin Tsutsumi & Associates 501 Sumner Street, Suite 521

Honolulu, HI 96817-5031 Phone: 533-3646 Fax: 526-1267

File Name: Honoapiilani Hwy - Piikana St Site Code: 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

Page No : 1

Groups Print	ed- Moto	rcvcles	- Cars 8	k Liaht G	Goods - E	Buses - l	Jnit Truc	cks - Arti	culated -	Trucks -	Bicvcles	on Roa	d - Bicvo	cles on (Crosswa	lk - Ped	estrians
0.22,22			LANI HV							PILIKA					LANI HV		
		SOUTHE	BOUND			WESTB	OUND		1	NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	0	144	10	0	0	0	0	0	3	101	0	0	25	0	22	0	305
06:45	ō	184	11	ō	ō	ō	ō	ō	1	109	Ō	ō	28	ō	19	ō	352
Total	0	328	21	0	0	0	0	0	4	210	0	0	53	0	41	0	657
07:00	0	163	15	0	0	0	0	0	3	126	0	0	49	0	28	0	384
07:15	0	163	17	0	0	0	0	0	3	164	0	0	58	0	32	0	437
07:30	0	181	15	0	0	0	0	0	7	189	0	0	32	0	19	0	443
07:45	0	180	15	0	0	0	0	0	5	138	0	0	14	0	9	0	361
Total	0	687	62	0	0	0	0	0	18	617	0	0	153	0	88	0	1625
08:00	0	173	16	0	0	0	0	0	5	125	0	0	10	0	12	0	341
08:15	0	138	3	0	0	0	0	0	3	128	0	0	9	0	4	0	285
Grand Total	0	1326	102	0	0	0	0	0	30	1080	0	0	225	0	145	0	2908
Apprch %	0	92.9	7.1	0	0	0	0	0	2.7	97.3	0	0	60.8	0	39.2	0	
Total %	0	45.6	3.5	0	0	0	0	0	1_	37.1	0	0	7.7	0	5	0	
Motorcycles	0	7	0	0	0	0	0	0	0	5	0	0	0	0	0	0	12
% Motorcycles	0	0.5	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0.4
Cars & Light Goods	0	1273	101	0	0	0	0	0	29	1056	0	0	223	0	145	0	2827
% Cars & Light Goods	0	96	99	0	0	0	0	0	96.7	97.8	0	0	99.1	0	100	0	97.2
Buses	0	12	1	0	0	0	0	0	1	10	0	0	0	0	0	0	24
% Buses	0	0.9	1	0	0	0	0	0	3.3	0.9	0	0	0	0	0	0	0.8
Single-Unit Trucks	0	26 2	0	0	0	0	0	0	0	7 0.6	0	0	1 0.4	0	0	0	34 1.2
% Single-Unit Trucks Articulated Trucks	0	7	0	0	0	0	0	0	0	0.0	0	0	0.4	0	0	0	7
	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
% Articulated Trucks Bicvcles on Road	0	1	0	0	0	0	0	0	0	2	0	0	1	0	0	0	4
% Bicycles on Road	0	0.1	0	0	0	0	0	0	0	0.2	0	0	0.4	0	0	0	0.1
	0	0.1	0	0	0	0	0	0	0	0.2	0	0	0.4	0	0	0	0.1
Bicycles on Crosswalk % Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	ő	0	0	0	0	0	0	0	0	٥

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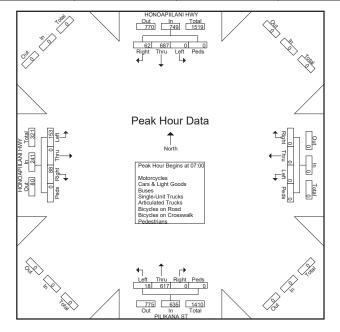
501 Sumner Street, Suite 521 Honolulu, HI 96817-5031

Phone: 533-3646 Fax: 526-1267

File Name: Honoapiilani Hwy - Piikana St Site Code: 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

	H	ONO	APIILA	NI HW	/Υ							PIL	IKANA	ST		H	ONO	APIILA	NI HW	ſΥ	
		SOL	JTHBC	UND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From	06:30 to	08:1	5 - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 07:00)															
07:00	0	163	15	0	178	0	0	0	0	0	3	126	0	0	129	49	0	28	0	77	384
07:15	0	163	17	0	180	0	0	0	0	0	3	164	0	0	167	58	0	32	0	90	437
07:30	0	181	15	0	196	0	0	0	0	0	7	189	0	0	196	32	0	19	0	51	443
07:45	0	180	15	0	195	0	0	0	0	0	5	138	0	0	143	14	0	9	0	23	361
Total Volume	0	687	62	0	749	0	0	0	0	0	18	617	0	0	635	153	0	88	0	241	1625
% App. Total	0	91.7	8.3	0		0	0	0	0		2.8	97.2	0	0		63.5	0	36.5	0		
PHF	.000	.949	.912	.000	.955	.000	.000	.000	.000	.000	.643	.816	.000	.000	.810	.659	.000	.688	.000	.669	.917



Honolulu, HI 96817-5031 Phone: 533-3646 Fax: 526-1267

File Name: Honoapiilani Hwy - Piikana St

Site Code : 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

Page No : 1

Groups Printed- Motorcycles - Cars & Light Goods - Buses - Unit Trucks - Articulated Trucks - Bicycles on Road - Bicycles on Crosswalk - Pedestrians
HONOAPIILANI HWY
PILIKANA ST HONOAPIILANI HWY WESTBOUND NORTHBOUND EASTBOUND Left Thru Right Peds Start Time Left Thru Right Left Thru Right Peds Left Thru Right Peds Int. Total 15:15 15:30 140 153 16 27 7 14 170 169 16 15 350 382 15:45 130 183 378 26 34 31 34 12 14 19 12 24 21 29 16:00 16:15 128 0 176 180 11 12 377 391 130 135 177 394 16:30 405 17:00 150 28 15 171 13 388 Grand Total 1136 221 102 6.8 1388 164 52 3065 Apprch % 83.7 16.3 93.2 75.2 23.9 0.9 Total % 37.1 Motorcycles % Motorcycles 0.3 3010 1359 97.9 1122 100 98 Cars & Light Goods 98.8 98.2 99.4 94.2 98.2 % Cars & Light Goods 10 19 % Buses 0.9 0.6 Single-Unit Trucks 20 0.7 0.9 % Single-Unit Trucks % Articulated Trucks Bicycles on Road 0.1 % Bicycles on Road Bicycles on Crosswall 0 Pedestrians % Pedestrians

Austin Tsutsumi & Associates

Honolulu, HI 96817-5031

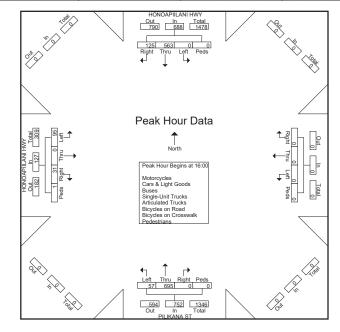
Phone: 533-3646 Fax: 526-1267

File Name: Honoapiilani Hwy - Piikana St

Site Code : 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

	H	ONO	APIILA	NI HW	ſΥ							PIL	IKANA	ST		ŀ	HONO	APIILA	NI HW	/Υ	
		SOL	JTHBC	UND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From	16:00 to	16:45	- Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 16:00)															
16:00	0	128	26	0	154	0	0	0	0	0	12	176	0	0	188	24	0	11	0	35	377
16:15	0	130	34	0	164	0	0	0	0	0	14	180	0	0	194	21	0	12	0	33	391
16:30	0	135	31	0	166	0	0	0	0	0	19	177	0	0	196	29	0	2	1	32	394
16:45	0	170	34	0	204	0	0	0	0	0	12	162	0	0	174	21	0	6	0	27	405
Total Volume	0	563	125	0	688	0	0	0	0	0	57	695	0	0	752	95	0	31	1	127	1567
% App. Total	0	81.8	18.2	0		0	0	0	0		7.6	92.4	0	0		74.8	0	24.4	0.8		
PHF	.000	.828	.919	.000	.843	.000	.000	.000	.000	.000	.750	.965	.000	.000	.959	.819	.000	.646	.250	.907	.967



Austin Tsutsumi & Associates 501 Sumner Street, Suite 521

Honolulu, HI 96817-5031 Phone: 533-3646 Fax: 526-1267

File Name: Honoapiilani Hwy - Waiko Rd Site Code: 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

Page No : 1

Groups Print	ed- Moto	rcycles	- Cars 8	Light G	oods - E	Buses - l	Jnit Truc	cks - Arti	culated 1	Γrucks -	Bicycles	on Roa	ad - Bicyo	cles on (Crosswa	lk - Ped	estrians
	HO	NOAPIII	LANI HV	VY		WAIK	O RD		HOI	NOAPIII	LANI HW	ſΥ		WAIK	O RD		
	5	SOUTHE	BOUND			WESTE	OUND		١	NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	16	130	2	0	10	0	3	0	0	89	4	0	3	7	2	1	267
06:45	15	206	1	0	19	1	5	0	1	97	12	0	7	5	7	0	376
Total	31	336	3	0	29	1	8	0	1	186	16	0	10	12	9	1	643
07:00	28	161	0	0	16	2	9	o l	0	112	13	1	3	4	1	0	350
07:15	29	154	0	0	18	1	14	0	1	141	17	0	6	5	1	0	387
07:30	46	148	1	0	19	4	15	ő	3	167	17	0	8	0	2	0	430
07:45	40	161	5	ō	22	0	10	ō	ō	138	20	ō	3	4	2	ō	405
Total	143	624	6	0	75	7	48	0	4	558	67	1	20	13	6	0	1572
08:00	16	160	1	1	16	4	8	o l	0	111	11	1	4	2	2	1	338
08:15	5	147	2	0	18	3	3	0	2	123	10	0	8	1	1	1	324
Grand Total	195	1267	12	1	138	15	67	0	7	978	104	2	42	28	18	3	2877
Apprch %	13.2	85.9	0.8	0.1	62.7	6.8	30.5	0	0.6	89.6	9.5	0.2	46.2	30.8	19.8	3.3	2011
Total %	6.8	44	0.4	0.1	4.8	0.5	2.3	0	0.2	34	3.6	0.1	1.5	1	0.6	0.1	
Motorcycles	0.0	- 6	0.1	0	0	0.0	0	0	0.2	4	1	0.1	0	0	0.0	0.1	11
% Motorcycles	0	0.5	0	ō	ō	ō	ō	ō	0	0.4	1	ō	Ō	ō	ō	ō	0.4
Cars & Light Goods	191	1220	12	0	137	15	65	0	6	958	101	0	41	27	16	0	2789
% Cars & Light Goods	97.9	96.3	100	0	99.3	100	97	0	85.7	98	97.1	0	97.6	96.4	88.9	0	96.9
Buses	2	10	0	0	1	0	1	0	0	11	1	0	0	1	1	0	28
% Buses	1	0.8	0	0	0.7	0	1.5	0	0	1.1	1	0	0	3.6	5.6	0	1
Single-Unit Trucks	2	23	0	0	0	0	1	0	1	4	0	0	1	0	1	0	33
% Single-Unit Trucks	1_	1.8	0	0	0	0	1.5	0	14.3	0.4	0	0	2.4	0	5.6	0	1.1
Articulated Trucks	0	6	0	0	0	0	0	0	0	0	1	0	0	0	0	0	7
% Articulated Trucks	0	0.5	0	0	0	0	0	0	0	0	1_	0	0	0	0	0	0.2
Bicycles on Road	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
% Bicycles on Road	0	0.2	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	3	6
% Pedestrians	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	100	0.2

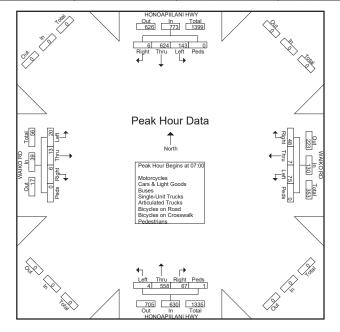
Austin Tsutsumi & Associates

501 Sumner Street, Suite 521 Honolulu, HI 96817-5031 Phone: 533-3646 Fax: 526-1267

File Name: Honoapiilani Hwy - Waiko Rd Site Code: 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

	H	ONO	APIILA	NI HW	/Υ		W	/AIKO	RD		H	ONO	APIILA	NI HW	/Y		W	/AIKO	RD		
		SOL	JTHBC	UND			WE	STBO	UND			NOF	RTHBO	DUND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From (06:30 to	08:15	5 - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 07:00)															
07:00	28	161	0	0	189	16	2	9	0	27	0	112	13	1	126	3	4	1	0	8	350
07:15	29	154	0	0	183	18	1	14	0	33	1	141	17	0	159	6	5	1	0	12	387
07:30	46	148	1	0	195	19	4	15	0	38	3	167	17	0	187	8	0	2	0	10	430
07:45	40	161	5	0	206	22	0	10	0	32	0	138	20	0	158	3	4	2	0	9	405
Total Volume	143	624	6	0	773	75	7	48	0	130	4	558	67	1	630	20	13	6	0	39	1572
% App. Total	18.5	80.7	0.8	0		57.7	5.4	36.9	0		0.6	88.6	10.6	0.2		51.3	33.3	15.4	0		
PHF	.777	.969	.300	.000	.938	.852	.438	.800	.000	.855	.333	.835	.838	.250	.842	.625	.650	.750	.000	.813	.914



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Honolulu, HI 96817-5031 Phone: 533-3646 Fax: 526-1267

File Name: Honoapiilani Hwy - Waiko Rd Site Code: 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

Page No : 1

Groups Print	ed- Moto	rcycles	- Cars &	Light C	Goods - E	suses - L	Jnit Truc	ks - Arti	culated -	Trucks -	Bicycles	on Roa	d - Bicy	cles on (Crosswa	lk - Ped	lestrians
			LANI HV	ſΥ		WAIK					LANI HV	VY		WAIK			
		SOUTH	BOUND.			WESTB	OUND .			NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
15:15	5	114	3	0	12	2	17	0	2	150	10	0	1	4	3	0	323
15:30	16	144	4	0	17	5	6	1	3	178	21	0	3	2	0	0	400
15:45	11	108	5	0	13	3	18	1	2	183	16	0	2	5	2	0	369
Total	32	366	12	0	42	10	41	2	7	511	47	0	6	11	5	0	1092
16:00	14	125	3	0	14	4	13	1	4	165	19	0	2	1	3	0	368
16:15	21	113	4	0	7	2	21	ó	1	171	19	0	6	2	0	1	368
16:30	17	114	3	0	20	3	24	0	2	183	16	0	0	3	0	0	385
16:45	12	164	12	0	16	1	16	0	2	146	22	0	4	1	0	0	396
Total	64	516	22	0	57	10	74	1	9	665	76	0	12	7	3	1	1517
17:00	15	136	6	0	12	4	21	0	1	154	26	0	2	1	1	1	380
Grand Total	111	1018	40	0	111	24	136	3	17	1330	149	0	20	19	9	2	2989
Apprch %	9.5	87.1	3.4	0	40.5	8.8	49.6	1.1	1.1	88.9	10	0	40	38	18	4	
Total %	3.7	34.1	1.3	0	3.7	0.8	4.6	0.1	0.6	44.5	5	0	0.7	0.6	0.3	0.1	
Motorcycles	1	5	0	0	0	0	0	0	0	8	0	0	0	0	0	0	14
% Motorcycles	0.9	0.5	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0.5
Cars & Light Goods	109	998	40	0	110	24	135	0	16	1294	147	0	20	19	7	0	2919
% Cars & Light Goods	98.2	98	100	0	99.1	100	99.3	0	94.1	97.3	98.7	0	100	100	77.8	0	97.7
Buses	0	9	0	0	0	0	0	0	0	9	0	0	0	0	0	0	18
% Buses	0	0.9	0	0	0	0	0	0	0	0.7	0	0	0	0	0	0	0.6
Single-Unit Trucks	0	4	0	0	0	0	0	0	0	14	1	0	0	0	0	0	19
% Single-Unit Trucks	0	0.4	0	0	0	0	0	0	0	1.1	0.7	0	0	0	0	0	0.6
Articulated Trucks	1	1	0	0	1	0	0	0	0	4	0	0	0	0	0	0	7
% Articulated Trucks	0.9	0.1	0	0	0.9	0	0	0	0	0.3	0	0	0	0	0	0	0.2
Bicycles on Road	0	1	0	0	0	0	1	0	1	1	1	0	0	0	2	0	7
% Bicycles on Road	0	0.1	0	0	0	0	0.7	0	5.9	0.1	0.7	0	0	0	22.2	0	0.2
Bicycles on Crosswalk	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
% Bicycles on Crosswalk	0	0	0	0	0	0	0	33.3	0	0	0	0	0	0	0	50	0.1
Pedestrians	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	3
% Pedestrians	0	0	0	0	0	0	0	66.7	0	0	0	0	0	0	0	50	0.1

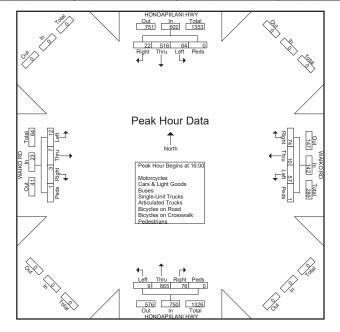
Austin Tsutsumi & Associates

501 Sumner Street, Suite 521 Honolulu, HI 96817-5031 Phone: 533-3646 Fax: 526-1267

File Name: Honoapiilani Hwy - Waiko Rd Site Code: 16-014.07 Maui DOT Signal Optimization

Start Date : 5/10/2018

	H	ONO	APIILA	NI HW	/Υ		W	AIKO	RD		H	ONO	APIILA	NI HW	ſΥ		W	/AIKO	RD		
		SOL	JTHBC	DUND			WE	STBO	UND			NOF	RTHBC	DUND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From '	16:00 to	o 16:4	5 - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 16:00)															
16:00	14	125	3	0	142	14	4	13	1	32	4	165	19	0	188	2	1	3	0	6	368
16:15	21	113	4	0	138	7	2	21	0	30	1	171	19	0	191	6	2	0	1	9	368
16:30	17	114	3	0	134	20	3	24	0	47	2	183	16	0	201	0	3	0	0	3	385
16:45	12	164	12	0	188	16	1	16	0	33	2	146	22	0	170	4	1	0	0	5	396
Total Volume	64	516	22	0	602	57	10	74	1	142	9	665	76	0	750	12	7	3	1	23	1517
% App. Total	10.6	85.7	3.7	0		40.1	7	52.1	0.7		1.2	88.7	10.1	0		52.2	30.4	13	4.3		
PHF	.762	.787	.458	.000	.801	.713	.625	.771	.250	.755	.563	.908	.864	.000	.933	.500	.583	.250	.250	.639	.958



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Kehalani Village Center Dwy - Kukahi Dr Site Code: 19-508 Puunani Homesteads

Start Date : 4/9/2019

Page No : 1

Groups Printe			VILLAC					7 11 11	baiatoa								
		CENTE				KUIKA								KUIKA			
			BOUND			WESTE	OUND		1	NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	7	0	26	0	0	120	14	0	0	0	0	0	23	161	0	0	351
06:45	11	0	30	0	0	137	14	0	0	0	0	0	14	181	0	0	387
Total	18	0	56	0	0	257	28	0	0	0	0	0	37	342	0	0	738
07:00	4	0	28	0	0	116	16	0	0	0	0	0	27	154	0	0	345
07:15	3	0	21	0	0	107	18	0	0	0	0	0	23	176	0	0	348
07:30	10	0	26	1	0	118	14	0	0	0	0	0	15	114	0	0	298
07:45	11	0	25	0	0	94	10	0	0	0	0	0	18	129	0	0	287
Total	28	0	100	1	0	435	58	0	0	0	0	0	83	573	0	0	1278
08:00	3	0	11	0	0	74	17	0	0	0	0	0	10	124	0	0	239
08:15	7	0	14	0	0	76	15	0	0	0	0	0	14	135	0	0	261
Grand Total	56	0	181	1	0	842	118	0	0	0	0	0	144	1174	0	0	2516
Apprch %	23.5	0	76.1	0.4	0	87.7	12.3	0	0	0	0	0	10.9	89.1	0	0	
Total %	2.2	0	7.2	0	0	33.5	4.7	0	0	0	0	0	5.7	46.7	0	0	
Motorcycles	0	0	0	0	0	2	0	0	0	0	0	0	1	3	0	0	6
% Motorcycles	0	0	0	0	0	0.2	0	0	0	0	0	0	0.7	0.3	0	0	0.2
Cars & Light Goods	54	0	181	0	0	807	114	0	0	0	0	0	143	1147	0	0	2446
% Cars & Light Goods	96.4	0	100	0	0	95.8	96.6	0	0	0	0	0	99.3	97.7	0	0	97.2
Buses	0	0	0	0	0	2	0	0	0	0	0	0	0	12	0	0	14
% Buses	0	0	0	0	0	0.2	0	0	0	0	0	0	0	1_	0	0	0.6
Single-Unit Trucks	. 1	0	0	0	0	27	. 2	0	0	0	0	0	0	8	0	0	38
% Single-Unit Trucks	1.8	0	0	0	0	3.2	1.7	0	0	0	0	0	0	0.7	0	0	1.5
Articulated Trucks	1	0	0	0	0	3	2	0	0	0	0	0	0	2	0	0	8
% Articulated Trucks	1.8	0	0	0	0	0.4	1.7	0	0	0	0	0	0	0.2	0	0	0.3
Bicycles on Road	0	0	0				_	- 1	0	0	0			0.2	0		0.1
% Bicycles on Road	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.2	0	0	0.1
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycles on Crosswalk Pedestrians	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
% Pedestrians	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	۱ (

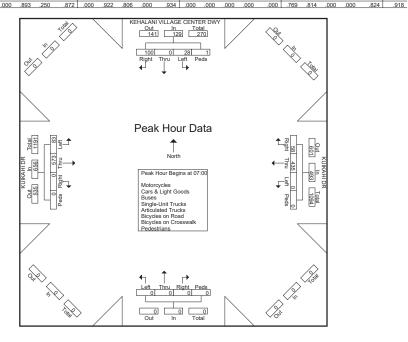
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Kehalani Village Center Dwy - Kukahi Dr Site Code: 19-508 Puunani Homesteads

Start Date : 4/9/2019

	ŀ	CEN	ANI V NTER I ITHBO	OWY	E			IIKAHI STBOI				NOF	RTHBO	UND				JIKAHI STBOI				
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total	
Peak Hour Ar	nalysis	From 0	7:00 to	07:45	- Peak	1 of 1																
Peak Hour for	r Entire	Inters	ection I	Begins	at 07:00)																
07:00	4	0	28	0	32	0	116	16	0	132	0	0	0	0	0	27	154	0	0	181	345	
07:15	3	0	21	0	24	0	107	18	0	125	0	0	0	0	0	23	176	0	0	199	348	
07:30	10	0	26	1	37	0	118	14	0	132	0	0	0	0	0	15	114	0	0	129	298	
07:45	11	0	25	0	36	0	94	10	0	104	0	0	0	0	0	18	129	0	0	147	287	
Total Volume	28	0	100	1	129	0	435	58	0	493	0	0	0	0	0	83	573	0	0	656	1278	
% App. Total	21.7	0	77.5	8.0		0	88.2	11.8	0		0	0	0	0		12.7	87.3	0	0			



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File Name: Kehalani Village Center Dwy - Kukahi Dr Site Code: 19-508 Puunani Homesteads

Start Date : 4/9/2019

Page No : 1

		HALANI CENTEI SOUTHI		EΕ		KUIKA WESTE			ı	NORTH	BOUND			KUIKA EASTB			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Tota
15:30	20	0	32	0	0	121	27	0	0	0	0	0	17	155	0	0	372
15:45	11	0	25	1	0	123	16	0	0	0	0	0	23	136	0	0	338
Total	31	0	57	1	0	244	43	0	0	0	0	0	40	291	0	0	707
16:00	9	0	37	0	0	113	23	0	0	0	0	0	32	130	0	0	344
16:15	11	0	27	2	0	119	24	0	0	0	0	0	15	103	0	0	30
16:30	16	0	30	0	0	135	21	0	0	0	0	0	23	101	0	0	326
16:45	12	0	34	2	0	116	33	0	0	0	0	0	30	112	0	0	339
Total	48	0	128	4	0	483	101	0	0	0	0	0	100	446	0	0	1310
17:00	9	0	32	1	0	102	31	1	0	0	0	0	31	109	0	0	31
17:15	11	0	26	0	0	93	19	0	0	0	0	0	26	93	0	0	26
Grand Total	99	0	243	6	0	922	194	1	0	0	0	0	197	939	0	0	260
Apprch %	28.4	0	69.8	1.7	0	82.5	17.4	0.1	0	0	0	0	17.3	82.7	0	0	
Total %	3.8	0	9.3	0.2	0	35.4	7.5	0	0	0	0	0	7.6	36.1	0	0	
Motorcycles	0	0	2	0	0	3	0	0	0	0	0	0	2	2	0	0	
% Motorcycles	0	0	0.8	0	0	0.3	0	0	0	0	0	0	1	0.2	0	0	0.
Cars & Light Goods	98	0	241	0	0	912	193	0	0	0	0	0	193	912	0	0	254
% Cars & Light Goods	99	0	99.2	0	0	98.9	99.5	0	0	0	0	0	98	97.1	0	0	9
Buses	1	0	0	0	0	. 1	. 1	0	0	0	0	0	2	9	0	0	1-
% Buses	1_	0	0	0	0	0.1	0.5	0	0	0	0	0	1	1_	0	0	0.
Single-Unit Trucks	0	0	0	0	0	6	0	0	0	0	0	0	0	11	0	0	1
% Single-Unit Trucks	0	0	0	0	0	0.7	0	0	0	0	0	0	0	1.2	0	0	0.
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	;
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0.
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	:
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycles on Crosswalk	0	0	0	0 6	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians Pedestrians	0	0	0	100	0	0	0	100	0	0	0	0	0	0	0	0	0

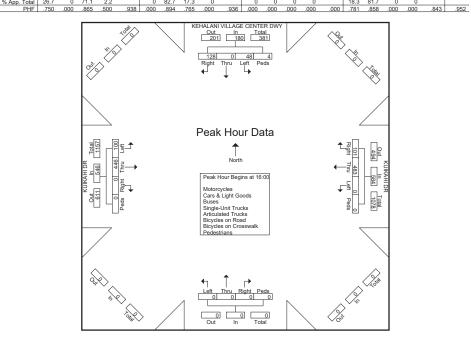
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Kehalani Village Center Dwy - Kukahi Dr Site Code: 19-508 Puunani Homesteads

Start Date : 4/9/2019

	ŀ	CEI	LANI V NTER I JTHBC		E			JIKAHI STBO				NOF	RTHBO	DUND				JIKAHI STBO			
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour A	nalysis l	From	16:00 to	o 16:45	- Peak	1 of 1															
Peak Hour fo	r Entire	Inters	ection	Begins	at 16:00	0															
16:00	9	0	37	0	46	0	113	23	0	136	0	0	0	0	0	32	130	0	0	162	344
16:15	11	0	27	2	40	0	119	24	0	143	0	0	0	0	0	15	103	0	0	118	301
16:30	16	0	30	0	46	0	135	21	0	156	0	0	0	0	0	23	101	0	0	124	326
16:45	12	0	34	2	48	0	116	33	0	149	0	0	0	0	0	30	112	0	0	142	339
Total Volume	48	0	128	4	180	0	483	101	0	584	0	0	0	0	0	100	446	0	0	546	1310
% Ann Total	26.7	0	71.1	2.2		0	82.7	17.3	0		0	0	0	0		18.3	81.7	0	0		



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Maui Lani Pkwy - Kamehameha Ave Site Code: 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

Page No : 1

Groups Print			VI PKWY			MEHAN					VI PKW				1EHA A\		estilalis
			BOUND		101	WESTB		-			BOUND			EASTB		_	
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	29	44	6	0	61	6	39	0	3	36	12	0	17	16	15	3	287
06:45	42	44	4	2	55	15	52	0	13	40	23	0	13	27	13	0	343
Total	71	88	10	2	116	21	91	0	16	76	35	0	30	43	28	3	630
07:00	30	33	14	4	67	40	50	οl	18	38	9	o l	26	34	21	1	385
07:15	31	26	25	12	30	58	36	ō	26	34	20	ō	31	61	23	3	416
07:30	32	22	32	11	40	60	21	0	16	35	30	0	33	63	24	0	419
07:45	46	31	17	4	42	15	63	0	12	48	27	0	38	57	26	0	426
Total	139	112	88	31	179	173	170	0	72	155	86	0	128	215	94	4	1646
08:00	46	37	6	3	43	15	63	0	5	46	20	o l	22	22	17	0	345
08:15	40	44	6	0	42	8	51	ō	2	56	25	0	9	14	6	ō	303
Grand Total	296	281	110	36	380	217	375	ō	95	333	166	ōl	189	294	145	7	2924
Apprch %	40.9	38.9	15.2	5	39.1	22.3	38.6	0	16	56.1	27.9	0	29.8	46.3	22.8	1.1	
Total %	10.1	9.6	3.8	1.2	13	7.4	12.8	0	3.2	11.4	5.7	0	6.5	10.1	5	0.2	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
% Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0
Cars & Light Goods	286	267	109	0	375	217	368	0	95	315	164	0	188	291	145	0	2820
% Cars & Light Goods	96.6	95	99.1	0	98.7	100	98.1	0	100	94.6	98.8	0	99.5	99	100	0	96.4
Buses	2	0	1	0	1	0	2	0	0	6	1	0	1	2	0	0	16
% Buses	0.7	0	0.9	0	0.3	0	0.5	0	0	1.8	0.6	0	0.5	0.7	0	0	0.5
Single-Unit Trucks	8	12	0	0	4	0	5	0	0	12	1	0	0	0	0	0	42
% Single-Unit Trucks	2.7	4.3	0	0	1.1	0	1.3	0	0	3.6	0.6	0	0	0	0	0	1.4
Articulated Trucks	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Articulated Trucks	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	2	23
% Bicycles on Crosswalk	0	0	0	58.3	0	0	0	0	0	0	0	0	0	0	0	28.6	0.8
Pedestrians	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	5	20
% Pedestrians	0	0	0	41.7	0	0	0	0	0	0	0	0	0	0	0	71.4	0.7

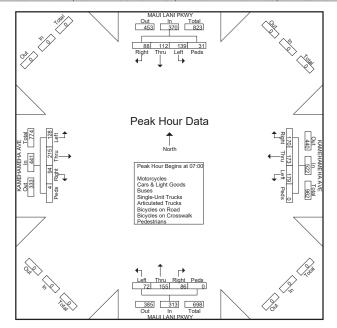
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Maui Lani Pkwy - Kamehameha Ave Site Code: 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

		MAUI	LANI	PKWY	′		KAME	HAME	HA AV	Œ		MAU	LANI	PKWY	·		KAME	HAME	HA AV	Έ	
		SOL	JTHBC	DUND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Tota
Peak Hour Ar	nalysis	From (06:30 t	o 08:1	5 - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 07:00	0															
07:00	30	33	14	4	81	67	40	50	0	157	18	38	9	0	65	26	34	21	1	82	385
07:15	31	26	25	12	94	30	58	36	0	124	26	34	20	0	80	31	61	23	3	118	416
07:30	32	22	32	11	97	40	60	21	0	121	16	35	30	0	81	33	63	24	0	120	419
07:45	46	31	17	4	98	42	15	63	0	120	12	48	27	0	87	38	57	26	0	121	426
Total Volume	139	112	88	31	370	179	173	170	0	522	72	155	86	0	313	128	215	94	4	441	1646
% App. Total	37.6	30.3	23.8	8.4		34.3	33.1	32.6	0		23	49.5	27.5	0		29	48.8	21.3	0.9		
PHF	.755	.848	.688	.646	.944	.668	.721	.675	.000	.831	.692	.807	.717	.000	.899	.842	.853	.904	.333	.911	.966



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Maui Lani Pkwy - Kamehameha Ave Site Code: 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

Page No : 1

Groups Print			VI PKWY			MEHAM					VI PKW				IEHA A\		
	5	SOUTHE	BOUND			WESTB	OUND		1	NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
15:30	46	43	23	0	35	39	49	0	12	50	43	0	18	25	12	0	395
15:45	37	32	37	2	39	52	59	0	14	42	51	0	30	41	19	0	455
Total	83	75	60	2	74	91	108	0	26	92	94	0	48	66	31	0	850
16:00	43	27	32	1	42	46	55	0	11	46	45	0	20	41	19	0	428
16:15	39	32	35	3	26	40	63	0	10	48	42	0	31	48	14	0	431
16:30	48	32	26	1	27	42	63	0	15	42	54	0	24	36	12	0	422
16:45	44	54	17	2	38	40	79	0	15	39	60	0	9	26	9	0	432
Total	174	145	110	7	133	168	260	0	51	175	201	0	84	151	54	0	1713
17:00	41	62	13	2	31	36	66	οl	8	66	44	o l	8	15	9	0	401
17:15	53	41	21	0	30	32	69	0	10	30	63	0	20	16	4	0	389
Grand Total	351	323	204	11	268	327	503	0	95	363	402	0	160	248	98	0	3353
Apprch %	39.5	36.3	22.9	1.2	24.4	29.8	45.8	0	11	42.2	46.7	0	31.6	49	19.4	0	
Total %	10.5	9.6	6.1	0.3	8	9.8	15	0	2.8	10.8	12	0	4.8	7.4	2.9	0	
Motorcycles	1	0	0	0	0	0	2	0	0	0	1	0	1	0	0	0	5
% Motorcycles	0.3	0	0	0	0	0	0.4	0	0	0	0.2	0	0.6	0	0	0	0.1
Cars & Light Goods	348	322	202	0	264	327	499	0	95	362	395	0	158	245	98	0	3315
% Cars & Light Goods	99.1	99.7	99	0	98.5	100	99.2	0	100	99.7	98.3	0	98.8	98.8	100	0	98.9
Buses	1	0	1	0	1	0	0	0	0	0	3	0	1	0	0	0	7
% Buses	0.3	0	0.5	0	0.4	0	0	0	0	0	0.7	0	0.6	0	0	0	0.2
Single-Unit Trucks	1	1	1	0	3	0	2	0	0	1	3	0	0	3	0	0	15
% Single-Unit Trucks	0.3	0.3	0.5	0	1.1	0	0.4	0	0	0.3	0.7	0	0	1.2	0	0	0.4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
% Bicycles on Crosswalk	0	0	0	27.3	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Pedestrians	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
% Pedestrians	0	0	0	72.7	0	0	0	0	0	0	0	0	0	0	0	0	0.2

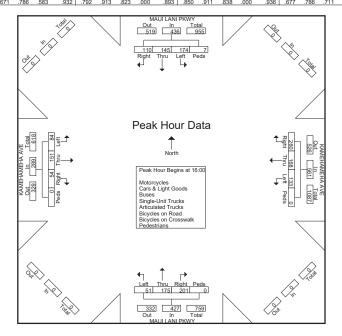
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Maui Lani Pkwy - Kamehameha Ave Site Code: 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

		MAUI	LANII	PKWY			KAME	HAME	HA AV	Æ		MAU	LANI	PKWY			KAME	HAME	HA AV	E	
		SOL	JTHBO	UND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBOL	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int.
Peak Hour Ar	nalysis	From 1	16:00 to	16:45	- Peak	1 of 1															
Peak Hour fo	r Entire	Inters	ection I	3egins	at 16:00	D															
16:00	43	27	32	1	103	42	46	55	0	143	11	46	45	0	102	20	41	19	0	80	
16:15	39	32	35	3	109	26	40	63	0	129	10	48	42	0	100	31	48	14	0	93	
16:30	48	32	26	1	107	27	42	63	0	132	15	42	54	0	111	24	36	12	0	72	
16:45	44	54	17	2	117	38	40	79	0	157	15	39	60	0	114	9	26	9	0	44	
Total Volume	174	145	110	7	436	133	168	260	0	561	51	175	201	0	427	84	151	54	0	289	1
% App. Total	39.9	33.3	25.2	1.6		23.7	29.9	46.3	0		11.9	41	47.1	0		29.1	52.2	18.7	0		
DUE																					



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Kuikahi Dr

Site Code : 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

Page No : 1

		WAIAL SOUTHE				AUI LAN WESTB	VI PKW	1	,	WAIAL				KUIKA			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Tota
06:30	30	18	37	0	6	31	39	1 003	4	23	12	0	54	48	4	0	30
06:45	49	26	35	2	5	45	52	0	11	45	11	0	86	50	8	1	42
Total	79	44	72	2	11	76	91	1	15	68	23	0	140	98	12	1	73
TOTAL	19	44	12	2		70	91		15	00	23	0 1	140	90	12	'	1 13
07:00	40	48	36	0	8	46	52	2	28	27	13	0	95	61	8	0	46
07:15	45	22	50	0	5	61	52	0	41	49	20	0	79	66	10	0	50
07:30	42	42	25	0	10	57	30	0	48	42	3	2	57	83	16	2	45
07:45	44	37	59	1	9	32	59	2	18	40	1	0	76	72	22	4	4
Total	171	149	170	1	32	196	193	4	135	158	37	2	307	282	56	6	18
08:00	48	32	51	2	7	58	58	0	7	25	4	o l	67	49	10	0	4
08:15	51	18	33	0	11	71	62	Ö	4	10	3	0	65	51	8	Ö	3
Grand Total	349	243	326	5	61	401	404	5	161	261	67	2	579	480	86	7	34
Apprch %	37.8	26.3	35.3	0.5	7	46	46.4	0.6	32.8	53.2	13.6	0.4	50.3	41.7	7.5	0.6	1
Total %	10.2	7.1	9.5	0.1	1.8	11.7	11.8	0.1	4.7	7.6	1.9	0.1	16.8	14	2.5	0.2	1
Motorcycles	0	0	4	0	0	0	0	0	0	0	0	0	0	1	1	0	
% Motorcycles	0	0	1.2	0	0	0	0	0	0	0	0	0	0	0.2	1.2	0	(
Cars & Light Goods	340	225	300	0	60	383	397	0	157	254	67	0	570	475	82	0	33
% Cars & Light Goods	97.4	92.6	92	0	98.4	95.5	98.3	0	97.5	97.3	100	0	98.4	99	95.3	0	96
Buses	1	3	1	0	0	3	3	0	1	2	0	0	8	2	1	0	
% Buses	0.3	1.2	0.3	0	0	0.7	0.7	0	0.6	0.8	0	0	1.4	0.4	1.2	0	(
Single-Unit Trucks	5	12	19	0	1	15	4	0	3	4	0	0	0	2	2	0	
6 Single-Unit Trucks	1.4	4.9	5.8	0	1.6	3.7	1_	0	1.9	1.5	0	0	0	0.4	2.3	0	1
Articulated Trucks	3	2	2	0	0	0	0	0	0	0	0	0	1	0	0	0	
% Articulated Trucks	0.9	0.8	0.6	0	0	0	0	0	0	0	0	0	0.2	0	0	0	(
Bicycles on Road	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
% Bicycles on Road	0	0.4	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	(
Bicycles on Crosswalk	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	l .
6 Bicycles on Crosswalk	0	0	0	40	0	0	0	20	0	0	0	0	0	0	0	0	(
Pedestrians	0	0	0	3	0	0	0	4	0	0	0	2	0	0	0	7	
% Pedestrians	0	0	0	60	0	0	0	80	0	0	0	100	0	0	0	100	1 (

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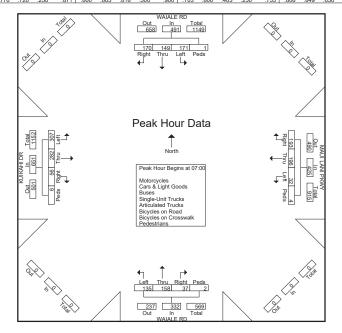
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Kuikahi Dr

Site Code : 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

																					_
		W	AIALE	RD			MAU	I LANI	PKWY	′		W.	AIALE	RD			Κl	JIKAHI	DR		1
		SOL	JTHBO	UND			WE	STBO	UND			NOF	RTHBC	DUND			EA	STBOL	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int.
Peak Hour Ar	nalysis	From (06:30 to	08:1	5 - Peak	1 of 1															
Peak Hour fo	r Entire	Inters	ection I	Begins	at 07:00)															
07:00	40	48	36	0	124	8	46	52	2	108	28	27	13	0	68	95	61	8	0	164	
07:15	45	22	50	0	117	5	61	52	0	118	41	49	20	0	110	79	66	10	0	155	
07:30	42	42	25	0	109	10	57	30	0	97	48	42	3	2	95	57	83	16	2	158	
07:45	44	37	59	1_	141	9	32	59	2	102	18	40	1_	0	59	76	72	22	4	174	
Total Volume	171	149	170	1	491	32	196	193	4	425	135	158	37	2	332	307	282	56	6	651	1
% App. Total	34.8	30.3	34.6	0.2		7.5	46.1	45.4	0.9		40.7	47.6	11.1	0.6		47.2	43.3	8.6	0.9		
DHE	950	776	720	250	871	800	803	818	500	ann	703	806	463	250	755	808	8/10	636	375	035	1



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Kuikahi Dr

Site Code : 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

Page No : 1

Groups Print	ea- Moto	WAIAI.		Light G		AUI LAN			cuiated	WAIAI		on Roa	aa - Bicyo	KUJIKA		ık - Ped	estrians
			BOUND			WESTB		'		NORTH				EASTB			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
15:30	74	32	29	1	9	67	64	0	17	36	19	0	73	47	16	0	484
15:45	77	34	36	0	12	68	53	0	14	47	10	0	68	65	18	0	502
Total	151	66	65	1	21	135	117	0	31	83	29	0	141	112	34	0	986
16:00	63	29	41	0	11	72	77	1	10	38	9	1	60	65	14	0	491
16:15	69	43	41	ō	20	66	74	Ó	12	36	17	o l	68	50	10	ō	506
16:30	65	54	45	0	14	78	55	0	5	25	15	0	66	62	12	0	496
16:45	67	52	38	0	16	61	74	0	12	30	7	0	79	44	21	0	501
Total	264	178	165	0	61	277	280	1	39	129	48	1	273	221	57	0	1994
17:00	75	45	47	0	21	78	68	0	4	24	5	o l	63	52	8	0	490
17:15	71	35	50	ō	22	60	67	ō	9	26	3	ō	54	59	16	ō	472
Grand Total	561	324	327	1	125	550	532	1	83	262	85	1	531	444	115	0	3942
Apprch %	46.2	26.7	27	0.1	10.3	45.5	44	0.1	19.3	60.8	19.7	0.2	48.7	40.7	10.6	0	
Total %	14.2	8.2	8.3	0	3.2	14	13.5	0	2.1	6.6	2.2	0	13.5	11.3	2.9	0	
Motorcycles	0	0	1	0	0	1	1	0	0	2	1	0	1	2	0	0	9
% Motorcycles	0	0	0.3	0	0	0.2	0.2	0	0	0.8	1.2	0	0.2	0.5	0	0	0.2
Cars & Light Goods	558	322	324	0	123	547	529	0	83	257	84	0	513	439	114	0	3893
% Cars & Light Goods	99.5	99.4	99.1	0	98.4	99.5	99.4	0	100	98.1	98.8	0	96.6	98.9	99.1	0	98.8
Buses	2	0	0	0	0	2	0	0	0	0	0	0	6	0	0	0	10
% Buses	0.4	0	0	0	0	0.4	0	0	0	0	0	0	1.1	0	0	0	0.3
Single-Unit Trucks	1	1	2	0	1	0	2	0	0	3	0	0	11	3	1	0	25
% Single-Unit Trucks	0.2	0.3	0.6	0	0.8	0	0.4	0	0	1.1	0	0	2.1	0.7	0.9	0	0.6
Articulated Trucks	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
% Articulated Trucks	0	0	0	0	0.8	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bicycles on Road	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	3
% Pedestrians	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	0	0.1

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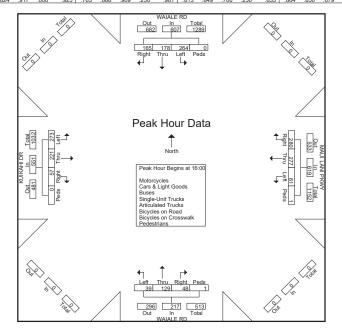
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Kuikahi Dr

Site Code : 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/13/2019

	WAIALE RD SOUTHBOUND					MAUI LANI PKWY					WAIALE RD NORTHBOUND						1				
						WESTBOUND															
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. To
Peak Hour Ar	nalysis	From 1	6:00 to	16:45	5 - Peak	1 of 1															
Peak Hour for			ection I	Begins)															
16:00	63	29	41	0	133	11	72	77	1	161	10	38	9	1	58	60	65	14	0	139	4
16:15	69	43	41	0	153	20	66	74	0	160	12	36	17	0	65	68	50	10	0	128	5
16:30	65	54	45	0	164	14	78	55	0	147	5	25	15	0	45	66	62	12	0	140	4
16:45	67	52	38	0	157	16	61	74	0	151	12	30	7	0	49	79	44	21	0	144	5
Total Volume	264	178	165	0	607	61	277	280	1	619	39	129	48	1	217	273	221	57	0	551	19
% App. Total	43.5	29.3	27.2	0		9.9	44.7	45.2	0.2		18	59.4	22.1	0.5		49.5	40.1	10.3	0		
DUE	0.67	024	017	000	0.25	762	000	000	250	061	012	0.40	706	250	925	064	050	670	000	0.67	



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Olomea St

Site Code : 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/14/2019

Page No : 1

		WAIAL				VAIMAL				WAIAL	Bicycles E RD						
	5	SOUTHE	BOUND			WESTB	OUND		1	NORTH	BOUND			1			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	6	102	8	0	1	0	0	0	1	164	6	0	19	0	11	0	318
06:45	3	105	15	0	3	0	2	1	2	166	9	0	18	0	9	0	333
Total	9	207	23	0	4	0	2	1	3	330	15	0	37	0	20	0	651
07:00	3	125	27	0	3	0	7	2	1	201	1	0	30	0	7	0	407
07:15	3	137	52	0	3	0	6	1	1	248	4	0	32	0	10	2	499
07:30	4	128	56	0	2	0	2	0	1	223	2	0	58	0	8	1	485
07:45	1_	142	31	0	0	0	1_	0	4	228	0	0	39	0	7	0	453
Total	11	532	166	0	8	0	16	3	7	900	7	0	159	0	32	3	1844
08:00	2	107	15	0	1	0	3	0	3	193	3	0	23	0	8	0	358
08:15	1	103	19	0	0	0	2	0	3	143	1	0	21	0	3	0	296
Grand Total	23	949	223	0	13	0	23	4	16	1566	26	0	240	0	63	3	3149
Apprch %	1.9	79.4	18.7	0	32.5	0	57.5	10	1	97.4	1.6	0	78.4	0	20.6	1	
Total %	0.7	30.1	7.1	0	0.4	0	0.7	0.1	0.5	49.7	0.8	0	7.6	0	2	0.1	
Motorcycles	0	2	0	0	0	0	0	0	0	2	0	0	3	0	0	0	7
% Motorcycles	0	0.2	0	0	0	0	0	0	0	0.1	0	0	1.2	0	0	0	0.2
Cars & Light Goods	23	909	219	0	13	0	22	0	11	1536	26	0	234	0	63	0	3056
% Cars & Light Goods	100	95.8	98.2	0	100	0	95.7	0	68.8	98.1	100	0	97.5	0	100	0	97
Buses	0	4	2	0	0	0	0	0	5	6	0	0	2	0	0	0	19
% Buses	0	0.4	0.9	0	0	0	0	0	31.2	0.4	0	0	0.8	0	0	0	0.6
Single-Unit Trucks	0	29	0	0	0	0	. 1	0	0	19	0	0	. 1	0	0	0	50
% Single-Unit Trucks	0	3.1	0	0	0	0	4.3	0	0	1.2	0	0	0.4	0	0	0	1.6
Articulated Trucks	0	4	2	0	0	0	0	0	0	3	0	0	0	0	0	0	9
% Articulated Trucks	0	0.4	0.9	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0.3
Bicycles on Road	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 1
% Bicycles on Road	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(
Pedestrians	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	3	1
% Pedestrians	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0.2

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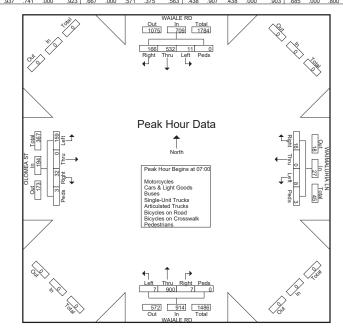
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Olomea St

Site Code : 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/14/2019

						WAIMALUHIA LN						W	AIALE	RD		OLOMEA ST					
						WESTBOUND				NORTHBOUND					EASTBOUND						
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int.
Peak Hour Ar	nalysis	From (06:30 to	08:15	5 - Peak	1 of 1															
Peak Hour fo	r Entire	Inters	ection I	Begins	at 07:00	D															
07:00	3	125	27	0	155	3	0	7	2	12	1	201	1	0	203	30	0	7	0	37	
07:15	3	137	52	0	192	3	0	6	1	10	1	248	4	0	253	32	0	10	2	44	
07:30	4	128	56	0	188	2	0	2	0	4	1	223	2	0	226	58	0	8	1	67	
07:45	1	142	31	0	174	0	0	1	0	1	4	228	0	0	232	39	0	7	0	46	
Total Volume	11	532	166	0	709	8	0	16	3	27	7	900	7	0	914	159	0	32	3	194	1
% App. Total	1.6	75	23.4	0		29.6	0	59.3	11.1		0.8	98.5	0.8	0		82	0	16.5	1.5		
DUE	600	027	7/11	000	022	667	000	E71	275	563	120	007	420	000	003	605	000	900	275	724	1 -



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File Name: Waiale Rd - Olomea St

Site Code : 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/14/2019

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		WAIAL					JHIA LN			WAIAI		on Roa		OLOM			
	5	SOUTHE				WESTB			1		BOUND			EASTB			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
15:30	0	164	43	0	4	0	5	1	7	161	0	0	23	0	7	0	415
15:45	2	148	42	0	2	0	4	0	8	209	0	0	19	0	3	1	438
Total	2	312	85	0	6	0	9	1	15	370	0	0	42	0	10	1	853
16:00	2	173	38	0	2	1	5	2	7	214	0	0	21	0	5	4	474
16:15	1	157	37	0	2	0	1	0	4	205	1	0	22	0	0	0	430
16:30	0	185	41	0	2	0	3	2	6	187	1	0	16	0	4	1	448
16:45	1	174	40	0	0	0	0	0	9	175	2	0	11	0	4	0	416
Total	4	689	156	0	6	1	9	4	26	781	4	0	70	0	13	5	1768
17:00	0	174	40	0	1	0	1	0	5	162	2	0	17	0	3	1	406
17:15	ō	117	29	ō	0	ō	1	3	6	138	0	ō	15	ō	4	2	31
Grand Total	6	1292	310	0	13	1	20	8	52	1451	6	0	144	0	30	9	3342
Apprch %	0.4	80.3	19.3	0	31	2.4	47.6	19	3.4	96.2	0.4	0	78.7	0	16.4	4.9	
Total %	0.2	38.7	9.3	0	0.4	0	0.6	0.2	1.6	43.4	0.2	0	4.3	0	0.9	0.3	
Motorcycles	0	3	1	0	0	0	0	0	0	13	0	0	0	0	0	0	17
% Motorcycles	0	0.2	0.3	0	0	0	0	0	0	0.9	0	0	0	0	0	0	0.5
Cars & Light Goods	5	1280	309	0	13	1	20	0	46	1401	6	0	142	0	30	0	325
% Cars & Light Goods	83.3	99.1	99.7	0	100	100	100	0	88.5	96.6	100	0	98.6	0	100	0	97.3
Buses	0	1	0	0	0	0	0	0	4	5	0	0	0	0	0	0	10
% Buses	0	0.1	0	0	0	0	0	0	7.7	0.3	0	0	0	0	0	0	0.3
Single-Unit Trucks	0	5	0	0	0	0	0	0	2	26	0	0	2	0	0	0	3
% Single-Unit Trucks	0	0.4	0	0	0	0	0	0	3.8	1.8	0	0	1.4	0	0	0	
Articulated Trucks	0	0.2	0	٠,	0			0	0	0.3		0	0	0		0	0.2
% Articulated Trucks	1	0.2	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0.2
Bicycles on Road	16.7	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.
% Bicycles on Road Bicycles on Crosswalk	0	0	0	0	0	0	0	3	0	0.1	0	0	0	0	0	0	0.
% Bicycles on Crosswalk	0	0	0	0	0	0	0	37.5	0	0	0	0	0	0	0	0	0.
% Bicycles on Crosswalk Pedestrians	0	0	0	0	0	0	0	57.5	0	0	0	0	0	0	0	9	14
% Pedestrians	0	0	0	0	0	0	0	62.5	0	0	0	0	0	0	0	100	0.4

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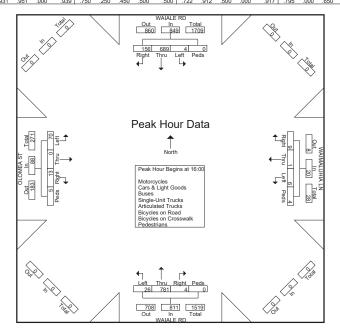
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Olomea St

Site Code : 19-503 MAUI LANI DEVELOPMENT

Start Date : 3/14/2019

																					_
		W	AIALE	RD			WAIN	//ALU	IIA LN			W.	AIALE	RD			OL	OMEA	ST		1
		SOL	JTHBO	UND			WE	STBO	UND			NOF	RTHBO	UND			EA	STBOL	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. To
Peak Hour Ar	nalysis	From 1	16:00 to	16:45	5 - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection I	Begins	at 16:00)															
16:00	2	173	38	0	213	2	1	5	2	10	7	214	0	0	221	21	0	5	4	30	4
16:15	1	157	37	0	195	2	0	1	0	3	4	205	1	0	210	22	0	0	0	22	4
16:30	0	185	41	0	226	2	0	3	2	7	6	187	1	0	194	16	0	4	1	21	4
16:45	1	174	40	0	215	0	0	0	0	0	9	175	2	0	186	11	0	4	0	15	4
Total Volume	4	689	156	0	849	6	1	9	4	20	26	781	4	0	811	70	0	13	5	88	17
% App. Total	0.5	81.2	18.4	0		30	5	45	20		3.2	96.3	0.5	0		79.5	0	14.8	5.7		
DUE	500	024	OE4	000	020	750	250	450	EOO	500	700	040	EOO	000	047	705	000	CEO	242	722	



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Waiinu Rd

Site Code : 19-503 Maui Lani Development

Start Date : 3/13/2019

Page No : 1

		WAIAL	E RD			WAIIN	U RD			WAIAL	E RD						
		SOUTHE	BOUND			WESTB	OUND			NORTHE	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Tota
06:30	10	72	0	0	36	0	2	0	0	67	98	0	0	0	0	0	28
06:45	9	89	0	0	39	0	9	0	0	83	134	0	0	0	0	0	36
Total	19	161	0	0	75	0	11	0	0	150	232	0	0	0	0	0	64
07:00	14	120	0	0	44	0	9	1	0	101	109	0	0	0	0	0	39
07:15	16	138	0	0	39	0	14	0	0	126	138	0	0	0	0	0	47
07:30	20	153	0	0	52	0	19	1	0	114	174	0	0	0	0	0	53
07:45	17	144	0	0	49	0	9	0	0	115	186	0	0	0	0	0	52
Total	67	555	0	0	184	0	51	2	0	456	607	0	0	0	0	0	192
08:00	12	99	0	0	36	0	4	1	0	87	84	0	0	0	0	0	32
08:15	15	80	0	0	29	0	15	0	0	85	83	0	0	0	0	0	3
Grand Total	113	895	0	0	324	0	81	3	0	778	1006	0	0	0	0	0	32
Apprch %	11.2	88.8	0	0	79.4	0	19.9	0.7	0	43.6	56.4	0	0	0	0	0	
Total %	3.5	28	0	0	10.1	0	2.5	0.1	0	24.3	31.4	0	0	0	0	0	
Motorcycles	0	3	0	0	1	0	1	0	0	1	2	0	0	0	0	0	
% Motorcycles	0	0.3	0	0	0.3	0	1.2	0	0	0.1	0.2	0	0	0	0	0	
Cars & Light Goods	109	854	0	0	298	0	78	0	0	761	993	0	0	0	0	0	30
% Cars & Light Goods	96.5	95.4	0	0	92	0	96.3	0	0	97.8	98.7	0	0	0	0	0	96
Buses	0	6	0	0	1	0	0	0	0	8	7	0	0	0	0	0	
% Buses	0	0.7	0	0	0.3	0	0	0	0	1_	0.7	0	0	0	0	0	
Single-Unit Trucks	3	29	0	0	18	0	2	0	0	8	3	0	0	0	0	0	
Single-Unit Trucks	2.7	3.2	0	0	5.6	0	2.5	0	0	1	0.3	0	0	0	0	0	
articulated Trucks	0	1	0	0	6	0	0	0	0	0	1	0	0	0	0	0	
6 Articulated Trucks	0	0.1	0	0	1.9	0	0	0	0	0	0.1	0	0	0	0	0	C
Bicycles on Road	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycles on Road	0.9	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles on Crosswalk	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	
Bicycles on Crosswalk	0	0	0	0	0	0	0	33.3	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	
% Pedestrians	0	0	0	0	0	0	0	66.7	0	0	0	0	0	0	0	0	(

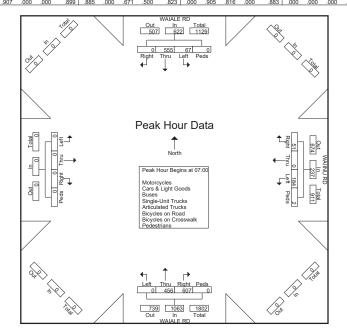
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Waiale Rd - Waiinu Rd Site Code: 19-503 Maui Lani Development

Start Date : 3/13/2019

		W	AIALE	RD			W	AIINU	RD			W	AIALE	RD							ĺ
		SOL	ІТНВО	UND			WE	STBO	UND			NOF	RTHBO	DUND			EA	STBO	UND		ĺ
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. To
Peak Hour A	nalysis	From 0	6:30 to	08:15	- Peak	1 of 1															
Peak Hour fo	r Entire	Inters	ection I	3egins	at 07:0	0															
07:00	14	120	0	0	134	44	0	9	1	54	0	101	109	0	210	0	0	0	0	0	39
07:15	16	138	0	0	154	39	0	14	0	53	0	126	138	0	264	0	0	0	0	0	47
07:30	20	153	0	0	173	52	0	19	1	72	0	114	174	0	288	0	0	0	0	0	5
07:45	17	144	0	0	161	49	0	9	0	58	0	115	186	0	301	0	0	. 0	0	0	52
Total Volume	67	555	0	0	622	184	0	51	2	237	0	456	607	0	1063	0	0	0	0	0	192
% App. Total	10.8	89.2	0	0		77.6	0	21.5	0.8		0	42.9	57.1	0		0	0	0	0		
DUE	000	007	000	000	000	005	000	074		000	000	-005	040	000	000	000	000	000	000	000	_



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Waiinu Rd

Site Code : 19-503 Maui Lani Development

Start Date : 3/12/2019

Page No : 1

		WAIAL				WAIIN				WAIAL				FASTB	OLIND		
Start Time	Left	Thru	Right	Peds	Int. Tota												
15:30	13	170	0	0	55	0	13	0	0	114	91	0	0	0	0	0	45
15:30	14	131	0	0	43	0	7	0	0	107	89	1	0	0	0	0	39
Total	27	301	0	0	98	0	20	0	0	221	180	1	0	0	0	0	84
TOTAL	21	301	U	U	90	U	20	U	U	221	100	11	U	U	U	U	1 04
16:00	9	141	0	0	55	0	3	0	0	110	101	0	0	0	0	0	4
16:15	14	124	0	0	54	0	7	0	0	114	108	0	0	0	0	0	42
16:30	21	156	0	0	50	0	7	0	0	91	99	0	0	0	0	0	42
16:45	18	133	0	0	72	0	15	0	0	110	96	0	0	0	0	0	44
Total	62	554	0	0	231	0	32	0	0	425	404	0	0	0	0	0	170
17:00	7	141	0	0	71	0	12	0	0	97	82	οl	0	0	0	0	4
17:15	7	103	ō	ō	48	ō	10	1	ō	84	81	ō	ō	ō	ō	ō	3
Grand Total	103	1099	0	0	448	0	74	1	0	827	747	1	0	0	0	0	33
Apprch %	8.6	91.4	0	0	85.7	0	14.1	0.2	0	52.5	47.4	0.1	0	0	0	0	
Total %	3.1	33.3	0	0	13.6	0	2.2	0	0	25.1	22.6	0	0	0	0	0	
Motorcycles	0	4	0	0	1	0	0	0	0	4	3	0	0	0	0	0	
% Motorcycles	0	0.4	0	0	0.2	0	0	0	0	0.5	0.4	0	0	0	0	0	0
Cars & Light Goods	101	1088	0	0	440	0	74	0	0	815	726	0	0	0	0	0	324
% Cars & Light Goods	98.1	99	0	0	98.2	0	100	0	0	98.5	97.2	0	0	0	0	0	98
Buses	0	1	0	0	3	0	0	0	0	1	8	0	0	0	0	0	
% Buses	0	0.1	0	0	0.7	0	0	0	0	0.1	1.1	0	0	0	0	0	0
Single-Unit Trucks	2	3	0	0	1	0	0	0	0	6	7	0	0	0	0	0	
% Single-Unit Trucks	1.9	0.3	0	0	0.2	0	0	0	0	0.7	0.9	0	0	0	0	0	0
Articulated Trucks	0	0	0	0	2	0	0	0	0	0	3	0	0	0	0	0	١
% Articulated Trucks	0	3	0	0	0.4	0	0	0	0	1	0.4	0	0	0	0	0	0
Bicycles on Road	0		0	0		0		0			0	0	0	0	0	0	٥ ا
% Bicycles on Road	0	0.3	0	0	0.2	0	0	0	0	0.1	0	0	0	0	0	0	H (
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycles on Crosswalk Pedestrians	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	
% Pedestrians	0	0	0	0	0	0	0	100	0	0	0	100	0	0	0	0	۱ ،

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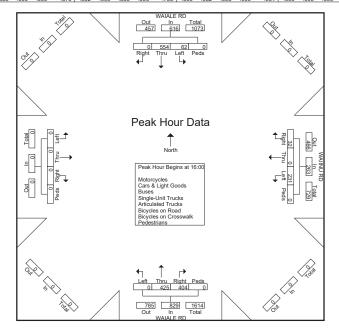
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Waiinu Rd

Site Code : 19-503 Maui Lani Development

Start Date : 3/12/2019

		W	AIALE	RD			W	AIINU	RD			W	AIALE	RD							
		SOL	JTHBO	UND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int.
Peak Hour Ar	nalysis	From 1	15:30 to	17:15	- Peak	1 of 1															
Peak Hour fo	r Entire	Inters	ection I	Begins	at 16:00)															
16:00	9	141	0	0	150	55	0	3	0	58	0	110	101	0	211	0	0	0	0	0	
16:15	14	124	0	0	138	54	0	7	0	61	0	114	108	0	222	0	0	0	0	0	
16:30	21	156	0	0	177	50	0	7	0	57	0	91	99	0	190	0	0	0	0	0	
16:45	18	133	0	0	151	72	0	15	0	87	0	110	96	0	206	0	0	0	0	0	
Total Volume	62	554	0	0	616	231	0	32	0	263	0	425	404	0	829	0	0	0	0	0	1
% App. Total	10.1	89.9	0	0		87.8	0	12.2	0		0	51.3	48.7	0		0	0	0	0		
PHF	738	888	000	000	870	802	000	533	000	756	000	932	935	nnn	934	000	000	000	000	000	_



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Haawi St

Site Code : 19-508 Puunani Homesteads

Start Date : 4/9/2019

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Groups Printe	ed- Moto			Light G	Goods - E	Buses - L	Jnit Truc	cks - Arti	culated -			on Roa	ad - Bicy	cles on (Crosswa	lk - Ped	estrians
		WAIAL	E RD	-						WAIAL	_E RD			HAAW	/I ST		ĺ
		OUTHE	BOUND			WESTB	OUND			NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	0	36	4	0	0	0	0	0	3	21	0	0	18	0	17	0	99
06:45	0	42	12	0	0	0	0	0	2	28	0	0	24	0	19	0	127
Total	0	78	16	0	0	0	0	0	5	49	0	0	42	0	36	0	226
07:00	0	46	7	0	0	0	0	0	4	48	0	0	26	0	29	0	160
07:15	0	46	7	0	0	0	0	0	4	46	0	0	21	0	20	0	144
07:30	0	35	6	0	0	0	0	0	6	38	0	0	14	0	10	0	109
07:45	0	33	8	0	ő	0	0	0	2	25	0	ő	7	0	14	0	89
Total	0	160	28	0	0	0	0	0	16	157	0	0	68	0	73	0	
08:00	0	22	6	0	0	0	0	0	5	11	0	0	15	0	8	0	67
08:15	0	19	6	0	0	0	0	0	1	16	0	0	11	0	8	0	61
Grand Total	0	279	56	0	0	0	0	0	27	233	0	0	136	0	125	0	856
Apprch %	0	83.3	16.7	0	0	0	0	0	10.4	89.6	0	0	52.1	0	47.9	0	
Total %	0	32.6	6.5	0	0	0	0	0	3.2	27.2	0	0	15.9	0	14.6	0	
Motorcycles	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Motorcycles	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Cars & Light Goods	0	265	56	0	0	0	0	0	25	222	0	0	136	0	125	0	829
% Cars & Light Goods	0	95	100	0	0	0	0	0	92.6	95.3	0	0	100	0	100	0	96.8
Buses	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4
% Buses	0	0.7	0	0	0	0	0	0	7.4	0	0	0	0	0	0	0	0.5
Single-Unit Trucks	0	6	0	0	0	0	0	0	0	9	0	0	0	0	0	0	15
% Single-Unit Trucks	0	2.2	0	0	0	0	0	0	0	3.9	0	0	0	0	0	0	1.8
Articulated Trucks	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5
% Articulated Trucks	0	1.4	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.6
Bicycles on Road	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.1
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

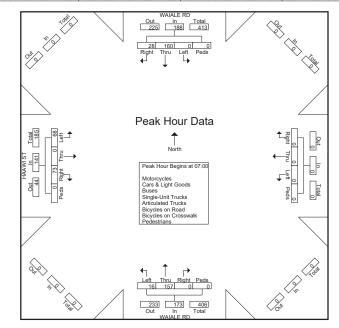
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Waiale Rd - Haawi St Site Code: 19-508 Puunani Homesteads

Start Date : 4/9/2019

		W	AIALE	RD								W	AIALE	RD			Н	AAWI	ST		i
		SOL	JTHBC	UND			WE	STBO	UND			NOF	RTHBC	UND			EΑ	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From (07:00 to	07:45	- Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 07:00)															
07:00	0	46	7	0	53	0	0	0	0	0	4	48	0	0	52	26	0	29	0	55	160
07:15	0	46	7	0	53	0	0	0	0	0	4	46	0	0	50	21	0	20	0	41	144
07:30	0	35	6	0	41	0	0	0	0	0	6	38	0	0	44	14	0	10	0	24	109
07:45	0	33	8	0	41	0	0	0	0	0	2	25	0	0	27	7	0	14	0	21	89
Total Volume	0	160	28	0	188	0	0	0	0	0	16	157	0	0	173	68	0	73	0	141	502
% App. Total	0	85.1	14.9	0		0	0	0	0		9.2	90.8	0	0		48.2	0	51.8	0		
PHF	.000	.870	.875	.000	.887	.000	.000	.000	.000	.000	.667	.818	.000	.000	.832	.654	.000	.629	.000	.641	.784



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Haawi St

Site Code : 19-508 Puunani Homesteads

Start Date : 4/9/2019

Page No : 1

		WAIAL	E RD							WAIAL	E RD			HAAW	/I ST		
	5	SOUTHE	BOUND			WESTB	OUND		1	NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Tota
15:30	0	37	7	0	0	0	0	0	18	41	0	0	9	0	8	0	12
15:45	0	33	14	0	0	0	0	0	15	38	0	0	13	0	5	1	11
Total	0	70	21	0	0	0	0	0	33	79	0	0	22	0	13	1	23
16:00	0	42	17	0	0	0	0	0	14	41	0	0	11	0	8	0	13
16:15	0	43	10	0	0	0	0	0	14	42	0	0	13	0	6	0	12
16:30	0	35	18	0	0	0	0	0	16	31	0	0	8	0	6	0	11
16:45	0	35	17	0	0	0	0	0	16	28	0	0	6	0	8	0	11
Total	0	155	62	0	0	0	0	0	60	142	0	0	38	0	28	0	48
17:00	0	47	11	0	0	0	0	οl	16	34	0	o l	5	0	6	0	l 11
17:15	0	20	13	0	0	0	0	0	10	29	0	0	10	0	6	0	8
Grand Total	0	292	107	0	0	0	0	0	119	284	0	0	75	0	53	1	9:
Apprch %	0	73.2	26.8	0	0	0	0	0	29.5	70.5	0	0	58.1	0	41.1	0.8	
Total %	0	31.4	11.5	0	0	0	0	0	12.8	30.5	0	0	8.1	0	5.7	0.1	
Motorcycles	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	
% Motorcycles	0	0	0.9	0	0	0	0	0	0	0	0	0	2.7	0	0	0	0
Cars & Light Goods	0	286	106	0	0	0	0	0	119	282	0	0	73	0	52	0	9
% Cars & Light Goods	0	97.9	99.1	0	0	0	0	0	100	99.3	0	0	97.3	0	98.1	0	98
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Single-Unit Trucks	0	3	0	0	0	0	0	0	0	1	0	0	0	0	1	0	
6 Single-Unit Trucks	0	1_	0	0	0	0	0	0	0	0.4	0	0	0	0	1.9	0	0
Articulated Trucks	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Articulated Trucks	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
% Bicycles on Road	0	0.3	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0

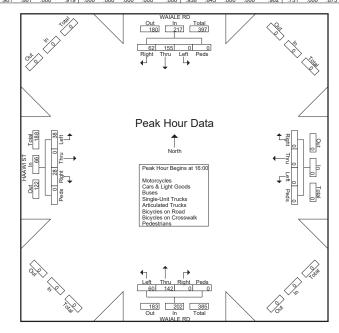
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Waiale Rd - Haawi St Site Code: 19-508 Puunani Homesteads

Start Date : 4/9/2019

		W	AIALE	RD								W.	AIALE	RD			Н	AAWI	ST		
		SOL	JTHBC	DUND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. To
Peak Hour Ar	nalysis	From 1	16:00 to	o 16:4	5 - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 16:00)															
16:00	0	42	17	0	59	0	0	0	0	0	14	41	0	0	55	11	0	8	0	19	1
16:15	0	43	10	0	53	0	0	0	0	0	14	42	0	0	56	13	0	6	0	19	13
16:30	0	35	18	0	53	0	0	0	0	0	16	31	0	0	47	8	0	6	0	14	1
16:45	0	35	17	0	52	0	0	0	0	0	16	28	0	0	44	6	0	8	0	14	1
Total Volume	0	155	62	0	217	0	0	0	0	0	60	142	0	0	202	38	0	28	0	66	4
% App. Total	0	71.4	28.6	0		0	0	0	0		29.7	70.3	0	0		57.6	0	42.4	0		
DUE	000	001	061	000	010	nnn	000	000	000	000	020	0.45	000	nnn	002	721	000	975	000	000	



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Oluloa Dr

Site Code : 19-508 PUUNANI HOMESTEAD

Start Date : 4/9/2019

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Groups Printe	<u> </u>	WAIAL		- Ligiti C	,0000 E	OLULO		/IC / III	ouiutou	WAIAI		0111100	ia Dioji	KAOH]
	5	OUTHE	BOUND			WESTB	OUND		1	NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	0	56	12	0	1	2	1	1	17	46	0	0	6	0	11	0	153
06:45	1	71	30	0	6	2	0	0	24	51	0	0	3	0	14	0	202
Total	1	127	42	0	7	4	1	1	41	97	0	0	9	0	25	0	355
07:00	1	77	24	0	1	1	1	1	30	80	2	0	14	0	22	0	254
07:15	0	113	40	0	5	3	2	0	40	79	2	0	25	0	29	0	338
07:30	1	112	28	0	4	6	2	2	45	76	1	0	23	3	43	0	346
07:45	0	135	12	0	5	5	4	1	30	111	1	0	20	0	30	0	354
Total	2	437	104	0	15	15	9	4	145	346	6	0	82	3	124	0	1292
08:00	2	111	12	0	2	1	2	0	20	110	3	o l	12	2	16	0	293
08:15	1	88	9	0	5	0	0	0	13	66	3	0	13	0	21	0	219
Grand Total	6	763	167	0	29	20	12	5	219	619	12	0	116	5	186	0	2159
Apprch %	0.6	81.5	17.8	0	43.9	30.3	18.2	7.6	25.8	72.8	1.4	0	37.8	1.6	60.6	0	
Total %	0.3	35.3	7.7	0	1.3	0.9	0.6	0.2	10.1	28.7	0.6	0	5.4	0.2	8.6	0	
Motorcycles	0	4	2	0	0	0	0	0	1	1	0	0	0	0	0	0	8
% Motorcycles	0	0.5	1.2	0	0	0	0	0	0.5	0.2	0	0	0	0	0	0	0.4
Cars & Light Goods	6	741	154	0	27	20	10	0	216	604	12	0	114	5	177	0	2086
% Cars & Light Goods	100	97.1	92.2	0	93.1	100	83.3	0	98.6	97.6	100	0	98.3	100	95.2	0	96.6
Buses	0	4	7	0	0	0	1	0	2	4	0	0	0	0	0	0	18
% Buses	0	0.5	4.2	0	0	0	8.3	0	0.9	0.6	0	0	0	0	0	0	0.8
Single-Unit Trucks	0	13	4	0	1	0	0	0	0	10	0	0	2	0	7	0	37
% Single-Unit Trucks	0	1.7	2.4	0	3.4	0	0_	0	0	1.6	0	0	1.7	0	3.8	0	1.7
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	:
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1	0	0.
Bicycles on Road	0	. 1	0	0	. 1	0	1	0	0	0	0	0	0	0	0	0	
% Bicycles on Road	0	0.1	0	0	3.4	0	8.3	0	0	0	0	0	0	0	0	0	0.
Bicycles on Crosswalk	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	:
% Bicycles on Crosswalk	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0.
Pedestrians	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	
% Pedestrians	0	0	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0.

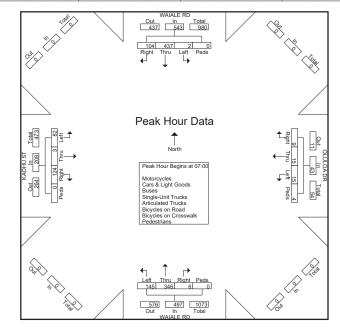
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Waiale Rd - Oluloa Dr Site Code : 19-508 PUUNANI HOMESTEAD

Start Date : 4/9/2019

		W	AIALE	RD			OL	ULOA	DR			W	AIALE	RD			K	AOHU	ST		ĺ
		SOL	JTHBC	DUND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	UND		ĺ
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From (7:00 t	o 07:4	5 - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 07:00)															
07:00	1	77	24	0	102	1	1	1	1	4	30	80	2	0	112	14	0	22	0	36	254
07:15	0	113	40	0	153	5	3	2	0	10	40	79	2	0	121	25	0	29	0	54	338
07:30	1	112	28	0	141	4	6	2	2	14	45	76	1	0	122	23	3	43	0	69	346
07:45	0	135	12	0	147	5	5	4	1	15	30	111	1	0	142	20	0	30	0	50	354
Total Volume	2	437	104	0	543	15	15	9	4	43	145	346	6	0	497	82	3	124	0	209	1292
% App. Total	0.4	80.5	19.2	0		34.9	34.9	20.9	9.3		29.2	69.6	1.2	0		39.2	1.4	59.3	0		
PHF	.500	.809	.650	.000	.887	.750	.625	.563	.500	.717	.806	.779	.750	.000	.875	.820	.250	.721	.000	.757	.912



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File Name: Waiale Rd - Oluloa Dr

Site Code : 19-508 PUUNANI HOMESTEAD

Start Date : 4/9/2019

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Groups Printe		WAIAL				OLULC		7.1.0		WAIAL				KAOH			
	5	SOUTHE	BOUND		1	WESTB	OUND		1	NORTHE	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Tota
15:30	3	107	11	0	2	2	1	5	17	98	4	0	27	5	42	0	32
15:45	1	108	14	0	5	1	1	0	26	95	6	0	16	2	16	0	29
Total	4	215	25	0	7	3	2	5	43	193	10	0	43	7	58	0	61
16:00	2	114	9	0	3	0	2	0	30	97	6	οl	13	2	17	0	29
16:15	0	120	20	0	3	2	3	0	27	110	7	0	14	1	28	0	33
16:30	0	119	15	0	5	1	0	0	25	94	1	0	16	3	51	0	33
16:45	6	127	22	4	3	1	3	0	9	91	7	0	15	4	62	0	35
Total	8	480	66	4	14	4	8	0	91	392	21	0	58	10	158	0	131
17:00	5	129	8	5	3	0	2	1	20	79	2	οl	18	1	30	2	30
17:15	ō	118	7	3	Ō	ō	1	ó	18	69	1	ō	5	1	16	1	2
Grand Total	17	942	106	12	24	7	13	6	172	733	34	0	124	19	262	3	24
Apprch %	1.6	87.5	9.8	1.1	48	14	26	12	18.3	78.1	3.6	0	30.4	4.7	64.2	0.7	
Total %	0.7	38.1	4.3	0.5	1	0.3	0.5	0.2	7	29.6	1.4	0	5	0.8	10.6	0.1	
Motorcycles	0	4	0	0	0	0	0	0	0	6	0	0	1	0	2	0	
% Motorcycles	0	0.4	0	0	0	0	0	0	0	0.8	0	0	0.8	0	0.8	0	0
Cars & Light Goods	17	923	103	0	24	7	12	0	172	714	32	0	122	19	259	0	24
% Cars & Light Goods	100	98	97.2	0	100	100	92.3	0	100	97.4	94.1	0	98.4	100	98.9	0	97
Buses	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
% Buses	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0
Single-Unit Trucks	0	10	2	0	0	0	1	0	0	13	1	0	0	0	0	0	2
% Single-Unit Trucks	0	1.1	1.9	0	0	0	7.7	0	0	1.8	2.9	0	0	0	0	0	1
Articulated Trucks	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Articulated Trucks	0	0.2	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	. 1	0	0	0	0	0	0	0	0	1	0	. 1	0	0	0	
% Bicycles on Road	0	0.1	0	0	0	0	0	0	0	0	2.9	0	0.8	0	0	0	0
Bicycles on Crosswalk	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
% Bicycles on Crosswalk	0	0	0	0	0	0	0	16.7	0	0	0	0	0	0	0	33.3	0
Pedestrians	0	0	0	12	0	0	0	5	0	0	0	0	0	0	0	2	1 1
% Pedestrians	0	0	0	100	0	0	0	83.3	0	0	0	0	0	0	0	66.7	0

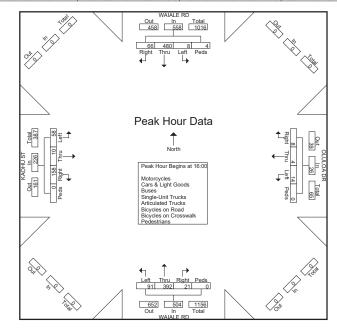
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Waiale Rd - Oluloa Dr Site Code : 19-508 PUUNANI HOMESTEAD

Start Date : 4/9/2019

		W	AIALE	RD			OL	ULOA	DR			W.	AIALE	RD			K	AOHU	ST		
		SOL	JTHBC	DUND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Tota
Peak Hour Ar	nalysis	From 1	16:00 to	o 16:4	5 - Peak	1 of 1															
Peak Hour for	r Éntire	Inters	ection	Begins	at 16:00)															
16:00	2	114	9	0	125	3	0	2	0	5	30	97	6	0	133	13	2	17	0	32	29
16:15	0	120	20	0	140	3	2	3	0	8	27	110	7	0	144	14	1	28	0	43	33
16:30	0	119	15	0	134	5	1	0	0	6	25	94	1	0	120	16	3	51	0	70	330
16:45	6	127	22	4	159	3	1	3	0	7	9	91	7	0	107	15	4	62	0	81	354
Total Volume	8	480	66	4	558	14	4	8	0	26	91	392	21	0	504	58	10	158	0	226	1314
% App. Total	1.4	86	11.8	0.7		53.8	15.4	30.8	0		18.1	77.8	4.2	0		25.7	4.4	69.9	0		
PHF	.333	.945	.750	.250	.877	.700	.500	.667	.000	.813	.758	.891	.750	.000	.875	.906	.625	.637	.000	.698	.928



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File Name: Waiale Rd - Kaupo St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/9/2019

Page No : 1

Groups Printe	ed- Moto			Light C	oods - E	Buses - L	Jnit Truc	cks - Arti	culated '			on Roa	ad - Bicyo			lk - Ped	estrians
		WAIAL								WAIAI				KAUP			
			BOUND			WESTB					BOUND			EASTB			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	0	81	2	0	0	0	0	0	6	137	0	0	11	0	10	2	249
06:45	0	110	4	0	0	0	0	0	5	181	0	0	17	0	6	1	324
Total	0	191	6	0	0	0	0	0	11	318	0	0	28	0	16	3	573
07:00	0	118	4	0	0	0	0	0	13	183	0	0	19	0	18	1	356
07:15	0	129	5	0	0	0	0	0	13	235	0	0	26	0	13	0	421
07:30	0	131	6	0	0	0	0	0	8	180	0	0	46	0	17	0	388
07:45	0	145	6	0	0	0	0	0	6	222	0	0	28	0	14	2	423
Total	0	523	21	0	0	0	0	0	40	820	0	0	119	0	62	3	1588
08:00	0	147	2	0	0	0	0	0	10	173	0	0	6	0	7	2	347
08:15	0	118	2	1	0	0	0	0	9	150	0	0	6	0	13	0	299
Grand Total	0	979	31	1	0	0	0	0	70	1461	0	0	159	0	98	8	2807
Apprch %	0	96.8	3.1	0.1	0	0	0	0	4.6	95.4	0	0	60	0	37	3	
Total %	0	34.9	1.1	0	0	0	0	0	2.5	52	0	0	5.7	0	3.5	0.3	
Motorcycles	0	4	0	0	0	0	0	0	0	5	0	0	2	0	0	0	11
% Motorcycles	0	0.4	0	0	0	0	0	0	0	0.3	0	0	1.3	0	0	0	0.4
Cars & Light Goods	0	933	30	0	0	0	0	0	66	1427	0	0	153	0	97	0	2706
% Cars & Light Goods	0	95.3	96.8	0	0	0	0	0	94.3	97.7	0	0	96.2	0	99	0	96.4
Buses	0	5	1	0	0	0	0	0	4	10	0	0	3	0	1	0	24
% Buses	0	0.5	3.2	0	0	0	0	0	5.7	0.7	0	0	1.9	0	1_	0	0.9
Single-Unit Trucks	0	23	0	0	0	0	0	0	0	14	0	0	1	0	0	0	38
% Single-Unit Trucks	0	2.3	0	0	0	0	0	0	0	1	0	0	0.6	0	0	0	1.4
Articulated Trucks	0	12	0	0	0	0	0	0	0	2	0	0	0	0	0	0	14
% Articulated Trucks	0	1.2	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.5
Bicycles on Road	0	2	0	0	0	0	0	0	0	3	0	0	0	0	0	0	5
% Bicycles on Road	0	0.2	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0.2
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	8	9
% Pedestrians	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	100	0.3

Austin Tsutsumi & Associates

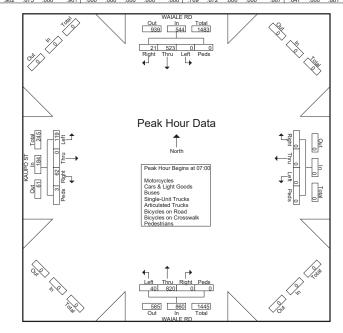
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Kaupo St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/9/2019

																					_
		W	AIALE	RD								W	AIALE	RD			K	AUPO	ST		1
		SOL	ITHBO	UND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int.
Peak Hour Ar	nalysis	From 0	06:30 to	08:1	5 - Peak	1 of 1															
Peak Hour fo	r Entire	Inters	ection I	Begins	at 07:00)															
07:00	0	118	4	0	122	0	0	0	0	0	13	183	0	0	196	19	0	18	1	38	
07:15	0	129	5	0	134	0	0	0	0	0	13	235	0	0	248	26	0	13	0	39	4
07:30	0	131	6	0	137	0	0	0	0	0	8	180	0	0	188	46	0	17	0	63	1 3
07:45	0	145	6	0	151	0	0	0	0	0	6	222	0	0	228	28	0	14	2	44	
Total Volume	0	523	21	0	544	0	0	0	0	0	40	820	0	0	860	119	0	62	3	184	1
% App. Total	0	96.1	3.9	0		0	0	0	0		4.7	95.3	0	0		64.7	0	33.7	1.6		
DHE	nnn	902	875	nnn	901	nnn	nnn	nnn	nnn	nnn	760	072	nnn	nnn	867	6/17	nnn	861	375	730	



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File Name: Waiale Rd - Kaupo St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/9/2019

Page No : 1

Groups Printe	ed- Moto			Light G	ioods - E	Buses - L	Jnit Truc	cks - Arti	culated .			on Roa	ad - Bicyo			lk - Ped	estrians
		WAIAL								WAIAI				KAUP			
			BOUND			WESTB					BOUND			EASTB			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
15:30	0	163	5	0	0	0	0	0	8	188	0	0	3	0	16	0	383
15:45	0	132	10	0	0	0	0	0	8	177	0	0	10	0	15	4	356
Total	0	295	15	0	0	0	0	0	16	365	0	0	13	0	31	4	739
16:00	0	173	8	0	0	0	0	0	11	201	0	0	6	0	8	2	409
16:15	0	155	5	0	0	0	0	0	11	191	0	0	15	0	9	0	386
16:30	0	168	2	0	0	0	0	0	9	174	0	0	8	0	10	7	378
16:45	0	179	13	0	0	0	0	0	20	171	0	0	8	0	11	3	405
Total	0	675	28	0	0	0	0	0	51	737	0	0	37	0	38	12	1578
17:00	0	171	14	0	0	0	0	0	7	143	0	o l	12	0	8	8	363
17:15	0	173	5	0	0	0	0	0	17	121	0	0	10	0	6	10	342
Grand Total	0	1314	62	0	0	0	0	0	91	1366	0	0	72	0	83	34	3022
Apprch %	0	95.5	4.5	0	0	0	0	0	6.2	93.8	0	0	38.1	0	43.9	18	
Total %	0	43.5	2.1	0	0	0	0	0	3	45.2	0	0	2.4	0	2.7	1.1	
Motorcycles	0	2	0	0	0	0	0	0	0	5	0	0	1	0	0	0	8
% Motorcycles	0	0.2	0	0	0	0	0	0	0	0.4	0	0	1.4	0	0	0	0.3
Cars & Light Goods	0	1299	61	0	0	0	0	0	90	1335	0	0	70	0	81	0	2936
% Cars & Light Goods	0	98.9	98.4	0	0	0	0	0	98.9	97.7	0	0	97.2	0	97.6	0	97.2
Buses	0	2	0	0	0	0	0	0	0	9	0	0	0	0	0	0	11
% Buses	0	0.2	0	0	0	0	0	0	0	0.7	0	0	0	0	0	0	0.4
Single-Unit Trucks	0	8	1	0	0	0	0	0	0	11	0	0	0	0	1	0	21
% Single-Unit Trucks	0	0.6	1.6	0	0	0	0	0	0	0.8	0	0	0	0	1.2	0	0.7
Articulated Trucks	0	2	0	0	0	0	0	0	1	5	0	0	1	0	1	0	10
% Articulated Trucks	0	0.2	0	0	0	0	0	0	1.1	0.4	0	0	1.4	0	1.2	0	0.3
Bicycles on Road	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
% Bicycles on Road	0	0.1	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.9	0.1
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	32
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94.1	1.1

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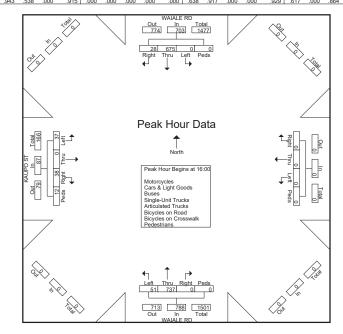
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Kaupo St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/9/2019

		W	AIALE	RD								W.	AIALE	RD			K	AUPO	ST		
		SOL	ITHBO	UND			WE	STBO	UND			NOF	RTHBO	UND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int.
Peak Hour Ar	nalysis	From 1	5:30 to	o 17:1	5 - Peak	1 of 1															
Peak Hour fo		Inters	ection I	Begins	at 16:00)															
16:00	0	173	8	0	181	0	0	0	0	0	11	201	0	0	212	6	0	8	2	16	
16:15	0	155	5	0	160	0	0	0	0	0	11	191	0	0	202	15	0	9	0	24	
16:30	0	168	2	0	170	0	0	0	0	0	9	174	0	0	183	8	0	10	7	25	
16:45	0	179	13	0	192	0	0	0	0	0	20	171	0	0	191	8	0	11_	3	22	
Total Volume	0	675	28	0	703	0	0	0	0	0	51	737	0	0	788	37	0	38	12	87	1
% App. Total	0	96	4	0		0	0	0	0		6.5	93.5	0	0		42.5	0	43.7	13.8		
DUE	000	0.42	E20	000	015	nnn	000	000	000	000	620	017	000	000	020	617	000	064	420	970	1



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Kolokolo St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

Page No : 1

Groups Print	ed- Moto			Light G	Goods - E	Buses - L	Jnit Truc	ks - Arti	culated 1			on Roa				lk - Ped	estrians
		WAIAL	E RD							WAIAL	E RD		K	(OKOLC	DLIO ST		
		OUTH	BOUND			WESTB	OUND			NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	41	5	0	0	0	0	0	1	60	0	0	29	0	1	0	137
07:15	0	43	9	0	0	0	0	0	1	71	0	0	53	0	9	0	186
07:30	0	48	6	0	0	0	0	0	0	65	0	0	33	0	3	0	155
07:45	0	40	14	0	0	0	0	0	2	45	0	0	15	0	8	0	124
Total	0	172	34	0	0	0	0	0	4	241	0	0	130	0	21	0	602
08:00	0	50	14	0	0	0	0	0	3	25	0	0	5	0	1	0	98
08:15	0	29	5	0	0	0	0	0	1	27	0	0	5	0	2	0	69
08:30	0	24	5	0	0	0	0	0	1	33	0	0	8	0	0	0	71
08:45	0	19	5	0	0	0	0	0	1_	22	0	0	9	0	2	0	58
Total	0	122	29	0	0	0	0	0	6	107	0	0	27	0	5	0	296
Grand Total	0	294	63	0	0	0	0	0	10	348	0	0	157	0	26	0	898
Apprch %	0	82.4	17.6	0	0	0	0	0	2.8	97.2	0	0	85.8	0	14.2	0	
Total %	0	32.7	7	0	0	0	0	0	1.1	38.8	0	0	17.5	0	2.9	0	
Motorcycles	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
% Motorcycles	0	0.7	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0.3
Cars & Light Goods	0	282	63	0	0	0	0	0	10	332	0	0	155	0	25	0	867
% Cars & Light Goods	0	95.9	100	0	0	0	0	0	100	95.4	0	0	98.7	0	96.2	0	96.5
Buses	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Buses	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Single-Unit Trucks	0	5	0	0	0	0	0	0	0	10	0	0	1	0	1	0	17
% Single-Unit Trucks	0	1.7	0	0	0	0	0	0	0	2.9	0	0	0.6	0	3.8	0	1.9
Articulated Trucks	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	7
% Articulated Trucks	0	1_	0	0	0	0	0	0	0	1.1	0	0	0	0	0	0	0.8
Bicycles on Road	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0.2
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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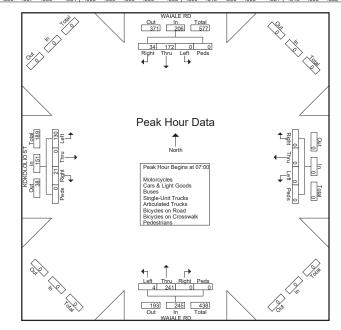
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name : Waiale Rd - Kolokolo St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

		W	AIALE	RD								W	AIALE	RD			KOK	OLOL	IO ST		
		SOL	JTHBC	UND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From (7:00 t	08:45	- Peak	1 of 1															
Peak Hour fo	r Entire	Inters	ection	Begins	at 07:00)															
07:00	0	41	5	0	46	0	0	0	0	0	1	60	0	0	61	29	0	1	0	30	137
07:15	0	43	9	0	52	0	0	0	0	0	1	71	0	0	72	53	0	9	0	62	186
07:30	0	48	6	0	54	0	0	0	0	0	0	65	0	0	65	33	0	3	0	36	155
07:45	0	40	14	0	54	0	0	0	0	0	2	45	0	0	47	15	0	8	0	23	124
Total Volume	0	172	34	0	206	0	0	0	0	0	4	241	0	0	245	130	0	21	0	151	602
% App. Total	0	83.5	16.5	0		0	0	0	0		1.6	98.4	0	0		86.1	0	13.9	0		
PHF	.000	896	607	.000	954	000	.000	.000	.000	.000	.500	849	000	000	851	613	.000	.583	.000	609	809



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Kolokolo St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

Page No : 1

Start Time	s	WAIAL	EBD														estrians
Start Time	S									WAIAL				COKOLO			
Start Time		OUTHE	BOUND			WESTB	OUND			NORTH	BOUND			EASTB	OUND		
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	52	13	0	0	0	0	0	9	39	0	0	17	0	1	0	131
16:15	0	50	20	0	0	0	0	0	8	55	0	0	15	0	5	0	153
16:30	0	46	19	0	0	0	0	0	7	43	0	0	11	0	7	0	133
16:45	0	49	21	0	0	0	0	0	6	32	0	0	6	0	1_	0	115
Total	0	197	73	0	0	0	0	0	30	169	0	0	49	0	14	0	532
17:00	0	48	19	0	0	0	0	0	5	27	0	0	9	0	4	0	112
17:15	0	54	14	0	0	0	0	0	4	33	0	1	18	0	3	0	127
17:30	0	37	14	0	0	0	0	0	8	29	0	0	7	0	0	0	95
17:45	0	33	13	0	0	0	0	0	7	15	0	0	0	0	2	0	70
Total	0	172	60	0	0	0	0	0	24	104	0	1	34	0	9	0	404
Grand Total	0	369	133	0	0	0	0	0	54	273	0	1	83	0	23	0	936
Apprch %	0	73.5	26.5	0	0	0	0	0	16.5	83.2	0	0.3	78.3	0	21.7	0	
Total %	0	39.4	14.2	0	0	0	0	0	5.8	29.2	0	0.1	8.9	0	2.5	0	
Motorcycles	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
% Motorcycles	0	0.3	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.2
Cars & Light Goods	0	360	133	0	0	0	0	0	53	270	0	0	82	0	23	0	921
% Cars & Light Goods	0	97.6	100	0	0	0	0	0	98.1	98.9	0	0	98.8	0	100	0	98.4
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
% Single-Unit Trucks	0	0.5	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.3
Articulated Trucks	0	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4
% Articulated Trucks	0	2	0	0	0	0	0	0	1	1	0	0	1	0	0	0	5
Bicycles on Road	0	0.5	0	0	0	0	0	0	1.9	0.4	0	0	1.2	0	0	0	0.5
% Bicycles on Road	0	0.5	0	0	0	0	0	0	1.9	0.4	0	0	1.2	0	0	0	0.5
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycles on Crosswalk Pedestrians	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0.1

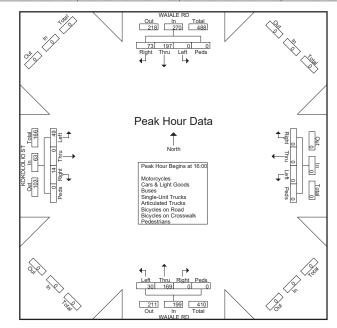
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Waiale Rd - Kolokolo St Site Code: 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

		W	AIALE	RD								W.	AIALE	RD			KOK	OLOL	IO ST		
		SOL	JTHBC	UND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. To
Peak Hour Ar	nalysis	From 1	16:00 to	o 17:45	- Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 16:00)															
16:00	0	52	13	0	65	0	0	0	0	0	9	39	0	0	48	17	0	1	0	18	13
16:15	0	50	20	0	70	0	0	0	0	0	8	55	0	0	63	15	0	5	0	20	15
16:30	0	46	19	0	65	0	0	0	0	0	7	43	0	0	50	11	0	7	0	18	13
16:45	0	49	21	0	70	0	0	0	0	0	6	32	0	0	38	6	0	1	0	7	11
Total Volume	0	197	73	0	270	0	0	0	0	0	30	169	0	0	199	49	0	14	0	63	53
% App. Total	0	73	27	0		0	0	0	0		15.1	84.9	0	0		77.8	0	22.2	0		
PHF	.000	.947	.869	.000	.964	.000	.000	.000	.000	.000	.833	.768	.000	.000	.790	.721	.000	.500	.000	.788	.8



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Nokekula St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

Page No : 1

Groups Print	ed- Moto			Light G	oods - E	Buses - L	Jnit Truc	ks - Arti	culated 1			on Roa				lk - Ped	estrians
		WAIAL								WAIAL				NOKEKI			ĺ
		OUTH	BOUND			WESTE	OUND		1	NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	0	31	0	0	0	0	0	0	0	17	0	0	3	0	5	0	56
06:45	0	73	3	0	0	0	0	0	0	24	0	0	4	0	9	0	113
Total	0	104	3	0	0	0	0	0	0	41	0	0	7	0	14	0	169
07:00	0	49	1	0	0	0	0	0	1	30	0	0	10	0	6	0	97
07:15	0	72	0	0	0	0	Ō	ō	2	32	0	0	13	0	5	ō	124
07:30	0	60	2	0	0	0	0	0	1	42	0	0	7	0	3	0	115
07:45	ō	50	2	ō	ō	ō	ō	ō	Ó	41	ō	ō	1	ō	2	ō	96
Total	0	231	5	0	0	0	0	0	4	145	0	0	31	0	16	0	432
08:00	0	38	1	0	0	0	0	o l	2	22	0	0	1	0	4	0	68
08:15	0	27	5	0	0	0	0	ő	1	17	0	0	3	0	6	Ö	59
Grand Total	0	400	14	0	0	0	0	0	7	225	0	0	42	0	40	0	728
Apprch %	ō	96.6	3.4	ō	ō	ō	ō	ō	3	97	Ō	ō	51.2	ō	48.8	ō	
Total %	0	54.9	1.9	0	0	0	0	0	1	30.9	0	0	5.8	0	5.5	0	1
Motorcycles	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
% Motorcycles	0	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4
Cars & Light Goods	0	385	12	0	0	0	0	0	6	209	0	0	41	0	40	0	693
% Cars & Light Goods	0	96.2	85.7	0	0	0	0	0	85.7	92.9	0	0	97.6	0	100	0	95.2
Buses	0	2	2	0	0	0	0	0	1	2	0	0	0	0	0	0	7
% Buses	0	0.5	14.3	0	0	0	0	0	14.3	0.9	0	0	0	0	0	0	1
Single-Unit Trucks	0	7	0	0	0	0	0	0	0	10	0	0	1	0	0	0	18
% Single-Unit Trucks	0	1.8	0	0	0	0	0	0	0	4.4	0	0	2.4	0	0	0	2.5
Articulated Trucks	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
% Articulated Trucks	0	0.8	0	0	0	0	0	0	0	0.9	0	0	0	0	0	0	0.7
Bicycles on Road	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0.9	0	0	0	0	0	0	0.3
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% redestrians	U	0	U	0	0	U	U	U	U	U	U	0	U	U	U	U	, 0

Austin Tsutsumi & Associates

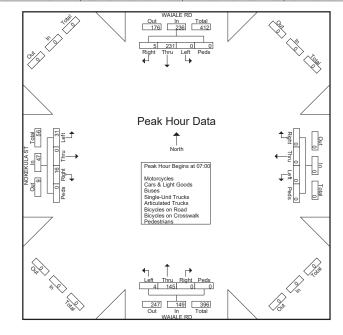
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Nokekula St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

		W	AIALE	RD								W.	AIALE	RD			NO	KEKUL	A ST		
		SOL	JTHBC	UND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From 0	7:00 to	07:45	- Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 07:00)															
07:00	0	49	1	0	50	0	0	0	0	0	1	30	0	0	31	10	0	6	0	16	97
07:15	0	72	0	0	72	0	0	0	0	0	2	32	0	0	34	13	0	5	0	18	124
07:30	0	60	2	0	62	0	0	0	0	0	1	42	0	0	43	7	0	3	0	10	115
07:45	0	50	2	0	52	0	0	0	0	0	0	41	0	0	41	1	0	2	0	3	96
Total Volume	0	231	5	0	236	0	0	0	0	0	4	145	0	0	149	31	0	16	0	47	432
% App. Total	0	97.9	2.1	0		0	0	0	0		2.7	97.3	0	0		66	0	34	0		
PHF	.000	.802	.625	.000	.819	.000	.000	.000	.000	.000	.500	.863	.000	.000	.866	.596	.000	.667	.000	.653	.871



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Nokekula St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

Page No : 1

Groups Print	ed- Moto			Light G	Goods - E	Buses - L	Jnit Truc	ks - Arti	culated 1			on Roa				lk - Ped	estrians
		WAIAL								WAIAL				NOKEKI			
	5	SOUTHE	BOUND			WESTB	OUND		1	NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
15:30	0	45	6	0	0	0	0	0	4	47	0	0	2	0	4	0	108
15:45	0	33	7	0	0	0	0	0	4	56	0	0	1	0	1	0	102
Total	0	78	13	0	0	0	0	0	8	103	0	0	3	0	5	0	210
16:00	0	36	4	0	0	0	0	0	5	52	0	0	1	0	3	2	103
16:15	ō	52	2	ō	ō	ō	ō	ō	4	51	Ō	ō	6	ō	7	0	122
16:30	0	41	6	0	0	0	0	0	2	44	0	0	2	0	4	0	99
16:45	0	39	2	0	0	0	0	0	5	47	0	0	1	0	3	0	97
Total	0	168	14	0	0	0	0	0	16	194	0	0	10	0	17	2	421
17:00	0	40	6	0	0	0	0	o l	3	41	0	o l	1	0	2	0	93
17:15	ō	40	5	ō	ō	ō	ō	ō	7	47	Ō	ō	3	ō	2	ō	104
Grand Total	0	326	38	0	0	0	0	0	34	385	0	0	17	0	26	2	828
Apprch %	0	89.6	10.4	0	0	0	0	0	8.1	91.9	0	0	37.8	0	57.8	4.4	
Total %	0	39.4	4.6	0	0	0	0	0	4.1	46.5	0	0	2.1	0	3.1	0.2	
Motorcycles	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Motorcycles	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0.1
Cars & Light Goods	0	318	38	0	0	0	0	0	34	379	0	0	17	0	26	0	812
% Cars & Light Goods	0	97.5	100	0	0	0	0	0	100	98.4	0	0	100	0	100	0	98.1
Buses	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0.1
Single-Unit Trucks	0	4	0	0	0	0	0	0	0	3	0	0	0	0	0	0	7
% Single-Unit Trucks	0	1.2	0	0	0	0	0	0	0	0.8	0	0	0	0	0	0	0.8
Articulated Trucks	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Articulated Trucks	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Bicycles on Road	0	0.6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
% Bicycles on Road	0	0.6	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0.4
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.2
70 redesinans	U	U	U	U	U	U	U	U	U	U	U	0	U	U	U	100	0.2

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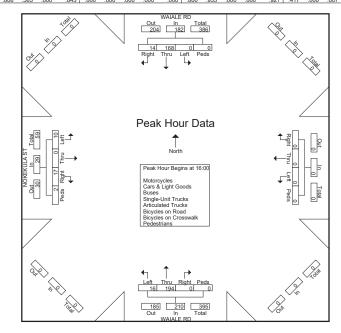
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Nokekula St

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

																					_
		WA	AIALE	RD								W.	AIALE	RD			NOI	KEKUL	A ST		
		SOU	THBO	UND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. To
Peak Hour Ar	nalysis	From 1	6:00 to	16:45	5 - Peak	1 of 1															
Peak Hour fo	r Entire	Interse	ection I	Begins	at 16:00)															
16:00	0	36	4	0	40	0	0	0	0	0	5	52	0	0	57	1	0	3	2	6	10
16:15	0	52	2	0	54	0	0	0	0	0	4	51	0	0	55	6	0	7	0	13	12
16:30	0	41	6	0	47	0	0	0	0	0	2	44	0	0	46	2	0	4	0	6	9
16:45	0	39	2	0	41	0	0	0	0	0	5	47	0	0	52	1	0	3	0	4	9
Total Volume	0	168	14	0	182	0	0	0	0	0	16	194	0	0	210	10	0	17	2	29	42
% App. Total	0	92.3	7.7	0		0	0	0	0		7.6	92.4	0	0		34.5	0	58.6	6.9		
DUE	000	000	502	000	0.42	nnn	nnn	000	000	000	900	022	000	nnn	024	417	000	607	250	650	0.



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name : Waiale Rd - Ohana Hana Lp Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

Page No : 1

Groups Printe	ed- Moto			Light G	oods - E	Buses - L	Jnit Truc	ks - Arti	culated 1			on Roa					estrians
		WAIAL	E RD	-						WAIAL	E RD		OH	ANA HA	NA LOC)P	
	8	OUTHE	BOUND			WESTB	OUND		1	NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	0	31	0	0	0	0	0	0	1	14	0	0	1	0	3	0	50
06:45	0	74	0	0	0	0	0	0	1	19	0	0	4	0	4	0	102
Total	0	105	0	0	0	0	0	0	2	33	0	0	5	0	7	0	152
07:00	0	58	4	0	0	0	0	0	1	18	0	o l	11	0	4	0	96
07:15	0	74	2	0	ō	0	0	0	0	29	0	ō	6	ō	8	ō	119
07:30	0	62	3	0	0	0	0	0	0	33	0	0	8	0	5	0	111
07:45	ō	45	3	ō	ō	ō	ō	ō	4	39	Ō	ō	3	ō	5	ō	99
Total	0	239	12	0	0	0	0	0	5	119	0	0	28	0	22	0	425
08:00	0	44	1	o l	0	0	0	0	0	19	0	οl	4	0	2	0	70
08:15	0	30	2	0	0	0	0	0	0	17	0	0	1	0	5	0	55
Grand Total	0	418	15	0	0	0	0	0	7	188	0	ő	38	0	36	0	702
Apprch %	0	96.5	3.5	0	0	0	0	0	3.6	96.4	0	ő	51.4	0	48.6	0	702
Total %	ő	59.5	2.1	ő	Ö	Ö	0	ő	1	26.8	0	ő	5.4	Ö	5.1	Ö	
Motorcycles	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Motorcycles	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Cars & Light Goods	0	405	15	0	0	0	0	0	7	176	0	0	38	0	36	0	677
% Cars & Light Goods	0	96.9	100	0	0	0	0	0	100	93.6	0	0	100	0	100	0	96.4
Buses	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
% Buses	0	0.2	0	0	0	0	0	0	0	1.1	0	0	0	0	0	0	0.4
Single-Unit Trucks	0	6	0	0	0	0	0	0	0	9	0	0	0	0	0	0	15
% Single-Unit Trucks	0	1.4	0	0	0	0	0	0	0	4.8	0	0	0	0	0	0	2.1
Articulated Trucks	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
% Articulated Trucks	0	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7
Bicycles on Road	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0.1
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians				0	0	0		0				0	0	0	0		0
% Pedestrians	0	0	0	0	U	U	0	0	0	0	0	0	U	U	U	0	l U

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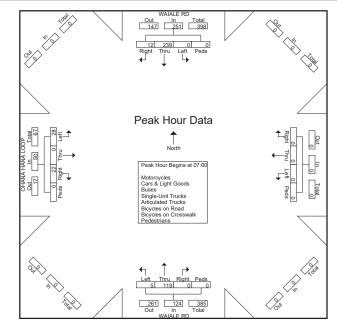
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Waiale Rd - Ohana Hana Lp Site Code: 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019 Page No : 2

Tago No 1.2

	_		=																		1
		W.	AIALE	RD								W.	AIALE	RD		(NAHC	A HAN	ia loc)P	
		SOL	JTHBC	UND			WE	STBO	UND			NOF	RTHBC	DUND			EA	STBO	UND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis	From (07:00 to	07:45	5 - Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 07:00	0															
07:00	0	58	4	0	62	0	0	0	0	0	1	18	0	0	19	11	0	4	0	15	96
07:15	0	74	2	0	76	0	0	0	0	0	0	29	0	0	29	6	0	8	0	14	119
07:30	0	62	3	0	65	0	0	0	0	0	0	33	0	0	33	8	0	5	0	13	111
07:45	0	45	3	0	48	0	0	0	0	0	4	39	0	0	43	3	0	5	0	8	99
Total Volume	0	239	12	0	251	0	0	0	0	0	5	119	0	0	124	28	0	22	0	50	425
% App. Total	0	95.2	4.8	0		0	0	0	0		4	96	0	0		56	0	44	0		
PHF	.000	.807	.750	.000	.826	.000	.000	.000	.000	.000	.313	.763	.000	.000	.721	.636	.000	.688	.000	.833	.893



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> File Name : Waiale Rd - Ohana Hana Lp Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

Page No : 1

Groups Printe	ed- Moto	rcycles WAIAL		Light C	ioods - E	suses - L	Jnit Truc	cks - Arti	culated	Frucks - WAIAL		on Roa			Crosswa NA LOC		lestrians
	5		BOUND			WESTR	OUND		1		BOUND		OH.	EASTB		JF	
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
15:30	0	40	3	0	0	0	0	0	2	51	0	0	3	0	0	1	100
15:45	0	32	2	0	0	0	0	0	4	58	0	0	3	0	1	0	100
Total	0	72	5	0	0	0	0	0	6	109	0	0	6	0	1	1	200
16:00	0	39	2	0	0	0	0	0	6	55	0	0	1	0	2	0	105
16:15	0	49	5	0	0	0	0	0	5	53	0	0	4	0	4	0	120
16:30	0	35	5	0	0	0	0	0	2	46	0	0	3	0	1	0	92
16:45	0	38	4	0	0	0	0	0	1	42	0	0	3	0	1	0	89
Total	0	161	16	0	0	0	0	0	14	196	0	0	11	0	8	0	406
17:00	0	41	3	0	0	0	0	0	2	49	0	0	0	0	1	0	96
17:15	0	39	3	0	0	0	0	0	2	44	0	0	6	0	0	0	94
Grand Total	0	313	27	0	0	0	0	0	24	398	0	0	23	0	10	1	796
Apprch %	0	92.1	7.9	0	0	0	0	0	5.7	94.3	0	0	67.6	0	29.4	2.9	
Total %	0	39.3	3.4	0	0	0	0	0	3	50	0	0	2.9	0	1.3	0.1	
Motorcycles	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Motorcycles	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0.1
Cars & Light Goods	0	306	26	0	0	0	0	0	24	394	0	0	23	0	10	0	783
% Cars & Light Goods	0	97.8	96.3	0	0	0	0	0	100	99	0	0	100	0	100	0	98.4
Buses	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Buses	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Single-Unit Trucks	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	6
% Single-Unit Trucks	0	1_	0	0	0	0	0	0	0	0.8	0	0	0	0	0	0	0.8
Articulated Trucks	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Articulated Trucks	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3
Bicycles on Road	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Bicycles on Road	0	0.3	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	. 1	1
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.1

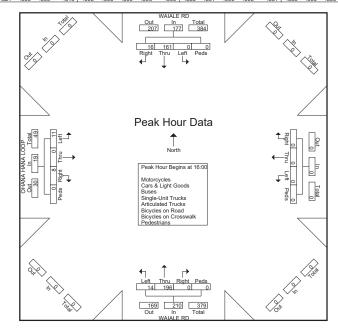
Austin Tsutsumi & Associates

1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

> File Name: Waiale Rd - Ohana Hana Lp Site Code: 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

		W	AIALE	RD								W.	AIALE	RD		(NAHC	A HAN	A LOC)P	ĺ
		SOL	ITHBC	UND			WE	STBO	UND			NOF	RTHBC	UND			EA	STBO	JND		ĺ
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. To
Peak Hour Ar	nalysis	From 1	6:00 to	16:45	- Peak	1 of 1															
Peak Hour fo	r Entire	Inters	ection	Begins	at 16:00)															
16:00	0	39	2	0	41	0	0	0	0	0	6	55	0	0	61	1	0	2	0	3	10
16:15	0	49	5	0	54	0	0	0	0	0	5	53	0	0	58	4	0	4	0	8	12
16:30	0	35	5	0	40	0	0	0	0	0	2	46	0	0	48	3	0	1	0	4	9
16:45	0	38	4	0	42	0	0	0	0	0	1	42	0	0	43	3	0	1	0	4	8
Total Volume	0	161	16	0	177	0	0	0	0	0	14	196	0	0	210	11	0	8	0	19	40
% App. Total	0	91	9	0		0	0	0	0		6.7	93.3	0	0		57.9	0	42.1	0		
PHF	.000	821	800	.000	819	000	.000	.000	.000	.000	583	.891	000	.000	.861	688	.000	500	.000	594	8



1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Waiko Rd

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

Page No : 1

Groups Print	ed- Moto			Light G	Goods - E			cks - Arti	culated '	Trucks -	Bicycles	on Roa	d - Bicy			lk - Ped	estrians
		WAIAL	E RD	-		WAIK	O RD							WAIK	O RD		
		OUTHE	BOUND			WESTB	OUND			NORTH	BOUND			EASTB	OUND		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	28	0	9	0	0	12	10	0	0	0	0	0	5	22	0	0	86
06:45	66	0	22	0	0	10	7	0	0	0	0	0	11	24	0	0	140
Total	94	0	31	0	0	22	17	0	0	0	0	0	16	46	0	0	226
07:00	37	0	15	0	0	11	14	o l	0	0	0	0	9	45	0	0	131
07:15	56	0	26	0	0	12	20	0	0	0	0	0	11	55	0	0	180
07:30	51	n	13	0	0	17	20	0	0	n	0	0	18	56	0	0	175
07:45	39	0	14	0	ő	18	24	ő	ő	0	0	ő	15	43	0	0	153
Total	183	0	68	0	0	58	78	0	0	0	0	0	53	199	0	0	639
08:00	20	0	23	0	0	11	13	0	0	0	0	0	4	17	0	0	88
08:15	22	0	14	0	0	18	14	0	0	0	0	0	6	15	0	0	89
Grand Total	319	0	136	0	0	109	122	0	0	0	0	0	79	277	0	0	1042
Apprch %	70.1	0	29.9	0	0	47.2	52.8	0	0	0	0	0	22.2	77.8	0	0	
Total %	30.6	0	13.1	0	0	10.5	11.7	0	0	0	0	0	7.6	26.6	0	0	
Motorcycles	2	0	. 1	0	0	. 1	0	0	0	0	0	0	0	0	0	0	4
% Motorcycles	0.6	0	0.7	0	0	0.9	0	0	0	0	0	0	0	0	0	0	0.4
Cars & Light Goods	304	0	134	0	0	106	109	0	0	0	0	0	76	273	0	0	1002
% Cars & Light Goods	95.3	0	98.5	0	0	97.2	89.3	0	0	0	0	0	96.2	98.6	0	0	96.2
Buses	2	0	0	0	0	. 1	0	0	0	0	0	0	2	2	0	0	7
% Buses	0.6	0	0	0	0	0.9	0	0	0	0	0	0	2.5	0.7	0	0	0.7
Single-Unit Trucks	7	0	1	0	0	1	12	0	0	0	0	0	0	2	0	0	23
% Single-Unit Trucks	2.2	0	0.7	0	0	0.9	9.8	0	0	0	0	0	0	0.7	0	0	2.2
Articulated Trucks		0	0	0	0	0		0	0	0	0	0	0	0	0	0	5
% Articulated Trucks	1.3	0	0	0	0	0	0.8	0	0	0	0	0	0	0	0	0	0.5
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	1.3	0	0	0	0.1
Bicycles on Crosswalk	0		0	0	0	0	0	0	0		•	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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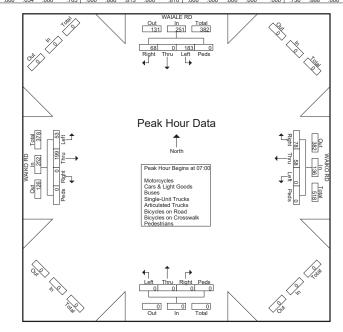
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Waiko Rd

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

		W	AIALE	RD			W	AIKO	RD								W	/AIKO	RD		
		SOL	THBC	UND			WE	STBO	UND			NOF	RTHBC	DUND			EA	STBOL	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. To
Peak Hour Ar	nalysis I	From 0	6:30 to	08:1	- Peak	1 of 1															
Peak Hour for	r Entire	Inters	ection	Begins	at 07:00)															
07:00	37	0	15	0	52	0	11	14	0	25	0	0	0	0	0	9	45	0	0	54	1
07:15	56	0	26	0	82	0	12	20	0	32	0	0	0	0	0	11	55	0	0	66	1
07:30	51	0	13	0	64	0	17	20	0	37	0	0	0	0	0	18	56	0	0	74	1
07:45	39	0	14	0	53	0	18	24	0	42	0	0	0	0	0	15	43	0	0	58	1
Total Volume	183	0	68	0	251	0	58	78	0	136	0	0	0	0	0	53	199	0	0	252	6
% App. Total	72.9	0	27.1	0		0	42.6	57.4	0		0	0	0	0		21	79	0	0		
DHE	817	nnn	654	nnn	765	nnn	806	813	000	810	nnn	nnn	nnn	nnn	nnn	736	888	nnn	nnn	851	5



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File Name: Waiale Rd - Waiko Rd

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

Page No : 1

Groups Print	ed- Moto			Light G	oods - E			cks - Arti	culated 7	Frucks -	Bicycles	on Roa	ıd - Bicyo			lk - Ped	estrians
		WAIAL				WAIK								WAIK			
		SOUTHE	BOUND.			WESTE	OUND		1	NORTH	BOUND			EASTB	OUND .		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
15:30	34	0	12	0	0	24	40	0	0	0	0	0	14	19	0	0	143
15:45	24	0	7	0	0	24	47	0	0	0	0	0	15	21	0	0	138
Total	58	0	19	0	0	48	87	0	0	0	0	0	29	40	0	0	281
16:00	34	0	8	0	0	35	50	0	0	0	0	0	13	15	0	0	155
16:15	45	0	12	0	0	25	40	0	0	0	0	0	15	21	0	0	158
16:30	31	0	6	0	0	25	39	0	0	0	0	0	7	22	0	0	130
16:45	30	0	9	ő	0	21	39	0	0	0	0	0	7	22	0	0	128
Total	140	0	35	0	0	106	168	0	0	0	0	0	42	80	0	0	571
17:00	30	0	13	0	0	25	32	0	0	0	0	0	15	17	0	0	132
17:15	25	0	12	0	0	19	30	0	0	0	0	0	16	21	0	0	123
Grand Total	253	0	79	0	0	198	317	0	0	0	0	0	102	158	0	0	1107
Apprch %	76.2	0	23.8	0	0	38.4	61.6	0	0	0	0	0	39.2	60.8	0	0	
Total %	22.9	0	7.1	0	0	17.9	28.6	0	0	0	0	0	9.2	14.3	0	0	
Motorcycles	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
% Motorcycles	0	0	0	0	0	0.5	0.3	0	0	0	0	0	0	0	0	0	0.2
Cars & Light Goods	247	0	79	0	0	196	315	0	0	0	0	0	101	157	0	0	1095
% Cars & Light Goods	97.6	0	100	0	0	99	99.4	0	0	0	0	0	99	99.4	0	0	98.9
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	4	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	8
% Single-Unit Trucks	1.6	0	0	0	0	0.5	0.3	0	0	0	0	0	1_	0.6	0	0	0.7
Articulated Trucks	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Articulated Trucks	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Austin Tsutsumi & Associates

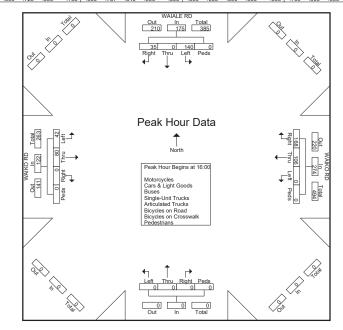
1871 Wili Pa Loop, Suite A Wailuku, Hawaii 96793 Phone: (808) 224-8044 Fax: (808) 242-9163

File Name: Waiale Rd - Waiko Rd

Site Code : 19-508 PUUNANI HOMESTEADS

Start Date : 4/4/2019

																					_
		W/	AIALE	RD			W	AIKO	RD								V	/AIKO	RD		1
		SOU	THBO	UND			WE	STBO	UND			NOF	RTHBC	DUND			EA	STBO	JND		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int.
Peak Hour Ar	nalysis	From 1	6:00 to	16:4	- Peak	1 of 1															
Peak Hour fo	r Entire	Interse	ection I	Begins	at 16:00)															
16:00	34	0	8	0	42	0	35	50	0	85	0	0	0	0	0	13	15	0	0	28	
16:15	45	0	12	0	57	0	25	40	0	65	0	0	0	0	0	15	21	0	0	36	
16:30	31	0	6	0	37	0	25	39	0	64	0	0	0	0	0	7	22	0	0	29	
16:45	30	0	9	0	39	0	21	39	0	60	0	0	0	0	0	7	22	0	0	29	
Total Volume	140	0	35	0	175	0	106	168	0	274	0	0	0	0	0	42	80	0	0	122	
% App. Total	80	0	20	0		0	38.7	61.3	0		0	0	0	0		34.4	65.6	0	0		
PHF	778	000	729	000	768	000	757	840	000	806	000	000	nnn	.000	000	700	909	000	000	847	





APPENDIX B

LEVEL OF SERVICE CRITERIA

APPENDIX B - LEVEL OF SERVICE (LOS) CRITERIA

VEHICULAR LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS (HCM 6th EDITION)

Level of service for vehicles at signalized intersections is directly related to delay values and is assigned on that basis. Level of Service is a measure of the acceptability of delay values to motorists at a given intersection. The criteria are given in the table below.

Level-of Service Criteria for Signalized Intersections

	Control Delay per
Level of Service	Vehicle (sec./veh.)
A	< 10.0
В	>10.0 and ≤ 20.0
С	>20.0 and ≤ 35.0
D	>35.0 and ≤ 55.0
E	>55.0 and ≤ 80.0
F	> 80.0

Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group or approach in question.

VEHICULAR LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM 6th EDITION)

The level of service criteria for vehicles at unsignalized intersections is defined as the average control delay, in seconds per vehicle.

LOS delay threshold values are lower for two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections than those of signalized intersections. This is because more vehicles pass through signalized intersections, and therefore, drivers expect and tolerate greater delays. While the criteria for level of service for TWSC and AWSC intersections are the same, procedures to calculate the average total delay may differ.

Level of Service Criteria for Two-Way Stop-Controlled Intersections

Level of	Average Control Delay
Service	(sec/veh)
Α	≤ 10
В	>10 and ≤15
С	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	> 50



APPENDIX C

LEVEL OF SERVICE CALCULATIONS



APPENDIX C

LEVEL OF SERVICE CALCULATIONS

• Existing AM Peak

07/30/2019 2: V

HCM 6th TWSC

: Waiale Rd & Waiinu Rd	07/30/20	019

Intersection Delay, s/veh	55.8											
Intersection LOS	F											
	- FD:	EDT	500	11151	LUDT	14/00		LIDT		0.01		000
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ሻ	1	101	45	(0	4.45	4	7	0	4	40
Traffic Vol, veh/h	82	3	124	15	15	9	145	346	6	2	437	10-
Future Vol, veh/h	82	3	124	15	15	9	145	346	6	2	437	10-
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2.0
Mvmt Flow	89	3	135	16	16	10	158	376	7	2	475	113
Number of Lanes	1	1	0	0	1	0	0	1	1	0	1	
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			2			1			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			2			2			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			1			1			2		
HCM Control Delay	13			12.9			54.2			76.9		
HCM LOS	В			В			F			F		
Lane		NBLn1	NBLn2	EBLn1		WBLn1	SBLn1					
Vol Left, %		30%	0%	100%	0%	38%	0%					
Vol Thru, %		70%	0%	0%	2%	38%	80%					
Vol Right, %		0%	100%	0%	98%	23%	19%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		491	6	82	127	39	543					
LT Vol		145	0	82	0	15	2					
Through Vol		346	0	0	3	15	437					
RT Vol		0	6	0	124	9	104					
ane Flow Rate		534	7	89	138	42	590					
Lane now ivale		7	7	7	7	6	6					
			0.01	0.204	0.271	0.1	1.049					
Geometry Grp Degree of Util (X)		0.96	0.01	0.204								
Geometry Grp		0.96 6.664	5.798	8.533	7.309	8.881	6.397					
Geometry Grp Degree of Util (X) Departure Headway (Hd)						8.881 Yes	6.397 Yes					
Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N		6.664	5.798	8.533	7.309							
Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N Cap		6.664 Yes	5.798 Yes	8.533 Yes	7.309 Yes	Yes	Yes					
Geometry Grp Degree of Util (X)		6.664 Yes 550	5.798 Yes 621	8.533 Yes 423	7.309 Yes 494	Yes 406	Yes 567					
Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N Cap Service Time		6.664 Yes 550 4.364	5.798 Yes 621 3.498	8.533 Yes 423 6.233	7.309 Yes 494 5.009	Yes 406 6.881	Yes 567 4.471					
Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N Cap Service Time HCM Lane V/C Ratio		6.664 Yes 550 4.364 0.971	5.798 Yes 621 3.498 0.011	8.533 Yes 423 6.233 0.21	7.309 Yes 494 5.009 0.279	Yes 406 6.881 0.103	Yes 567 4.471 1.041					

ntersection								
nt Delay, s/veh	54.9							
ovement	WBL	WBR	NBT	NBR	SBL	SBT		
ane Configurations	ሻ	7	î,			લી		
raffic Vol, veh/h	184	51	456	607	67	555		
uture Vol. veh/h	184	51	456	607	67	555		
onflicting Peds, #/hr	0	0	0	2	2	0		
ign Control	Stop	Stop	Free	Free	Free	Free		
T Channelized	-	None		None	-	None		
torage Length	0	145				-		
eh in Median Storage	e. # O	-	0	-		0		
irade, %	0		0			0		
eak Hour Factor	92	92	92	92	92	92		
eavy Vehicles, %	2	2	2	2	2	2		
lymt Flow	200	55	496	660	73	603		
	200	- 55	170	000	, ,	000		
lajor/Minor I	Minor1		Vajor1	n	Major2			
onflicting Flow All	1577	828	0	0	1158	0		
Stage 1	828	828	0	U	1108	-		
Stage 1 Stage 2	749				- 1			
ritical Hdwy	6.42	6.22	-	-	4.12	-		
	5.42	0.22			4.12			
ritical Hdwy Stg 1			-	_	-	-		
ritical Hdwy Stg 2	5.42	2 210	-		2 210	-		
ollow-up Hdwy	3.518		-	-	2.218	-		
ot Cap-1 Maneuver	~ 121	371	-	-	603	-		
Stage 1	429	-	-	-	-	-		
Stage 2	467	-	-	-		-		
latoon blocked, %		0.70	-	-	100	-		
lov Cap-1 Maneuver	~ 99	370	-		602	-		
lov Cap-2 Maneuver	~ 99	-	-	-	-	-		
Stage 1	428	-	-	-	-	-		
Stage 2	382	-	-	-	-	-		
pproach	WB		NB		SB			
CM Control Delay, s\$	444.9		0		1.3			
CM LOS	F							
linor Lane/Major Mvm	nt	NBT	NBRV	VBLn1V	VBLn2	SBL	SBT	
apacity (veh/h)		-	-	99	370	602	-	
CM Lane V/C Ratio				2.02		0.121		
CM Control Delay (s)				563.7	16.4	11.8	0	
CM Lane LOS			- Ψ	F	C	В	A	
)	-	-	17	0.5	0.4	-	
CIVI 95IN %IIIE CILVEN					0.0	0.1		
•								
CM 95th %tile Q(vehiotes Volume exceeds cal		4.5		eeds 3			putation Not Defined	*: All major volume in platoon

HCM 6th TWSC

Intersection

4: Waiale Rd & Kaupo St

Int Delay, s/veh 77.6 Movement EBL EBT EBR WBL WBT WBR NBL Lane Configurations Traffic Vol, veh/h 900 532 Future Vol, veh/h 159 0 32 0 16 7 900 11 Conflicting Peds, #/hr 0 0 0 3 0 Sign Control Stop Stop Stop Stop Stop Free Free Free Free Free Free RT Channelized - - None - - None Storage Length 0 Veh in Median Storage, # -Grade, % Peak Hour Factor Heavy Vehicles, % Mvmt Flow Conflicting Flow All 1702 1700 671 1711 1786 985 761 0 989 Stage 1 - 1001 1001 Stage 2 1007 1005 - 710 785 Critical Hdwy 7.12 6.52 6.22 7.12 6.52 6.22 4.12 Critical Hdwy Stg 1 6.12 5.52 - 6.12 5.52 Critical Hdwy Stg 2 6.12 5.52 6.12 5.52 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 Pot Cap-1 Maneuver ~ 72 92 456 71 81 301 851 - 293 321 433 444 Stage 1 Stage 2 290 319 - 424 404 Platoon blocked, % Mov Cap-1 Maneuver ~ 65 87 455 63 76 300 849 Mov Cap-2 Maneuver ~ 65 87 63 76 423 429 - 286 313 Stage 1 Stage 2 267 311 - 379 390 HCM Control Delay, s\$ 740.7 HCM LOS NBL NBT NBR EBLn1 EBLn2WBLn1 SBL Capacity (veh/h) 65 455 133 697 HCM Lane V/C Ratio 0.009 2.659 0.076 0.196 0.017 HCM Control Delay (s) 0 - \$887 13.6 38.6 10.3 HCM Lane LOS B E B HCM 95th %tile Q(veh) - 17.2 0.2 0.7 0.1

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

nt Delay, s/veh	16.2							
lovement	EBL	EBR	NBL	NBT	SBT	SBR		
ane Configurations	7	7		ની	₽			
raffic Vol, veh/h	119	62	40	820	523	21		
uture Vol, veh/h	119	62	40	820	523	21		
onflicting Peds, #/hr	0	0	3	0	0	3		
ign Control	Stop	Stop	Free	Free	Free	Free		
T Channelized	-	None	-	None	-	None		
torage Length	125	0	-	-	-	-		
eh in Median Storage	e,# 0	-	-	0	0	-		
Grade, %	0	-	-	0	0			
eak Hour Factor	92	92	92	92	92	92		
leavy Vehicles, %	2	2	2	2	2	2		
/lvmt Flow	129	67	43	891	568	23		
ajor/Minor	Minor2		Major1		Major2			
onflicting Flow All	1560	583	594	0	viajui z	0		
Stage 1	583	303	374	-		0		
Stage 2	977							
Critical Hdwy	6.42	6.22	4.12					
critical Hdwy Stg 1	5.42	0.22	4.12					
ritical Hdwy Stg 2	5.42							
	3.518				-	-		
ollow-up Hdwy	~ 123	512	982	-	-	-		
ot Cap-1 Maneuver	558	512		-	-	-		
Stage 1					-			
Stage 2	365	-	-		-	-		
latoon blocked, %	110	F11	070	-	-	-		
lov Cap-1 Maneuver		511	979		-	-		
lov Cap-2 Maneuver		-	-	-	-	-		
Stage 1	508	-	-		-	-		
Stage 2	364	-	-	-	-	-		
pproach	EB		NB		SB			
ICM Control Delay, s	139.9		0.4		0			
ICM LOS	F							
linor Lane/Major Mvn	mt	NBL	MRT	EBLn1	EBI no	SBT	SBR	
	III					JDI	SDR	
Capacity (veh/h)		979	-	112	511	-	•	
CM Cantal Dalay (a)	`	0.044	-	1.100			-	
ICM Control Delay (s))	8.8		205.9	13.1	-	•	
CM Lane LOS	,	A	A	F	В	-	-	
HCM 95th %tile Q(veh	1)	0.1	-	8.1	0.5		-	
otes								
Volume exceeds ca	pacity	\$: D	elay exc	ceeds 3	00s	+: Com	putation Not Defined	*: All major volume in platoon
	, ,		,					.,

	•	\rightarrow	*	1	—	*	1	1	1	-	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	1 >		ሻ	^	7	*	1 >			1>	
Traffic Volume (veh/h)	307	282	56	32	196	193	135	158	37	171	149	170
Future Volume (veh/h)	307	282	56	32	196	193	135	158	37	171	149	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	384	307	53	35	213	27	147	172	31	186	162	143
Peak Hour Factor	0.80	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	550	535	92	329	304	256	334	314	57	431	204	180
Arrive On Green	0.21	0.34	0.34	0.03	0.16	0.16	0.09	0.20	0.20	0.11	0.22	0.22
Sat Flow, veh/h	1781	1553	268	1781	1870	1575	1781	1538	277	1781	910	803
Grp Volume(v), veh/h	384	0	360	35	213	27	147	0	203	186	0	305
Grp Sat Flow(s), veh/h/ln	1781	0	1821	1781	1870	1575	1781	0	1816	1781	0	1713
Q Serve(g_s), s	10.5	0.0	10.4	1.0	6.9	0.9	4.1	0.0	6.4	5.1	0.0	10.8
Cycle Q Clear(g_c), s	10.5	0.0	10.4	1.0	6.9	0.9	4.1	0.0	6.4	5.1	0.0	10.8
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.15	1.00		0.47
Lane Grp Cap(c), veh/h	550	0	627	329	304	256	334	0	370	431	0	384
V/C Ratio(X)	0.70	0.00	0.57	0.11	0.70	0.11	0.44	0.00	0.55	0.43	0.00	0.79
Avail Cap(c a), veh/h	897	0	1108	583	700	590	533	0	623	595	0	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.4	0.0	17.2	21.4	25.4	22.9	18.2	0.0	22.9	17.2	0.0	23.5
Incr Delay (d2), s/veh	1.6	0.0	0.8	0.1	2.9	0.2	0.9	0.0	1.3	0.7	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	4.2	0.4	3.2	0.3	1.7	0.0	2.8	2.1	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.0	0.0	18.0	21.5	28.3	23.1	19.1	0.0	24.1	17.9	0.0	27.7
LnGrp LOS	В	Α	В	С	С	С	В	Α	С	В	Α	С
Approach Vol, veh/h		744			275			350			491	
Approach Delay, s/veh		17.5			26.9			22.0			24.0	
Approach LOS		В			С			С			С	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	19.1	5.9	28.1	9.8	20.4	17.5	16.4				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	13.0	22.0	11.0	39.0	13.0	22.0	26.0	24.0				
Max Q Clear Time (q_c+l1), s	7.1	8.4	3.0	12.4	6.1	12.8	12.5	8.9				
Green Ext Time (p c), s	0.2	0.4	0.0	2.5	0.1	1.3	1.0	1.1				
4 – 7:	0.2	0.7	0.0	2.0	0.2	1.0	1.0	1.1				
Intersection Summary			0.4.5									
HCM 6th Ctrl Delay			21.5									
HCM 6th LOS			С									

HCM 6th AWSC 6: Kamehameha Ave & Maui Lani Pkwy

Intersection		
Intersection Delay, s/veh-	17.2	
Intersection LOS	Ε	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		ሻ	1		7	î,		
Traffic Vol, veh/h	139	112	88	72	155	86	128	215	94	179	173	170	
Future Vol, veh/h	139	112	88	72	155	86	128	215	94	179	173	170	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	151	122	96	78	168	93	139	234	102	195	188	185	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0	
Approach	EB			WB			NB			SB			
Opposing Approach	WB			EB			SB			NB			
Opposing Lanes	1			1			2			2			
Conflicting Approach Le	ft SB			NB			EB			WB			
Conflicting Lanes Left	2			2			1			1			
Conflicting Approach Ri	ghNB			SB			WB			EB			
Conflicting Lanes Right	2			2			1			1			
HCM Control Delay	58.4			48.3			39.1			46.1			
HCM LOS	F			Е			Е			Е			

Lane	NBLn1	NBLn2	EBLn1\	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	41%	23%	100%	0%
Vol Thru, %	0%	70%	33%	50%	0%	50%
Vol Right, %	0%	30%	26%	27%	0%	50%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	309	339	313	179	343
LT Vol	128	0	139	72	179	0
Through Vol	0	215	112	155	0	173
RT Vol	0	94	88	86	0	170
Lane Flow Rate	139	336	368	340	195	373
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.383	0.856	0.922	0.861	0.53	0.924
Departure Headway (Hd)	9.923	9.174	9.007	9.11	9.806	8.918
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Сар	362	393	402	398	368	406
Service Time	7.696	6.947	7.081	7.187	7.581	6.692
HCM Lane V/C Ratio	0.384	0.855	0.915	0.854	0.53	0.919
HCM Control Delay	18.8	47.5	58.4	48.3	23.2	58.1
HCM Lane LOS	С	Ε	F	Е	С	F
HCM 95th-tile Q	1.8	8.2	9.9	8.3	3	10

Mvmt Flow

HCM 6th TWSC

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	7	7		ર્ન	ĥ	
Traffic Vol, veh/h	130	21	4	241	172	34
Future Vol, veh/h	130	21	4	241	172	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None		None
Storage Length	0	50	-	-	-	-
Veh in Median Storage,	# 0	-		0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2

Major/Minor	Minor2		Major1	M	ajor2	
Conflicting Flow All	476	206	224	0	-	0
Stage 1	206	-	-	-	-	-
Stage 2	270	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-		
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42		-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	548	835	1345	-		-
Stage 1	829	-	-	-	-	-
Stage 2	775		-	-		-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver		835	1345	-	-	-
Mov Cap-2 Maneuver	546	-	-	-	-	-
Stage 1	827		-	-		-
Stage 2	775	-	-	-	-	-
Annroach	EB		NB		SB	
Approach						
HCM Control Delay, s HCM LOS			0.1		0	
HCIVI LUS	В					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	1345	-	546	835	-		
HCM Lane V/C Ratio	0.003	-	0.259	0.027	-	-	
HCM Control Delay (s)	7.7	0	13.9	9.4	-	-	
HCM Lane LOS	Α	Α	В	Α	-	-	
HCM 95th %tile Q(veh)	0	-	1	0.1	-	-	

Intersection							
Int Delay, s/veh	3.5						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
		LDIN	NDL			JUIN	
Lane Configurations	٦Y			र्भ	₽		
Traffic Vol, veh/h	68	73	16	157	160	28	
Future Vol, veh/h	68	73	16	157	160	28	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None		None		None	
Storage Length	0	-	-	-	-	-	
Veh in Median Storage,	# 0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	74	79	17	171	174	30	

Major/Minor	Minor2		Major1	٨	/lajor2	
Conflicting Flow All	394	189	204	0	-	0
Stage 1	189	-	-	-	-	-
Stage 2	205	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-		-
Follow-up Hdwy				-	-	-
Pot Cap-1 Maneuver	611	853	1368	-		-
Stage 1	843	-	-	-	-	-
Stage 2	829		-	-		-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	602	853	1368	-		-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s			0.7		0	
HCM LOS	В		0.7			
110111 200						

Minor Lane/Major Mvmt	NBL	NBT E	BLn1	SBT	SBR	
Capacity (veh/h)	1368	-	710	-	-	
HCM Lane V/C Ratio	0.013	- 0).216	-	-	
HCM Control Delay (s)	7.7	0	11.5	-		
HCM Lane LOS	Α	Α	В	-	-	
HCM 95th %tile Q(veh)	0	-	8.0	-	-	

HCM 6th TWSC

10: Waiale Rd & Ohana Hana Loop

-						
Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	ĵ.	
Traffic Vol, veh/h	31	16	4	145	231	5
Future Vol, veh/h	31	16	4	145	231	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None		None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-		0	0	-
Grade, %	0	-		0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	34	17	4	158	251	5

Major/Minor	Minor2		Major1	M	ajor2	
Conflicting Flow All	420	254	256	0	-	0
Stage 1	254		-	-	-	-
Stage 2	166	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42		-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	590	785	1309	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	863		-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver		785	1309	-	-	-
Mov Cap-2 Maneuver	588	-	-	-	-	-
Stage 1	786		-	-	-	-
Stage 2	863	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s			0.2		0	
HCM LOS	11.1 B		0.2		U	
HCIVI LUS	В					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1309	-	643	-	-	
HCM Lane V/C Ratio	0.003	-	0.079	-	-	
HCM Control Delay (s)	7.8	0	11.1	-	-	
HCM Lane LOS	Α	Α	В	-	-	
HCM 95th %tile Q(veh)	0	-	0.3		-	

ntersection						
nt Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥		ሻ	†	1}	
Traffic Vol, veh/h	28	22	5	119	239	12
Future Vol, veh/h	28	22	5	119	239	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	-
Veh in Median Storage	e,# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	24	5	129	260	13
Major/Minor	Minor2		Major1	1	Major2	
2 21 11 51 411	101	0.47	070	-		-

Major/Minor	Minor2		Major1	N	/lajor2	
Conflicting Flow All	406	267	273	0	-	0
Stage 1	267	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	601	772	1290	-	-	
Stage 1	778	-	-	-	-	-
Stage 2	888	-		-	-	
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver		772	1290	-	-	
Mov Cap-2 Maneuver	r 647	-	-	-	-	-
Stage 1	775	-		-	-	
Stage 2	888	-	-	-	-	-
Approach	FB		NB		SB	
HCM Control Delay, s			0.3		0	
HCM LOS	В					
Minor Lane/Major Mvr	mt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1290	-	697	-	
HCM Lane V/C Ratio		0.004	-	0.078		
HCM Control Delay (s	s)	7.8		10.6	-	
HCM Lane LOS		Α		В	-	

HCM 95th %tile Q(veh)

Intersection						
Int Delay, s/veh	6.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	ĵ.		¥	
Traffic Vol, veh/h	53	199	58	78	183	68
Future Vol, veh/h	53	199	58	78	183	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized		None	-	None		None
Storage Length	-	-	-	-	0	-
Veh in Median Storage	,# -	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	216	63	85	199	74

Major/Minor	Major1	Majo	or2	N	/linor2	
Conflicting Flow All	148	0	-	0	438	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1434	-	-	-	576	948
Stage 1	-	-	-	-	918	-
Stage 2	-		-	-	727	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1434	-	-	-	550	948
Mov Cap-2 Maneuver	-	-	-	-	550	-
Stage 1		-	-	-	876	
Stage 2	-	-	-	-	727	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	15.3
HCM LOS			С

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1434	-	-	-	621
HCM Lane V/C Ratio	0.04	-	-	-	0.439
HCM Control Delay (s)	7.6	0		-	15.3
HCM Lane LOS	Α	Α	-	-	С
HCM 95th %tile Q(veh)	0.1	-	-	-	2.2

HCM 6th Signalized Intersection Summary 12: Honoapiilani Hwy & W Waiko Rd/E Waiko Rd

07/30/2019

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ર્ન	7		4			î,		ሻ	†	7
Traffic Volume (veh/h)	20	13	6	75	7	48	4	558	67	143	624	6
Future Volume (veh/h)	20	13	6	75	7	48	4	558	67	143	624	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	14	2	82	8	32	4	607	69	155	678	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	101	180	214	19	45	420	867	99	459	1123	952
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.01	0.53	0.53	0.08	0.60	0.60
Sat Flow, veh/h	842	886	1578	952	165	397	1781	1649	187	1781	1870	1585
Grp Volume(v), veh/h	36	0	2	122	0	0	4	0	676	155	678	4
Grp Sat Flow(s), veh/h/ln	1728	0	1578	1514	0	0	1781	0	1837	1781	1870	1585
Q Serve(q s), s	0.0	0.0	0.1	3.4	0.0	0.0	0.1	0.0	15.8	2.0	13.0	0.1
Cycle Q Clear(q_c), s	1.0	0.0	0.1	4.4	0.0	0.0	0.1	0.0	15.8	2.0	13.0	0.1
Prop In Lane	0.61		1.00	0.67		0.26	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	298	0	180	278	0	0	420	0	965	459	1123	952
V/C Ratio(X)	0.12	0.00	0.01	0.44	0.00	0.00	0.01	0.00	0.70	0.34	0.60	0.00
Avail Cap(c a), veh/h	793	0	691	752	0	0	847	0	2253	754	2294	1944
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	22.4	24.3	0.0	0.0	7.0	0.0	10.2	7.5	7.1	4.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	2.0	0.2	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	1.5	0.0	0.0	0.0	0.0	5.5	0.5	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	0.0	22.4	24.7	0.0	0.0	7.0	0.0	12.1	7.7	8.3	4.6
LnGrp LOS	С	Α	С	С	Α	Α	A	Α	В	Α	Α	Α
Approach Vol, veh/h		38			122			680			837	
Approach Delay, s/veh		22.9			24.7			12.1			8.1	
Approach LOS		С			С			В			Α	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	36.0		11.5	5.3	40.3		11.5				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	14.0	70.0		25.0	14.0	70.0		25.0				
Max Q Clear Time (g_c+l1), s	4.0	17.8		3.0	2.1	15.0		6.4				
Green Ext Time (p_c), s	0.1	12.2		0.1	0.0	12.3		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			11.3									
HCM 6th LOS			В									

User approved pedestrian interval to be less than phase max green.

		*	7	ı	*	*
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ች	1	*	*		1
Traffic Volume (veh/h)	153	88	18	617	687	62
Future Volume (veh/h)	153	88	18	617	687	62
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approac		1.00	1.00	No.	No.	1.00
	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	166	13	20	671	747	40
			0.92			
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	263	234	315	1180	946	802
Arrive On Green	0.15	0.15	0.02	0.63	0.51	0.51
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	166	13	20	671	747	40
Grp Sat Flow(s), veh/h/lr	n1781	1585	1781	1870	1870	1585
Q Serve(q s), s	4.3	0.3	0.2	10.3	16.3	0.6
Cycle Q Clear(g_c), s	4.3	0.3	0.2	10.3	16.3	0.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h		234	315	1180	946	802
V/C Ratio(X)	0.63	0.06	0.06	0.57	0.79	0.05
Avail Cap(c a), veh/h	1077	958	774	3392	2676	2268
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
	1.00					
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/vel		18.2	8.1	5.3	10.1	6.2
Incr Delay (d2), s/veh	2.5	0.1	0.1	0.4	1.5	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),vel		0.1	0.1	2.5	5.3	0.2
Unsig. Movement Delay	, s/veh	1				
LnGrp Delay(d),s/veh	22.4	18.3	8.2	5.7	11.6	6.2
LnGrp LOS	С	В	Α	Α	В	Α
Approach Vol, veh/h	179			691	787	
Approach Delay, s/veh				5.8	11.3	
Approach LOS	C			Α.	В	
	0					
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc)	, s6.2	31.1		12.3		37.3
Change Period (Y+Rc),	s 5.0	6.0		5.0		6.0
Max Green Setting (Gm		71.0		30.0		90.0
Max Q Clear Time (q c		18.3		6.3		12.3
Green Ext Time (p c), s		6.8		0.5		5.6
4-7	, 5.0	3.0		3.0		5.0
Intersection Summary						
HCM 6th Ctrl Delay			10.2			

	•	-	\rightarrow	1	+	*	1	1	1	1	Ų.	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		*	7	ች	*	7	7	•	7	- 1	•	7
Traffic Volume (veh/h)	43	104	68	279	36	255	16	385	317	277	474	6
Future Volume (veh/h)	43	104	68	279	36	255	16	385	317	277	474	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	h	No			No			No			No	
	2067	2067	2067	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	113	9	303	39	80	17	418	0	301	515	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	261	254	491	479	623	300	560		432	781	723
Arrive On Green	0.04	0.13	0.13	0.17	0.26	0.26	0.02	0.30	0.00	0.14	0.42	0.42
	1968	2067	1738	1781	1870	1579	1781	1870	1585	1781	1870	1576
Grp Volume(v), veh/h	47	113	9	303	39	80	17	418	0	301	515	4
Grp Sat Flow(s), veh/h/ln	1968	2067	1738	1781	1870	1579	1781	1870	1585	1781	1870	1576
Q Serve(q s), s	1.6	4.0	0.4	11.0	1.3	2.6	0.5	15.9	0.0	8.6	17.5	0.1
Cycle Q Clear(q_c), s	1.6	4.0	0.4	11.0	1.3	2.6	0.5	15.9	0.0	8.6	17.5	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
	361	261	254	491	479	623	300	560		432	781	723
V/C Ratio(X)	0.13	0.43	0.04	0.62	0.08	0.13	0.06	0.75		0.70	0.66	0.01
Avail Cap(c a), veh/h	505	785	694	616	947	1019	693	1421		614	1421	1261
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	31.9	28.9	22.2	22.3	15.3	18.9	25.0	0.0	16.7	18.5	11.6
Incr Delay (d2), s/veh	0.2	0.4	0.0	1.3	0.0	0.0	0.0	4.2	0.0	0.8	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh		2.0	0.1	4.6	0.5	0.9	0.2	7.3	0.0	3.2	7.3	0.0
Unsig. Movement Delay		1										
LnGrp Delay(d),s/veh	28.2	32.3	29.0	23.4	22.4	15.3	18.9	29.2	0.0	17.4	20.5	11.6
LnGrp LOS	С	С	С	С	С	В	В	С		В	С	В
Approach Vol, veh/h		169			422			435	Α		820	
Approach Delay, s/veh		31.0			21.8			28.8			19.3	
Approach LOS		С			С			С			В	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc)	1E 0	29.6	18.5	15.0	6.6	39.0	8.2	25.2				
Change Period (Y+Rc),		6.0	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gm		60.0	19.0	30.0	19.0	60.0	9.0	40.0				
Max Green Selling (Gm. Max Q Clear Time (g. c+		17.9	13.0	6.0	2.5	19.5	3.6	40.0				
Green Ext Time (p_c), s		5.7	0.5	0.4	0.0	7.5	0.0	0.3				
, ,	0.3	5.7	0.5	0.4	0.0	1.3	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			23.2									
HCM 6th LOS			С									
N-4												

HCM 6th Signalized Intersection Summary 14: Honoapiilani Highway & Kuikahi Drive

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th LOS

	۶	→	*	<	←	4	1	†	<i>></i>	/	 	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		†	7	ች	1	7	ች	†	7	ች	†	7
Traffic Volume (veh/h)	238	226	359	30	195	121	247	449	14	37	305	98
Future Volume (veh/h)	238	226	359	30	195	121	247	449	14	37	305	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	h	No			No			No			No	
Adj Sat Flow, veh/h/ln	1567	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	340	246	94	33	212	16	268	488	0	40	332	0
Peak Hour Factor	0.70	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	567	479	323	278	234	425	643		265	460	
Arrive On Green	0.19	0.30	0.30	0.03	0.15	0.15	0.14	0.34	0.00	0.04	0.25	0.00
Sat Flow, veh/h	1493	1870	1580	1781	1870	1574	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	340	246	94	33	212	16	268	488	0	40	332	0
Grp Sat Flow(s), veh/h/ln	11493	1870	1580	1781	1870	1574	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	14.0	7.9	3.3	1.2	8.1	0.7	7.8	17.3	0.0	1.2	12.1	0.0
Cycle Q Clear(g_c), s	14.0	7.9	3.3	1.2	8.1	0.7	7.8	17.3	0.0	1.2	12.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	567	479	323	278	234	425	643		265	460	
V/C Ratio(X)	0.82	0.43	0.20	0.10	0.76	0.07	0.63	0.76		0.15	0.72	
Avail Cap(c_a), veh/h	416	567	479	599	502	423	758	1256		772	1256	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	120.5	20.8	19.2	25.4	30.4	27.3	17.1	21.7	0.0	20.2	25.7	0.0
Incr Delay (d2), s/veh	11.3	0.2	0.1	0.1	1.6	0.0	0.6	3.9	0.0	0.1	4.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh		3.4	1.2	0.5	3.7	0.2	2.9	7.5	0.0	0.5	5.5	0.0
Unsig. Movement Delay	, s/veh											
LnGrp Delay(d),s/veh	31.8	21.0	19.3	25.5	32.1	27.3	17.7	25.6	0.0	20.3	30.2	0.0
LnGrp LOS	С	С	В	С	С	С	В	С		С	С	
Approach Vol, veh/h		680			261			756	Α		372	Α
Approach Delay, s/veh		26.2			31.0			22.8			29.2	
Approach LOS		С			С			С			С	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc)	s7.8	31.6	7.5	27.6	15.1	24.3	19.0	16.1				
Change Period (Y+Rc),		6.0	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gm:		50.0	14.0	20.0	24.0	50.0	14.0	20.0				
Max Q Clear Time (q c+		19.3	3.2	9.9	9.8	14.1	16.0	10.1				
Green Ext Time (p c), s		6.2	0.0	0.8	0.3	4.0	0.0	0.6				
4 = 7:	0.0	0.2	0.0	0.0	0.0	7.0	0.0	0.0				
Intersection Summary			2/ 1									
HCM 6th Ctrl Delay			26.1									
HCM 6th LOS			С									

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

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Intersection							
Int Delay, s/veh	2.2						
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	↑	†	7	*	7	
Traffic Vol, veh/h	83	573	435	58	28	100	
Future Vol, veh/h	83	573	435	58	28	100	
Conflicting Peds, #/hr		0	0	1	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	140110	-	None	
Storage Length	145	-	-	50	0	0	
Veh in Median Storag		0	0	-	0	-	
Grade, %	-	0	0	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	90	623	473	63	30	109	
Major/Minor	Major1	1	Major2		Minor2		
Conflicting Flow All	537	0	-	0	1277	474	
Stage 1	-	-	-	-	474	-	
Stage 2	-	-	-	-	803	-	
Critical Hdwy	4.12			-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-		-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	-	3.518		
Pot Cap-1 Maneuver	1031		-	-	184	590	
Stage 1	-	-	-	-	626	-	
Stage 2	-		-	-	441	-	
Platoon blocked, %		-	-	-			
Mov Cap-1 Maneuver		-	-	-	168	589	
Mov Cap-2 Maneuver		-	-	-	168	-	
Stage 1	-		-		571	-	
Stage 2	-	-	-	-	441	-	
Approach	EB		WB		SB		
HCM Control Delay, s	1.1		0		16.6		
HCM LOS					С		
Minor Lane/Major Mvr	mt	EBL	EBT	WBT	WRR	SBLn1	SRI n2
Capacity (veh/h)	THE STATE OF THE S	1030	LDI	*******	VVDIC	168	589
HCM Lane V/C Ratio		0.088				0.181	
HCM Carted Dalay (- \	0.088	-	-	-		12.5

- 31.1 12.5

- - - D B

HCM Control Delay (s)

HCM 95th %tile Q(veh)

HCM Lane LOS

HCM 6th TWSC

16: Kuikahi Dr & Kehalani Village Center Dr

APPENDIX C

LEVEL OF SERVICE CALCULATIONS

• Existing PM Peak

HCM 6th AWSC

1: Waiale Rd & Kaohu St/Oluloa Dr

07/30/2019

ntersection	
ntersection Delay, s/veh	56.7
ntersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ĵ.			ĵ»			ની	7		4	
Traffic Vol, veh/h	58	10	158	14	4	8	91	392	21	8	480	66
Future Vol, veh/h	58	10	158	14	4	8	91	392	21	8	480	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	11	172	15	4	9	99	426	23	9	522	72
Number of Lanes	1	1	0	0	1	0	0	1	1	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			2			1			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			2			2			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			1			1			2		
HCM Control Delay	13.6			12.6			48.2			84.2		
HCM LOS	В			В			Е			F		

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	19%	0%	100%	0%	54%	1%
Vol Thru, %	81%	0%	0%	6%	15%	87%
Vol Right, %	0%	100%	0%	94%	31%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	483	21	58	168	26	554
LT Vol	91	0	58	0	14	8
Through Vol	392	0	0	10	4	480
RT Vol	0	21	0	158	8	66
Lane Flow Rate	525	23	63	183	28	602
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.937	0.036	0.143	0.355	0.067	1.073
Departure Headway (Hd)	6.622	5.81	8.47	7.272	8.946	6.416
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	551	620	426	499	403	566
Service Time	4.322	3.51	6.17	4.972	6.946	4.479
HCM Lane V/C Ratio	0.953	0.037	0.148	0.367	0.069	1.064
HCM Control Delay	49.9	8.7	12.6	13.9	12.6	84.2
HCM Lane LOS	Е	Α	В	В	В	F
HCM 95th-tile Q	11.8	0.1	0.5	1.6	0.2	17.7

Puunani Homestead 4:00 pm 06/13/2019 PM Existing Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 1

07/30/2019	3: Waiale R

3: Waiale Rd & Olomea St/Waimaluhia Ln

HCM 6th TWSC

	1/2	

Intersection	Intersection
Int Delay, s/veh 67.7	Int Delay, s/veh 13.8
Movement WBL WBR NBT NBR SBL SBT	Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR
Lane Configurations	Lane Configurations 7 6 4 6
Traffic Vol. veh/h 231 32 425 404 62 554	Traffic Vol. veh/h 70 0 13 6 1 9 26 781 4 4 689 156
Tuture Vol. veh/h 231 32 425 404 62 554	Future Vol. veh/h 70 0 13 6 1 9 26 781 4 4 689 156
rutine vii, verim 251 32 423 404 02 334 Conflicting Peds, #hr 0 0 0 0 0 0	Conflicting Peds, #/hr 0 0 0 0 0 0 5 0 4 4 0 5
Sign Control Stop Stop Free Free Free	Sign Control Stop Stop Stop Stop Stop Free Free Free Free Free
Sign Control Stup Stup Free Free Free Free Free Free Free Fre	RT Channelized - None - None - None - None
Ri Ciannelizeu - Norie - Norie Storage Length 0 145	Storage Length 135
Storage Length 145 0	Veh in Median Storage, # - 0 0 0 0 -
Peak Hour Factor 92 92 92 92 92 92 92	Peak Hour Factor 92
Heavy Vehicles, % 2 2 2 2 2 2	11001) 10110100, 70
Mvmt Flow 251 35 462 439 67 602	Mvmt Flow 76 0 14 7 1 10 28 849 4 4 749 170
Major/Minor Minor1 Major1 Major2	Major/Minor Minor2 Minor1 Major1 Major2
Conflicting Flow All 1418 682 0 0 901 0	Conflicting Flow All 1760 1760 839 1760 1843 855 924 0 0 857 0 0
Stage 1 682	Stage 1 847 847 - 911 911
Stage 2 736	Stage 2 913 913 - 849 932
Critical Hdwy 6.42 6.22 - 4.12 -	Critical Hdwy 7.12 6.52 6.22 7.12 6.52 6.22 4.12 - 4.12
Critical Hdwy Stg 1 5.42	Critical Hdwy Stg 1 6.12 5.52 - 6.12 5.52
Critical Hdwy Stg 2 5.42	Critical Hdwy Stg 2 6.12 5.52 - 6.12 5.52
Follow-up Hdwy 3.518 3.318 2.218 -	Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218
Pot Cap-1 Maneuver - 151 450 754 -	Pot Cap-1 Maneuver ~ 66 84 366 66 75 358 739 - 783
Stage 1 502	Stage 1 357 378 - 328 353
Stage 2 474	Stage 2 328 352 - 356 345
Platon blocked. %	Platoon blocked, %
Mov Cap-1 Maneuver - 131 450 754 -	Mov Cap-1 Maneuver ~ 59 76 364 59 68 357 735 780
Mov Cap-1 Maneuver - 131	Mov Cap-1 Manleuver - 59 76 - 59 68
Stage 1 502	Stage 1 330 372 - 303 326
Stage 2 410	Stage 2 295 325 - 338 339
Stage 2 410	Stagle 2 290 320 - 330 339
Approach WB NB SB	Approach EB WB NB SB
HCM Control Delay, s\$ 437.4 0 1	HCM Control Delay, s 281 42.6 0.3 0
HCM LOS F	HCM LOS F E
THE RESERVE OF THE PROPERTY OF	
Minor Lane/Major Mvmt NBT NBRWBLn1WBLn2 SBL SBT	Minor Lane/Major Mvmt NBL NBT NBR EBLn1 EBLn2WBLn1 SBL SBT SBR
Capacity (veh/h) 131 450 754 -	Capacity (veh/h) 735 59 364 113 780
HCM Lane V/C Ratio - 1.917 0.077 0.089 -	HCM Lane V/C Ratio 0.038 1.29 0.039 0.154 0.006
HCM Control Delay (s) - \$ 496.1 13.7 10.2 0	HCM Control Delay (s) 10.1 0 -\$ 330.3 15.3 42.6 9.6
HCM Lane LOS F B B A	HCM Lane LOS B A - F C E A
HCM 95th %tile Q(veh) - 19.8 0.2 0.3 -	HCM 95th %tile Q(veh) 0.1 6.5 0.1 0.5 0
Notes	Notes
-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon	-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Puunani Homestead 4:00 pm 06/13/2019 PM Existing Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 2 Puunani Homestead 4:00 pm 06/13/2019 PM Existing Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 3

	•	\rightarrow	*	1	—	*	1	1	1	-	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	1→			*	7		î,		ሻ	1>	
Traffic Volume (veh/h)	273	221	57	61	329	280	39	129	48	264	178	165
Future Volume (veh/h)	273	221	57	61	329	280	39	129	48	264	178	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	297	240	52	66	358	56	42	140	37	287	193	146
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	447	526	114	435	447	378	259	199	53	449	263	199
Arrive On Green	0.16	0.35	0.35	0.04	0.24	0.24	0.03	0.14	0.14	0.16	0.27	0.27
Sat Flow, veh/h	1781	1489	323	1781	1870	1582	1781	1425	376	1781	987	747
Grp Volume(v), veh/h	297	0	292	66	358	56	42	0	177	287	0	339
Grp Sat Flow(s), veh/h/ln	1781	0	1812	1781	1870	1582	1781	0	1801	1781	0	1734
Q Serve(q s), s	7.5	0.0	8.1	1.8	11.8	1.8	1.3	0.0	6.1	8.4	0.0	11.7
Cycle Q Clear(q_c), s	7.5	0.0	8.1	1.8	11.8	1.8	1.3	0.0	6.1	8.4	0.0	11.7
Prop In Lane	1.00		0.18	1.00		1.00	1.00		0.21	1.00		0.43
Lane Grp Cap(c), veh/h	447	0	640	435	447	378	259	0	251	449	0	462
V/C Ratio(X)	0.66	0.00	0.46	0.15	0.80	0.15	0.16	0.00	0.70	0.64	0.00	0.73
Avail Cap(c a), veh/h	874	0	1078	657	685	579	500	0	659	464	0	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	16.3	17.6	23.5	19.7	23.1	0.0	26.9	18.2	0.0	21.9
Incr Delay (d2), s/veh	1.7	0.0	0.5	0.2	3.9	0.2	0.3	0.0	3.6	2.8	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.3	0.7	5.4	0.7	0.6	0.0	2.8	3.6	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.7	0.0	16.8	17.7	27.4	19.9	23.4	0.0	30.5	21.0	0.0	24.8
LnGrp LOS	В	Α	В	В	С	В	С	Α	С	С	Α	С
Approach Vol, veh/h		589			480			219			626	
Approach Delay, s/veh		16.7			25.2			29.1			23.1	
Approach LOS		В			С			С			С	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.4	15.1	6.8	29.2	6.1	23.5	14.3	21.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	11.0	24.0	11.0	39.0	11.0	24.0	26.0	24.0				
Max Q Clear Time (q c+l1), s	10.4	8.1	3.8	10.1	3.3	13.7	9.5	13.8				
Green Ext Time (p c), s	0.1	0.9	0.1	2.0	0.0	1.6	0.8	1.8				
Intersection Summary		0.7	0.7	2.0	0.0		0.0					
HCM 6th Ctrl Delay			22.3									
HCM 6th LOS			22.3 C									
HCIVI OIN LUS			C									

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	*	7	IVDL	4	1	JUIN
Traffic Vol, veh/h	37	38	51	737	675	28
Future Vol. veh/h	37	38	51	737	675	28
Conflicting Peds, #/hr	0	0	12	0	0/0	12
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- -	None	-	None	-	None
Storage Length	125	0		-		-
Veh in Median Storage		-		0	0	
Grade, %	0			0	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	40	41	55	801	734	30
WWITE FIOW	40	71	33	001	734	30
	Minor2		Major1		Major2	
Conflicting Flow All	1672	761	776	0	-	0
Stage 1	761	-	-	-		-
Stage 2	911	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-		-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42		-	-		-
Follow-up Hdwy	3.518	3.318		-	-	-
Pot Cap-1 Maneuver	105	405	840	-	-	-
Stage 1	461	-	-	-	-	-
Stage 2	392	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver		400	830	-		-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	402	-	-	-	-	-
Stage 2	388	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s			0.6		0	
HCM LOS	43.5 E		0.0		U	
TICIVI EUS	L					
Minor Lane/Major Mvn	nt	NBL	NBT	EBLn1 I	EBLn2	SBT
Capacity (veh/h)		830	-	91	400	-
HCM Lane V/C Ratio		0.067	-	0.442		-
HCM Control Delay (s))	9.6	0	72.7	15	-
HCM Lane LOS		Α	Α	F	С	-
HCM 95th %tile Q(veh	1)	0.2	-	1.8	0.3	-

Puunani Homestead 4:00 pm 06/13/2019 PM Existing Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 4

Puunani Homestead 4:00 pm 06/13/2019 PM Existing Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 5

HCM 6th TWSC

7: Waiale Rd & Kokololio St

Intersection Intersection Delay, s/veh90.1 Intersection LOS F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4			ĥ			ĵ.		
Traffic Vol, veh/h	174	145	110	51	175	201	84	151	54	133	168	260	
Future Vol, veh/h	174	145	110	51	175	201	84	151	54	133	168	260	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	189	158	120	55	190	218	91	164	59	145	183	283	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0	
Approach	EB			WB			NB			SB			
Opposing Approach	WB			EB			SB			NB			
Opposing Lanes	1			1			2			2			
Conflicting Approach Le	eft SB			NB			EB			WB			
Conflicting Lanes Left	2			2			1			1			
Conflicting Approach Ri	igh i NB			SB			WB			EB			
Conflicting Lanes Right	2			2			1			1			
HCM Control Delay	118.7			108.4			24.6			88.1			
HCM LOS	F			F			С			F			

Lane	NBLn1	NBLn2	EBLn1\	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	41%	12%	100%	0%
Vol Thru, %	0%	74%	34%	41%	0%	39%
Vol Right, %	0%	26%	26%	47%	0%	61%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	84	205	429	427	133	428
LT Vol	84	0	174	51	133	0
Through Vol	0	151	145	175	0	168
RT Vol	0	54	110	201	0	260
Lane Flow Rate	91	223	466	464	145	465
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.262	0.594	1.136	1.107	0.384	1.11
Departure Headway (Hd)	11.203	10.477	9.388	9.261	10.321	9.345
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	322	348	392	395	351	391
Service Time	8.903	8.177	7.388	7.261	8.021	7.045
HCM Lane V/C Ratio	0.283	0.641	1.189	1.175	0.413	1.189
HCM Control Delay	17.8	27.4	118.7	108.4	19.3	109.5
HCM Lane LOS	С	D	F	F	С	F
HCM 95th-tile Q	1	3.6	16.4	15.6	1.8	15.6

Major/Minor	Minor2		Major1	Major	2			
Conflicting Flow All	504	254	293	0	- ()		
Stage 1	254	-	-	-	-			
Stage 2	250	-	-	-	-			
Critical Hdwy	6.42	6.22	4.12	-	-			
Critical Hdwy Stg 1	5.42	-	-	-	-			
Critical Hdwy Stg 2	5.42	-	-	-	-			
Follow-up Hdwy	3.518			-	-			
Pot Cap-1 Maneuver	528	785	1269	-	-			
Stage 1	788	-	-	-	-			
Stage 2	792	-	-	-	-			
Platoon blocked, %				-	-			
Mov Cap-1 Maneuver		785	1269	-	-			
Mov Cap-2 Maneuver		-	-	-	-			
Stage 1	765	-	-	-				
Stage 2	792	-	-	-	-			
Approach	EB		NB	S	В			
HCM Control Delay, s			1.2		0			
HCM LOS	В							
M. 1 (M. 1 M.		NIDI	NDT	-DI 4 -EDI	0 00			

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1269	-	513	785	-	-
HCM Lane V/C Ratio	0.026	-	0.104	0.019	-	-
HCM Control Delay (s)	7.9	0	12.8	9.7		-
HCM Lane LOS	Α	Α	В	Α	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	0.1		-

2.6

0 Veh in Median Storage, # 0 - - 0 0 -

486 202 235

6.42 6.22 4.12

3.518 3.318 2.218

540 839 1332

1332

0.049

5.42

832

764

Mov Cap-1 Maneuver 511 839 1332 Mov Cap-2 Maneuver 511 Stage 1 Stage 2

60 142 155

62

28 60 142 155

- None - None - None

92 92 92 92 92 92

41 30 65 154 168 67

0

NBT EBLn1 SBT SBR

- 613

- 0.117

0 11.7

A B

- 0.4

0 0

Stop Stop Free Free Free Free

0 0 0 0 0

Int Delay, s/veh

Movement Lane Configurations

Traffic Vol, veh/h Future Vol, veh/h

Sign Control RT Channelized

Storage Length

Peak Hour Factor

Heavy Vehicles, % Mvmt Flow

Conflicting Flow All

Stage 1 Stage 2 Critical Hdwy

Critical Hdwy Stg 1 Critical Hdwy Stg 2

Follow-up Hdwy

Pot Cap-1 Maneuver

Stage 1

Stage 2 Platoon blocked, %

HCM Control Delay, s 11.7

HCM LOS

Capacity (veh/h)

HCM Lane LOS

HCM Lane V/C Ratio

HCM Control Delay (s)

HCM 95th %tile Q(veh)

Austin, Tsutsumi, & Assoc.

Grade, %

Conflicting Peds, #/hr

9: Waiale Rd & Nokekula Lp

HCM 6th TWSC

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	₩.	LDR	IVDL	NDI 4	3B1	JOK
Traffic Vol, veh/h	10	17	16	194	168	14
Future Vol. veh/h	10	17	16	194	168	14
Conflicting Peds, #/hr		0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	310p	None	1166	None	1100	None
Storage Length	0	NUITE -		NUITE -		INUITE -
Veh in Median Storag				0	0	
Grade, %	e,# 0			0	0	
Peak Hour Factor	92	92	92	92	92	92
	2	2	2	2	2	2
Heavy Vehicles, % Mymt Flow	11	18	17	211	183	15
IVIVIIIL FIOW	11	18	17	211	183	15
Major/Minor	Minor2		Major1	1	Major2	
Conflicting Flow All	438	193	200	0	-	0
Stage 1	193	-		-	-	
Stage 2	245		-	-	-	
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42		-	-	-	
Critical Hdwy Stg 2	5.42	-		-		
Follow-up Hdwy	3.518	3.318	2.218	-	-	
Pot Cap-1 Maneuver	576	849	1372	-		
Stage 1	840	-	-	-	-	-
Stage 2	796	-	-	-	-	-
Platoon blocked. %						-
Mov Cap-1 Maneuver	566	847	1369	-		
Mov Cap-2 Maneuver		017	1307			
Stage 1	827					
Stage 2	794					
Stage 2	7.74					
Approach	EB		NB		SB	
HCM Control Delay, s	10.3		0.6		0	
HCM LOS	В					
Minor Lane/Major Mvr	mt	NBL	MRT	EBLn1	SBT	SBR
Capacity (veh/h)	THE .	1369	IVDI -	715	JDT	JUIN .
		0.013				
HCM Control Dolay (c	-)	7.7	0	10.3	-	
HCM Control Delay (s)	1.1	0	10.3		

Puunani Homestead 4:00 pm 06	5/13/2019 PM Existing

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HCM Lane LOS

HCM 95th %tile Q(veh)

07/30/2019

HCM 6th TWSC

11: E Waiko Rd & Waiale Rd

Intersection						
Int Delay, s/veh	0.7					
Movement	FBI	FBR	NBL	NBT	SBT	SBR
Movement	EDL	EBR	INDL	INDI	SBT	SBR
Lane Configurations	Y		7		₽	
Traffic Vol, veh/h	11	8	14	196	161	16
Future Vol, veh/h	11	8	14	196	161	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None	-	None
Storage Length	-	-	200	-	-	-
Veh in Median Storage,	# 0	-		0	0	-
Grade, %	0	-		0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	12	9	15	213	175	17

Major/Minor	Minor2		Major1	M	ajor2	
Conflicting Flow All	427	184	192	0	-	0
Stage 1	184	-	-	-	-	
Stage 2	243	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42		-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	584	858	1381	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	797		-	-		-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	578	858	1381	-	-	-
Mov Cap-2 Maneuver	636	-	-	-	-	-
Stage 1	839		-	-		
Stage 2	797	-	-	-	-	-
Approach	FB		NB		SB	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1381	-	714	-	-
HCM Lane V/C Ratio	0.011	-	0.029	-	-
HCM Control Delay (s)	7.6	-	10.2	-	-
HCM Lane LOS	Α	-	В	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

							_
Intersection							
Int Delay, s/veh	4.6						Т
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		લી	ĵ.		144		_
Traffic Vol, veh/h	42	80	106	168	140	35	j
Future Vol, veh/h	42	80	106	168	140	35	,
Conflicting Peds, #/hr	0	0	0	0	0	0)
Sign Control	Free	Free	Free	Free	Stop	Stop)
RT Channelized		None	-	None	-	None	
Storage Length	-	-	-	-	0	-	
Veh in Median Storage	,# -	0	0	-	0	-	
Grade, %	-	0	0	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	1
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	46	87	115	183	152	38	,

Major1	Ma	ajor2	Λ	/linor2		
298	0	-	0	386	207	
-	-	-	-	207	-	
-	-	-	-	179	-	
4.12	-	-	-	6.42	6.22	
-	-	-	-	5.42	-	
-	-	-	-	5.42	-	
2.218	-	-	-			
1263	-	-	-		833	
-	-	-	-		-	
-	-	-	-	852	-	
	-	-	-			
	-	-	-		833	
-	-	-	-		-	
-	-	-	-		-	
-	-	-	-	852	-	
FB		WB		SB		
		0		13.2		
		-		В		
	298 	298 0	298 0	298 0 - 0	298 0 - 0 386 207 179 4.12 6.42 5.42 5.42 2.218 5.42 2.218 3.518 1263 - 617 - 828 852 1263 594 594 852 EB WB SB 2.7 0 13.2	298 0 - 0 386 207 207 179 - 4.12 6.42 6.22 5.42 5.42 5.42 3.518 3.318 1263 617 833 828 852 852 852 852 852 852 852 852 852 852 852 852 852 852 797 852 852 852 797 852 852 1 797 852 852 1 797 852 852 1 797 852 852 1 797 852 852 1 797 852 852 1 797 852 852

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR SBLn1
Capacity (veh/h)	1263	-	-	- 630
HCM Lane V/C Ratio	0.036	-	-	- 0.302
HCM Control Delay (s)	8	0		- 13.2
HCM Lane LOS	Α	Α		- B
HCM 95th %tile Q(veh)	0.1	-	-	- 1.3

HCM Control Delay, s 10.2 HCM LOS B

	•	→	*	•	←	*	1	†	1	-	Į.	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ની	7		4		7	ĵ₃		ሻ	↑	7
Traffic Volume (veh/h)	12	7	3	57	10	74	9	665	76	64	516	22
Future Volume (veh/h)	12	7	3	57	10	74	9	665	76	64	516	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	8	1	62	11	44	10	723	80	70	561	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	89	161	159	23	58	543	982	109	400	1191	1008
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.01	0.59	0.59	0.06	0.64	0.64
Sat Flow, veh/h	869	873	1585	725	230	576	1781	1654	183	1781	1870	1584
Grp Volume(v), veh/h	21	0	1	117	0	0	10	0	803	70	561	15
Grp Sat Flow(s), veh/h/ln	1741	0	1585	1531	0	0	1781	0	1837	1781	1870	1584
Q Serve(g_s), s	0.0	0.0	0.0	4.1	0.0	0.0	0.1	0.0	20.2	0.9	10.0	0.2
Cycle Q Clear(g_c), s	0.7	0.0	0.0	4.7	0.0	0.0	0.1	0.0	20.2	0.9	10.0	0.2
Prop In Lane	0.62		1.00	0.53		0.38	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	267	0	161	241	0	0	543	0	1091	400	1191	1008
V/C Ratio(X)	0.08	0.00	0.01	0.49	0.00	0.00	0.02	0.00	0.74	0.18	0.47	0.01
Avail Cap(c_a), veh/h	702	0	617	675	0	0	909	0	2003	689	2039	1727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	0.0	25.9	28.0	0.0	0.0	5.4	0.0	9.4	7.7	6.1	4.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	2.1	0.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	1.7	0.0	0.0	0.0	0.0	6.8	0.2	3.1	0.1
Unsig. Movement Delay, s/veh			05.0									
LnGrp Delay(d),s/veh	26.3	0.0	25.9	28.6	0.0	0.0	5.4	0.0	11.5	7.7	6.7	4.3
LnGrp LOS	С	Α	С	С	Α	Α	Α	А	В	А	А	A
Approach Vol, veh/h		22			117			813			646	
Approach Delay, s/veh		26.2			28.6			11.4			6.7	
Approach LOS		С			С			В			Α	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	44.1		11.5	5.8	46.9		11.5				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	14.0	70.0		25.0	14.0	70.0		25.0				
Max Q Clear Time (g_c+I1), s	2.9	22.2		2.7	2.1	12.0		6.7				
Green Ext Time (p_c), s	0.0	15.9		0.0	0.0	9.4		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			В									

-	7	*	1	T	¥	4
Movement E	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7	ሻ	†	†	7
Traffic Volume (veh/h)	95	31	57	695	563	125
Future Volume (veh/h)	95	31	57	695	563	125
Initial Q (Qb), veh	0	0	0	0	0	0
	1.00	1.00	1.00			1.00
	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	
	870	1870	1870	1870	1870	1870
	103	1	62	755	612	73
).92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	235	209	408	1149	820	694
Arrive On Green 0).13	0.13	0.06	0.61	0.44	0.44
Sat Flow, veh/h 1	781	1585	1781	1870	1870	1583
Grp Volume(v), veh/h	103	1	62	755	612	73
Grp Sat Flow(s), veh/h/ln1	781	1585	1781	1870	1870	1583
	2.3	0.0	0.7	11.3	11.8	1.2
	2.3	0.0	0.7	11.3	11.8	1.2
	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	235	209	408	1149	820	694
).44	0.00	0.15	0.66	0.75	0.11
	233	1097	875	3884	3064	2594
	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I) 1	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh 1		16.3	7.0	5.4	10.2	7.2
	1.3	0.0	0.2	0.6	1.4	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/li		0.0	0.2	1.9	3.9	0.3
Unsig. Movement Delay, s			0.2	1.7	5.7	0.0
	18.6	16.4	7.2	6.0	11.5	7.2
LnGrp LOS	В	В	A	A	В	Α.
	104	D		817	685	
	18.6			6.1	11.1	
Approach LOS	18.0 B			0. I	П.Т	
Approacti LOS	D			А	D	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	s7.6	25.0		10.7		32.6
Change Period (Y+Rc), s		6.0		5.0		6.0
Max Green Setting (Gma)	k¥,.®	71.0		30.0		90.0
Max Q Clear Time (g c+l		13.8		4.3		13.3
Green Ext Time (p c), s		5.2		0.3		6.1
, , , , , , , , , , , , , , , , , , ,						
Intersection Summary						
HCM 6th Ctrl Delay			9.1			
HCM 6th LOS			Α			

Puunani Homestead 4:00 pm 06/13/2019 PM Existing Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 12 Puunani Homestead 4:00 pm 06/13/2019 PM Existing Austin, Tsutsumi, & Assoc.

HCM 6th Signalized Intersection Summary 13: Honoapiilani Hwy & Pilikana St

	ၨ	-	*	•	•	*	4	1	1	1	↓	4	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	*	7	*	^	7	*	^	7	- 1	^	7	
Traffic Volume (veh/h)	16	68	23	299	94	205	46	437	341	229	424	23	
Future Volume (veh/h)	16	68	23	299	94	205	46	437	341	229	424	23	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac	:h	No			No			No			No		
Adj Sat Flow, veh/h/ln	2067	2067	2067	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	17	74	2	325	102	70	50	475	0	249	461	11	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	298	249	284	525	526	625	355	621		385	755	669	
Arrive On Green	0.02	0.12	0.12	0.18	0.28	0.28	0.04	0.33	0.00	0.11	0.40	0.40	
Sat Flow, veh/h	1968	2067	1751	1781	1870	1585	1781	1870	1585	1781	1870	1581	
Grp Volume(v), veh/h	17	74	2	325	102	70	50	475	0	249	461	11	
Grp Sat Flow(s), veh/h/lr	11968	2067	1751	1781	1870	1585	1781	1870	1585	1781	1870	1581	
Q Serve(g_s), s	0.6	2.7	0.1	12.4	3.4	2.3	1.5	18.8	0.0	7.1	16.1	0.3	
Cycle Q Clear(g_c), s	0.6	2.7	0.1	12.4	3.4	2.3	1.5	18.8	0.0	7.1	16.1	0.3	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	298	249	284	525	526	625	355	621		385	755	669	
V/C Ratio(X)	0.06	0.30	0.01	0.62	0.19	0.11	0.14	0.77		0.65	0.61	0.02	
Avail Cap(c_a), veh/h	474	750	708	613	905	947	691	1358		593	1358	1179	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/vel	า 30.8	33.1	29.0	23.2	22.6	15.9	17.4	24.7	0.0	17.1	19.5	13.8	
Incr Delay (d2), s/veh	0.1	0.2	0.0	1.5	0.1	0.0	0.1	4.2	0.0	0.7	1.7	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),vel	h/lr0.3	1.4	0.0	5.3	1.5	0.8	0.6	8.5	0.0	2.7	6.8	0.1	
Unsig. Movement Delay	, s/veh	1											
LnGrp Delay(d),s/veh	30.9	33.4	29.1	24.7	22.6	15.9	17.4	28.9	0.0	17.8	21.2	13.9	
LnGrp LOS	С	С	С	С	С	В	В	С		В	С	В	
Approach Vol, veh/h		93			497			525	Α		721		
Approach Delay, s/veh		32.8			23.0			27.8			19.9		
Approach LOS		С			С			С			В		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)	1.34.4	33.4	19.9	15.0	8.4	39.4	6.6	28.2					
Change Period (Y+Rc),		6.0	5.0	5.0	5.0	6.0	5.0	5.0					
Max Green Setting (Gm		60.0	19.0	30.0	19.0	60.0	9.0	40.0					
Max Q Clear Time (q. c		20.8	14.4	4.7	3.5	18.1	2.6	5.4					
Green Ext Time (p c), s		6.6	0.4	0.2	0.0	6.6	0.0	0.5					
Intersection Summary													
HCM 6th Ctrl Delay			23.7										
HCM 6th LOS			23.7 C										
II LUS			C										

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ž	+	7	7	^	7	7	•	7	Ĭ	^	7
Traffic Volume (veh/h)	120	72	121	14	105	84	143	433	23	67	479	152
Future Volume (veh/h)	120	72	121	14	105	84	143	433	23	67	479	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99	4.00	0.99	0.98	4.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approad Adj Sat Flow, veh/h/ln	1673	No 1870	1870	1870	No 1870	1870	1870	No 1870	1870	1870	No 1870	1870
Adj Flow Rate, veh/h	130	78	28	15	114	1870	155	471	1870	73	521	1870
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	427	357	343	298	248	358	740		378	693	
Arrive On Green	0.09	0.23	0.23	0.02	0.16	0.16	0.08	0.40	0.00	0.05	0.37	0.00
Sat Flow, veh/h	1594	1870	1564	1781	1870	1555	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	130	78	28	15	114	9	155	471	0	73	521	0
Grp Sat Flow(s), veh/h/l		1870	1564	1781	1870	1555	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.5	2.3	1.0	0.5	3.8	0.3	3.6	14.1	0.0	1.7	16.8	0.0
Cycle Q Clear(g_c), s	4.5	2.3	1.0	0.5	3.8	0.3	3.6	14.1	0.0	1.7	16.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h		427	357	343	298	248	358	740		378	693	
V/C Ratio(X)	0.36	0.18	0.08	0.04	0.38	0.04	0.43	0.64		0.19	0.75	
Avail Cap(c_a), veh/h	545	540	452	671	540	449	834	1351		899	1351	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/ve		21.5	21.0	23.6	26.0	24.6	13.9	16.9	0.0	13.1	19.0	0.0
Incr Delay (d2), s/veh Initial Q Delay(d3),s/vel	0.2	0.1	0.0	0.0	0.3	0.0	0.3	1.9	0.0	0.1	3.5	0.0
%ile BackOfQ(50%),ve		0.0	0.0	0.0	0.0	0.0	0.0	0.0 5.6	0.0	0.0	7.0	0.0
Unsig. Movement Dela			0.5	0.2	1.7	0.1	1.3	3.0	0.0	0.0	7.0	0.0
LnGrp Delay(d),s/veh	20.4	21.6	21.0	23.6	26.3	24.6	14.2	18.8	0.0	13.2	22.5	0.0
LnGrp LOS	20.4 C	C C	C C	23.0 C	20.5 C	C C	В	В	0.0	В	C	0.0
Approach Vol, veh/h		236			138			626	А		594	Α
Approach Delay, s/veh		20.9			25.9			17.7			21.4	
Approach LOS		С			С			В			С	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc) <8.8	33.4	6.3	20.8	10.5	31.7	11.0	16.0				
Change Period (Y+Rc),		6.0	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gm		50.0	14.0	20.0	24.0	50.0	14.0	20.0				
Max Q Clear Time (q c		16.1	2.5	4.3	5.6	18.8	6.5	5.8				
Green Ext Time (p_c),		6.1	0.0	0.2	0.2	6.8	0.1	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			С									

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 15: Honoapiilani Hwy & Kehalani Pkwy

HCM 6th TWSC 16: Kuikahi Dr & Kehalani Village Center Dr

07/30/2019

Intersection						
Int Delay, s/veh	3.3					
	EDI	COT	MOT	MIDD	CDI	CDD
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	7	•	- ↑	7	- 1	7
Traffic Vol, veh/h	100	477	483	101	48	128
Future Vol, veh/h	100	477	483	101	48	128
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	145	-	-	50	0	0
Veh in Median Storage	e,# -	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	109	518	525	110	52	139

lajor/Minor	Major1	Ma	ajor2	١	√linor2				
Conflicting Flow All	639	0	-	0	1265	529	١		
Stage 1	-	-	-	-	529	-			
Stage 2	-	-	-	-	736	-			
Critical Hdwy	4.12	-	-	-	6.42	6.22			
Critical Hdwy Stg 1	-	-	-	-	5.42	-			
Critical Hdwy Stg 2	-	-	-	-	5.42	-			
Follow-up Hdwy	2.218	-	-	-	3.518	3.318			
Pot Cap-1 Maneuver	945	-	-	-	187	550			
Stage 1	-	-	-	-	591	-			
Stage 2	-	-	-	-	474	-			
Platoon blocked, %		-	-	-					
Mov Cap-1 Maneuver	941	-		-	164	548			
Mov Cap-2 Maneuver	-	-	-	-	164	-			
Stage 1	-	-	-	-	520	-			
Stage 2	-	-	-	-	472	-			
Approach	EB		WB		SB				
HCM Control Delay, s	1.6		0		20.1				
HCM LOS	1.0		U		C				
I ICIVI EUS					C				

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	941	-	-	-	164	548
HCM Lane V/C Ratio	0.116	-	-	-	0.318	0.254
HCM Control Delay (s)	9.3	-	-	-	36.9	13.8
HCM Lane LOS	Α	-	-	-	Ε	В
HCM 95th %tile Q(veh)	0.4	-	-	-	1.3	1

Puunani Homestead 4:00 pm 06/13/2019 PM Existing Austin, Tsutsumi, & Assoc.

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APPENDIX C

LEVEL OF SERVICE CALCULATIONS

• Base Year 2024 AM Peak

2: Waiale Rd & Waiinu Rd 01/15/2020

tersection	
tersection Delay, s/veh	124.8
tersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	î,			ĵ»			ર્ન	7		4	
Traffic Vol, veh/h	85	5	150	15	15	10	165	420	10	5	550	105
Future Vol, veh/h	85	5	150	15	15	10	165	420	10	5	550	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	92	5	163	16	16	11	179	457	11	5	598	114
Number of Lanes	1	1	0	0	1	0	0	1	1	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			2			1			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			2			2			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			1			1			2		
HCM Control Delay	14.5			14.1			121.1			174.9		
HCM LOS	В			В			F			F		

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	28%	0%	100%	0%	38%	1%
Vol Thru, %	72%	0%	0%	3%	38%	83%
Vol Right, %	0%	100%	0%	97%	25%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	585	10	85	155	40	660
LT Vol	165	0	85	0	15	5
Through Vol	420	0	0	5	15	550
RT Vol	0	10	0	150	10	105
Lane Flow Rate	636	11	92	168	43	717
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	1.178	0.018	0.213	0.333	0.106	1.312
Departure Headway (Hd)	7.074	6.211	9.183	7.953	9.945	6.887
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	521	580	394	455	363	531
Service Time	4.774	3.911	6.883	5.653	7.945	4.887
HCM Lane V/C Ratio	1.221	0.019	0.234	0.369	0.118	1.35
HCM Control Delay	123	9	14.4	14.6	14.1	174.9
HCM Lane LOS	F	Α	В	В	В	F
HCM 95th-tile Q	21.7	0.1	0.8	1.4	0.4	29.2

Intersection						
Int Delay, s/veh	166.4					
ilit Delay, siveli	100.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	7	7	1>			4
Traffic Vol, veh/h	230	55	545	730	70	690
Future Vol, veh/h	230	55	545	730	70	690
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	145	-	-	-	-
Veh in Median Storag	je,# 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	250	60	592	793	76	750
Major/Minor	Minor1	Ν	/lajor1	1	Major2	
Conflicting Flow All	1893	991	0	0	1387	0
Stage 1	991		-		-	

Major/Minor	Minor1	N	/lajor1	Λ	Najor2				
Conflicting Flow All	1893	991	0	0	1387	0	 ·	,	
Stage 1	991	-	-	-	-	-			
Stage 2	902	-	-	-	-	-			
Critical Hdwy	6.42	6.22	-	-	4.12	-			
Critical Hdwy Stg 1	5.42	-	-	-	-	-			
Critical Hdwy Stg 2	5.42	-	-	-	-	-			
Follow-up Hdwy	3.518	3.318	-	-	2.218	-			
Pot Cap-1 Maneuver	~ 77	299	-	-	494	-			
Stage 1	359	-	-	-	-	-			
Stage 2	396	-	-	-	-	-			
Platoon blocked, %			-	-		-			
Mov Cap-1 Maneuver		298	-	-	493	-			
Mov Cap-2 Maneuver	~ 57	-	-	-	-	-			
Stage 1	358	-	-	-	-	-			
Stage 2	291	-	-	-	-	-			
Approach	WB		NB		SB				
	4054 1								

Approach	WB	NB	SB
HCM Control Del	lay, \$ 1351.4	0	1.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWB	Ln1WBLn2	SBL	SBT			
Capacity (veh/h)	-	-	57 298	493	-			
HCM Lane V/C Ratio	-	- 4.	386 0.201	0.154	-			
HCM Control Delay (s)	-	\$ 166	9.7 20.1	13.6	0			
HCM Lane LOS	-	-	F C	В	Α			
HCM 95th %tile Q(veh)		- 2	7.5 0.7	0.5				
Notes								
~: Volume exceeds capacity	\$: De	lav excee	ds 300s	+: Com	putation	Not Defined	*: All major volume in platoon	

Intersection												
Int Delay, s/veh	180.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	7		44			41			1>	
Traffic Vol, veh/h	160	0	35	10	0	20	10	1110	10	15	715	170
Future Vol. veh/h	160	0	35	10	0	20	10	1110	10	15	715	170
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	3	3	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	Otop	None	-	-	None			None			None
Storage Length			0			-			-			-
Veh in Median Storage	- # c	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-, "	0			0			0			0	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mymt Flow	174	0	38	11	0	22	11	1207	11	16	777	185
WWW.CT IOW	17.1	U	30	- "	U	22	- ''	1207		10	111	100
	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2151	2148	873	2159	2235	1216	965	0	0	1221	0	0
Stage 1	905	905	-	1238	1238	-		-		-	-	-
Stage 2	1246	1243	-	921	997	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-		-		-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 35	48	349	34	43	221	714	-		571	-	-
Stage 1	331	355	-	215	248	-	-	-	-	-	-	-
Stage 2	213	246		324	322			-		-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 29	43	348	28	38	220	712	-		569	-	-
Mov Cap-2 Maneuver	~ 29	43	-	28	38	-	-	-	-	-	-	-
Stage 1	314	332	-	204	235	-	-	-	-	-	-	-
Stage 2	183	233	-	270	301	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s				101.7			0.1			0.2		
HCM LOS	# 2007 F			F			0.1			0.2		
HOW EOS				'								
Minor Lane/Major Mvm	nt	NBL	NBT	NRP	FRI n1	EBLn2\	VRI n1	SBL	SBT	SBR		
Capacity (veh/h)		712	INDI	TVDIC	29	348	67	569	JD1	JUIN -		
HCM Lane V/C Ratio		0.015					0.487	0.029				
HCM Control Delay (s)	١	10.1	0		\$ 2518	16.6	101.7	11.5				
HCM Lane LOS		В	A		F 2310	C	101.7 F	В				
HCM 95th %tile Q(veh)	0	A		21.2	0.4	2	0.1				
)	U			21.2	0.4	2	0.1				
Notes												

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection									
Int Delay, s/veh	53.5								
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations	T T	Z Z	INDL	4	1301	JUK			
Traffic Vol, veh/h	130	65	40	1025	700	25			
Future Vol. veh/h	130	65	40	1025	700	25			
Conflicting Peds, #/hr	0	0.0	3	0	0	3			
Sign Control	Stop	Stop	Free	Free	Free	Free			
RT Channelized	Jiup -	None	1166	None	1166	None			
Storage Length	125	0		NONE -		None -			
Veh in Median Storage		-		0	0				
Grade. %	0			0	0				
Peak Hour Factor	92	92	92	92	92	92			
Heavy Vehicles, %	2	2	2	2	2	2			
Mvmt Flow	141	71	43	1114	761	27			
WWIIIL FIOW	141	/ 1	43	1114	/01	21			
	Minor2		Major1		Major2				
Conflicting Flow All	1978	778	791	0	-	0			
Stage 1	778			-	-	-			
Stage 2	1200		-	-	-	-			
Critical Hdwy	6.42	6.22	4.12		-	-			
Critical Hdwy Stg 1	5.42	-	-	-	-	-			
Critical Hdwy Stg 2	5.42			-	-	-			
Follow-up Hdwy	3.518	3.318		-	-	-			
Pot Cap-1 Maneuver	~ 68	396	829	-	-	-			
Stage 1	453	-	-	-	-	-			
Stage 2	285	-	-	-	-	-			
Platoon blocked, %				-	-	-			
Mov Cap-1 Maneuver	~ 58	395	827	-	-	-			
Mov Cap-2 Maneuver	~ 58	-	-	-	-	-			
Stage 1	390	-	-	-	-	-			
Stage 2	284	-	-	-	-	-			
Approach	EB		NB		SB				
HCM Control Delay, s	542.4		0.4		0				
HCM LOS	F				-				
. 10.11. 200									
Minor Lone/Major Mum	n+	NIDI	MDT	FDI 51 I	בטו איז	CDT	CDD		
Minor Lane/Major Mvn	nı	NBL	MRI	EBLn1		SBT	SBR		
Capacity (veh/h)		827		58	395				
HCM Cantrol Dalay (c)		0.053	-	2.436			-		
HCM Control Delay (s))	9.6		805.5	16.1	-	-		
HCM Lane LOS	`	A	Α	F	C		-		
HCM 95th %tile Q(veh)	0.2	-	14.2	0.6	-	-		
Notes									
~: Volume exceeds ca	pacity	\$: De	elay exc	ceeds 3	00s	+: Com	putation Not Defined	*: All major volume in platoon	
								,	

	۶	→	•	•	—	*	4	†	1	-	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	- 1	1>		ሻ	↑	7	7	f.		ሻ	₽	
Traffic Volume (veh/h)	380	385	90	50	255	230	180	255	65	200	265	205
Future Volume (veh/h)	380	385	90	50	255	230	180	255	65	200	265	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	475	418	93	54	277	28	196	277	64	217	288	203
Peak Hour Factor	0.80	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	517	555	124	240	325	273	277	457	106	402	325	229
Arrive On Green	0.24	0.37	0.37	0.03	0.17	0.17	0.09	0.31	0.31	0.10	0.32	0.32
Sat Flow, veh/h	1781	1481	329	1781	1870	1576	1781	1467	339	1781	1018	718
Grp Volume(v), veh/h	475	0	511	54	277	28	196	0	341	217	0	491
Grp Sat Flow(s), veh/h/ln	1781	0	1810	1781	1870	1576	1781	0	1805	1781	0	1736
Q Serve(q_s), s	23.5	0.0	27.8	2.8	16.2	1.7	8.3	0.0	18.1	9.2	0.0	30.3
Cycle Q Clear(q_c), s	23.5	0.0	27.8	2.8	16.2	1.7	8.3	0.0	18.1	9.2	0.0	30.3
Prop In Lane	1.00		0.18	1.00		1.00	1.00		0.19	1.00		0.41
Lane Grp Cap(c), veh/h	517	0	679	240	325	273	277	0	563	402	0	554
V/C Ratio(X)	0.92	0.00	0.75	0.22	0.85	0.10	0.71	0.00	0.61	0.54	0.00	0.89
Avail Cap(c a), veh/h	648	0	882	320	481	405	394	0	960	474	0	892
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.2	0.0	30.7	36.6	45.2	39.2	27.2	0.0	33.0	24.0	0.0	36.5
Incr Delay (d2), s/veh	16.0	0.0	2.7	0.5	9.5	0.2	3.3	0.0	1.1	1.1	0.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	0.0	12.6	1.3	8.4	0.7	3.8	0.0	8.1	4.0	0.0	13.8
Unsig. Movement Delay, s/veh		0.0	12.0	1.0	0.4	0.7	3.0	0.0	0.1	4.0	0.0	13.0
LnGrp Delay(d),s/veh	43.2	0.0	33.4	37.1	54.7	39.4	30.5	0.0	34.0	25.1	0.0	43.1
LnGrp LOS	43.2 D	Α	C	37.1 D	D D	37.4 D	30.5 C	Α	34.0 C	23.1 C	Α	43.1 D
Approach Vol, veh/h	U	986	<u> </u>	U	359	U		537			708	
					50.9							
Approach Delay, s/veh		38.1 D			50.9 D			32.8 C			37.6 D	
Approach LOS		D			U			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.4	41.2	7.9	48.3	14.6	42.0	30.7	25.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	16.0	60.0	9.0	55.0	18.0	58.0	35.0	29.0				
Max Q Clear Time (q c+l1), s	11.2	20.1	4.8	29.8	10.3	32.3	25.5	18.2				
Green Ext Time (p_c), s	0.3	2.5	0.0	3.8	0.3	3.7	1.2	1.3				
Intersection Summary												
HCM 6th Ctrl Delay			38.6									

6: Kamehameha Ave & Maui Lani Pkwy	У
	_
Intersection	

HCM 6th Roundabout

Carcin LOS C C C C C C C C C	Intersection					
SB Lanes	Intersection Delay, s/veh17.	.7				
Lanes 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Intersection LOS	С				
Lanes 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Approach	ED	WR	MR	SB	
1						
pgroach Flow, veh/h 533 408 506 637 nd Flow Rate, veh/h 544 417 516 650 es Circulating, veh/h 638 500 411 577 ol Crossing Leg. #h 31 0 4 0 0 ap Adj 0.996 1.000 0.999 1.000 ach Delay, s/veh 15.3 14.6 19.3 20.5 ach LOS C B C C C C B C C C C B C C C C C C C	Entry Lanes			•		
nd Flow Rate, veh/h 544 417 516 650 es Circulating, veh/h 484 632 616 472 es Exiting, veh/h 638 500 411 577 ol Crossing Leg, #/h 31 0 4 0 ap Adj 0.996 1.000 0.999 1.000 ach Delay, s/veh 15.3 14.6 19.3 20.5 ach LOS C B C C Left Left Left Left Left nated Moves LTR LTR LTR LTR LTR ed Moves LTR ed Moves LTR LTR ed Moves LTR LTR ed Moves LTR						
es Circulating, veh/h 484 632 616 472 es Exiting, veh/h 638 500 411 577 ol Crossing Leg, #/h 31 0 4 0 ap Adj 0,996 1.000 0.999 1.000 ach Delay, s/veh 15.3 14.6 19.3 20.5 ach LOS C B C C Left Left Left Left Left nated Moves LTR LTR LTR LTR LTR ead Moves LTR LTR LTR LTR LTR ead Moves LTR LTR LTR LTR LTR eannelized Jill 1.000 1.000 1.000 1.000						
es Exiting, veh/h 638 500 411 577 of Crossing Leg, #h 31 0 4 0 ap Adj 0.996 1.000 0.999 1.000 ach Delay, s/veh 15.3 14.6 19.3 20.5 ach LOS C B C C Left Left Left Left Left nated Moves LTR LTR LTR LTR LTR earnelized Jili 1.000 1.000 1.000 1.000 -Up Headway, s 2.609 2.609 2.609 -Up Headway, s 2.609 2.609 2.609 0.009 -Up Headway, s 4.976 4.976 4.976 4.976 Flow, veh/h 544 417 516 650						
ol Crossing Leg, #/h 31 0 4 0 0 ap Adj 0.996 1.000 0.999 1.000 ap Adj 0.996 1.000 0.999 1.000 ach Delay, s/veh 15.3 14.6 19.3 20.5 ach LOS C B C C Left Left Left Left Left Left nated Moves LTR LTR LTR LTR LTR annelized Util 1.000 1.000 1.000 1.000 -Up Headway, s 2.609 2.609 2.609 2.609 -Up Headway, s 2.609 4.976 4.976 4.976 -Flow, veh/h 544 417 516 650						
ap Adj 0.996 1.000 0.999 1.000 ach Delay, s/veh 15.3 14.6 19.3 20.5 ach LOS C B C C Left Left Left Left Left nated Moves LTR LTR LTR LTR LTR tannelized blil 1.000 1.000 1.000 1.000						
ach Delay, s/veh 15.3 14.6 19.3 20.5 ach LOS C B C C Left Left Left Left Left Left Intended Moves LTR						
Left	Ped Cap Adj					
Left						
Analed Moves	Approacti LOS	C	Б	C	C	
TR	Lane Le	:ft	Left	Left	Left	
	Designated Moves LT	R	LTR	LTR	LTR	
1.000 1.00	Assumed Moves LT	R	LTR	LTR	LTR	
-Up Headway, s 2.609 2.6	RT Channelized					
Il Headway, s 4.976 4.976 4.976 4.976 Flow, veh/h 544 417 516 650 Intry Lane, veh/h 842 724 736 853 HV Adj Factor 0.980 0.979 0.981 0.980 Entry, veh/h 533 408 506 637 Intry, veh/h 822 709 722 836 atio 0.649 0.576 0.701 0.762 Il Delay, s/veh 15.3 14.6 19.3 20.5 C B C C	Lane Util 1.00	10	1.000	1.000	1.000	
Flow, veh/h 544 417 516 650 ntry Lane, veh/h 842 724 736 853 HV Adj Factor 0.980 0.979 0.981 0.980 entry, veh/h 533 408 506 637 ntry, veh/h 822 709 722 836 atio 0.649 0.576 0.701 0.762 ol Delay, s/veh 15.3 14.6 19.3 20.5 C B C C	Follow-Up Headway, s 2.60	19	2.609	2.609	2.609	
ntry Lane, veh/h 842 724 736 853 HV Adj Factor 0.980 0.979 0.981 0.980 Entry, veh/h 533 408 506 637 ntry, veh/h 822 709 722 836 atio 0.649 0.576 0.701 0.762 b) Delay, s/veh 15.3 14.6 19.3 20.5 C B C C	Critical Headway, s 4.97	6	4.976	4.976	4.976	
HV Adj Factor 0.980 0.979 0.981 0.980 intry, velv/h 533 408 506 637 ntry, velv/h 822 709 722 836 atio 0.649 0.576 0.701 0.762 ol Delay, s/veh 15.3 14.6 19.3 20.5 C B C C			417	516	650	
Entry, veh/h 533 408 506 637 ntry, veh/h 822 709 722 836 atio 0.649 0.576 0.701 0.762 ol Delay, s/veh 15.3 14.6 19.3 20.5 C B C C				736	853	
ntry, veh/h 822 709 722 836 atio 0.649 0.576 0.701 0.762 ol Delay, s/veh 15.3 14.6 19.3 20.5 C B C C		0	0.979	0.981	0.980	
atió 0.649 0.576 0.701 0.762 bl Delay, síveh 15.3 14.6 19.3 20.5 C B C C	Flow Entry, veh/h 53	3	408	506	637	
ol Delay, s/veh 15.3 14.6 19.3 20.5 C B C C						
C B C C						
			14.6			
tille Queue, veh 5 4 6 7			В	С		
	95th %tile Queue, veh	5	4	6	7	

HCM 6th LOS

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	1100	4	1→	ODIT
Traffic Vol, veh/h	130	25	5	330	340	35
Future Vol, veh/h	130	25	5	330	340	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None		None
Storage Length	0	50	-	-	-	-
Veh in Median Storage	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	141	27	5	359	370	38

Major/Minor	Minor2		Major1	M	ajor2	
Conflicting Flow All	758	389	408	0	-	0
Stage 1	389	-	-	-		-
Stage 2	369	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-		-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	375	659	1151	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	699	-	-	-		-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	373	659	1151	-	-	-
Mov Cap-2 Maneuver	373	-	-	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Annroach	EB		NB		SB	
Approach						
HCM Control Delay, s			0.1		0	
HCM LOS	С					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	1151	-	373	659	-	-	
HCM Lane V/C Ratio	0.005	-	0.379	0.041	-	-	
HCM Control Delay (s)	8.1	0	20.4	10.7		-	
HCM Lane LOS	Α	Α	С	В	-	-	
HCM 95th %tile Q(veh)	0	-	1.7	0.1	-		

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			ર્ન	ĵ.	
Traffic Vol, veh/h	70	75	20	245	330	30
Future Vol, veh/h	70	75	20	245	330	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-		0	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	82	22	266	359	33

Major/Minor	Minor2		Major1	Λ	/lajor2	
Conflicting Flow All	686	376	392	0	-	0
Stage 1	376	-	-	-	-	-
Stage 2	310	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-		-
Follow-up Hdwy		3.318		-	-	-
Pot Cap-1 Maneuver	413	670	1167	-		-
Stage 1	694	-	-	-	-	-
Stage 2	744		-	-		-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver		670	1167	-		-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s			0.6		0	
HCM LOS	С				-	
Minor Lane/Major Myr		NRI	NRT F		SRT	SRR

Minor Lane/Major Mvmt	NBL	NBT E	EBLn1	SBT	SBR	
Capacity (veh/h)	1167	-	508	-	-	
HCM Lane V/C Ratio	0.019	-	0.31	-	-	
HCM Control Delay (s)	8.1	0	15.2	-	-	
HCM Lane LOS	Α	Α	С	-	-	
HCM 95th %tile Q(veh)	0.1	-	1.3	-	-	

01/15/2020	
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10: Waiale Rd & Ohana Hana Loop

Intersection						
Int Delay, s/veh	1.2					
		EDD	NIDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	**	00	-	4	₽	-
Traffic Vol, veh/h	35	20	5	235	400	5
Future Vol, veh/h	35	20	5	235	400	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-		-	-
Veh in Median Storage		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	22	5	255	435	5
Major/Minor	Minor2		Major1	N	Najor2	
Conflicting Flow All	703	438	440	0	-	0
Stage 1	438	430	440	-		-
Stage 2	265					
Critical Hdwy	6.42	6.22	4.12			
Critical Hdwy Stg 1	5.42	0.22	4.12		-	
Critical Hdwy Stg 1	5.42				-	_
Follow-up Hdwy		3.318				
		619	1120		-	_
Pot Cap-1 Maneuver	404		1120	-	-	-
Stage 1	651	-		-	-	
Stage 2	779	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	402	619	1120	-	-	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	648	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	14		0.2		0	
			0.2		U	
HCM LOS	В					
Minor Lane/Major Mvm	nt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1120		461	-	-
HCM Lane V/C Ratio		0.005		0.13		
HCM Control Delay (s)		8.2	0	14		
HCM Lane LOS		A	A	В		
HCM 95th %tile Q(veh)	0	-	0.4		
TIGINI 73111 70111E Q(VEII)	0		0.4		

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		*	†	1>	
Traffic Vol, veh/h	30	25	5	210	410	15
Future Vol. veh/h	30	25	5	210	410	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	Jiop -	None	-	None	-	None
Storage Length		None -	200	None -		None -
Veh in Median Storage				0	0	
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	27	5	228	446	16
Marian/Missan	N 41 O		NA-!1		4-10	
	Minor2		Major1		Major2	
Conflicting Flow All	692	454	462	0	-	0
Stage 1	454	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	410	606	1099		-	-
Stage 1	640					
Stage 2	802					
Platoon blocked. %	002					
	408	606	1099			
Mov Cap-1 Maneuver				-	-	-
Mov Cap-2 Maneuver	505	-	-	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	802	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.4		0.2		0	
HCM LOS	В					
Minor Lane/Major Mvr	nt	NBL	MRT	EBLn1	SBT	SBR
Capacity (veh/h)		1099	-	546	301	JUIN
HCM Cartes Delay (c)		0.005		0.109		-
HCM Control Delay (s)	8.3	-	12.4	-	-
HCM Lane LOS		Α	-	В	-	-
HCM 95th %tile Q(veh	1)	0		0.4		

Heavy Vehicles, % Mvmt Flow

HCM Control Delay, s 1.8

HCM LOS

Intersection						
Int Delay, s/veh	27.3					
Movement	FBI	FBT	WBT	WBR	SBL	SBR
wovement	EDL	EDI	WDI	NDL	SDL	JDK
Lane Configurations		र्स	ĵ.		- 74	
Traffic Vol, veh/h	80	265	75	140	325	95
Future Vol, veh/h	80	265	75	140	325	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None		None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage,	# -	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92

Major/Minor	Major1	Ma	ijor2	- 1	Minor2		
Conflicting Flow All	234	0	-	0	620	158	
Stage 1		-	-	-	158		
Stage 2	-	-	-	-	462	-	
Critical Hdwy	4.12	-	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1333	-	-	-	452	887	
Stage 1	-	-	-	-	871	-	
Stage 2		-	-	-	634		
Platoon blocked, %		-	-	-			
Mov Cap-1 Maneuver	1333	-	-	-	417	887	
Mov Cap-2 Maneuver	-	-	-	-	417	-	
Stage 1		-	-	-	803		
Stage 2	-	-	-	-	634	-	
A 1			MD		00		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR SB	Ln1
0 " (1 ")	4000				47.4
Capacity (veh/h)	1333			-	474
HCM Lane V/C Ratio	0.065	-		- 0	.963
HCM Control Delay (s)	7.9	0	-	- (62.3
HCM Lane LOS	Α	Α	-		F
LICM OF the Of tile Of rob)	0.2				10

HCM 6th Signalized Intersection Summary 12: Honoapiilani Hwy & W Waiko Rd/E Waiko Rd

01/15/2020

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	7		4			î,		ሻ	†	7
Traffic Volume (veh/h)	20	15	10	105	10	55	5	705	125	170	830	10
Future Volume (veh/h)	20	15	10	105	10	55	5	705	125	170	830	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	16	1	114	11	45	5	766	131	185	902	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	113	222	208	20	56	312	945	162	336	1238	1049
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.01	0.61	0.61	0.06	0.66	0.66
Sat Flow, veh/h	785	800	1579	968	139	399	1781	1556	266	1781	1870	1585
Grp Volume(v), veh/h	38	0	1	170	0	0	5	0	897	185	902	7
Grp Sat Flow(s), veh/h/ln	1586	0	1579	1506	0	0	1781	0	1822	1781	1870	1585
Q Serve(q_s), s	0.0	0.0	0.0	7.6	0.0	0.0	0.1	0.0	31.9	3.0	26.4	0.1
Cycle Q Clear(q_c), s	1.5	0.0	0.0	9.1	0.0	0.0	0.1	0.0	31.9	3.0	26.4	0.1
Prop In Lane	0.58		1.00	0.67		0.26	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	291	0	222	284	0	0	312	0	1107	336	1238	1049
V/C Ratio(X)	0.13	0.00	0.00	0.60	0.00	0.00	0.02	0.00	0.81	0.55	0.73	0.01
Avail Cap(c a), veh/h	531	0	471	514	0	0	597	0	1521	524	1561	1323
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	31.0	34.7	0.0	0.0	9.1	0.0	12.7	14.1	9.3	4.8
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.8	0.0	0.0	0.0	0.0	3.7	0.5	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	3.4	0.0	0.0	0.0	0.0	12.2	1.7	9.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.7	0.0	31.0	35.5	0.0	0.0	9.1	0.0	16.5	14.6	11.4	4.8
LnGrp LOS	С	Α	С	D	Α	Α	Α	Α	В	В	В	А
Approach Vol, veh/h		39			170			902			1094	
Approach Delay, s/veh		31.7			35.5			16.4			11.9	
Approach LOS		С			D			В			В	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	56.9		16.8	5.5	61.5		16.8				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	14.0	70.0		25.0	14.0	70.0		25.0				
Max Q Clear Time (g_c+l1), s	5.0	33.9		3.5	2.1	28.4		11.1				
Green Ext Time (p_c), s	0.2	17.0		0.1	0.0	18.2		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			15.9									
HCM 6th LOS			В									

User approved pedestrian interval to be less than phase max green.

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<i>•</i>	*	٠ 🦠	4	†	Ţ	1
Movement EBL	EBR	RI ER	R NBL	NBT	SBT	SBR
				770	1000	7
Traffic Volume (veh/h) 155	90			770	920	65
Future Volume (veh/h) 155	90			770	920	65
				0	0	0
Ped-Bike Adj(A_pbT) 1.00	1.00					1.00
Parking Bus, Adj 1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach No				No	No	
Adj Sat Flow, veh/h/ln 1870	1870			1870	1870	1870
Adj Flow Rate, veh/h 168	8	68	3 22	837	1000	56
Peak Hour Factor 0.92	0.92	92 0.9	0.92	0.92	0.92	0.92
Percent Heavy Veh, % 2	2	2	2 2	2	2	2
Cap, veh/h 218	194	18 19	254	1345	1164	986
Arrive On Green 0.12	0.12			0.72	0.62	0.62
Sat Flow, veh/h 1781	1585		1781	1870	1870	1585
Grp Volume(v), veh/h 168	8			837	1000	56
Grp Sat Flow(s), veh/h/ln1781	1585			1870	1870	1585
Q Serve(q s), s 6.4	0.3			15.8	30.2	1.0
Cycle Q Clear(q c), s 6.4	0.3			15.8	30.2	1.0
) 10- /-				10.0	30.2	
Prop In Lane 1.00	1.00			124E	11//	1.00
Lane Grp Cap(c), veh/h 218	194			1345	1164	986
V/C Ratio(X) 0.77	0.04			0.62	0.86	0.06
Avail Cap(c_a), veh/h 769	684			2422		1619
HCM Platoon Ratio 1.00	1.00			1.00	1.00	1.00
Upstream Filter(I) 1.00	1.00			1.00	1.00	1.00
Uniform Delay (d), s/veh 29.5	26.9			5.0	10.6	5.1
Incr Delay (d2), s/veh 5.6	0.1	.6 0.	0.1	0.5	2.3	0.0
Initial Q Delay(d3),s/veh 0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr2.9	0.1	.9 0.	0.1	4.0	10.2	0.3
Unsig. Movement Delay, s/ve	h	veh				
LnGrp Delay(d),s/veh 35.2	27.0	.2 27.	11.6	5.4	12.9	5.2
LnGrp LOS D	С			Α	В	Α
Approach Vol, veh/h 176		76		859	1056	
Approach Delay, s/veh 34.8				5.6	12.5	
Approach LOS C				Α.	В.	
**						
Timer - Assigned Phs 1	2			4		6
Phs Duration (G+Y+Rc), s6.7	49.3			13.5		56.0
Change Period (Y+Rc), s 5.0	6.0)	5.0		6.0
Max Green Setting (Gmax), @	71.0	.G 71.)	30.0		90.0
Max Q Clear Time (q_c+l12,3	32.2	,3 32.)	8.4		17.8
Green Ext Time (p_c), s 0.0	11.1	0.0 11.		0.5		8.2
Intercaction Cummens						
Intersection Summary			44.6			
HCM 6th Ctrl Delay			11.6			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		†	7	7	†	7	7	†	7	ች	†	7
Traffic Volume (veh/h)	55	135	85	335	50	350	25	470	390	370	645	10
Future Volume (veh/h)	55	135	85	335	50	350	25	470	390	370	645	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A pbT)	0.99		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approac	ch	No			No			No			No	
Adj Sat Flow, veh/h/ln	2067	2067	2067	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	147	10	364	54	203	27	511	0	402	701	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	206	219	448	466	650	237	633		440	887	812
Arrive On Green	0.04	0.10	0.10	0.19	0.25	0.25	0.03	0.34	0.00	0.16	0.47	0.47
Sat Flow, veh/h	1968	2067	1734	1781	1870	1579	1781	1870	1585	1781	1870	1577
Grp Volume(v), veh/h	60	147	10	364	54	203	27	511	0	402	701	6
Grp Sat Flow(s), veh/h/l		2067	1734	1781	1870	1579	1781	1870	1585	1781	1870	1577
Q Serve(q s), s	2.7	6.9	0.5	17.7	2.2	8.7	1.0	24.9	0.0	14.0	31.6	0.2
Cycle Q Clear(q c), s	2.7	6.9	0.5	17.7	2.2	8.7	1.0	24.9	0.0	14.0	31.6	0.2
Prop In Lane	1.00	0.7	1.00	1.00	2.2	1.00	1.00	24.7	1.00	1.00	31.0	1.00
Lane Grp Cap(c), veh/h		206	219	448	466	650	237	633	1.00	440	887	812
V/C Ratio(X)	0.20	0.71	0.05	0.81	0.12	0.31	0.11	0.81		0.91	0.79	0.01
Avail Cap(c a), veh/h	396	619	566	448	747	888	528	1121		490	1121	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/ve		43.7	38.4	30.5	29.1	19.9	22.2	30.1	0.0	20.4	22.1	11.8
Incr Delay (d2), s/veh	0.3	1.7	0.0	10.8	0.0	0.1	0.1	5.2	0.0	19.2	4.4	0.0
Initial Q Delay(d3),s/vel		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),ve		3.6	0.0	8.9	1.0	3.2	0.4	11.7	0.0	7.6	14.0	0.0
Unsig. Movement Dela			0.2	0.9	1.0	3.2	0.4	11.7	0.0	7.0	14.0	0.1
LnGrp Delay(d),s/veh	38.5	45.4	38.5	41.4	29.1	20.0	22.3	35.3	0.0	39.6	26.5	11.8
LnGrp LOS	36.3 D	43.4 D	36.5 D	41.4 D	29.1 C	20.0 C	22.3 C	33.3 D	0.0	39.0 D	20.5 C	П.6
	U	217	D	Ŋ	621	U	U	538	А	Ŋ	1109	D
Approach Vol, veh/h									A			
Approach Delay, s/veh Approach LOS		43.1 D			33.3 C			34.7 C			31.2 C	
Approacti LOS		D			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), 31.2	39.9	24.0	15.0	7.6	53.5	9.1	29.9				
Change Period (Y+Rc)		6.0	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gn		60.0	19.0	30.0	19.0	60.0	9.0	40.0				
Max Q Clear Time (q c		26.9	19.7	8.9	3.0	33.6	4.7	10.7				
Green Ext Time (p c),		7.0	0.0	0.5	0.0	9.9	0.0	0.6				
Intersection Summary												
			33.5									
HCM 6th Ctrl Delay												
HCM 6th LOS			С									
Notes												

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Puunani Homestead 7:00 am 06/13/2019 BY 2024 AM Austin, Tsutsumi, & Assoc.

HCM 6th LOS

Synchro 10 Report Page 13 Puunani Homestead 7:00 am 06/13/2019 BY 2024 AM Austin, Tsutsumi, & Assoc.

HCM 6th Signalized Intersection Summary 14: Honoapiilani Highway & Kuikahi Drive

Synchro 10 Report Page 14

16: Kuikahi Dr & Kehalani Village Center Dr

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h) 285 285 485 30 240 135 305 565 15 50 400 110 0 0 0 0 0 0 0 Ped-Bike Adj(A_pbT) 1.00 1.00 1.00 0.99 1.00 1.00 1.00 1.00 Parking Bus, Adj Work Zone On Approach Adj Flow Rate, veh/h 407 310 156 33 261 17 332 614 0 54 435 Peak Hour Factor 0.70 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Percent Heavy Veh, % 10 Cap, veh/h 425 666 563 291 303 255 380 715 Arrive On Green Sat Flow, veh/h 1493 1870 1581 1781 1870 1575 1781 1870 1585 1781 1870 1585 Grp Volume(v), veh/h 407 310 156 33 261 17 332 614 0 54 435 Grp Sat Flow(s), veh/h/ln1493 1870 1581 1781 1870 1575 1781 1870 1585 1781 1870 1585 Q Serve(q_s), s 24.0 13.7 7.6 1.6 14.6 1.0 13.8 32.4 0.0 2.3 23.8 0.0 Cycle Q Clear(g_c), s 24.0 13.7 7.6 1.6 14.6 1.0 13.8 32.4 0.0 2.3 23.8 0.0 Prop In Lane 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Lane Grp Cap(c), veh/h 425 666 563 291 303 255 380 715 V/C Ratio(X) 0.96 0.47 0.28 0.11 0.86 0.07 0.87 0.86 0.27 0.86 Avail Cap(c_a), veh/h 425 666 563 704 418 352 510 715 HCM Platoon Ratio Upstream Filter(I) Uniform Delay (d), s/veh 27.9 26.7 24.7 35.8 43.9 38.2 25.0 30.5 0.0 28.7 37.4 0.0 Incr Delay (d2), s/veh 32.8 0.2 0.1 0.1 9.9 0.0 10.0 11.1 0.0 0.3 12.7 0.0 %ile BackOfQ(50%),veh/li2.3 6.2 2.9 0.7 7.6 0.4 6.5 16.0 0.0 1.0 12.2 0.0 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 60.7 26.9 24.8 35.9 53.8 38.2 34.9 41.6 0.0 29.0 50.1 0.0 LnGrp LOS E C C D D D C D D 946 Approach Vol, veh/h 311 489 39.3 47.8 Approach Delay, s/veh 42.3 51.0 Approach LOS D D D Phs Duration (G+Y+Rc), s9.0 47.1 8.1 43.3 21.2 34.9 29.0 22.4 Change Period (Y+Rc), s 5.0 6.0 5.0 5.0 5.0 5.0 5.0 5.0 Max Green Setting (Gmax)4.0s 36.0 28.0 20.0 24.0 36.0 24.0 24.0 Max Q Clear Time (g_c+l14),3s 34.4 3.6 15.7 15.8 25.8 26.0 16.6 Green Ext Time (p_c), s 0.0 0.9 0.0 0.7 0.3 3.1 0.0 0.6 Intersection Summary HCM 6th Ctrl Delay 43.3 HCM 6th LOS

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Puunani Homestead 7:00 am 06/13/2019 BY 2024 AM

Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 15

10	Report

Intersection												
Int Delay, s/veh	9.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	LDL	1>	LDIN	WDL.	W ↑	W DIX	INDL	4	NDK	JUL	- 3b1	JUK
Traffic Vol, veh/h	95	745	10	10	555	65	30	5	30	35	5	110
Future Vol. veh/h	95	745	10	10	555	65	30	5	30	35	5	110
Conflicting Peds, #/hr	1	743	0	0	000	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	1166	1166	None	1166	1166	None	Siup	Stop -	None	Stop -	Stop -	None
Storage Length	145		INUITE .	0	-	50	-		0	-	-	0
Veh in Median Storage		0		-	0	30		0	U		0	U
Grade. %	:,# -	0			0			0			0	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mymt Flow	103	810	11	11	603	71	33	5	33	38	5	120
WWITH FIUW	103	010	11	- 11	003	71	33	0	33	ან	0	120
	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	675	0	0	821	0	0	1745	1719	816	1667	1653	604
Stage 1	-		-	-	-	-	1022	1022	-	626	626	-
Stage 2	-	-	-	-	-	-	723	697	-	1041	1027	-
Critical Hdwy	4.12		-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2				-		-	6.12	5.52		6.12	5.52	
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	916	-	-	808	-	-	68	90	377	77	98	498
Stage 1	-	-	-	-	-	-	285	313	-	472	477	-
Stage 2		-	-	-	-	-	417	443	-	278	312	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	915			808	-		45	79	377	60	86	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	45	79	-	60	86	-
Stage 1	-		-		-	-	253	278	-	419	470	-
Stage 2	-	-	-	-	-	-	309	436	-	221	277	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			0.2			116.7			49.8		
HCM LOS							F			Е		
										_		
Minor Lane/Major Mvm	nt	NBLn1	MRI n2	EBL	EBT	EBR	WBL	WBT	WRP	SBLn1	SRI n2	
Capacity (veh/h)	It	48	377	915	LDI	LDI	808	WDI	NON	62	498	
HCM Lane V/C Ratio		0.793	0.086	0.113			0.013			0.701	0.24	
				9.4	-	-	9.5	-	-	147	14.5	
HCM Control Delay (s)		203.4	15.5	9.4	-	-	9.5	-	-	147	14.5	

Α - -

3.2 0.3 0.4 -

Α

HCM Lane LOS

HCM 95th %tile Q(veh)

APPENDIX C

LEVEL OF SERVICE CALCULATIONS

• Base Year 2024 PM Peak

HCM 6th AWSC

1: Waiale Rd & Kaohu St/Oluloa Dr

01/15/2020

ntersection	
ntersection Delay, s/veh	160.5
ntersection LOS	F

EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
7	ĵ.			ĵ»			ની	7		4	
60	10	200	15	5	10	110	505	25	10	640	70
60	10	200	15	5	10	110	505	25	10	640	70
0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
2	2	2	2	2	2	2	2	2	2	2	2
65	11	217	16	5	11	120	549	27	11	696	76
1	1	0	0	1	0	0	1	1	0	1	0
EB			WB			NB			SB		
WB			EB			SB			NB		
1			2			1			2		
SB			NB			EB			WB		
1			2			2			1		
NB			SB			WB			EB		
2			1			1			2		
16.5			14.4			143.9			235.4		
С			В			F			F		
	60 60 0.92 2 65 1 EB WB 1 SB 1 NB	60 10 60 10 0.92 0.92 2 2 655 11 1 1 EB WB 1 SB 1 NB	60 10 200 60 10 200 0.92 0.92 0.92 2 2 2 2 65 11 217 1 1 0 EB WB 1 SB 1 SB 1 NB	60 10 200 15 60 10 200 15 0.92 0.92 0.92 2 2 2 2 2 65 11 217 16 1 1 0 0 EB WB WB EB 1 2 2 SB NB 1 2 2 NB SB NB SB 2 1 16.5 14.4	1	60 10 200 15 5 10 60 10 200 15 5 10 0.92 0.92 0.92 0.92 0.92 2 2 2 2 2 2 2 2 65 11 217 16 5 11 1 1 0 0 1 0 1 0 EB WB WB B EB 1 2 2 SB NB 1 2 2 SB NB 1 2 2 NB SB 2 1 16.5 11.4	10	10	60 10 200 15 5 10 110 505 25 60 10 200 15 5 10 110 505 25 60 10 200 15 5 10 110 505 25 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 65 11 217 16 5 11 120 549 27 1 1 0 0 1 0 0 1 1 0 0 1 1 EB WB BEB SB 1 2 1 1 SB NB EB 1 2 2 1 SB NB EB 1 2 2 1 SB NB EB 1 2 2 2 NB SB WB 2 1 1 1 1 16.5 11.4 1143.9	60 10 200 15 5 10 110 505 25 10 60 10 200 15 5 10 110 505 25 10 0.92 <	10

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	18%	0%	100%	0%	50%	1%
Vol Thru, %	82%	0%	0%	5%	17%	89%
Vol Right, %	0%	100%	0%	95%	33%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	615	25	60	210	30	720
LT Vol	110	0	60	0	15	10
Through Vol	505	0	0	10	5	640
RT Vol	0	25	0	200	10	70
Lane Flow Rate	668	27	65	228	33	783
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	1.245	0.045	0.15	0.45	0.081	1.455
Departure Headway (Hd)	7.26	6.447	9.361	8.138	10.523	7.073
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	508	559	385	445	343	524
Service Time	4.96	4.147	7.061	5.838	8.523	5.073
HCM Lane V/C Ratio	1.315	0.048	0.169	0.512	0.096	1.494
HCM Control Delay	149.4	9.5	13.7	17.3	14.4	235.4
HCM Lane LOS	F	Α	В	С	В	F
HCM 95th-tile Q	24.6	0.1	0.5	2.3	0.3	36.5

Puunani Homestead 4:00 pm 06/13/2019 BY 2024 PM Austin, Tsutsumi, & Assoc.

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Int Delay, s/veh 297.5 Movement WBL WBR NBT NBR SBL SBT Lane Configurations ሻ ሾ ቡ Traffic Vol, veh/h 315 35 560 530 65 750 Future Vol, veh/h 315 35 560 530 65 750 Conflicting Peds, #/hr 0 0 0 0 0 Stop Stop Free Free Free Free Sign Control RT Channelized - None - None - None 0 145 Storage Length Veh in Median Storage, # 0 - 0 - - 0 Grade, % Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % Mvmt Flow 342 38 609 576 71 815 Conflicting Flow All 1854 897 0 0 1185 0 Stage 1 Stage 2 Critical Hdwy 6.42 6.22 - 4.12 Critical Hdwy Stg 1 5.42 Critical Hdwy Stg 2 5.42 Follow-up Hdwy 3.518 3.318 - - 2.218 Pot Cap-1 Maneuver Stage 1 398 Stage 2 373 Platoon blocked, % Mov Cap-1 Maneuver ~ 63 339 - - 589 -Mov Cap-2 Maneuver ~ 63 Stage 1 Stage 2 ~ 291 HCM Control Delay, \$ 1914.7 HCM LOS NBT NBRWBLn1WBLn2 SBL SBT Capacity (veh/h) 63 339 589 HCM Lane V/C Ratio - 5.435 0.112 0.12 HCM Control Delay (s) \$2125.5 17 11.9 0 HCM Lane LOS - - F C B A HCM 95th %tile Q(veh) - - 38.3 0.4 0.4 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Puunani Homestead 4:00 pm 06/13/2019 BY 2024 PM	Synchro 10 Report
Austin, Tsutsumi, & Assoc.	Page 2

lata												
Intersection Int Delay, s/veh	40.1											
iiii Deiay, Siveri												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ની			4			4			Þ	
Traffic Vol, veh/h	70	0	15	10	5	10	30	1040	5	5	970	160
Future Vol, veh/h	70	0	15	10	5	10	30	1040	5	5	970	160
Conflicting Peds, #/hr	0	0	0	0	0	0	5	0	4	4	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-		None			None	-		None
Storage Length	135	-	-	-	-	-	-		-	-	-	-
Veh in Median Storage		0	-		0			0			0	
Grade, %	-	0	-	-	0	-	-	0		-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	0	16	11	5	11	33	1130	5	5	1054	174
Major/Minor	Minor2			Vinor1			Major1		- 1	Major2		
Conflicting Flow All	2363	2361	1146	2362	2446	1137	1233	0	0	1139	0	0
Stage 1	1156	1156	-	1203	1203							
Stage 2	1207	1205		1159	1243					-		-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12			4.12		
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52			-		-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52							
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-		2.218		-
Pot Cap-1 Maneuver	~ 25	35	243	25	31	246	565			613		
Stage 1	239	271	-	225	257					-	-	-
Stage 2	224	257	-	238	246	-	-		-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 17	28	242	20	25	245	562	-	-	611	-	-
Mov Cap-2 Maneuver	~ 17	28	-	20	25	-	-	-	-	-	-	-
Stage 1	200	262	-	189	215	-	-	-	-	-	-	-
Stage 2	175	215	-	216	238	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, \$				266			0.3			0		
HCM LOS	F			200 F			0.3			U		
TIGWI EU3	F			г								
Minor Lane/Major Mvn	nt	NBL	NBT	NBR	EBLn1	EBLn2\	VBLn1	SBL	SBT	SBR		
Capacity (veh/h)		562			17	27	34	611				
HCM Lane V/C Ratio		0.058			2.984	1.543		0.009		-		
HCM Control Delay (s))	11.8	0	\$	1358.5\$	588.5	266	10.9				
HCM Lane LOS		В	Α		F	F	F	В				

0.2 - - 7 5 2.8 0

-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Puunani Homestead 4:00 pm 06/13/2019 BY 2024 PM Austin, Tsutsumi, & Assoc.

HCM 95th %tile Q(veh)

HCM 6th TWSC

3: Waiale Rd & Olomea St/Waimaluhia Ln

Synchro 10 Report Page 3

elay, s/veh 19.2 ement EBL EBR NBL NBT SBT SBR (Configurations									
### BEBL FBR NBL NBT SBT SBR	ntersection								
Configurations T	nt Delay, s/veh	19.2							
ic Vol, veh/h 60 40 55 975 940 45 re Vol, veh/h 60 40 55 975 940 45 liciting Pets, #hr 0 0 12 0 0 12 Control Stop Stop Free Free Free Free Free Free Free Fre	Novement			NBL	NBT	SBT	SBR		
re Vol, veh'h 60 40 55 975 940 45	ane Configurations	7	7		4	₽			
Control	affic Vol, veh/h	60	40	55	975	940	45		
Control Stop Stop Free Free Free Free Free Free Free Fre	uture Vol, veh/h	60		55	975	940			
Channelized	onflicting Peds, #/hr	. 0	0	12	0	0	12		
age Length 125 0	ign Control	Stop	Stop	Free	Free	Free	Free		
In Median Storage, # 0	Γ Channelized		None	-	None	-	None		
le, % 0 0 0 1	orage Length		0	-	-	-	-		
Hour Factor 92 92 92 92 92 92 92 92 1 Flow 65 43 60 1060 1022 49 1 Flow 65 65 43 60 1060 1022 49 1 Flow 65 65 43 60 1060 1022 49 1 Flow 65 65 43 60 1060 1022 49 1 Flow 65 65 43 60 1060 1022 49 1 Flow 65 65 43 60 1060 1022 49 1 Flow 65 65 43 60 1060 1022 49 1 Flow 65 65 65 65 65 65 65 65 65 65 65 65 65	h in Median Storage	je,# 0	-		0	0	-		
r/Minor Minor2 Major1 Major2 ilicting Flow All 2239 1059 1083 0 - 0 Stage 1 1059	ade, %				0				
Flow 65 43 60 1060 1022 49	eak Hour Factor								
r/Minor Minor2 Major1 Major2 licting Flow All 2239 1059 1083 0 - 0 Stage 1 1059	eavy Vehicles, %	2	2	2	2	2	2		
Stage 1	vmt Flow	65	43	60	1060	1022	49		
Stage 1									
Stage 1	ajor/Minor	Minor2		Maior1	- 1	Maior2			
Stage 1 1059	onflicting Flow All						0		
Stage 2 1180					-				
tal Hdwy Stg 1 5.42									
Tall Hdwy Stg 1 5.42									
al Hdwy Stg 2 5.42									
wup Hdwy 3.518 3.318 2.218									
Cap-1 Maneuver				2 218					
Stage 1 333									
Stage 2 292 - - - Jon blocked, % - - - Cap-1 Maneuver -35 270 637 - - Cap-2 Maneuver -35 - - - Stage 1 254 - - - Stage 2 289 - - - J Control Delay, \$ 400.9 0.6 0 H LOS F - - I LOS F - - I Lane V/C Ratio 0.094 - 1.863 0.161 - I Lane V/C Ratio 0.094 - 1.863 0.161 - - I Lane LOS B A F C - - - 195th %tile Q(veh) 0.3 - 7.2 0.6 - - -									
Cap-1 Maneuver									
Cap-1 Maneuver - 35		212							
Cap-2 Maneuver - 35		_ 35	270	637					
Stage 1 254 -									
Stage 2 289									
oach EB NB SB I Control Delay, s\$ 400.9 0.6 0 I LOS F **I Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR **acity (veh/h) 637 - 35 270 - 1 Lane V/C Ratio 0.094 - 1.863 0.161 - 1 Control Delay (s) 11.2 0% 654.2 20.9 - 1 Lane LOS B A F C - 2 195th %tile Q(veh) 0.3 - 7.2 0.6									
Control Delay, s\$ 400.9 0.6 0	Staye Z	209				·			
Control Delay, s\$ 400.9 0.6 0	poroach	ED		MD		CD			
F SBR SBR									
r Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR acity (veh/h) 637 - 35 270 I Lane V/C Ratio 0.094 - 1.863 0.161 I Control Delay (s) 11.2 08 654.2 20.9 I Lane LOS B A F C C 195th %tile Q(veh) 0.3 - 7.2 0.6 s	CM CONTO Delay, S CM LOS			0.0		U			
acity (veh/h) 637 - 35 270 I Lane V/C Ratio 0.094 - 1.863 0.161 I Control Delay (s) 11.2 0\$ 654.2 20.9 I Lane LOS B A F C I 95th %tile Q(veh) 0.3 - 7.2 0.6 S	CIVI EUS	Г							
acity (veh/h) 637 - 35 270 I Lane V/C Ratio 0.094 - 1.863 0.161 I Control Delay (s) 11.2 08 654.2 20.9 I Lane LOS B A F C I 95th %tile Q(veh) 0.3 - 7.2 0.6 S	inor Long/Major Man	no.t	ND	NDT	CDI 51	EDI 50	CDT	CDD	
Lane V/C Ratio		IIIL					281	אשכ	
Control Delay (s)							-	•	
Lane LOS		-\							
95th %tile Q(veh) 0.3 - 7.2 0.6 s		5)					-	•	
s									
	JM 95th %tile Q(veh	h)	0.3	-	7.2	0.6	-	-	
olume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon	tes								
	Volume exceeds ca	apacity	\$: De	elay exc	eeds 3	00s	+: Com	outation Not Defined	*: All major volume in platoon

	۶	-	•	1	•	•	1	†	1	-	ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	- 1}		ሻ	*	7	ሻ	1>		ሻ	1₃	
Traffic Volume (veh/h)	320	295	95	110	465	330	90	255	85	320	320	215
Future Volume (veh/h)	320	295	95	110	465	330	90	255	85	320	320	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	348	321	98	120	505	167	98	277	84	348	348	220
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	555	169	368	552	467	177	343	104	390	379	240
Arrive On Green	0.17	0.40	0.40	0.06	0.29	0.29	0.05	0.25	0.25	0.16	0.35	0.35
Sat Flow, veh/h	1781	1375	420	1781	1870	1582	1781	1377	417	1781	1071	677
Grp Volume(v), veh/h	348	0	419	120	505	167	98	0	361	348	0	568
Grp Sat Flow(s), veh/h/ln	1781	0	1794	1781	1870	1582	1781	0	1794	1781	0	1747
Q Serve(g_s), s	23.4	0.0	28.1	7.2	40.4	12.9	6.3	0.0	29.3	21.8	0.0	48.2
Cycle Q Clear(g_c), s	23.4	0.0	28.1	7.2	40.4	12.9	6.3	0.0	29.3	21.8	0.0	48.2
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.23	1.00		0.39
Lane Grp Cap(c), veh/h	373	0	724	368	552	467	177	0	446	390	0	619
V/C Ratio(X)	0.93	0.00	0.58	0.33	0.92	0.36	0.55	0.00	0.81	0.89	0.00	0.92
Avail Cap(c_a), veh/h	452	0	846	434	664	562	221	0	695	475	0	903
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.7	0.0	35.9	35.0	52.7	43.0	43.6	0.0	54.7	36.9	0.0	47.9
Incr Delay (d2), s/veh	23.9	0.0	0.7	0.5	15.6	0.5	2.7	0.0	4.0	16.7	0.0	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	0.0	12.7	3.3	21.5	5.2	3.0	0.0	13.9	11.4	0.0	23.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	0.0	36.7	35.5	68.3	43.5	46.3	0.0	58.7	53.5	0.0	58.5
LnGrp LOS	Ε	Α	D	D	E	D	D	Α	Е	D	Α	Е
Approach Vol, veh/h		767			792			459			916	
Approach Delay, s/veh		50.7			58.1			56.1			56.6	
Approach LOS		D			E			Е			Е	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	28.5	44.5	13.3	68.5	12.2	60.8	30.1	51.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	32.0	60.0	15.0	73.0	12.0	80.0	33.0	55.0				
Max Q Clear Time (q c+l1), s	23.8	31.3	9.2	30.1	8.3	50.2	25.4	42.4				
Green Ext Time (p_c), s	0.7	2.5	0.1	3.2	0.1	4.6	0.7	3.3				
Intersection Summary												
HCM 6th Ctrl Delay			55.4									
HCM 6th LOS			Е									

Synchro 10 Report

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HCM 6th Signalized Intersection Summary 5: Waiale Rd & Kuikahi Dr/Maui Lani Pkwy

7: Waiale Rd & Kokololio St

Intersection						
Intersection Delay, s/ve	eh22.9					
Intersection LOS	С					
Approach	F	В	WB	NB		SB
Entry Lanes		1	1	1		1
Conflicting Circle Lane	c	1	1	1		1
Adj Approach Flow, ve			587	342		740
Demand Flow Rate, ve			598	348		755
Vehicles Circulating, ve			553	671		176
Vehicles Exiting, veh/h			466	416		575
Ped Vol Crossing Leg,		7	0	0		0
Ped Cap Adj	0.99	100	1.000	1.000	1.0	000
Approach Delay, s/veh			21.8	12.9		2.3
Approach LOS		C	C	В	_	D
**	1 - 4	1 -4		. 4	1 -64	
Lane	Left	Left	Le		Left	
Designated Moves	LTR	LTR	LT		LTR	
Assumed Moves	LTR	LTR	LT	R	LTR	
RT Channelized	1 000					
Lane Util	1.000	1.000	1.00		1.000	
Follow-Up Headway, s		2.609	2.60		2.609	
Critical Headway, s	4.976	4.976	4.97		4.976	
Entry Flow, veh/h	676	598	34		755	
Cap Entry Lane, veh/h		785	69		849	
Entry HV Adj Factor	0.981	0.981	0.98		0.980	
Flow Entry, veh/h	663	587	34		740	
Cap Entry, veh/h	889	770	68		832	
V/C Ratio	0.746	0.762	0.50		0.889	
Control Delay, s/veh	18.6	21.8	12.		32.3	
LOS	Ç	C		В	D	
95th %tile Queue, veh	7	7		3	12	

Interception							
Intersection	1.5						
Int Delay, s/veh	1.5						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	7	7		લી	ĵ,		
Traffic Vol, veh/h	50	15	30	360	355	75	
Future Vol. veh/h	50	15	30	360	355	75	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	50	-	-	-	-	
Veh in Median Storage	e.# 0	-	-	0	0	-	
Grade. %	0			0	0		
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mymt Flow	54	16	33	391	386	82	
IVIVITIL I IUW	54	10	33	J71	300	02	
	Minor2		Major1		Major2		
Conflicting Flow All	884	427	468	0	-	0	
Stage 1	427	-	-	-	-	-	
Stage 2	457	-	-	-	-	-	
Critical Hdwy	6.42	6.22	4.12	-	-	-	
Critical Hdwy Stg 1	5.42		-				
Critical Hdwy Stg 2	5.42	-	-	-	-	-	
Follow-up Hdwy	3.518	3.318	2.218	-	-	-	
Pot Cap-1 Maneuver	316	628	1094	-	-	-	
Stage 1	658	-	-	-	-	-	
Stage 2	638	-	-	-	-		
Platoon blocked. %							
Mov Cap-1 Maneuver	304	628	1094				
Mov Cap-2 Maneuver	304	- 020	1074				
Stage 1	632						
Stage 2	638						
Jiaye 2	030						
Approach	EB		NB		SB		
HCM Control Delay, s	17.4		0.6		0		
HCM LOS	С						
Minor Lane/Major Mvr	nt	NBL	MRT	EBLn1	FRI n2	SBT	
	iii.	1094	NDI -	304	628	JD I	
Capacity (veh/h) HCM Lane V/C Ratio		0.03		0.179			
	\	8.4	0	19.4	10.9	-	
HCM Control Delay (s)	8.4 A	A	19.4 C	10.9 B		
HCM Lane LOS		A	А		В	-	
HCM 95th %tile Q(veh	۸	0.1		0.6	0.1		

01/15/2020

HCM 6th TWSC 9: Waiale Rd & Nokekula Lp

01	/15	/20	20	

Intersection							
Int Delay, s/veh	2						
Movement	EBL	EBR	NBL	NBT	SBT	SBR)
Lane Configurations	¥			4	ĵ»		
Traffic Vol, veh/h	40	30	60	335	310	65	,
Future Vol, veh/h	40	30	60	335	310	65	,
Conflicting Peds, #/hr	0	0	0	0	0	0)
Sign Control	Stop	Stop	Free	Free	Free	Free	,
RT Channelized	-	None	-	None	-	None	,
Storage Length	0	-	-	-	-	-	
Veh in Median Storage,	# 0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92)
Heavy Vehicles, %	2	2	2	2	2	2)
Mymt Flow	43	33	65	364	337	71	

Major/Minor	Minor2		Major1	Ma	ajor2	
Conflicting Flow All	867	373	408	0	-	0
Stage 1	373	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	323	673	1151	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	300	673	1151	-	-	-
Mov Cap-2 Maneuver	300	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	613	-	-	-	-	-
, and the second						
Annroach	EB		NB		SB	
Approach						
HCM Control Delay, s			1.3		0	
HCM LOS	С					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1151	-	393	-	-	
HCM Lane V/C Ratio	0.057	-	0.194	-	-	
HCM Control Delay (s)	8.3	0	16.3		-	
HCM Lane LOS	А	Α	С	-	-	
HCM 95th %tile Q(veh)	0.2		0.7		-	

-						
Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			र्स	₽	
Traffic Vol, veh/h	10	20	20	385	325	15
Future Vol, veh/h	10	20	20	385	325	15
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None	-	None
Storage Length	0	-		-	-	-
Veh in Median Storage	e. # 0	-		0	0	-
Grade, %	0			0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	11	22	22	418	353	16
	Minor2		Major1		/lajor2	
Conflicting Flow All	825	363	371	0	-	0
Stage 1	363	-		-	-	-
Stage 2	462	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-		-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	342	682	1188	-	-	-
i or oab- i mancuvci						
Stage 1	704	-	-	-	-	-
	704 634		-	-		-
Stage 1		-			-	-
Stage 1 Stage 2 Platoon blocked, %		681	1186	-	-	-
Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver	634	681	1186	-	-	-
Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver Mov Cap-2 Maneuver	332 332	681	1186		-	
Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver	634 332	681	1186		-	

Approach	EB		NB		SB	
HCM Control Delay, s	12.6		0.4		0	
HCM LOS	В					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1186	-	504	-	-
HCM Lane V/C Ratio	(0.018	-	0.065	-	-
HCM Control Delay (s)		8.1	0	12.6		
HCM Lane LOS		Α	Α	В	-	-
HCM 95th %tile O(veh)		0.1		0.2		

11: E Waiko Rd & Waiale Rd

Intersection						
Int Delay, s/veh	0.6					
· ·						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		- 1	•	Þ	
Traffic Vol, veh/h	15	10	15	390	320	20
Future Vol. veh/h	15	10	15	390	320	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	Otop	None	1100	None	1100	None
	-		200			
Storage Length		-	200	-	-	-
Veh in Median Storage,	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	16	11	16	424	348	22
Heavy Vehicles, %	2	2	2	2	2	2

Major/Minor	Minor2		Major1	Ma	ajor2	
Conflicting Flow All	815	359	370	0	-	0
Stage 1	359	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-		-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42		-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	347	685	1189	-		-
Stage 1	707	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	342	685	1189	-	-	-
Mov Cap-2 Maneuver	460	-	-	-	-	-
Stage 1	698		-	-		
Stage 2	638	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s			0.3		0	
How control belay, 3	12.2		0.0		U	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1189	-	530	-	-
HCM Lane V/C Ratio	0.014	-	0.051	-	-
HCM Control Delay (s)	8.1	-	12.2	-	-
HCM Lane LOS	Α	-	В	-	-
HCM 95th %tile O(veh)	0	-	0.2		-

Intersection Int Delay, s/veh 13.1 Movement EBL EBT WBT WBR SBL SBR Lane Configurations 75 115 165 315 260 Traffic Vol, veh/h Future Vol, veh/h 75 115 165 315 260 Conflicting Peds, #/hr 0 0 0 0 Sign Control Free Free Free Stop Stop RT Channelized - None - None - None Storage Length 0 -Veh in Median Storage, # - 0 0 -Grade, % 0 0 Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % Mvmt Flow 82 125 179 342 283 65

Major/Minor	Major1	Ma	ajor2	Λ	1inor2	
Conflicting Flow All	521	0	-	0	639	350
Stage 1	-	-	-	-	350	-
Stage 2	-	-	-	-	289	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1045	-	-	-	440	693
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	760	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1045	-	-	-	403	693
Mov Cap-2 Maneuver	-	-	-	-	403	-
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	760	-
			1115			
Approach	EB		WB		SB	
HCM Control Delay, s	3.4		0		38.4	
HCM LOS					Ε	

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1045	-	-		437
HCM Lane V/C Ratio	0.078	-	-		0.796
HCM Control Delay (s)	8.7	0			38.4
HCM Lane LOS	Α	Α	-		· E
HCM 95th %tile Q(veh)	0.3	-			7.1

В

HCM LOS

Traffic Volume (veh/h) 15 10 5 120 15 95 10 840 130 80 710 25 Initial O (Ob), veh 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		۶	→	*	•	←	4	1	1	<i>></i>	/	+	4
Traffic Volume (veh/h) 15 10 5 120 15 95 10 840 130 80 710 25 Initial O (Ob), veh 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Movement	EBL			WBL	WBT	WBR		NBT	NBR			
Future Volume (veh/h) 15 10 5 120 15 95 10 840 130 80 710 25 initial O (Qb), veh 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lane Configurations												7
Initial O (Ob), veh													
Ped-Bike Adj(A_pbT)													
Parking Bus, Adj		-	0	-	-	0	-	-	0	-	-	0	
Work Zone On Ápproach No No No No R70 1870													
Adj Sat Flow, vehih/In 1870 1870 1870 1870 1870 1870 1870 1870		1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Adj Flow Rate, veh/h Adj Flow Rate, veh/h 16													
Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92													
Percent Heavy Veh, % 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2													
Cap, veh/h 183 112 271 199 23 92 383 1014 152 211 1242 1052 Arrive On Green 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.10 0.10													
Arrive On Green 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17		_	_	_	_		_	_		_	_	_	_
Sat Flow, veh/h 742 658 1585 839 134 540 1781 1589 238 1781 1870 1584 Grp Volume(v), veh/h 27 0 1 227 0 0 11 0 1050 87 772 17 17 17 21 17 21 17 21 17 21 17 21 17 21 17 21 0 0 1781 0 1827 1781 1870 1584 0 0 0 1781 0 1827 1781 1880 1585 1582 0 0 0 1585 1583 1582 0 0 0 0 0 1586 0													
Grp Volume(v), veh/h 27 0 1 227 0 0 0 11 0 1050 87 772 17 Grp Sat Flow(s), veh/h/ln 1400 0 1585 1512 0 0 1781 0 1827 1781 1870 1584 O Serve(g_s), s 0.0 0.0 0.1 13.6 0.0 0.0 0.2 0.0 49.8 1.7 24.0 0.4 Cycle Q Clear(q_c), s 1.2 0.0 0.1 14.9 0.0 0.0 0.2 0.0 49.8 1.7 24.0 0.4 Cycle Q Clear(q_c), s 1.2 0.0 0.1 14.9 0.0 0.0 0.2 0.0 49.8 1.7 24.0 0.4 Prop In Lane 0.59 1.00 0.57 0.36 1.00 0.13 1.00 1.00 Lane Grp Cap(c), veh/h 296 0 271 314 0 0 383 0 1166 211 1242 1052 CVC Ratio(X) 0.09 0.00 0.00 0.00 0.72 0.00 0.00 0.30 0.00 0.90 0.41 0.62 0.02 Avail Cap(c_a), veh/h 406 0 389 425 0 0 614 0 1256 396 1286 1089 HCM Platon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0													
Grp Sat Flow(s), veh/h/ln 1400 0 1585 1512 0 0 1781 0 1827 1781 1870 1584 O Serve(g_s), s 0.0 0.0 0.1 13.6 0.0 0.0 0.2 0.0 49.8 1.7 24.0 0.4 Cycle Q Clear(g_c), s 1.2 0.0 0.1 14.9 0.0 0.0 0.2 0.0 49.8 1.7 24.0 0.4 Prop In Lane 0.59 1.00 0.57 0.36 1.00 0.13 1.00 1.00 1.00 1.00 1.00 1.00													
O Serve(g_s), s			-			-	_		_				
Cycle Q Clear(g_c), s 1.2 0.0 0.1 14.9 0.0 0.0 0.2 0.0 49.8 1.7 24.0 0.4 Prop In Lane 0.59 1.00 0.57 0.36 1.00 0.13 1.00 <td></td>													
Prop In Lane													
Lane Grp Cap(c), veh/h 296 0 271 314 0 0 383 0 1166 211 1242 1052 V/C Ratio(X) 0.09 0.00 0.00 0.72 0.00 0.00 0.03 0.00 0.90 0.41 0.62 0.02 Avail Cap(c_a), veh/h 406 0 389 425 0 0 614 0 1256 396 1286 1089 HCM Platon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0			0.0			0.0			0.0			24.0	
V/C Ratio(X) V/													
Avail Cap(c_a), veh/h						-	-						
HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0													
Upstream Filter(f) 1.00 0.00 1.00 1.00 0.00 1.00 0.0			-			-	-		-				
Uniform Delay (d), s/veh 35.5 0.0 35.0 41.0 0.0 0.0 8.7 0.0 15.7 20.3 9.8 5.8 Incr Delay (d2), s/veh 0.0 0.0 0.0 2.1 0.0 0.0 0.0 0.0 9.5 0.5 1.3 0.0 Initial Q Delay(d3), s/veh 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
Incr Delay (d2), s/veh													
Initial Q Delay(d3),s/veh 0.0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>													
%ile BackOr(0,50%), veh/ln 0.6 0.0 0.0 5.7 0.0 0.0 0.1 0.0 21.3 1.2 9.2 0.1 Unsig, Movement Delay, s/veh LnGrp Delay(g), s/veh 35.6 0.0 35.0 43.1 0.0 0.0 8.7 0.0 25.2 20.8 11.1 5.8 LnGrp LOS D A D D A A A A A C C B B A Approach Vol, veh/h 28 227 1061 876 Approach Delay, s/veh 35.5 43.1 25.0 12.0 Approach Delay, s/veh 35.5 5 43.1 25.0 12.0 Approach LOS D D C B Timer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+RC), s 8.5 71.0 22.4 5.8 73.6 22.4 Change Period (Y+RC), s 5.0 6.0 5.0 5.0 6.0 5.0 Max Green Setting (Gmax), s 14.0 70.0 25.0 14.0 70.0 25.0 Max Green Setting (Gmax), s 14.0 70.0 25.0 14.0 70.0 25.0 Green Ext Time (g_C+I), s 3.7 51.8 3.2 2.2 26.0 16.9 Green Ext Time (g_C), s 0.1 13.2 0.1 0.0 14.5 0.6													
Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 35.6 0.0 35.0 43.1 0.0 0.0 8.7 0.0 25.2 20.8 11.1 5.8 LnGrp LOS D A A A A A C C B A Approach Vol, veh/h 28 227 1061 876 Approach Delay, s/veh 35.5 43.1 25.0 12.0 Approach Delay, s/veh 35.5 D C B Iimer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s 8.5 71.0 22.4 5.8 73.6 22.4 Change Period (Y+Rc), s 5.0 6.0 5.0 Max Green Setting (Gmax), s 14.0 70.0 25.0 12.0 Approach LOS B Iimer - Lassigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s 5.0 6.0 5.0 6.0 5.0 Max Green Setting (Gmax), s 14.0 70.0 25.0 14.0 16.0 16.0 16.0 16.0 16.0 16.0 16.0 16													
LnGrp Delay(d),s/veh 35.6 0.0 35.0 43.1 0.0 0.0 8.7 0.0 25.2 20.8 11.1 5.8 LnGrp LOS D A D D A A A A A C C B A Approach Vol, veh/h 28 227 1061 876 B Approach Delay, s/veh 35.5 43.1 25.0 12.0 Approach LOS D C B I B I I E 43.1 25.0 12.0 Approach LOS D C B I I I E 43.1 25.0 12.0 Approach LOS D C B I			0.0	0.0	5.7	0.0	0.0	0.1	0.0	21.3	1.2	9.2	0.1
LnGrp LOS D A D D A A A A A C C B A Approach Vol, velvh 28 227 1061 876 436 4376													
Approach Vol, veh/h 28 227 1061 876 Approach Delay, s/veh 35.5 43.1 25.0 12.0 Approach LOS D D C B Timer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s 8.5 71.0 22.4 5.8 73.6 22.4 Change Period (Y+Rc), s 5.0 6.0 5.0 6.0 5.0 Max Green Setting (Gmax), s 14.0 70.0 25.0 14.0 70.0 25.0 Max Q Clear Time (g_c+rl), s 3.7 51.8 3.2 2.2 26.0 16.9 Green Ext Time (p_c), s 0.1 13.2 0.1 0.0 14.5 0.6 Intersection Summary HCM 6th Ctrl Delay 21.8													
Approach Delay, s/veh 35.5 43.1 25.0 12.0 Approach LOS D D C B Timer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s 8.5 71.0 22.4 5.8 73.6 22.4 Change Period (Y+Rc), s 5.0 6.0 5.0 6.0 5.0 Max Geen Setting (Gmax), s 14.0 70.0 25.0 14.0 70.0 25.0 Max O Clear Time (g_c+II), s 3.7 51.8 3.2 2.2 26.0 16.9 Green Ext Time (g_c, s), s 0.1 13.2 0.1 0.0 14.5 0.6 Intersection Summary HCM 6th Ctrl Delay 21.8		D		D	D		A	A		С	С		A
Approach LOS D D C B Timer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s 8.5 71.0 22.4 5.8 73.6 22.4 Change Period (Y+Rc), s 5.0 6.0 5.0 5.0 6.0 5.0 Max Green Setting (Gmax), s 14.0 70.0 25.0 14.0 70.0 25.0 Max Q Clear Time (g_c+I1), s 3.7 51.8 3.2 2.2 26.0 16.9 Green Ext Time (g_c), s 0.1 13.2 0.1 0.0 14.5 0.6 Intersection Summary HCM 6th Ctrl Delay 21.8													
Timer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s 8.5 71.0 22.4 5.8 73.6 22.4 Change Period (Y+Rc), s 5.0 6.0 5.0 5.0 6.0 5.0 Max Green Setting (Gmax), s 14.0 70.0 25.0 14.0 70.0 25.0 Max Q Clear Time (g_c+I1), s 3.7 51.8 3.2 2.2 26.0 16.9 Green Ext Time (p_c), s 0.1 13.2 0.1 0.0 14.5 0.6 Intersection Summary HCM 6th Ctrl Delay 21.8													
Phs Duration (G+Y+Rc), s 8.5 71.0 22.4 5.8 73.6 22.4 Change Period (Y+Rc), s 5.0 6.0 5.0 5.0 6.0 5.0 Max Green Settling (Gmax), s 14.0 70.0 25.0 14.0 70.0 25.0 Max G Clear Time (g_c+I1), s 3.7 51.8 3.2 2.2 26.0 16.9 Green Ext Time (g_c), s 0.1 13.2 0.1 0.0 14.5 0.6 Intersection Summary HCM 6th Ctrl Delay 21.8	Approach LOS		D			D			С			В	
Change Period (Y+Rc), s 5.0 6.0 5.0 5.0 6.0 5.0 Max Green Setting (Gmax), s 14.0 70.0 25.0 14.0 70.0 25.0 25.0 Max Green Setting (G_c+I1), s 3.7 51.8 3.2 2.2 26.0 16.9 Green Ext Time (g_c), s 0.1 13.2 0.1 0.0 14.5 0.6 Intersection Summary HCM 6th Ctrl Delay 21.8	Timer - Assigned Phs	1	2		4	5	6		8				
Max Green Setting (Gmax), s 14.0 70.0 25.0 14.0 70.0 25.0 Max Q Clear Time (g_c+l1), s 3.7 51.8 3.2 2.2 26.0 16.9 Green Ext Time (p_c), s 0.1 13.2 0.1 0.0 14.5 0.6 Intersection Summary HCM 6th Ctrl Delay 21.8	Phs Duration (G+Y+Rc), s	8.5	71.0		22.4	5.8	73.6		22.4				
Max Q Clear Time (g_c+l1), s 3.7 51.8 3.2 2.2 26.0 16.9 Green Ext Time (p_c), s 0.1 13.2 0.1 0.0 14.5 0.6 Intersection Summary HCM 6th Ctrl Delay 21.8	Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Q Clear Time (g_c+l1), s 3.7 51.8 3.2 2.2 26.0 16.9 Green Ext Time (p_c), s 0.1 13.2 0.1 0.0 14.5 0.6 Intersection Summary HCM 6th Ctrl Delay 21.8	Max Green Setting (Gmax), s	14.0	70.0		25.0	14.0	70.0		25.0				
Green Ext Time (p_c), s 0.1 13.2 0.1 0.0 14.5 0.6 Intersection Summary HCM 6th Ctrl Delay 21.8	Max Q Clear Time (q_c+l1), s	3.7	51.8		3.2	2.2	26.0		16.9				
HCM 6th Ctrl Delay 21.8	Green Ext Time (p_c), s	0.1	13.2		0.1	0.0	14.5		0.6				
HCM 6th Ctrl Delay 21.8	Intersection Summary												
				21.8									
	HCM 6th LOS			C									

		*	1	T	¥	*
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		†	†	7
Traffic Volume (veh/h)	100	35	60	890	770	130
Future Volume (veh/h)	100	35	60	890	770	130
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No No			No	No	
Adj Sat Flow, veh/h/ln 1	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	3	65	967	837	96
	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	207	184	346	1294	1025	868
	0.12	0.12	0.06	0.69	0.55	0.55
	1781	1585	1781	1870	1870	1584
Grp Volume(v), veh/h	109	3	65	967	837	96
Grp Sat Flow(s), veh/h/ln1		1585	1781	1870	1870	1584
Q Serve(q s), s	3.3	0.1	0.8	18.9	21.0	1.7
Cycle Q Clear(q c), s	3.3	0.1	0.8	18.9	21.0	1.7
	1.00	1.00	1.00	10.7	21.0	1.00
Lane Grp Cap(c), veh/h		184	346	1294	1025	868
	0.53	0.02	0.19	0.75	0.82	0.11
	933	830	681	2939	2319	1963
Avail Cap(c_a), veh/h HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		22.4	9.0	5.6	10.6	6.2
Incr Delay (d2), s/veh	2.1	0.0	0.3	0.9	1.7	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/		0.0	0.2	3.5	7.0	0.5
Unsig. Movement Delay,						
	25.9	22.4	9.2	6.5	12.2	6.3
LnGrp LOS	С	С	Α	Α	В	Α
Approach Vol, veh/h	112			1032	933	
Approach Delay, s/veh	25.8			6.7	11.6	
Approach LOS	С			Α	В	
	1	^				,
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc),		37.4		11.7		45.6
Change Period (Y+Rc), s		6.0		5.0		6.0
Max Green Setting (Gma		71.0		30.0		90.0
Max Q Clear Time (g_c+		23.0		5.3		20.9
Green Ext Time (p_c), s	0.1	8.4		0.3		9.7
Intersection Summary						
HCM 6th Ctrl Delay			9.9			
HCM 6th LOS			9.9 A			
LICINI OILI FO2			A			

Puunani Homestead 4:00 pm 06/13/2019 BY 2024 PM Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 12 Puunani Homestead 4:00 pm 06/13/2019 BY 2024 PM Austin, Tsutsumi, & Assoc.

HCM 6th Signalized Intersection Summary 13: Honoapiilani Hwy & Pilikana St

Synchro 10 Report Page 13

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14: Honoapıılanı	High	nway	& Ku	ııkahı	Driv	e							01/	15/202
	۶	→	•	•	←	4	1	†	<i>></i>	/	ļ	4		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
ane Configurations	7	*	7	7	*	7	7	*	7	7	*	7		
raffic Volume (veh/h)	25	95	30	400	135	310	60	540	430	300	530	35		
uture Volume (veh/h)	25	95	30	400	135	310	60	540	430	300	530	35		
nitial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
ed-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Vork Zone On Approac	:h	No			No			No			No			
dj Sat Flow, veh/h/ln	2067	2067	2067	1870	1870	1870	1870	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	27	103	3	435	147	125	65	587	0	326	576	18		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	230	178	217	527	551	670	315	694		359	863	769		
Arrive On Green	0.03	0.09	0.09	0.23	0.29	0.29	0.04	0.37	0.00	0.13	0.46	0.46		
Sat Flow, veh/h	1968	2067	1751	1781	1870	1585	1781	1870	1585	1781	1870	1582		
Grp Volume(v), veh/h	27	103	3	435	147	125	65	587	0	326	576	18		
Grp Sat Flow(s), veh/h/li		2067	1751	1781	1870	1585	1781	1870	1585	1781	1870	1582		
Serve(q s), s	1.4	5.6	0.2	24.8	7.0	5.7	2.6	33.3	0.0	12.6	27.8	0.7		
Cycle Q Clear(q c), s	1.4	5.6	0.2	24.8	7.0	5.7	2.6	33.3	0.0	12.6	27.8	0.7		
rop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
ane Grp Cap(c), veh/h		178	217	527	551	670	315	694		359	863	769		
//C Ratio(X)	0.12	0.58	0.01	0.82	0.27	0.19	0.21	0.85		0.91	0.67	0.02		
Avail Cap(c a), veh/h	656	464	459	542	551	670	570	985		454	985	872		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Jpstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00		
Jniform Delay (d), s/vel		50.9	44.5	34.1	31.3	21.0	22.4	33.4	0.0	24.3	24.3	15.5		
ncr Delay (d2), s/veh	0.2	1.1	0.0	9.9	0.1	0.0	0.1	7.3	0.0	16.8	2.3	0.0		
nitial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
6ile BackOfQ(50%),vel		3.0	0.1	12.2	3.2	2.2	1.1	16.1	0.0	6.6	12.4	0.3		
Jnsig. Movement Delay			0.1	12.2	0.2			10.1	0.0	0.0	12.1	0.0		
.nGrp Delay(d),s/veh	46.6	52.0	44.5	43.9	31.4	21.0	22.5	40.7	0.0	41.1	26.6	15.5		
nGrp LOS	D	D	D	D	С	С	C	D	0.0	D	C	В		
approach Vol, veh/h		133			707			652	А		920			
Approach Delay, s/veh		50.7			37.3			38.9	- / (31.5			
Approach LOS		D			D			D			C			
•														
imer - Assigned Phs	1	2	3	4	5	6	7	8						
hs Duration (G+Y+Rc)		49.0	32.0	15.0	9.4	59.4	7.9	39.1						
Change Period (Y+Rc),	s 5.0	6.0	5.0	5.0	5.0	6.0	5.0	5.0						
Max Green Setting (Gm		61.0	28.0	26.0	21.0	61.0	28.0	26.0						
Max Q Clear Time (g_c		35.3	26.8	7.6	4.6	29.8	3.4	9.0						
Green Ext Time (p_c), s	0.3	7.7	0.2	0.3	0.1	8.2	0.0	0.7						
ntersection Summary														
HCM 6th Ctrl Delay			36.2											

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

D

HCM 6th LOS

Puunani Homestead 4:00 pm 06/13/2019 BY 2024 PM Synchro 10 Report Austin, Tsutsumi, & Assoc.

	۶	_	_	_	—	4	•	†	<i>></i>	1	1	1	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
	EDL	EDI	EDR	WDL	WD1	WDK	NDL	IND I	NDK	3DL 1	3D1	JDK 7	
ane Configurations	140	T	170	15	160		210	T 555	25	120	T	230	
raffic Volume (veh/h)	140	135	170	15	160	130 130	210	555	25	120	600	230	
uture Volume (veh/h)		135		0	0			000			000		
nitial Q (Qb), veh	0.99	U	0.99	0.98	U	0.98	1.00	U	1.00	1.00	U	1.00	
Ped-Bike Adj(A_pbT)		1 00			1 00			1.00			1 00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Vork Zone On Approac		No	4070	4070	No	4070	4070	No	4070	4070	No	4070	
dj Sat Flow, veh/h/ln	1673	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
dj Flow Rate, veh/h	152	147	34	16	174	14	228	603	0	130	652	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
ercent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	294	405	338	283	253	210	330	826		342	760		
Arrive On Green	0.10	0.22	0.22	0.02	0.14	0.14	0.10	0.44	0.00	0.06	0.41	0.00	
Sat Flow, veh/h	1594	1870	1563	1781	1870	1550	1781	1870	1585	1781	1870	1585	
Grp Volume(v), veh/h	152	147	34	16	174	14	228	603	0	130	652	0	
Grp Sat Flow(s), veh/h/l	n1594	1870	1563	1781	1870	1550	1781	1870	1585	1781	1870	1585	
2 Serve(g_s), s	6.6	5.7	1.5	0.6	7.5	0.7	6.1	22.5	0.0	3.5	26.9	0.0	
Cycle Q Clear(g_c), s	6.6	5.7	1.5	0.6	7.5	0.7	6.1	22.5	0.0	3.5	26.9	0.0	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
ane Grp Cap(c), veh/h	294	405	338	283	253	210	330	826		342	760		
//C Ratio(X)	0.52	0.36	0.10	0.06	0.69	0.07	0.69	0.73		0.38	0.86		
Avail Cap(c a), veh/h	324	729	609	461	707	586	659	906		734	906		
-CM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Jpstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	
Jniform Delay (d), s/ve		28.2	26.6	30.6	34.9	31.9	17.7	19.5	0.0	15.5	22.9	0.0	
ncr Delay (d2), s/veh	0.5	0.2	0.0	0.0	1.2	0.0	1.0	3.7	0.0	0.3	8.8	0.0	
nitial Q Delay(d3),s/vel		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
6ile BackOfQ(50%),ve		2.5	0.6	0.3	3.5	0.3	2.2	9.5	0.0	1.3	12.5	0.0	
Jnsig. Movement Dela			0.0	0.5	3.3	0.5	2.2	7.5	0.0	1.5	12.0	0.0	
_nGrp Delay(d),s/veh	26.9	28.4	26.6	30.6	36.1	32.0	18.7	23.2	0.0	15.8	31.7	0.0	
nGrp LOS	20.9 C	20.4 C	20.0 C	30.0 C	30.1	32.0 C	10.7 B	23.2 C	0.0	13.6 B	31.7 C	0.0	
	C		C	C	204	C	D	831	۸	Ь	782	Δ.	
approach Vol, veh/h		333							Α			Α	
pproach Delay, s/veh		27.5			35.4			21.9			29.0		
pproach LOS		С			D			С			С		
imer - Assigned Phs	1	2	3	4	5	6	7	8					
hs Duration (G+Y+Rc), 180.4	43.4	6.6	24.3	13.4	40.4	13.4	17.5					
Change Period (Y+Rc)	s 5.0	6.0	5.0	* 6	5.0	6.0	5.0	6.0					
lax Green Setting (Gn	na 24 ,6	41.0	10.0	* 33	24.0	41.0	10.0	32.0					
Max Q Clear Time (g_c		24.5	2.6	7.7	8.1	28.9	8.6	9.5					
Green Ext Time (p_c),		6.2	0.0	0.6	0.3	5.5	0.0	0.6					
ntersection Summary													
ICM 6th Ctrl Delay			26.7										
ICM 6th LOS			С										

Notes

*HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Puunani Homestead 4:00 pm 06/13/2019 BY 2024 PM Austin, Tsutsumi, & Assoc.

Intersection													
nt Delay, s/veh	33.1												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
ane Configurations	ሻ			*		7		4	7		4	7	
Fraffic Vol, veh/h	145	590	25	25	660	130	15	5	15	80	5	180	
uture Vol. veh/h	145	590	25	25	660	130	15	5	15	80	5	180	
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	None	-		None	- Otop	-	None	-	-	None	
Storage Length	145		-	50		50			0			0	
Veh in Median Storage	.# -	0			0			0			0		
Grade, %	-	0			0			0			0		
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mymt Flow	158	641	27	27	717	141	16	5	16	87	5	196	
VIVIII I IOW	130	041	21	21	717	171	10	J	10	07	J	170	
Major/Minor N	Najor1		- 1	Major2			Minor1			Minor2			
Conflicting Flow All	862	0	0	668	0	0	1913	1887	655	1756	1759	721	
Stage 1	002	U	U	000	U	U	971	971	000	775	775	721	
		-	-				942	916		981	984		
Stage 2 Critical Hdwy	4.12			4.12			7.12	6.52	6.22	7.12	6.52	6.22	
Critical Hdwy Stg 1	4.12		-	4.12		-	6.12	5.52	0.22	6.12	5.52	0.22	
Critical Hdwy Stg 2							6.12	5.52		6.12	5.52		
Follow-up Hdwy	2.218		-	2.218			3.518	4.018	3.318	3.518	4.018	3.318	
Pot Cap-1 Maneuver	780			922			51	70	466	~ 66	4.016	427	
	700			922		-	304	331	400	391	408	421	
Stage 1 Stage 2							316	351		300	327		
Platoon blocked, %			-	-			310	331		300	321	-	
	777			922			21	54	466	~ 49	66	425	
Mov Cap-1 Maneuver	111			922			21	54	400	~ 49	66	420	
Mov Cap-2 Maneuver		-	-	-	-	-	242	264	-	~ 49 310	395	-	
Stage 1	- 1						163	339		226	261		
Stage 2	- 1	-		-	- 1		103	339		220	201	-	
Approach	EB			WB			NB			SB			
	2.1			0.3			210.6			199.3			
HCM Control Delay, s HCM LOS	Z. I			0.3			210.6 F			199.3 F			
HCIVI LUS							г			г			
Minor Lane/Major Mvm	+	NBLn1	MRI n2	EBL	EBT	EBR	WBL	WBT	WRD	SBLn1	CRI n2		
	t .	25	466	777	LDI	LDK	922	VVDI	NOV.	50	425		
Capacity (veh/h)						-		-	-				
ICM Central Delay (a)		0.87	0.035	0.203	-	-	0.029	-	-	1.848	0.46		
HCM Control Delay (s)		358.8	13	10.8		-	9	-	-	\$ 578	20.5		
HCM Lane LOS		F	В	В	-	-	A	-	-	F	C		
HCM 95th %tile Q(veh)		2.7	0.1	0.8	-	-	0.1	-	-	9.1	2.4		
otes													
: Volume exceeds cap	44	A D	-1	eeds 30	വറ	Com	nutation	Not D	ofinad	*· All	majory	/oluma	in platoon

Puunani Homestead 4:00 pm 06/13/2019 BY 2024 PM Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 16



APPENDIX C

LEVEL OF SERVICE CALCULATIONS

Future Year 2024 AM Peak

1: Waiale Rd & Kaohu St/Oluloa Dr

08/28/2020

Page 1

Movement	EBL	FBT	EBR	WBL	WBT	WBR	NBL	NRT	NBR	SBL	SBT	SBR
Lane Configurations	7	ĵ.			ĵ»			ની	7		4	
Traffic Vol, veh/h	85	5	150	15	15	10	165	425	10	5	555	105
Future Vol, veh/h	85	5	150	15	15	10	165	425	10	5	555	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	92	5	163	16	16	11	179	462	11	5	603	114
Number of Lanes	1	1	0	0	1	0	0	1	1	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			2			1			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			2			2			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			1			1			2		
HCM Control Delay	14.5			14.2			124.8			179.1		
HCM LOS	В			В			F			F		

1	NIDL 1	NIDI O	EDI1	EDI 2	M/DL 1	CDI1
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	28%	0%	100%	0%	38%	1%
Vol Thru, %	72%	0%	0%	3%	38%	83%
Vol Right, %	0%	100%	0%	97%	25%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	590	10	85	155	40	665
LT Vol	165	0	85	0	15	5
Through Vol	425	0	0	5	15	555
RT Vol	0	10	0	150	10	105
Lane Flow Rate	641	11	92	168	43	723
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	1.188	0.018	0.213	0.334	0.106	1.322
Departure Headway (Hd)	7.085	6.222	9.208	7.978	9.985	6.901
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	519	579	393	453	361	535
Service Time	4.785	3.922	6.908	5.678	7.985	4.901
HCM Lane V/C Ratio	1.235	0.019	0.234	0.371	0.119	1.351
HCM Control Delay	126.8	9	14.4	14.6	14.2	179.1
HCM Lane LOS	F	Α	В	В	В	F
HCM 95th-tile Q	22.2	0.1	0.8	1.4	0.4	29.7

HCM 6th TWSC 2: Waiale Rd & Waiinu Rd

08/28/2020

Intersection						
Int Delay, s/veh	172.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	*	7	1			ની
Traffic Vol, veh/h	230	55	555	735	70	695
Future Vol. veh/h	230	55	555	735	70	695
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None		None
Storage Length	0	145				
Veh in Median Storage	e. # 0	-	0			0
Grade. %	0		0			0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	250	60	603	799	76	755
WWW.CTIOW	200	00	003	177	70	700
	Minor1		Major1		Major2	
Conflicting Flow All	1912	1005	0	0	1404	0
Stage 1	1005	-		-	-	
Stage 2	907	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-		-	-	
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 75	293			486	
Stage 1	354	-	-	-	-	-
Stage 2	394	-		-		
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 55	292		-	485	
Mov Cap-2 Maneuver	~ 55	-		-	-	-
Stage 1	353	-		-		
Stage 2	288	-				-
J						
Approach	WB		NB		SB	
			0		1.3	
HCM Control Delay, \$ HCM LOS	1412.8 F		U		1.3	
I ICIVI EUS	Г					
Minor Lane/Major Mvn	nt	NBT	NBRV	WBLn1V		SBL
Capacity (veh/h)		-	-	55	292	485
HCM Lane V/C Ratio		-	-	4.545	0.205	0.157
LICM Control Dolon (c)	١			1745 0	20 5	12.0

- \$1745.8 20.5 13.8 0

- - F C B A

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

- - 27.8 0.8 0.6

HCM Control Delay (s)

HCM 95th %tile Q(veh)

HCM Lane LOS

Puunani Homestead 7:00 am 06/13/2019 FY 2024 AM Austin, Tsutsumi, & Assoc.

HCM 6th TWSC

4: Waiale Rd & Kaupo St

Intersection													
Int Delay, s/veh	198.7												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
ane Configurations		र्स	7		44			ર્ન			ĵ,		
Traffic Vol, veh/h	165	0	35	10	0	20	10	1120	10	15	715	170	
uture Vol, veh/h	165	0	35	10	0	20	10	1120	10	15	715	170	
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	3	3	0	3	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-		None	-	-	None	-		None	
Storage Length	-		0			-		-				-	
Veh in Median Storage	e.# -	0			0			0			0		
Grade, %	-	0			0			0			0		
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mymt Flow	179	0	38	11	0	22	11	1217	11	16	777	185	
WIVIIIL FIOW	179	U	38	- 11	U	22	- 11	1217	- 11	10	111	180	
Major/Minor	Minor2			Minor1			Major1		1	Major2			
Conflicting Flow All	2161	2158	873	2169	2245	1226	965	0	0	1231	0	0	
Stage 1	905	905	-	1248	1248	1220	700	-	-	1201	-	-	
Stage 2	1256	1253		921	997								
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12			4.12			
Critical Hdwy Stg 1	6.12	5.52	0.22	6.12	5.52	0.22	4.12			4.12			
Critical Hdwy Stg 2	6.12	5.52		6.12	5.52								
			2 210			2 210	2 210		-	2.218			
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	566	-	-	
Pot Cap-1 Maneuver	~ 34	48	349	34	42	218	714	-	-	566			
Stage 1	331	355	-	212	245	-	_	-	-	-	-	-	
Stage 2	210	244	-	324	322	-	-	-		-			
Platoon blocked, %								-	-		-	-	
Mov Cap-1 Maneuver	~ 28	42	348	28	37	217	712	-	-	564			
Mov Cap-2 Maneuver	~ 28	42	-	28	37	-	-	-	-	-	-	-	
Stage 1	314	331	-	201	232	-	-	-	-	-	-	-	
Stage 2	180	231	-	270	300	-	-	-	-	-	-	-	
Annroach	EB			WB			NB			SB			
Approach													
HCM Control Delay, \$	2238.5 F			101.7 F			0.1			0.2			
HCM LOS	r			F									
Minor Lane/Major Mvn	nt	NBL	NBT	NBR	FBI n1	EBLn2V	VRI n1	SBL	SBT	SBR			
Capacity (veh/h)		712			28	348	67	564	-	-			
HCM Lane V/C Ratio		0.015			6.405	0.109	0.487	0.029					
	١	10.1	0		2709.8	16.6	101.7	11.6	-				
HCM Control Delay (s))						101.7 F		-				
HCM Lane LOS	,	В	Α		F	C		В					
HCM 95th %tile Q(veh	1)	0	-	-	22	0.4	2	0.1	-	-			
Votes													
: Volume exceeds ca	pacity	\$: De	elay exc	eeds 30	00s	+: Com	outation	Not De	fined	*: All r	najor v	olume in	platoon

Section Delay, Siveh
Delay, size S5.9 Serement EBL EBR NBL NBT SBT SBR SBR SER SE
e Configurations Tit: Vol, vehrh Tito: Vehrh Tito: Vehrh Tito: Vol, vehrh Tito:
e Configurations Tite Vol, vehrh Tite Vol, veh
ffic Vol, veh/h 130 65 40 1035 705 25 rev Vol, veh/h 130 65 40 1035 705 25 ffic Col, veh/h 130 65 40 1035 705 25 ffic Control Stop Stop Free Free Free Free Free Channelized - None age Length 125 0
rice Vol, veh/h
Stage 1
Stop Stop Free
Channelized
rage Length 125 0
Lin Median Storage, # 0
de, % 0 0 0 0 - k Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92
K Hour Factor 92 92 92 92 92 92 92 92 92 97 92 97 92 97 97 97 97 97 97 97 97 97 97 97 97 97
nt Flow 141 71 43 1125 766 27 orr/Minor Minor2 Major1 Major2 filicting Flow All 1994 783 796 0 0 0 Stage 1 783
Int Flow
or/Minor Minor2 Major1 Major2 filicting Flow All 1994 783 796 0 0 Stage 1 783 - - - - Stage 2 1211 - - - - call Hdwy Stg 1 5.42 - - - - - call Hdwy Stg 2 5.42 -
Stage 1
Stage 1
Stage 2
Stage 2
Call Hdwy Stg 1
Call Hdwy Stg 1
Call Hdwy Sig 2
ow-up Hidwy 3.518 3.318 2.218
Cap-1 Maneuver - 66 394 826 Stage 1 450
Stage 1
Stage 2 282 -
oon blocked, % 'Cap-1 Maneuver
r Cap-1 Maneuver
/ Cap-2 Maneuver - 56
Stage 1 386 Stage 2 281 - Stage 2 281 - M Control Delay, s\$ 571.1 0.4 0 M LOS F Or Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR Stage 2 SBT SBR Stage 3 SBT SBR Stage 4 - 56 393 M Lane V/C Ratio 0.053 - 2.523 0.18 M Control Delay (s) 9.6 0\$ 848.5 16.2 M Lane LOS A A F C M 195th %tille Q(veh) 0.2 - 14.4 0.6 Stage 5 SBR SBR
Stage 2 281
roach EB NB SB M Control Delay, s\$ 571.1 0.4 0 M LOS F or Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR acity (veh/h) 824 - 56 393 M Lane V/C Ratio 0.053 - 2.523 0.18 M Control Delay (s) 9.6 0\$ 848.5 16.2 M Lane LOS A A F C M 95th %tile Q(veh) 0.2 - 14.4 0.6
M Control Delay, s\$ 571.1 0.4 0 M LOS F Or Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR or Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR dictly (veh/h) 824 - 56 393 M Lane V/C Ratio 0.053 - 2.523 0.18 M Control Delay (s) 9.6 08 848.5 16.2 M Lane LOS A A F C C M 195th %tille Q(veh) 0.2 - 14.4 0.6
M Control Delay, s\$ 571.1 0.4 0 M LOS F Or Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR or Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR dictly (veh/h) 824 - 56 393 M Lane V/C Ratio 0.053 - 2.523 0.18 M Control Delay (s) 9.6 08 848.5 16.2 M Lane LOS A A F C C M 195th %tille Q(veh) 0.2 - 14.4 0.6
M LOS F or Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR acity (veh/hr) 824 - 56 393 M Lane V/C Ratio 0.053 - 2.523 0.18 M Control Delay (s) 9.6 0\$ 848.5 16.2 M Lane LOS A A F C M 95th %tille Q(veh) 0.2 - 14.4 0.6
or Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR vacity (veh/h) 824 - 56 393 VI Lane V/C Ratio 0.053 - 2.523 0.18 M Control Delay (s) 9.6 0\$ 848.5 16.2 VI Lane LOS A A F C C VI 95th %tille Q(veh) 0.2 - 14.4 0.6
vacity (veh/h) 824 - 56 393 vl Lane V/C Ratio 0.053 - 2.523 0.18 vl Control Delay (s) 9.6 0\$ 848.5 16.2 vl Lane LOS A A F C vl 95th %tille Q(veh) 0.2 - 14.4 0.6 -
vacity (veh/h) 824 - 56 393 vl Lane V/C Ratio 0.053 - 2.523 0.18 vl Control Delay (s) 9.6 0\$ 848.5 16.2 vl Lane LOS A A F C vl 95th %tille Q(veh) 0.2 - 14.4 0.6 -
Aacity (veh/h) 824 - 56 393 VI Lane V/C Ratio 0.053 - 2.523 0.18 VI Control Delay (s) 9.6 0\$ 848.5 16.2 VI Lane LOS A A F C C VI 95th %tille Q(veh) 0.2 - 14.4 0.6
M Lane V/C Ratio 0.053 - 2.523 0.18 M Control Delay (s) 9.6 0\$ 848.5 16.2 M Lane LOS A A F C M 195th %tile Q(veh) 0.2 - 14.4 0.6
M Control Delay (s) 9.6 0\$ 848.5 16.2
M Lane LOS A A F C M 95th %tile Q(veh) 0.2 - 14.4 0.6 es
M 95th %tile Q(veh) 0.2 - 14.4 0.6 es
es ·
olume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoor

	۶	→	*	•	←	*	1	1	/	/	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1>		ሻ	↑	7	7	f)		ሻ	ĵ»	
Traffic Volume (veh/h)	395	395	90	50	260	230	180	255	65	200	265	205
Future Volume (veh/h)	395	395	90	50	260	230	180	255	65	200	265	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	494	429	93	54	283	28	196	277	64	217	288	203
Peak Hour Factor	0.80	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	527	573	124	243	327	275	270	455	105	396	323	228
Arrive On Green	0.25	0.39	0.39	0.03	0.17	0.17	0.09	0.31	0.31	0.10	0.32	0.32
Sat Flow, veh/h	1781	1489	323	1781	1870	1576	1781	1467	339	1781	1017	717
Grp Volume(v), veh/h	494	0	522	54	283	28	196	0	341	217	0	491
Grp Sat Flow(s),veh/h/ln	1781	0	1811	1781	1870	1576	1781	0	1805	1781	0	1733
Q Serve(g_s), s	25.9	0.0	29.4	2.9	17.4	1.8	8.7	0.0	19.0	9.7	0.0	31.9
Cycle Q Clear(g_c), s	25.9	0.0	29.4	2.9	17.4	1.8	8.7	0.0	19.0	9.7	0.0	31.9
Prop In Lane	1.00		0.18	1.00		1.00	1.00		0.19	1.00		0.41
Lane Grp Cap(c), veh/h	527	0	698	243	327	275	270	0	560	396	0	550
V/C Ratio(X)	0.94	0.00	0.75	0.22	0.87	0.10	0.73	0.00	0.61	0.55	0.00	0.89
Avail Cap(c_a), veh/h	618	0	843	316	459	387	376	0	917	458	0	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.8	0.0	31.4	38.2	47.4	41.0	28.7	0.0	34.7	25.3	0.0	38.4
Incr Delay (d2), s/veh	20.3	0.0	3.0	0.5	11.9	0.2	4.3	0.0	1.1	1.2	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	0.0	13.4	1.3	9.2	0.7	4.0	0.0	8.6	4.2	0.0	14.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.1	0.0	34.4	38.6	59.3	41.1	32.9	0.0	35.7	26.5	0.0	46.2
LnGrp LOS	D	Α	С	D	Ε	D	С	Α	D	С	Α	D
Approach Vol, veh/h		1016			365			537			708	
Approach Delay, s/veh		41.5			54.9			34.7			40.2	
Approach LOS		D			D			С			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.9	42.6	8.1	51.5	15.0	43.5	33.0	26.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	16.0	60.0	9.0	55.0	18.0	58.0	35.0	29.0				
Max Q Clear Time (q_c+l1), s	11.7	21.0	4.9	31.4	10.7	33.9	27.9	19.4				
Green Ext Time (p_c), s	0.2	2.5	0.0	3.8	0.3	3.7	1.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			41.6									
HCM 6th LOS			D									

Intersection							
Intersection Delay, s/v	/oh 18 Ω						
Intersection LOS	C						
IIIICISCUIOII EOS	C						
Approach		EB	WB	NE	3	SB	
Entry Lanes		1	1	1		1	
Conflicting Circle Lane		1	1	1		1	
Adj Approach Flow, ve	eh/h	543	408	506		637	
Demand Flow Rate, v	eh/h	555	417	516		650	
Vehicles Circulating, v	/eh/h	484	638	627		472	
Vehicles Exiting, veh/h		638	505	411		583	
Ped Vol Crossing Leg	ı, #/h	31	0	4		0	
Ped Cap Adj		0.996	1.000	0.999		1.000	
Approach Delay, s/vel	h	15.8	14.8	19.9		20.5	
Approach LOS		С	В	C		С	
Lane	Left		Left	Left	Left		
Designated Moves	LTR		LTR	LTR	LTR		
Assumed Moves	LTR		LTR	LTR	LTR		
RT Channelized							
Lane Util	1.000		1.000	1.000	1.000		
Follow-Up Headway, s	s 2.609		2.609	2.609	2.609		
Critical Headway, s	4.976		4.976	4.976	4.976		
Entry Flow, veh/h	555		417	516	650		
Cap Entry Lane, veh/h			720	728	853		
Entry HV Adj Factor	0.979		0.979	0.981	0.980		
Flow Entry, veh/h	543		408	506	637		
Cap Entry, veh/h	821		705	714	836		
V/C Ratio	0.662		0.579	0.709	0.762		
Control Delay, s/veh	15.8		14.8	19.9	20.5		
LOS	C.		B	C.	C.		

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Puunani Homestead 7:00 am 06/13/2019 FY 2024 AM Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 5 Puunani Homestead 7:00 am 06/13/2019 FY 2024 AM Austin, Tsutsumi, & Assoc.

95th %tile Queue, veh

HCM 6th Roundabout

6: Kamehameha Ave & Maui Lani Pkwy

08/28/2020

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	7	7		4	ß	
Traffic Vol, veh/h	130	25	5	330	340	35
Future Vol, veh/h	130	25	5	330	340	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None		None
Storage Length	0	50	-	-	-	-
Veh in Median Storage	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	141	27	5	359	370	38

Major/Minor	Minor2		Major1	Ma	ajor2	
Conflicting Flow All	758	389	408	0	-	0
Stage 1	389		-	-		-
Stage 2	369	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-		-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42		-	-		-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	375	659	1151	-		-
Stage 1	685	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	373	659	1151	-		-
Mov Cap-2 Maneuver	373	-	-	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s HCM LOS			0.1		0	
HCIVI LUS	С					

Minor Lane/Major Mymt	NBI	NBT	FBI n1	FBI n2	SBT	SBR
minor Editoritajor minit	1100	1101	LULIII	LULINE	00.	ODIT
Capacity (veh/h)	1151	-	373	659	-	-
HCM Lane V/C Ratio	0.005		0.379	0.041		
HOW LAKE VIC RAND	0.003		0.379	0.041	-	-
HCM Control Delay (s)	8.1	0	20.4	10.7		
HOW Control Delay (3)	0.1	U	20.4	10.7		
HCM Lane LOS	Α	Α	C	В		
HCM 95th %tile O(veh)	0		17	0.1		-

HCM 6th TWSC 8: Waiale Rd & Haawi St

08/28/2020

Interception						
Intersection	2.1					
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	ĵ.	
Traffic Vol, veh/h	70	75	20	245	330	30
Future Vol, veh/h	70	75	20	245	330	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	e. # O		-	0	0	
Grade, %	0			0	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	76	82	22	266	359	33
IVIVIII I IOW	70	02	22	200	337	33
Major/Minor	Minor2		Major1	1	Major2	
Conflicting Flow All	686	376	392	0	-	0
Stage 1	376	-	-	-	-	-
Stage 2	310	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-		-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42		-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	413	670	1167	-	-	-
Stage 1	694					
Stage 2	744			-		-
Platoon blocked, %	, , , ,					
Mov Cap-1 Maneuver	404	670	1167			
Mov Cap-1 Maneuver	404	- 070	1107			
Stage 1	679					- :
Stage 2	744					
Staye 2	744				-	
Approach	EB		NB		SB	
HCM Control Delay, s	15.2		0.6		0	
HCM LOS	С					
		NID:	NIDT	EDI 1	007	000
Minor Lane/Major Mvm	I	NBL	NRL	EBLn1	SBT	SBR
Capacity (veh/h)		1167		508		-
HCM Lane V/C Ratio		0.019	-	0.31	-	-

HCM Control Delay (s) HCM Lane LOS

HCM 95th %tile Q(veh)

8.1 0 15.2 - -

A A C

10: Waiale Rd & Ohana Hana Loop

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
		LDIK	HUL			JUIN
Lane Configurations	Y			- €િ	₽	
Traffic Vol, veh/h	35	20	5	235	400	5
Future Vol, veh/h	35	20	5	235	400	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	22	5	255	435	5

Major/Minor	Minor2		Major1	M	ajor2	
Conflicting Flow All	703	438	440	0	-	0
Stage 1	438	-	-	-	-	-
Stage 2	265	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42				-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	404	619	1120	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	779		-		-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver		619	1120	-	-	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	648	-		-	-	-
Stage 2	779	-	-	-	-	-
Approach	EB		NB		SB	
			0.2		0	
HCM Control Delay, s HCM LOS	14 B		0.2		U	
I ICIVI EUS	D					

Minor Lane/Major Mvmt	NBL	NBT E	EBLn1	SBT	SBR
Capacity (veh/h)	1120	-	461	-	-
HCM Lane V/C Ratio	0.005	-	0.13	-	-
HCM Control Delay (s)	8.2	0	14		
HCM Lane LOS	A	Α	В	-	-
HCM 95th %tile O(veh)	0	-	0.4	-	-

ntersection						
nt Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥		7	†	ß	
Traffic Vol, veh/h	30	25	5	210	410	15
Future Vol, veh/h	30	25	5	210	410	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None		None
Storage Length	-	-	200	-	-	-
Veh in Median Storage	e, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Vivmt Flow	33	27	5	228	446	16
Major/Minor	Minor2		Maior1	N	Aaior2	

Major/Minor N	Minor2		Major1	٨	/lajor2	
Conflicting Flow All	692	454	462	0	-	0
Stage 1	454	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-		-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42		-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	410	606	1099	-		-
Stage 1	640	-	-	-	-	-
Stage 2	802		-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	408	606	1099	-	-	-
Mov Cap-2 Maneuver	505		-	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	802	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.4		0.2		0	
HCM LOS	12.4 B		0.2		U	
HOW EOS						
Minor Lane/Major Mvm	ıt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1099	-	546	-	-
HCM Lane V/C Ratio		0.005	-	0.109	-	-
HCM Control Delay (s)		8.3		12.4		

- B

HCM Lane LOS

HCM 95th %tile Q(veh)

Intersection						
Int Delay, s/veh	28.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્ન	ĵ.		Y	
Traffic Vol, veh/h	80	275	75	140	325	95
Future Vol, veh/h	80	275	75	140	325	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None		None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage,	# -	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	299	82	152	353	103

A A			^		4' 0	
Major/Minor	Major1	Majo	or2	1	Vinor2	
Conflicting Flow All	234	0	-	0	631	158
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	473	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1333	-	-	-	445	887
Stage 1	-	-	-	-	871	
Stage 2	-	-	-	-	627	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1333	-	-	-	410	887
Mov Cap-2 Maneuver	-	-	-	-	410	-
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	627	

66.1

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR SB	Ln1
C	1222				4/7
Capacity (veh/h)	1333				467
HCM Lane V/C Ratio	0.065			- 0.	978
HCM Control Delay (s)	7.9	0	-	- 6	66.1
HCM Lane LOS	Α	Α	-		F
LICALOFTE OVER OVER	0.0			- 1	10.4

HCM 6th Signalized Intersection Summary 12: Honoapiilani Hwy & W Waiko Rd/E Waiko Rd

08/28/2020

	۶	-	•	1	-	*	1	†	1	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	7		4			î,		ሻ	†	7
Traffic Volume (veh/h)	20	15	10	105	10	55	5	715	125	180	860	10
Future Volume (veh/h)	20	15	10	105	10	55	5	715	125	180	860	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	16	1	114	11	45	5	777	132	196	935	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	112	221	206	19	56	295	951	161	332	1246	1056
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.01	0.61	0.61	0.06	0.67	0.67
Sat Flow, veh/h	785	796	1579	970	137	399	1781	1558	265	1781	1870	1585
Grp Volume(v), veh/h	38	0	1	170	0	0	5	0	909	196	935	7
Grp Sat Flow(s),veh/h/ln	1581	0	1579	1506	0	0	1781	0	1823	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	7.7	0.0	0.0	0.1	0.0	33.2	3.2	28.6	0.1
Cycle Q Clear(g_c), s	1.5	0.0	0.0	9.3	0.0	0.0	0.1	0.0	33.2	3.2	28.6	0.1
Prop In Lane	0.58		1.00	0.67		0.26	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	288	0	221	281	0	0	295	0	1112	332	1246	1056
V/C Ratio(X)	0.13	0.00	0.00	0.60	0.00	0.00	0.02	0.00	0.82	0.59	0.75	0.01
Avail Cap(c_a), veh/h	520	0	461	504	0	0	575	0	1491	512	1530	1296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	31.7	35.5	0.0	0.0	9.6	0.0	13.0	15.0	9.5	4.8
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.8	0.0	0.0	0.0	0.0	4.0	0.6	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	3.5	0.0	0.0	0.0	0.0	12.8	2.0	10.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.4	0.0	31.7	36.3	0.0	0.0	9.6	0.0	17.0	15.6	12.0	4.8
LnGrp LOS	С	Α	С	D	Α	Α	Α	Α	В	В	В	Α
Approach Vol, veh/h		39			170			914			1138	
Approach Delay, s/veh		32.4			36.3			16.9			12.6	
Approach LOS		С			D			В			В	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	58.2		17.0	5.6	63.0		17.0				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	14.0	70.0		25.0	14.0	70.0		25.0				
Max Q Clear Time (q_c+l1), s	5.2	35.2		3.5	2.1	30.6		11.3				
Green Ext Time (p_c), s	0.2	17.0		0.1	0.0	18.9		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			16.5									
HCM 6th LOS			В									

User approved pedestrian interval to be less than phase max green.

Puunani Homestead 7:00 am 06/13/2019 FY 2024 AM Austin, Tsutsumi, & Assoc.

HCM Control Delay, s 1.8

HCM LOS

Synchro 10 Report Page 11 Puunani Homestead 7:00 am 06/13/2019 FY 2024 AM Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 12

Synchro 10 Report

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14: Honoapiilani	i High	าพลy	& Kι	ıikahi	Drive	Э							08/28/2020
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	- 7	*	7	7	†	7	7	†	7	7	1	7	
Traffic Volume (veh/h)	55	135	85	340	50	350	25	500	415	370	660	10	
Future Volume (veh/h)	55	135	85	340	50	350	25	500	415	370	660	10	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		1.00	1.00		1.00	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac	:h	No			No			No			No		
Adj Sat Flow, veh/h/ln	2067	2067	2067	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	60	147	9	370	54	213	27	543	0	402	717	6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	292	201	214	434	453	634	241	664		432	913	833	
Arrive On Green	0.04	0.10	0.10	0.18	0.24	0.24	0.03	0.36	0.00	0.16	0.49	0.49	
Sat Flow, veh/h	1968	2067	1733	1781	1870	1579	1781	1870	1585	1781	1870	1577	
Grp Volume(v), veh/h	60	147	9	370	54	213	27	543	0	402	717	6	
Grp Sat Flow(s), veh/h/li		2067	1733	1781	1870	1579	1781	1870	1585	1781	1870	1577	
Q Serve(q_s), s	2.8	7.1	0.5	18.8	2.3	9.6	1.0	27.1	0.0	14.1	32.8	0.2	
Cycle Q Clear(q_c), s	2.8	7.1	0.5	18.8	2.3	9.6	1.0	27.1	0.0	14.1	32.8	0.2	
Prop In Lane	1.00	7.1	1.00	1.00	2.0	1.00	1.00	27.1	1.00	1.00	32.0	1.00	
Lane Grp Cap(c), veh/h		201	214	434	453	634	241	664	1.00	432	913	833	
V/C Ratio(X)	0.21	0.73	0.04	0.85	0.12	0.34	0.11	0.82		0.93	0.79	0.01	
Avail Cap(c_a), veh/h	386	603	551	434	727	865	523	1091		478	1091	983	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/vel		45.1	39.7	32.3	30.4	21.4	21.8	30.1	0.0	21.0	21.9	11.5	
Incr Delay (d2), s/veh	0.3	1.9	0.0	15.1	0.0	0.1	0.1	5.3	0.0	22.9	4.4	0.0	
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),vel		3.8	0.0	9.9	1.1	3.6	0.4	12.7	0.0	8.1	14.5	0.0	
Unsig. Movement Delay			0.2	7.7	1.1	3.0	0.4	12.7	0.0	0.1	14.5	0.1	
LnGrp Delay(d),s/veh	39.9	47.1	39.8	47.4	30.5	21.5	21.9	35.4	0.0	43.9	26.2	11.5	
LnGrp LOS	D	D	D	D	C	C C	C	D	0.0	73.7 D	C	В	
Approach Vol, veh/h	U	216	U	U	637	C		570	А	U	1125	ь	
		44.8			37.3			34.8	А		32.5		
Approach LOS		44.8 D			37.3 D			34.8 C			32.5 C		
Approach LOS		D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)), 21.3	42.6	24.0	15.0	7.7	56.2	9.1	29.9					
Change Period (Y+Rc),		6.0	5.0	5.0	5.0	6.0	5.0	5.0					
Max Green Setting (Gm		60.0	19.0	30.0	19.0	60.0	9.0	40.0					
Max Q Clear Time (q_c		29.1	20.8	9.1	3.0	34.8	4.8	11.6					
Green Ext Time (p_c), s		7.4	0.0	0.5	0.0	9.9	0.0	0.6					
Intersection Summary													
			25.2										
HCM 6th Ctrl Delay			35.2										

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Synchro	10	Repor

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		*	7	7	*	7	7	†	7	7	*	7
Traffic Volume (veh/h)	290	285	500	35	240	135	315	585	15	50	405	110
Future Volume (veh/h)	290	285	500	35	240	135	315	585	15	50	405	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approac	:h	No			No			No			No	
Adj Sat Flow, veh/h/ln	1567	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	414	310	163	38	261	17	342	636	0	54	440	0
Peak Hour Factor	0.70	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	427	667	564	292	301	254	380	720		185	501	
Arrive On Green	0.23	0.36	0.36	0.03	0.16	0.16	0.15	0.39	0.00	0.04	0.27	0.00
Sat Flow, veh/h	1493	1870	1581	1781	1870	1575	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	414	310	163	38	261	17	342	636	0	54	440	0
Grp Sat Flow(s), veh/h/li		1870	1581	1781	1870	1575	1781	1870	1585	1781	1870	1585
Q Serve(q_s), s	25.0	14.1	8.2	1.9	15.0	1.0	14.7	34.9	0.0	2.4	24.8	0.0
Cycle Q Clear(g_c), s	25.0	14.1	8.2	1.9	15.0	1.0	14.7	34.9	0.0	2.4	24.8	0.0
Prop In Lane	1.00	14.1	1.00	1.00	15.0	1.00	1.00	34.9	1.00	1.00	24.8	1.00
		667	564		301		380	720	1.00		501	1.00
Lane Grp Cap(c), veh/h				292		254				185		
V/C Ratio(X)	0.97	0.46	0.29	0.13	0.87	0.07	0.90	0.88		0.29	0.88	
Avail Cap(c_a), veh/h	427	667	564	657	407	343	493	720	1.00	507	594	4.00
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/vel		27.4	25.4	36.8	45.1	39.2	25.6	31.6	0.0	29.9	38.7	0.0
Incr Delay (d2), s/veh	35.3	0.2	0.1	0.1	11.2	0.0	14.1	13.2	0.0	0.3	14.8	0.0
Initial Q Delay(d3),s/vel		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),vel		6.4	3.1	0.9	7.9	0.4	7.3	17.5	0.0	1.0	13.0	0.0
Unsig. Movement Delay	, .		05.1	0/.0	E / C	20.0	00.7	11.0	0.0	20.0	F0 F	0.0
LnGrp Delay(d),s/veh	64.0	27.5	25.6	36.8	56.3	39.3	39.7	44.8	0.0	30.2	53.5	0.0
LnGrp LOS	Е	С	С	D	E	D	D	D		С	D	
Approach Vol, veh/h		887			316			978	Α		494	Α
Approach Delay, s/veh		44.2			53.0			43.0			50.9	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc)), s9.0	48.5	8.4	44.3	22.0	35.5	30.0	22.7				
Change Period (Y+Rc),		6.0	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gm		35.0	26.0	23.0	24.0	35.0	25.0	24.0				
Max Q Clear Time (q_c		36.9	3.9	16.1	16.7	26.8	27.0	17.0				
Green Ext Time (p c), s		0.0	0.0	1.0	0.3	2.7	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			46.0									
HCM 6th LOS			40.U									
I ICIVI OIII LUS			D									

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 15: Honoapiilani Hwy & Kehalani Pkwy

HCM 6th LOS

Intersection												
Int Delay, s/veh	10.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	↑		ሻ	↑	7		4	7		ર્ન	7
Traffic Vol, veh/h	100	770	10	10	560	65	30	5	30	35	5	115
Future Vol, veh/h	100	770	10	10	560	65	30	5	30	35	5	115
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-		None	-		None	-		None
Storage Length	145	-	-	50	-	50	-	-	0	-	-	0
Veh in Median Storage	,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-		0	-		0	-		0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	837	11	11	609	71	33	5	33	38	5	125

Major/Minor	Major1		Ν	Najor2		1	∕linor1			Minor2			
Conflicting Flow All	681	0	0	848	0	0	1793	1764	843	1712	1698	610	
Stage 1	-	-	-	-	-	-	1061	1061		632	632	-	
Stage 2	-	-	-	-	-	-	732	703	-	1080	1066	-	
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52		6.12	5.52	-	
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318	
Pot Cap-1 Maneuver	912	-	-	790	-	-	63	84	364	71	92	494	
Stage 1	-	-	-	-	-	-	271	300	-	468	474	-	
Stage 2	-	-	-	-	-	-	413	440		264	299	-	
Platoon blocked, %		-	-		-	-							
Mov Cap-1 Maneuver	911	-	-	790	-	-	40	73	364	55	80	494	
Mov Cap-2 Maneuver	-	-	-	-	-	-	40	73	-	55	80	-	
Stage 1	-	-	-	-	-	-	238	264	-	412	467	-	
Stage 2	-	-	-	-	-	-	301	433	-	207	263	-	
Approach	EB			WB			NB			SB			
HCM Control Delay, s	1.1			0.2			140.4			55.1			
HCM LOS							F			F			

Minor Lane/Major Mvmt	NBLn1 N	IBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	43	364	911	-	-	790	-	-	57	494
HCM Lane V/C Ratio	0.885	0.09	0.119	-	-	0.014	-	-	0.763	0.253
HCM Control Delay (s)	247.2	15.9	9.5		-	9.6	-		171.4	14.7
HCM Lane LOS	F	С	Α	-	-	Α	-	-	F	В
HCM 05th %tile O(veh)	3.5	0.3	0.4			Λ			2.2	1

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	†	†	7
Traffic Vol, veh/h	65	30	10	925	995	20
Future Vol, veh/h	65	30	10	925	995	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None		None
Storage Length	0	0	200	-	-	200
Veh in Median Storage	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	33	11	1005	1082	22

Major/Minor	Minor2		Major1	Ma	ajor2	
Conflicting Flow All	2109	1082	1104	0	-	0
Stage 1	1082	-	-	-	-	-
Stage 2	1027	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	
Pot Cap-1 Maneuver	~ 56	264	632		-	
Stage 1	325	-	-	-	-	-
Stage 2	345		-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 55	264	632	-	-	-
Mov Cap-2 Maneuver	176		-	-	-	-
Stage 1	319	-	-	-	-	-
Stage 2	345	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	32.8		0.1		0	

Approach	FB		INR		SB					
HCM Control Delay, s	32.8		0.1		0					
HCM LOS	D									
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	EBLn2	SBT	SBR			
Capacity (veh/h)		632	-	176	264	-	-			
HCM Lane V/C Ratio		0.017	-	0.401	0.124	-	-			
HCM Control Delay (s)		10.8	-	38.5	20.5	-	-			
HCM Lane LOS		В	-	Е	С	-	-			
HCM 95th %tile Q(veh)		0.1	-	1.8	0.4	-	-			
Notes										
~: Volume exceeds capa	acity	\$: De	lav exc	eeds 30	00s -	e: Comr	utation 1	Not Defined	*: All major volume in platoon	

18: Honoapiilani Highway/Honoapiilani Hwy & North Project Access

Ω	120	120	12
08	20.	IΖl	JZ۱

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		†	↑	7
Traffic Vol, veh/h	0	15	0	985	1000	10
Future Vol, veh/h	0	15	0	985	1000	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None		None
Storage Length	-	0	-	-	-	200
Veh in Median Storage	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	0	1071	1087	11

Major/Minor	Minor2	N	Najor1	Ma	ajor2	
Conflicting Flow All	-	1087	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	263	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver		263	-	-	-	-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1		-	-	-		-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB	
HCM Control Delay, s	19.6	0	0	
HCM LOS	С			

Minor Lane/Major Mvmt	N	IBT	EBLn1	SBT	SBR
Capacity (veh/h)		-	263	-	-
HCM Lane V/C Ratio		-	0.062	-	-
HCM Control Delay (s)		-	19.6		-
HCM Lane LOS		-	С	-	-
HCM 95th %tile Q(veh)			0.2	-	-

Puunani Homestead 7:00 am 06/13/2019 FY 2024 AM Austin, Tsutsumi, & Assoc.

Synchro 10 Report Page 18



APPENDIX C

LEVEL OF SERVICE CALCULATIONS

Future Year 2024 PM Peak

1: Waiale Rd & Kaohu St/Oluloa Dr

08/28/2020 2: Wa

HCM 6th TWSC

2: Waiale Rd & Waiinu Rd	08/28/2020
2. Walale Nu & Walifu Nu	00/20/2020

Intersection												
Intersection Delay, s/veh	164.3											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	ĵ,			4			ર્ન	7		43-	
Traffic Vol, veh/h	60	10	200	15	5	10	110	510	25	10	645	70
Future Vol, veh/h	60	10	200	15	5	10	110	510	25	10	645	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	11	217	16	5	11	120	554	27	11	701	76
Number of Lanes	1	1	0	0	1	0	0	1	1	0	1	C
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			2			1			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			2			2			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			1			1			2		
HCM Control Delay	16.6			14.5			147.8			240.1		
HCM LOS	С			В			F			F		
Lane		NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1					
Vol Left, %		18%	0%	100%	0%	50%	1%					
Vol Thru, %		82%	0%	0%	5%	17%	89%					
Vol Right, %		0%	100%	0%	95%	33%	10%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		620	25	60	210	30	725					
LT Vol		110	0	60	0	15	10					
Through Vol		510	0	0	10	5	645					
RT Vol		0	25	0	200	10	70					
Lane Flow Rate		674	27	65	228	33	788					
Geometry Grp		7	7	7	7	6	6					
Degree of Util (X)		1.255	0.045	0.15	0.45	0.081	1.466					
Departure Headway (Hd)		7.27	6.458	9.385	8.161	10.564	7.084					
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes	Yes					
Cap		505	558	385	445	341	520					
Service Time		4.97	4.158	7.085	5.861	8.564	5.084					
HCM Lane V/C Ratio		1.335	0.048	0.169	0.512	0.097	1.515					
HCM Control Delay		153.4	9.5	13.7	17.4	14.5	240.1					
		F	Α	В	С	В	F					
HCM Lane LOS												

Intersection								
nt Delay, s/veh	301.9							
Novement	WBL	WBR	NBT	NBR	SBL	SBT		
ane Configurations	WDL	NDK.	1401	ZIGNI	JDL	अवा		
raffic Vol, veh/h	315	35	560	535	65	755		
uture Vol. veh/h	315	35	560	535	65	755		
conflicting Peds, #/hr		0	0	0	00	755		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized	Siup -	None	1166	None	1166	None		
Storage Length	0	145		-		- INOTIC		
/eh in Median Storag	-	143	0			0		
Grade. %	0, "		0			0		
Peak Hour Factor	92	92	92	92	92	92		
Heavy Vehicles, %	2	2	2	2	2	2		
Nymt Flow	342	38	609	582	71	821		
WWIIICT IOW	512	50	007	302	, ,	021		
4 ' (3.4'	A 41			_				
Major/Minor	Minor1		Major1		Najor2			
Conflicting Flow All	1863	900	0	0	1191	0		
Stage 1	900		-	-	-	-		
Stage 2	963		-	-	-	-		
Critical Hdwy	6.42	6.22		-	4.12	-		
Critical Hdwy Stg 1	5.42	-	-	-	-	-		
Critical Hdwy Stg 2	5.42			-	-	-		
ollow-up Hdwy	3.518		-	-	2.218	-		
ot Cap-1 Maneuver	~ 80	337		-	586	-		
Stage 1	397	-	-	-	-	-		
Stage 2	370	-	-	-	-	-		
Platoon blocked, %			-	-	=0/	-		
Mov Cap-1 Maneuver		337	-	-	586	-		
Mov Cap-2 Maneuver		-	-					
Stage 1	397	-	-	-	-	-		
Stage 2	~ 287	-	-	-	-	-		
Approach	WB		NB		SB			
HCM Control Delay, \$			0		0.9			
HCM LOS	F							
Minor Lane/Major Mvr	mt	NBT	NBRV	VBLn1V	VBLn2	SBL	SBT	
Capacity (veh/h)		-	-	62	337	586		
HCM Lane V/C Ratio				5.522	0.113	0.121		
HCM Control Delay (s	5)	-	\$:	2166.8	17	12	0	
HCM Lane LOS		-	-	F	С	В	A	
HCM 95th %tile Q(veh	n)		-	38.4	0.4	0.4		
Votes								
	an a altu	é. Do	lau ava	00d0 20	100	Comm	utation Not Defined	*. All major valuma in plataan
: Volume exceeds ca	apacity	2: De	iay exc	eeds 30	JUS	+: Comp	outation Not Defined	*: All major volume in platoon

4: Waiale Rd & Kaupo St

Intersection													
Int Delay, s/veh	43.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	4			44			4			ĵ,		
Traffic Vol, veh/h	70	0	15	10	5	10	30	1045	5	5	975	160	
Future Vol, veh/h	70	0	15	10	5	10	30	1045	5	5	975	160	
Conflicting Peds, #/hr	0	0	0	0	0	0	5	0	4	4	0	5	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-		None	-	-	None	-		None	
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage	,# -	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	76	0	16	11	5	11	33	1136	5	5	1060	174	
Major/Minor 1	Minor2			Minor1			Wajor1		1	Major2			
Conflicting Flow All	2375	2373	1152	2374	2458	1143	1239	0	0	1145	0	0	
Stage 1	1162	1162		1209	1209	-		-		-		-	
Stage 2	1213	1211		1165	1249			-					
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12			4.12			
Critical Hdwy Stg 1	6.12	5.52		6.12	5.52	-		-				-	
Critical Hdwy Stg 2	6.12	5.52		6.12	5.52								
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218			2.218			
Pot Cap-1 Maneuver	~ 24	35	241	24	31	244	562	-		610		-	
Stage 1	237	269	-	223	256	-	-	-		-			
Stage 2	222	255		237	245	-		-				-	
Platoon blocked, %								-	-			-	
Mov Cap-1 Maneuver	~ 16	28	240	19	25	243	559	-		608		-	
Mov Cap-2 Maneuver	~ 16	28		19	25	-		-	-	-		-	
Stage 1	198	260	-	186	214	-	-	-	-	-		-	
Stage 2	173	213		215	237	-		-	-	-		-	
, in the second													
Approach	EB			WB			NB			SB			
HCM Control Delay, \$ 1				279.3			0.3			0			
HCM LOS	F			F			0.5			U			
Minor Lane/Major Mvm	+	NDI	NDT	NIDD	EDI n1	EBLn2\	MDI n1	SBL	SBT	SBR			Ξ
Capacity (veh/h)	ı	NBL 559	NBT	NDK	16	25	33	608	SDI	SDR			
			-	-		1.667			-	-			
HCM Control Dolay (c)		0.058	0	-	3.17	660.2		0.009	-	-			
HCM Control Delay (s) HCM Lane LOS		11.8 B	A	3	1400.33 F	660.2 F	2/9.3 F	B					
		0.2	А		7	5.1	2.8	0	-				
HCM 95th %tile Q(veh)		0.2	-	-	1	5.1	2.8	U	-	-			
Notes													
~: Volume exceeds cap	oacity	\$: De	elay exc	eeds 3	00s	+: Com	outation	Not De	fined	*: All ı	major v	olume ir	platoon

Intersection								
nt Delay, s/veh	19.9							
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
ane Configurations	*	7	1100	4	1	ODIT		
Fraffic Vol, veh/h	60	40	55	980	950	45		
uture Vol. veh/h	60	40	55	980	950	45		
Conflicting Peds, #/hr		0	12	0	0			
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized	-	None		None	-			
Storage Length	125	0		-		-		
eh in Median Storag	e. # 0	-		0	0	-		
Grade, %	0	-		0	0	-		
Peak Hour Factor	92	92	92	92	92	92		
leavy Vehicles, %	2	2	2	2	2	2		
/lvmt Flow	65	43	60	1065	1033	49		
lajor/Minor	Minor2		Major1		Major2			
Conflicting Flow All	2255	1070	1094	0	wajorz	0		
Stage 1	1070	1070	1074	-		0		
Stage 2	1185							
ritical Hdwy	6.42	6.22	4.12					
ritical Hdwy Stg 1	5.42	0.22	7.12					
ritical Hdwy Stg 2	5.42							
ollow-up Hdwy	3.518		2.218					
ot Cap-1 Maneuver	~ 45	269	638			-		
Stage 1	329	-	-					
Stage 2	290							
Platoon blocked, %	2.0							
Nov Cap-1 Maneuver	~ 34	266	631					
Nov Cap-2 Maneuver		-						
Stage 1	250							
Stage 2	287							
pproach	EB		NB		SB			
ICM Control Delay, s			0.6		0			
ICM LOS	F		0.0		0			
5 200								
linor Lane/Major Mvr	mt	NBL	NIRT	EBLn1	EBI n2	SBT	SBR	
Capacity (veh/h)	TIC .	631	INDI	34	266		JUN	
CM Lane V/C Ratio		0.095		1.918				
CM Control Delay (s	-)	11.3		683.6	21.2			
CM Lane LOS	7)	П.3	A	5 003.0	21.2 C			
ICM 95th %tile Q(veh	2)	0.3	A .	7.3	0.6			
,	IJ	0.5		1.3	0.0			
otes								
Volume exceeds ca	apacity	\$: De	elay exc	eeds 30	00s	+: Comp	outation Not Defined	*: All major volume in platoon

Movement							-					
iviovement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1>		7	†	7	7	ĵ.		7	ĵ.	
Traffic Volume (veh/h)	330	300	95	110	480	330	90	255	85	320	320	220
Future Volume (veh/h)	330	300	95	110	480	330	90	255	85	320	320	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	359	326	98	120	522	175	98	277	84	348	348	224
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	577	173	376	557	471	167	342	104	382	375	241
Arrive On Green	0.18	0.42	0.42	0.06	0.30	0.30	0.05	0.25	0.25	0.16	0.35	0.35
Sat Flow, veh/h	1781	1380	415	1781	1870	1582	1781	1377	417	1781	1062	684
Grp Volume(v), veh/h	359	0	424	120	522	175	98	0	361	348	0	572
	1781	0	1795	1781	1870	1582	1781	0	1794	1781	0	1746
	27.7	0.0	30.5	7.9	46.0	14.8	6.9	0.0	32.1	24.0	0.0	53.4
	27.7	0.0	30.5	7.9	46.0	14.8	6.9	0.0	32.1	24.0	0.0	53.4
	1.00		0.23	1.00		1.00	1.00		0.23	1.00		0.39
Lane Grp Cap(c), veh/h	381	0	750	376	557	471	167	0	445	382	0	616
	0.94	0.00	0.57	0.32	0.94	0.37	0.59	0.00	0.81	0.91	0.00	0.93
Avail Cap(c a), veh/h	430	0	774	450	607	514	200	0	614	439	0	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
	51.0	0.0	37.6	37.9	57.9	46.9	48.1	0.0	59.9	40.6	0.0	52.7
	27.8	0.0	0.9	0.5	21.4	0.5	3.2	0.0	5.7	21.2	0.0	14.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	0.0	13.9	3.6	25.3	6.0	3.3	0.0	15.5	12.9	0.0	26.1
Unsig. Movement Delay, s/veh	10.1	0.0	10.7	0.0	20.0	0.0	0.0	0.0	10.0	12.7	0.0	20.1
LnGrp Delay(d),s/veh	78.9	0.0	38.5	38.4	79.3	47.4	51.3	0.0	65.6	61.8	0.0	67.1
LnGrp LOS	E	A	D	D	E	D	D	A	E	E	A	E
Approach Vol, veh/h		783			817			459			920	
Approach Delay, s/veh		57.0			66.5			62.6			65.1	
Approach LOS		57.0 F			66.5 F			02.0 E			65.1 F	
											L	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
	30.6	48.0	14.0	76.7	12.9	65.7	34.3	56.4				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	32.0	58.0	17.0	73.0	12.0	78.0	35.0	55.0				
Max Q Clear Time (g_c+l1), s	26.0	34.1	9.9	32.5	8.9	55.4	29.7	48.0				
Green Ext Time (p_c), s	0.6	2.4	0.2	3.2	0.1	4.3	0.6	2.4				
Intersection Summary												
HCM 6th Ctrl Delay			63.0									
HCM 6th LOS			Е									

Intersection						
Intersection Delay, s/ve	sh 2/1 3					
Intersection LOS	C C					
IIIICI SCCIIOII EOS	C					
Approach		EB	WB	NB		SB
Entry Lanes		1	1	1		1
Conflicting Circle Lanes	S	1	1	1		1
Adj Approach Flow, vel	h/h	674	593	342		751
Demand Flow Rate, ve	h/h	687	604	348		766
Vehicles Circulating, ve	eh/h	411	559	682		482
Vehicles Exiting, veh/h		837	471	416		681
Ped Vol Crossing Leg,	#/h	7	0	0		0
Ped Cap Adj		0.999	1.000	1.000	1	.000
Approach Delay, s/veh		19.3	22.7	13.2		35.1
Approach LOS		С	С	В		Е
Lane	Left		Left	Left	Left	
Designated Moves	LTR		LTR	LTR	LTR	
Assumed Moves	LTR		LTR	LTR	LTR	
RT Channelized						
Lane Util	1.000		1.000	1.000	1.000	
Follow-Up Headway, s	2.609		2.609	2.609	2.609	
Critical Headway, s	4.976		4.976	4.976	4.976	
Entry Flow, veh/h	687		604	348	766	
Cap Entry Lane, veh/h	907		780	688	844	
Entry HV Adj Factor	0.981		0.981	0.981	0.981	
Flow Entry, veh/h	674		593	342	751	
Cap Entry, veh/h	889		766	675	828	
V/C Ratio	0.758		0.774	0.506	0.908	
Control Delay, s/veh	19.3		22.7	13.2	35.1	
LOC	0		C	D	C C	

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HCM 6th Roundabout

95th %tile Queue, veh

6: Kamehameha Ave & Maui Lani Pkwy

08/28/2020

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7		ની	ĵ.	
Traffic Vol, veh/h	50	15	30	360	355	75
Future Vol, veh/h	50	15	30	360	355	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None		None
Storage Length	0	50	-	-	-	-
Veh in Median Storage,	# 0	-		0	0	-
Grade, %	0		-	0	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	54	16	33	391	386	82

Major/Minor	Minor2		Major1	Ma	ajor2	
Conflicting Flow All	884	427	468	0	-	0
Stage 1	427		-		-	
Stage 2	457	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	316	628	1094	-	-	-
Stage 1	658	-	-	-	-	-
Stage 2	638		-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	304	628	1094	-	-	-
Mov Cap-2 Maneuver	304	-	-	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Annroach	ED		ND		CD	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1094	-	304	628	-	-
HCM Lane V/C Ratio	0.03	-	0.179	0.026	-	-
HCM Control Delay (s)	8.4	0	19.4	10.9	-	-
HCM Lane LOS	Α	Α	С	В	-	-
HCM 95th %tile O(veh)	0.1	-	0.6	0.1		

HCM 6th TWSC 8: Waiale Rd & Haawi St

08/28/2020

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			ની	₽	
Traffic Vol, veh/h	40	30	60	335	310	65
Future Vol, veh/h	40	30	60	335	310	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	e, # 0	-		0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	33	65	364	337	71
Major/Minor	Minor2		Major1	N.	Najor2	
			408	0		0
Conflicting Flow All	867 373	373	408	-	-	0
Stage 1	494		- 1			
Stage 2	6.42	6.22	4.12	-	-	-
Critical Hdwy	5.42	0.22			-	
Critical Hdwy Stg 1	5.42		-	-	-	-
Critical Hdwy Stg 2		3.318	2 210		-	
Follow-up Hdwy	3.518			-	-	-
Pot Cap-1 Maneuver	323	673	1151		-	-
Stage 1	696				-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	300	673	1151		-	-
Mov Cap-2 Maneuver	300		-	-	-	-
Stage 1	647	-		-	-	-
Stage 2	613	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	16.3		1.3		0	
HCM LOS	10.5 C		1.3		U	
TIGW E03						
Minor Lane/Major Mvn	nt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1151		393	-	-
HCM Lane V/C Ratio		0.057		0.194	-	-
HCM Control Delay (s))	8.3	0	16.3	-	-
HCM Lane LOS		Α	Α	С	-	-
HCM 95th %tile Q(veh)	0.2		0.7	-	-

0.6

HCM Control Delay, s 17.4 HCM LOS C

Intersection						
Int Delay, s/veh	0.7					
Movement	EDI	FBR	NIDI	NDT	CDT	SBR
	EBL	EBK	NBL	NBT	SBT	SBR
Lane Configurations	- Y			ની	₽	
Traffic Vol, veh/h	10	20	20	385	325	15
Future Vol. veh/h	10	20	20	385	325	15
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
	Slup		riee		riee	
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0		-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	72	2	2	2	2
Mvmt Flow	11	22	22	418	353	16

Major/Minor	Minor2		Major1	Ma	ajor2	
Conflicting Flow All	825	363	371	0	-	0
Stage 1	363	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-		-
Follow-up Hdwy			2.218	-	-	-
Pot Cap-1 Maneuver	342	682	1188	-	-	
Stage 1	704	-	-	-	-	-
Stage 2	634	-	-	-		-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	332	681	1186	-		-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Annroach	ED		ND		CD	

Minor Lane/Major Mymt	NBI	NBT	FBI n1	SBT	SBR
WILLOU EGILC/INIGIOL MINITE	NDL	IVDI	LDLIII	JDT	JUIN
Capacity (veh/h)	1186		504	-	-
HCM Lane V/C Ratio	0.018	-	0.065	-	-
HCM Control Delay (s)	8.1	0	12.6		
HCM Lane LOS	A	Α	В	-	-
HCM 95th %tile O(veh)	0.1		0.2		-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥	LDIT	*	*	1>	ODIT
Traffic Vol, veh/h	15	10	15	390	320	20
Future Vol, veh/h	15	10	15	390	320	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None		None		None
Storage Length	-	-	200	-	-	-
Veh in Median Storage	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	11	16	424	348	22
Mojor/Minor I	Minor	Λ.	Anior1	,	Anior?	

Major/Minor	Minor2		Major1	1	Major2	
Conflicting Flow All	815	359	370	0	-	0
Stage 1	359	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-		
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	
Follow-up Hdwy	3.518			-	-	-
Pot Cap-1 Maneuver	347	685	1189	-	-	
Stage 1	707	-	-	-	-	-
Stage 2	638	-	-	-	-	
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver		685	1189	-	-	
Mov Cap-2 Maneuver	460	-	-	-		-
Stage 1	698	-	-	-	-	
Stage 2	638	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s			0.3		0	
HCM LOS	В В		0.5		U	
110111 200						
Minor Lane/Major Mvr	mt	NBL	NBT I		SBT	SBR
Capacity (veh/h)		1189	-	530	-	-
HCM Lane V/C Ratio		0.014		0.051		-

8.1 - 12.2 - -

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0.4

HCM Control Delay, s 12.6

HCM LOS

HCM Control Delay (s)

HCM 95th %tile Q(veh)

HCM Lane LOS

HCM 6th TWSC

10: Waiale Rd & Ohana Hana Loop

Intersection						
Int Delay, s/veh	13.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	1 >		W	
Traffic Vol, veh/h	75	120	170	315	260	60
Future Vol, veh/h	75	120	170	315	260	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None		None
Storage Length	-	-	-	-	0	-
Veh in Median Storag	e,# -	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	130	185	342	283	65
Major/Minor	Major1	1	Wajor2	N	√linor2	
Conflicting Flow All	527	0	-	0	650	356
Stage 1				-	356	-
Stage 2	-	-	-	-	294	-
Critical Hdwy	4.12	-			6.42	6.22

iviajor/iviirioi	iviajui i	IVIa	ULZ		VIIIIUIZ		
Conflicting Flow All	527	0	-	0	650	356	
Stage 1		-	-	-	356	-	
Stage 2	-	-	-	-	294	-	
Critical Hdwy	4.12	-	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1040		-	-	434	688	
Stage 1	-	-	-	-	709	-	
Stage 2	-	-	-	-	756	-	
Platoon blocked, %		-	-	-			
Mov Cap-1 Maneuver	1040	-	-	-	397	688	
Mov Cap-2 Maneuver	-	-	-	-	397	-	
Stage 1			-	-	649	-	
Stage 2	-	-	-	-	756	-	

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	40.1
HCM LOS			Е

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1040	-	-		431
HCM Lane V/C Ratio	0.078	-	-	-	0.807
HCM Control Delay (s)	8.8	0			40.1
HCM Lane LOS	Α	Α	-	-	E
HCM 95th %tile Q(veh)	0.3		-		7.3

HCM 6th Signalized Intersection Summary 12: Honoapiilani Hwy & W Waiko Rd/E Waiko Rd

8/28/2020

	•	\rightarrow	*	1	—	•	1	1	1	-	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	7		44			î,		ሻ	†	7
Traffic Volume (veh/h)	15	10	5	120	15	100	10	870	130	80	720	25
Future Volume (veh/h)	15	10	5	120	15	100	10	870	130	80	720	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	11	1	130	16	85	11	946	137	87	783	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	112	274	196	23	96	377	1024	148	191	1247	1056
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.01	0.64	0.64	0.03	0.67	0.67
Sat Flow, veh/h	735	647	1585	825	131	557	1781	1597	231	1781	1870	1584
Grp Volume(v), veh/h	27	0	1	231	0	0	11	0	1083	87	783	17
Grp Sat Flow(s),veh/h/ln	1382	0	1585	1513	0	0	1781	0	1829	1781	1870	1584
Q Serve(g_s), s	0.0	0.0	0.1	14.3	0.0	0.0	0.2	0.0	54.6	1.8	25.1	0.4
Cycle Q Clear(g_c), s	1.3	0.0	0.1	15.6	0.0	0.0	0.2	0.0	54.6	1.8	25.1	0.4
Prop In Lane	0.59		1.00	0.56		0.37	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	293	0	274	315	0	0	377	0	1172	191	1247	1056
V/C Ratio(X)	0.09	0.00	0.00	0.73	0.00	0.00	0.03	0.00	0.92	0.46	0.63	0.02
Avail Cap(c_a), veh/h	391	0	378	414	0	0	601	0	1223	369	1251	1059
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	35.8	42.1	0.0	0.0	8.9	0.0	16.6	22.9	10.0	5.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	12.1	0.6	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	6.1	0.0	0.0	0.1	0.0	24.0	1.3	9.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	0.0	35.8	45.0	0.0	0.0	9.0	0.0	28.7	23.6	11.5	5.9
LnGrp LOS	D	Α	D	D	Α	Α	Α	Α	С	С	В	Α
Approach Vol, veh/h		28			231			1094			887	
Approach Delay, s/veh		36.4			45.0			28.5			12.5	
Approach LOS		D			D			С			В	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	73.1		23.1	5.8	75.8		23.1				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	14.0	70.0		25.0	14.0	70.0		25.0				
Max Q Clear Time (q_c+l1), s	3.8	56.6		3.3	2.2	27.1		17.6				
Green Ext Time (p_c), s	0.1	10.5		0.1	0.0	14.7		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			24.0									
HCM 6th LOS			С									

User approved pedestrian interval to be less than phase max green.

14: Honoapillan	ı mığı	iway	ακι	IINAIII	שווע	U							08/28/20.
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
ane Configurations	- 1	•	7		•	7	Ť	^	7	- 1	1	7	
Traffic Volume (veh/h)	25	95	30	430	135	310	60	560	450	300	570	35	
Future Volume (veh/h)	25	95	30	430	135	310	60	560	450	300	570	35	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac	ch	No			No			No			No		
Adj Sat Flow, veh/h/ln	2067	2067	2067	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	27	103	3	467	147	125	65	609	0	326	620	20	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	223	172	211	522	546	666	294	711		354	881	784	
Arrive On Green	0.02	0.08	0.08	0.23	0.29	0.29	0.04	0.38	0.00	0.13	0.47	0.47	
Sat Flow, veh/h	1968	2067	1751	1781	1870	1585	1781	1870	1585	1781	1870	1582	
Grp Volume(v), veh/h	27	103	3	467	147	125	65	609	0	326	620	20	
Grp Sat Flow(s), veh/h/li		2067	1751	1781	1870	1585	1781	1870	1585	1781	1870	1582	
Q Serve(q s), s	1.5	5.8	0.2	28.0	7.2	6.0	2.6	35.9	0.0	13.1	31.5	0.8	
Cycle Q Clear(q_c), s	1.5	5.8	0.2	28.0	7.2	6.0	2.6	35.9	0.0	13.1	31.5	0.8	
Prop In Lane	1.00	0.0	1.00	1.00	7.2	1.00	1.00	00.7	1.00	1.00	0110	1.00	
Lane Grp Cap(c), veh/h		172	211	522	546	666	294	711	1100	354	881	784	
V/C Ratio(X)	0.12	0.60	0.01	0.90	0.27	0.19	0.22	0.86		0.92	0.70	0.03	
Avail Cap(c_a), veh/h	634	448	444	522	546	666	540	951		437	951	844	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/vel		53.0	46.5	36.6	32.6	21.9	23.1	34.2	0.0	25.9	25.1	15.4	
Incr Delay (d2), s/veh	0.2	1.2	0.0	17.9	0.1	0.1	0.1	8.3	0.0	20.3	3.0	0.0	
Initial Q Delay(d3),s/vel		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),vel		3.1	0.1	14.9	3.4	2.3	1.1	17.5	0.0	7.2	14.2	0.3	
Unsig. Movement Delay			0.1		0.1	2.0		17.0	0.0	7.2		0.0	
LnGrp Delay(d),s/veh	48.6	54.3	46.5	54.5	32.7	21.9	23.2	42.4	0.0	46.1	28.1	15.5	
LnGrp LOS	D	D	D	D	C	С	C	D	0.0	D	C	В	
Approach Vol, veh/h		133			739			674	Α		966		
Approach Delay, s/veh		52.9			44.6			40.6	А		33.9		
Approach LOS		D.7			D.			D.0			. C		
Timer - Assigned Phs	1	2	3	4	5	,	7	8					
	20.1			4		6	7						
Phs Duration (G+Y+Rc)		51.6	33.0	15.0	9.4	62.5	8.0	40.0					
Change Period (Y+Rc),		6.0	5.0	5.0	5.0	6.0	5.0	5.0					
Max Green Setting (Gm		61.0	28.0	26.0	21.0	61.0	28.0	26.0					
Max Q Clear Time (g_c		37.9	30.0	7.8	4.6	33.5	3.5	9.2					
Green Ext Time (p_c), s	s 0.3	7.7	0.0	0.3	0.1	8.6	0.0	0.7					
ntersection Summary													
HCM 6th Ctrl Delay			39.9										
HCM 6th LOS			D										

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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Synchro 10 I	Rep

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		*	7		*	7		1	7	7	*	7
Traffic Volume (veh/h)	140	135	180	15	160	130	215	570	25	120	630	230
Future Volume (veh/h)	140	135	180	15	160	130	215	570	25	120	630	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.98		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approac	ch	No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	147	36	16	174	14	234	620	0	130	685	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	289	402	336	279	251	208	318	846		339	778	
Arrive On Green	0.10	0.21	0.21	0.02	0.13	0.13	0.10	0.45	0.00	0.06	0.42	0.00
Sat Flow, veh/h	1594	1870	1563	1781	1870	1550	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	152	147	36	16	174	14	234	620	0	130	685	0
Grp Sat Flow(s), veh/h/lr	n1594	1870	1563	1781	1870	1550	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.9	5.9	1.6	0.7	7.8	0.7	6.4	23.7	0.0	3.6	29.5	0.0
Cycle Q Clear(g_c), s	6.9	5.9	1.6	0.7	7.8	0.7	6.4	23.7	0.0	3.6	29.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	289	402	336	279	251	208	318	846		339	778	
V/C Ratio(X)	0.53	0.37	0.11	0.06	0.69	0.07	0.74	0.73		0.38	0.88	
Avail Cap(c_a), veh/h	314	706	590	450	685	568	631	878		717	878	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/vel	h 27.4	29.2	27.6	31.6	36.1	33.0	18.5	19.6	0.0	15.7	23.5	0.0
Incr Delay (d2), s/veh	0.6	0.2	0.1	0.0	1.3	0.1	1.3	3.9	0.0	0.3	10.8	0.0
Initial Q Delay(d3),s/veh	n 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),vel	h/ln2.6	2.6	0.6	0.3	3.6	0.3	2.4	10.2	0.0	1.3	14.1	0.0
Unsig. Movement Delay	y, s/veh											
LnGrp Delay(d),s/veh	27.9	29.4	27.6	31.7	37.4	33.1	19.8	23.5	0.0	16.0	34.3	0.0
LnGrp LOS	С	С	С	С	D	С	В	С		В	С	
Approach Vol, veh/h		335			204			854	Α		815	Α
Approach Delay, s/veh		28.5			36.6			22.5			31.4	
Approach LOS		С			D			С			С	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc)	1. \$0.5	45.5	6.6	24.8	13.6	42.4	13.7	17.7				
Change Period (Y+Rc),		6.0	5.0	* 6	5.0	6.0	5.0	6.0				
Max Green Setting (Gm		41.0	10.0	* 33	24.0	41.0	10.0	32.0				
Max Q Clear Time (g c		25.7	2.7	7.9	8.4	31.5	8.9	9.8				
Green Ext Time (p_c), s		6.1	0.0	0.6	0.3	4.9	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			28.0									
HCM 6th LOS			20.0 C									
501 200			0									

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Puunani Homestead 4:00 pm 06/12/2019 FY 2024 PM Austin, Tsutsumi, & Assoc.

HCM 6th Signalized Intersection Summary

15: Honoapiilani Hwy & Kehalani Pkwy

36.7

Int Delay, s/veh

8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ĵ.		7	↑	7		र्स	7		ન	7
Traffic Vol, veh/h	145	605	25	25	680	130	15	5	15	80	5	185
Future Vol, veh/h	145	605	25	25	680	130	15	5	15	80	5	185
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-		None			None	-	-	None	-	-	None
Storage Length	145	-	-	50	-	50	-	-	0	-	-	0
Veh in Median Storage	e,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	158	658	27	27	739	141	16	5	16	87	5	201

Major/Minor	Major1		1	Major2		Λ	/linor1			Minor2			
Conflicting Flow All	884	0	0	685	0	0	1955	1926	672	1795	1798	743	
Stage 1	-	-	-	-	-	-	988	988	-	797	797	-	
Stage 2	-	-	-	-	-	-	967	938	-	998	1001	-	
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-	
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318	
Pot Cap-1 Maneuver	765	-	-	908	-	-	48	67	456	~ 62	80	415	
Stage 1	-	-	-	-	-	-	297	325	-	380	399	-	
Stage 2	-	-	-	-	-	-	306	343		294	321	-	
Platoon blocked, %		-	-		-	-							
Mov Cap-1 Maneuver	762	-	-	908	-	-	19	51	456	~ 45	61	413	
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	51	-	~ 45	61	-	
Stage 1		-	-	-	-	-	236	258		300	385	-	
Stage 2	-	-	-	-	-	-	150	331	-	220	255	-	
Annroach	EB			W/D			NID			S.B.			

HCM Control Delay, s	2	0.3		238.5	222.6	
HCM LOS				F	F	
Minor Lane/Major Mvmt	NBLn1 NBLn2	EBL EI	BT EBR	WBL WB	T WBR SBLn1 SBLn2	
Capacity (veh/h)	23 456	762		908	46 413	

IVIII OI Lancivajoi IVIVIII	INDEITI	INDLIIZ	LDL	LDI	LDIN	VVDL	WDI	WDI	JULITI	JULIIZ	
Capacity (veh/h)	23	456	762	-	-	908	-	-	46	413	
HCM Lane V/C Ratio	0.945	0.036	0.207	-	-	0.03	-	-	2.009	0.487	
HCM Control Delay (s)	\$ 407.5	13.2	11	-	-	9.1	-	-\$	659.8	21.7	
HCM Lane LOS	F	В	В	-	-	Α	-	-	F	С	
HCM 95th %tile Q(veh)	2.8	0.1	0.8			0.1	-		9.5	2.6	

Notes				
Volume exceeds canacity	\$- Dalay avegade 300s	+ Computation Not Defined	*· All major volume in platoon	

Puunani Homestead 4:00 pm 06/12/2019 FY 2024 PM Austin, Tsutsumi, & Assoc.

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HCM 6th TWSC 17: Honoapiilani Highway/Honoapiilani Hwy & South Project Access

92 92 92 92 92 92

49 16 43 1071 978

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	7	†	1	7
Traffic Vol, veh/h	45	15	40	985	900	55
Future Vol, veh/h	45	15	40	985	900	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	200	-	-	200
Veh in Median Storage,	# 0	-	-	0	0	-
Grade %	0	-		0	0	

Major/Minor	Minor2		Major1	M	ajor2	
Conflicting Flow All	2135	978	1038	0	-	0
Stage 1	978	-	-	-	-	-
Stage 2	1157	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42		-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	54	304	670		-	-
Stage 1	364	-	-	-	-	-
Stage 2	299		-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	51	304	670	-		-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	341		-		-	-
Stage 2	299	-	-	-	-	-
Annroach	ED		ND		SB	
Approach	EB		NB			
HCM Control Delay, s			0.4		0	
HCM LOS	D					

Mineral and Maries Maries	NRI	NRT FRI n1	EDL-2	SBT	CDD	
Minor Lane/Major Mvmt	INBL	MRT ERFUT	FRFU7	SRI	SBR	
Capacity (veh/h)	670	- 169	304	-	-	
HCM Lane V/C Ratio	0.065	- 0.289	0.054	-	-	
HCM Control Delay (s)	10.7	- 34.8	17.5	-	-	
HCM Lane LOS	В	- D	С	-	-	
HCM 95th %tile Q(veh)	0.2	- 1.1	0.2	-	-	

Puunani Homestead 4:00 pm 06/12/2019 FY 2024 PM Austin, Tsutsumi, & Assoc.

Peak Hour Factor

Heavy Vehicles, % Mvmt Flow

18: Honoapiilani Highway/Honoapiilani Hwy & North Project Access

08/28/2020

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		↑	↑	7
Traffic Vol, veh/h	0	5	0	1030	950	20
Future Vol, veh/h	0	5	0	1030	950	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None		None
Storage Length	-	0	-	-	-	200
Veh in Median Storage	, # 0	-	-	0	0	-
Grade, %	0	-		0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	0	5	0	1120	1033	22

Major/Minor	Minor2	N	1ajor1	Ma	ijor2		
Conflicting Flow All	-	1033	-	0	-	0	 Ī
Stage 1	-		-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.22		-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-		-	-	-	
Follow-up Hdwy	-	3.318	-	-	-	-	
Pot Cap-1 Maneuver	0	282	0	-		-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %				-	-	-	
Mov Cap-1 Maneuver		282		-		-	
Mov Cap-2 Maneuver		-	-	-	-	-	
Stage 1	-	-		-		-	
Stage 2	-	-	-	-	-	-	

Minor Lane/Maior Mvmt	NRT FRI n1	SBT	SBR
minor Eurominajor mini	HDT EDEIT	001	ODIT
Capacity (veh/h)	- 282	-	-
HCM Lane V/C Ratio	- 0.019	-	-
HCM Control Delay (s)	- 18	-	-
HCM Lane LOS	- C	-	-
HCM 95th %tile O(veh)	- 01		

Puunani Homestead 4:00 pm 06/12/2019 FY 2024 PM Austin, Tsutsumi, & Assoc.

HCM Control Delay, s 18 HCM LOS C

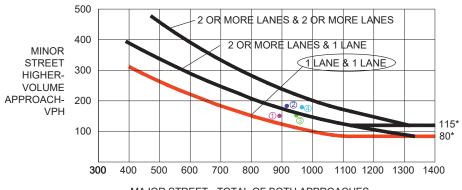
> Synchro 10 Report Page 18



APPENDIX D

TRAFFIC SIGNAL WARRANTS

Warrant 2, Four-Hour Vehicular Volume



MAJOR STREET - TOTAL OF BOTH APPROACHES - VEHICLES PER HOUR (VPH)

*Note

 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane. ① (1:15 PM to 2:15 PM), (885, 150) ② (2:15 PM to 3:15 PM), (917,193) ③ (3:15 PM to 4:15 PM), (946, 153) ④ (4:15 PM to 5:15 PM), (965, 187)

FIGURE D1

Signal Warrant Existing Conditions
Waiale Rd - Kaohu St

PUUNANI HOMESTEAD PROJECT TIAR



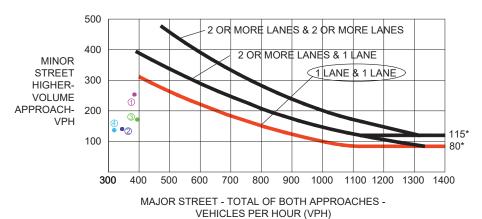
Warrant 2, Four-Hour Vehicular Volume



VEHICLES PER HOUR (VPH)

 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane. ① (1:30 PM to 2:30 PM), (1301, 84) ② (3:00 PM to 4:00 PM), (1361, 81) ③ (4:00 PM to 5:00 PM), (1552, 92) ④ (5:00 PM to 6:00 PM), (1293, 82)

Warrant 2, Four-Hour Vehicular Volume



Noto

 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane. ① (7:00 AM to 8:00 AM), (388, 251) ② (3:00 PM to 4:00 PM), (337, 144) ③ (4:00 PM to 5:00 PM), (396, 175) ④ (5:00 PM to 6:00 PM), (314, 135)

FIGURE D3

Signal Warrant Existing Conditions Waiale Rd - Waiko Rd

PUUNANI HOMESTEAD PROJECT TIAR



Warrant 2, Four-Hour Vehicular Volume

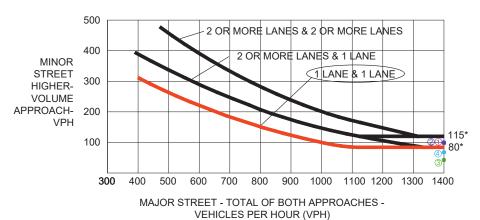


VEHICLES PER HOUR (VPH)

*Note

 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane. ① (6:30 AM to 7:30 AM), (412, 450) ② (7:30 AM to 8:30 AM), (463, 339) ③ (3:00 PM to 4:00 PM), (572, 262) ④ (4:00 PM to 5:00 PM), (670, 320)

Warrant 2, Four-Hour Vehicular Volume



*Note

 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane. ① (6:30 AM to 7:30 AM), (1610, 95) ② (7:30 AM to 8:30 AM), (1737, 100) ③ (3:00 PM to 4:00 PM), (1867, 44) ④ (4:00 PM to 5:00 PM), (2030, 60)

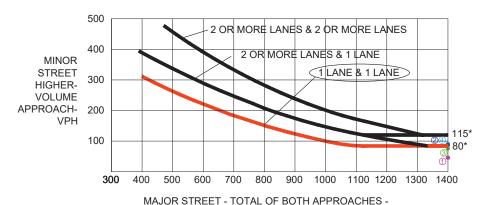
FIGURE D5

Signal Warrant Future Year 2024 Conditions Waiale Rd - Kaupo Street

PUUNANI HOMESTEAD PROJECT TIAR



Warrant 2, Four-Hour Vehicular Volume



VEHICLES PER HOUR (VPH)

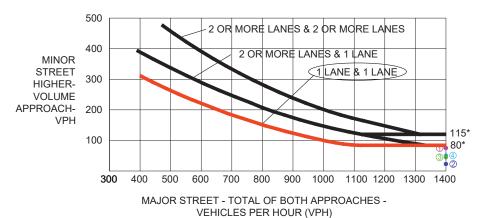
*Note

 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane. ① (7:00 AM to 8:00 AM), (1515, 40) ② (1:45 PM to 2:45 PM), (1405, 82) ③ (2:45 PM to 3:45 PM), (1445, 73) ④ (4:00 PM to 5:00 PM), (1610, 85)

PUUNANI HOMESTEAD PROJECT TASK 1 - TIAR



Warrant 2, Four-Hour Vehicular Volume



*Note

 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane. ① (6:45 AM to 7:45 AM), (1931, 72) ② (7:45 AM to 8:45 AM), (1721, 20) ③ (3:00 PM to 4:00 PM), (1924, 37) ④ (4:00 PM to 5:00 PM), (1980, 45)

FIGURE D7

Signal Warrant Future Year 2024 Conditions Honoapiilani Hwy - South Project Access PRELIMINARY ENGINEERING REPORT **APPENDIX**

Established 1969

Preliminary Engineering Report

PU`UNANI HOMESTEAD

Wailuku, Maui, Hawaii

TMK: (2) 3-5-002: 002 (por.) TMK: (2) 3-5-001: 064 (por.)

Prepared For:

State of Hawaii Department of Hawaiian Home Lands 91-5420 Kapolei Parkway Kapolei, HI 96707



WARREN S. UNEMORI ENGINEERING, INC.

Civil and Structural Engineers – Land Surveyors Wells Street Professional Center – Suite 403 2145 Wells Street Wailuku, Maui, Hawaii 96793

August 14, 2020

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APPENDIX B - Potable Water Calculations

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APPENDIX C - Wastewater Discharge Calculation

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Preliminary Engineering Report for Pu'unani Homestead

1. INTRODUCTION

1.1 Purpose

This report describes the existing infrastructure in the vicinity of the Pu'unani Homestead project and identifies the key improvements needed to implement the proposed development plan.

1.2 Project Location

The 47.4-acre Pu'unani Homestead subdivision is located in Wailuku, Maui, on the western (mauka) side of Honoapiilani Highway adjacent to the existing Waiolani Mauka subdivision. The project site is a portion of an undeveloped 60-acre land parcel at Tax Map Key 3-5-002: 002. Offsite sewerline work described in Section 5.3 of this report will affect a portion of Tax Map Key 3-5-001: 064.

1.3 Project Description

Pu'unani Homestead will be an urban residential subdivision development by the Department of Hawaiian Home Lands (DHHL) consisting of 161 single-family houselots, with each lot having an area of approximately 7,500 square feet.

¹ The 47.382 acre project site is Lot 1 of the *Pu'unani Ag Subdivision* application which is currently being processed by the Maui County Department of Public Works as DSA Subdivision No. 3.2405.

2. ROADWAY IMPROVEMENTS

2.1 Existing Conditions

Honoapiilani Highway is the principal public roadway providing vehicular access to the undeveloped project site.² Old Waikapu Road, which abuts the project site along its north and west sides, is a substandard County right-of-way that has fallen into disrepair and been abandoned as a public thoroughfare in favor of other safer and more modern streets serving the area.

2.2 Proposed Improvements

A network of streets will be constructed within the Pu'unani Homestead to provide access to all new houselots. These internal streets will connect to Honoapiilani Highway at two locations: a new full-movement "T" intersection will be constructed in line with the Kokololio Street right-of-way to serve as the main subdivision entrance³; a second intersection will be established approximately 1,500 feet north of the first with vehicle movements restricted to right turns only. (See Figure 2-1)

² Honoapiilani Highway a two-lane highway owned by the State of Hawaii and maintained by the Hawaii State Department of Transportation's Highways Division.

³ A 60 ft. wide right-of-way for Kokololio Street has been established between Waiale Road and Honoapiilani Highway and improved along most of its length. However, the 280 ft. long segment between Honoapiilani Highway and Kamahana'o Street, which forms the western approach to the Honoapiilani Highway / Kokololio Street intersection, remains unimproved.

The new internal streets will have 44- or 60-foot wide rights-of-way and are expected to conform to current Maui County subdivision standards in all but two respects:

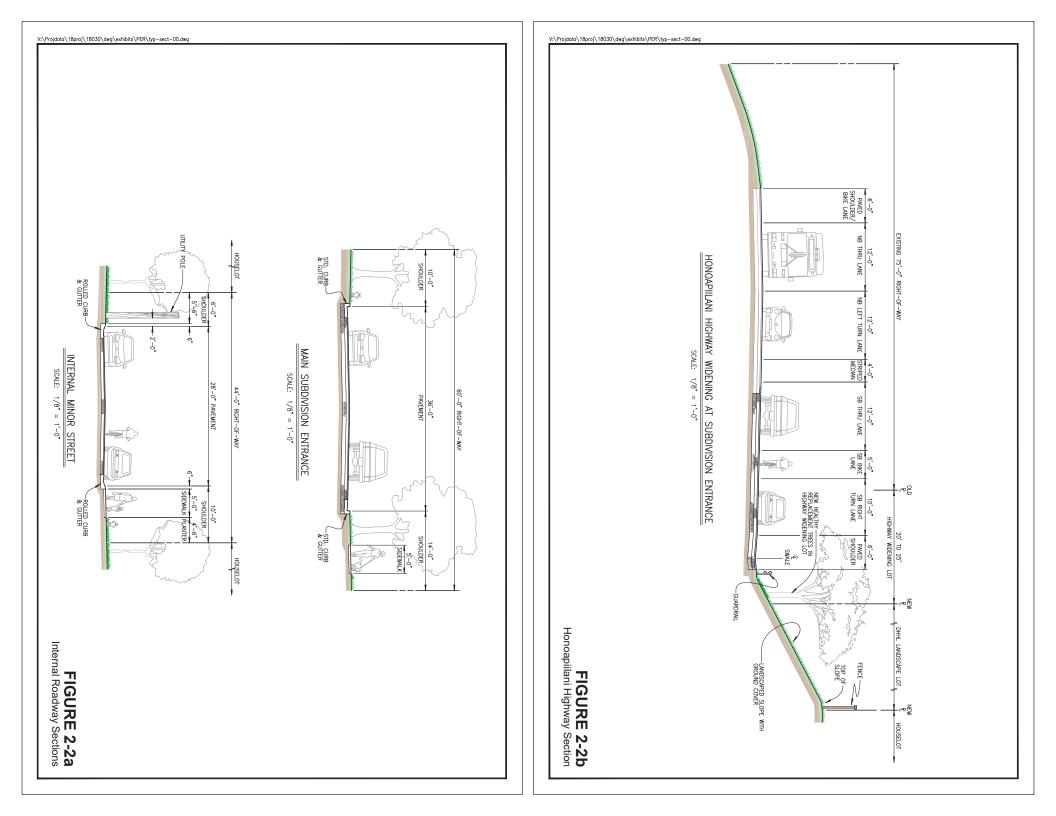
1) sidewalks will be provided on only one side of the street instead of both sides, and

2) electrical power and telephone lines will be installed overhead instead of underground.

The existing 75-foot wide right-of-way at Honoapiilani Highway will be widened by up to 25 feet to accommodate turning lanes and improve sight distance at the new intersections. (See Figures 2-2a and 2-2b)

2-2

V:\Projdata\18proj\18030\dwg\exhibits\PER\Roadway-00.dwg KOKOLOLIO STREET I 0 NOAPIILA NEW FULL-MOVEMENT "T" INTERSECTION ALIGNED WITH EXISTING KOKOLOLIO STREET RIGHT-OF-WAY 1,500 FT. PU'UNANI HOMESTEAD HIGHWAY WIDENING
SUBDIVISION ENTRANCE STREET, 60' RIGHT-OF-WAY
MINOR STREET, 44' RIGHT-OF-WAY -Existing 75 ft. Right-of-Way NEW RESTRICTED-MOVEMENT INTERSECTION (RIGHT-TURNS ONLY) -N A KUIKAH DRIVE FIGURE 2-1
Roadway Plan



3. DRAINAGE

3.1 Existing Conditions

3.1.1 Topography and Soils

The 47.4-acre project site was once used for cultivating sugar cane and pineapple; however, the land currently lies fallow and is no longer in productive agricultural use.

The existing terrain slopes steadily downward across the site from west to east at a grade of 7 to 8 percent. Elevation ranges from 450 feet at the southwestern side of the site, to 380 feet at its northeast corner. An existing drainage gully runs along the site's northern border, and an irrigation ditch with maintenance access road bounds its western side.

The USDA Natural Resources Conservation Service identifies Iao Clay (IcB) and Iao Silty Clay (IbB) as the predominant soil types found on the project site. (See Figure 3-1) These Iao clay soils are reported to produce a medium amount of runoff and represent a slight to moderate erosion hazard.⁴

3.1.2 Flood and Tsunami Zone

FEMA's Flood Insurance Rate Map for Maui County locates the project site within Zone X, outside of both the 500-year floodplain and tsunami zone.⁵

Appendix A-1 contains a current DLNR Flood Hazard Assessment Report for the parcel.

3.1.3 Existing Drainage Condition

Surface runoff generated by the undeveloped 47.4-acre project site sheet flows eastward toward Honoapiilani Highway, where it concentrates along the road shoulder and flows northward along the highway into the existing drainage gully. The runoff then passes through a drainage culvert under Honoapiilani Highway on its way to the Waiale irrigation reservoir⁶ where it is impounded. (See Figure 3-2) The 10-year 1-hour peak flow rate generated by the project site in its current, undeveloped state is estimated to be 41 cubic feet per second (cfs).

⁴ United States Department of Agriculture, Soil Conservation Service, *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, August 1972, pp. 46-47, Maps 99-100.

⁵ U.S. Department of Homeland Security, Federal Emergency Management Agency, Flood Insurance Rate Map, Maui County, Hawaii, Community-Panel Numbers 150003 0391E, September 25, 2009, and 150003 0393F, November 04, 2015.

⁶ TMK 3-8-046: 020, owned by Mahi Pono entity MP CPR LLC.

⁷ Supporting calculations may be found in Appendix A-2.

3.2 Drainage Plan

3.2.1 Projected Increase in Runoff

Pu'unani Homestead is expected to produce a peak runoff volume of 109 cfs from a 10-year 1-hour storm once it has been fully developed. This represents a net increase of approximately 68 cfs attributable to development of the project area. A comparative summary of pre-development and post-development runoff is presented in Table 3-1 below:

TABLE 3-1 Increase in Runoff Attributable to Development (10 yr. - 1 hr. storm)

Pre-Development Flow	Post-Development Flow Before Mitigation	Net Change
41 cfs	109 cfs	+68 cfs

3.2.2 Proposed Improvements

Peak Flow Mitigation

Surface runoff generated by the roads and homes within the Pu'unani

Homestead will be directed to drain inlets located along the internal streets. The
collected runoff will then be conveyed by underground drainage pipes to a
stormwater detention basin located at the northeast corner of the homestead which,
in turn, will discharge into the existing drainage gully on the north side of the
project site. (See Figure 3-3) This detention basin, whose capacity will be at

least 4.2 acre-feet ⁹, will fully mitigate the expected increase in peak flow by limiting the downstream release of stormwater to a flow rate which does not exceed pre-development levels in compliance with Maui County storm drainage standards.¹⁰

Water Quality Measures

Maui County requires the implementation of water quality control measures to reduce water pollution from stormwater runoff. A "detention based" treatment approach will be employed by the Pu'unani Homestead to mitigate stormwater-related water pollution associated with the developed site. This will involve providing additional storage volume in the detention basin to facilitate sediment removal in addition to peak flow mitigation. 12

⁸ See Appendix A-3 for supporting calculations.

⁹ The drainage basin will be sized to route the 50-year 1-hour design storm with a downstream release not exceeding the 10-year 1-hour pre-development peak discharge of 41 cfs. Detention basin sizing calculations can be found in Appendix A-4.

¹⁰ County of Maui, Department of Public Works and Waste Management, "Rules for the Design of Storm Drainage Facilities in the County of Maui," Title MC-15, Chapter 4, November 2, 1995.

¹¹ County of Maui, Department of Public Works, "Rules for the Design of Storm Water Treatment Best Management Practices," Title MC-15, Chapter 111, November 15, 2012.

 $^{^{12}}$ 1.2 acre-feet of storage capacity will be provided below the basin outlet to provide the volume for sedimentation required by County storm water quality rules. The calculation of this required volume can be found in Appendix A-4.1.

3.2.3 Post-Development Runoff After Application of Mitigation Measures

The proposed stormwater detention basin will fully mitigate the increase in peak flow attributable to development while simultaneously providing water pollution control. Table 3-2 summarizes the storage capacity within the stormwater detention basin needed to achieve both of these objectives.

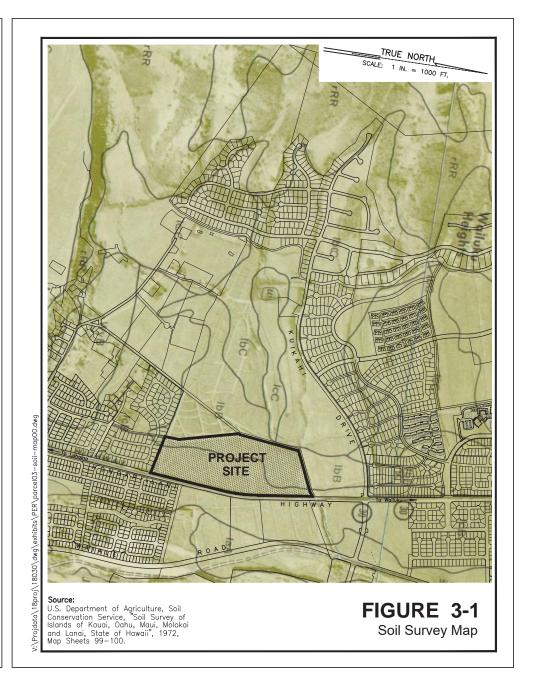
TABLE 3-2 Stormwater Detention Basin Capacity (Basin Sized for 50 yr. - 1 hr. storm)

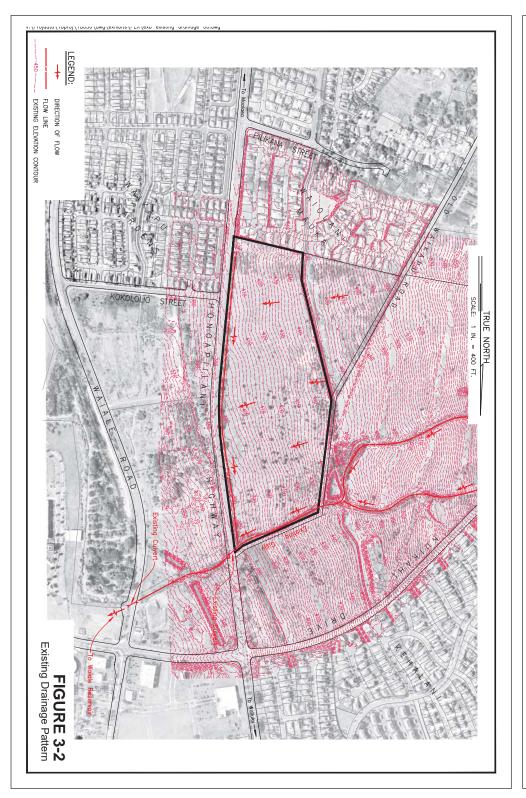
Storage Capacity	Additional Storage	Total Storage
Required to Meet	Capacity Required to	Capacity to be
Water Quality Criteria	Mitigate Peak Flow	Provided
1.2 Acft.	3.0 Acft.	4.2 Acft.

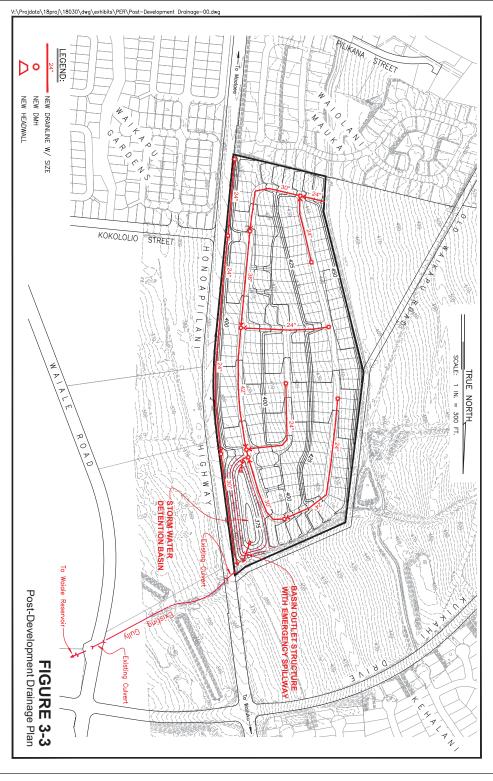
Once the detention basin is in place, the hydrologic impact on downstream properties resulting from the proposed development of Pu'unani Homestead will be fully mitigated, as summarized in Table 3-3.

TABLE 3-3
Result of Onsite Peak Runoff Mitigation (10 yr. - 1 hr. storm)

Pre-Development Peak Flow	Post-Development Peak Flow Before Mitigation	Post-Development Peak Flow After Mitigation	Net Change in Peak Runoff
41 cfs	109 cfs	41 cfs	0 cfs







4. WATER SYSTEM

4.1 Existing Infrastructure

The Pu'unani Homestead is located within the Maui County Department of Water Supply's Central Maui water system. Water for Pu'unani Homestead will be supplied from the Dept. of Water Supply's distribution system in Waikapu, which uses a groundwater well as its source and distributes water from the existing 1.5 million gallon (MG) capacity storage tank located along Kuikahi Drive at elevation 670 feet.

4.2 **Projected Demand**

Average daily water consumption by the 161 single-family homes comprising the Pu'unani Homestead is projected to be approximately 99,490 gallons per day (gpd). 13

4.3 Proposed Improvements

Water Source

No water source improvements are proposed with the Pu'unani Homestead project. The subdivision will be processed under the water source provisions for affordable housing projects present in the Dept. of Water Supply's Water Service Rules¹⁴ and Maui County Code¹⁵.

An 8-inch water main will be extended into the subdivision from the Dept. of Water Supply's existing 12-inch distribution main along Old Waikapu Road. A network of 8-inch distribution mains within the subdivision on which service laterals and fire hydrants have been installed will then provide water service and fire protection to the individual houselots in accordance with Dept. of Water Supply standards. ¹⁶ (See Figure 4-1)

Reservoir Storage Capacity

The storage capacity needed by Pu'unani Homestead under Maui County

Dept. of Water Supply standards is 149,235 gallons.¹⁷ DHHL is working with the

Dept. of Water Supply to determine whether the payment of fees or improvements

will be needed to address the storage requirements for the project.

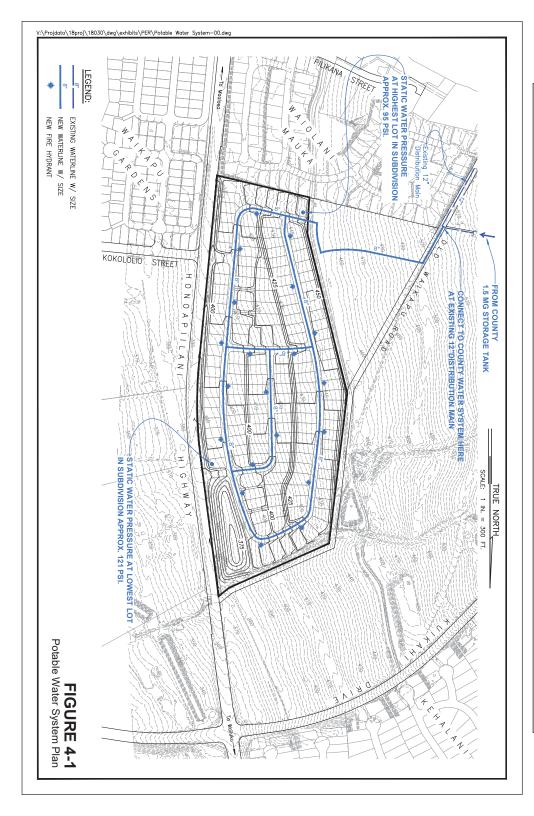
¹³ Water demand calculations may be found in Appendix B-1.

¹⁴ Maui County Administrative Rules, Section 16-201-03(g)(1).

¹⁵ Maui County Code, Section 14.12.030.F.

¹⁶ Water system will provide a static water pressures ranging from 95 psi to 121 psi and deliver a fire flow of 1,000 gpm for at least 2 hours duration (120,000 gallons) from the 1.5 MG storage tank. [Ref. Maui County Dept. of Water Supply, Water System Standards, 2002, pp.111-4 to 111-6.]

¹⁷ Water storage calculations may be found in Appendix B-2.



5. WASTEWATER SYSTEM

5.1 Existing Infrastructure

The land parcel on which the Pu'unani Homestead will be developed has no sewer service currently available to it; however, the area in which it is located is served by the County of Maui's sewerage system, which collects wastewater and conveys it to the Kahului Wastewater Reclamation Facility (KWWRF) for treatment and disposal.

The 12- and 18-inch diameter County-owned gravity sewer main located near Waiale Road which collects wastewater from the Waikapu and Kehalani residential areas is the closest existing sewerline to the project site. This trunk sewer main conveys wastewater toward Lower Main Street on its way to the KWWRF.

5.2 Projected Demand

The Pu'unani Homestead is expected to generate 56,350 gallons of was tewater per day. 18

5.3 Proposed Improvements

Collection System

A branching network of new gravity sewer pipes will be installed within the internal streets to collect wastewater from the houselots and convey it toward the low end of the homestead near its northeast corner at Honoapiilani Highway. A new 8-inch diameter, 1,700 ft. long gravity sewer main will convey the

¹⁸ Wastewater demand calculations can be found in Appendix C.

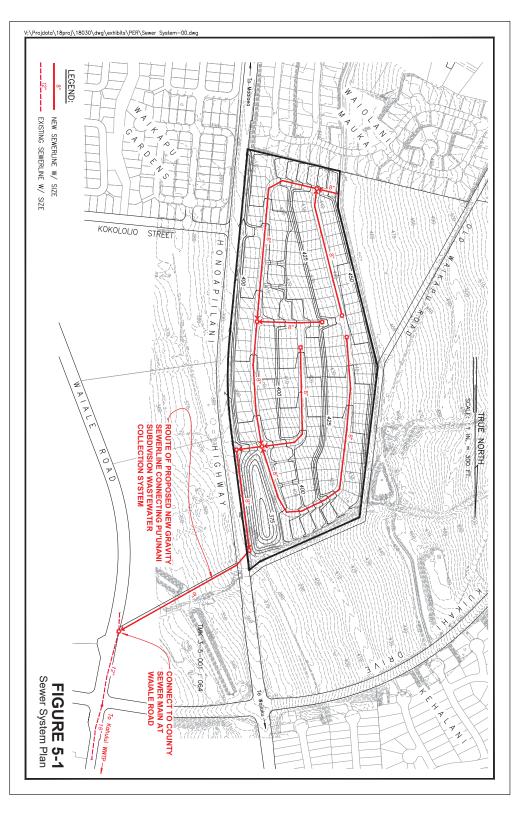
homestead's wastewater northward along Honoapiilani Highway from there, then eastward under Honoapiilani Highway and across TMK 3-5-001: 064¹⁹ to a connection point at Waiale Road where the County's sewer system has sufficient capacity to accept the wastewater generated by the project. (See Figure 5-1)

A County sewerline project is currently underway to relieve a known capacity bottleneck on Lower Main Street, downstream of Pu'unani Homestead.

The sewerline project's November 2021 scheduled completion date is compatible with planned occupancy of the first homes in Pu'unani Homestead.

Treatment Plant Capacity

Average daily wastewater flows received at the County's Kahului Wastewater Reclamation Facility currently measure about 5.6 million gallons per day (MGD), or roughly 71 percent of the plant's 7.9 MGD capacity. KWWRF's remaining treatment capacity appears ample to accommodate the 0.06 MGD of wastewater that Pu'unani Homestead is expected to generate at build-out; therefore, a plant capacity upgrade is not necessary to fully occupy the subdivision.



¹⁹ Pu'unani Homestead has already secured the sewerline easement rights across TMK 3-5-001: 064 necessary to complete the described connection to the County sewer system.

6. POWER AND TELECOMMUNICATIONS

6.1 Existing Infrastructure

Maui Electric Company (MECo), Hawaiian Telcom and Spectrum are the regulated Public Utilities offering electrical power, telephone and cable television services in the area where the Pu'unani Homestead subdivision is located. All three providers have existing overhead lines along Honoapiilani Highway, both on and across the street from the project site. Sandwich Isle Communications, which provides telephone and internet service to DHHL projects, has an underground fiber optic trunk line located along Honoapiilani Highway.²⁰

6.2 **Project Requirements**

Electrical power, telephone and cable television distribution systems will be extended into the project from the existing overhead utility lines along Honoapiilani Highway to provide those services to each houselot in the subdivision. DHHL has opted to install an overhead distribution system to be consistent with other nearby DHHL subdivisions. (See Figure 6-1)

6.2.1 Maui Electric Company

Pu'unani Homestead is expected to add approximately 805 kW of load to Maui Electric Company's infrastructure. MECo will install an overhead power

²⁰ Sandwich Isle Communications had previously been the exclusive provider for Department of Hawaiian Homelands' projects; however, as of 2018, they no longer have an exclusive right to service DHHL projects.

distribution system along the subdivision's streets that will include poles, anchors, lines, pole-mounted transformers and street lights complying with its residential service requirements. Easements may be required to cover any new poles, anchors and overhead equipment that must be located in private property in order to provide service. Individual customers will be responsible for their own service connection and monthly fees.

6.2.2 Hawaiian Telcom

Hawaiian Telcom is the closest service provider in the area capable of providing regulated telephone and DSL service to the project. Its existing telephone plant serving the area is not sufficient to serve this project; therefore, a fiber distribution hub (FDH) and fiber optic equipment will be installed to provide the needed telecommunication services.²¹ The FDH equipment will function as a hub for the distribution of all Hawaiian Telcom telecommunication services within the Pu'unani Homestead development.

Hawaiian Telcom's route of entry into Pu'unani Homestead will be from Honoapiilani Highway. The final configuration of the telephone system will be dependent upon the location selected for the FDH, which will be specified by Hawaiian Telcom's planning department at the time detailed construction plans are prepared.

²¹ The fiber distribution hub will consist of a metal equipment cabinet approximately 36 inches high x 30 inches wide x 18 inches deep, sitting atop a 4 ft. x 4 ft. concrete slab within an 8 ft. x 8 ft. easement.

Overhead telephone lines will be installed at Hawaiian Telcom's expense; supporting structures for the overhead lines will be provided by DHHL; and individual customers will be responsible for their own service connection and monthly fees.

6.2.3 Spectrum

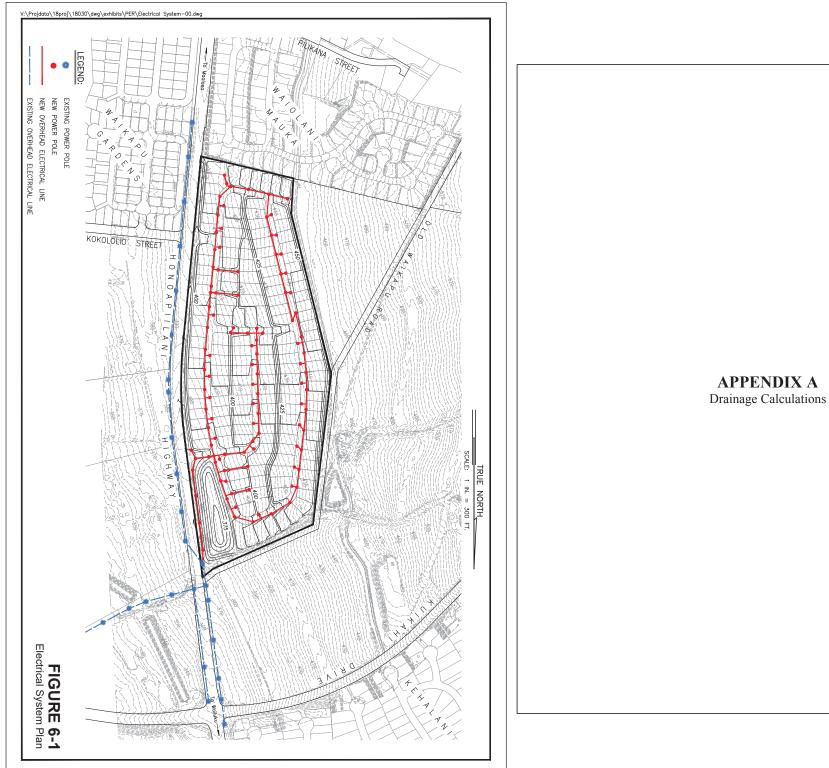
Spectrum is the regulated cable television provider on Maui, but also can provide telephone and internet connection. Spectrum will need to extend their overhead facilities across Honoapiilani Highway in order to provide service to the project site.

Spectrum will install the needed cables and power supply equipment at its expense; DHHL will be responsible for providing any other improvements required for system installation such as riser ducts, boxes, at least one power supply pad, easements and maintenance vehicle access; and individual customers will be responsible for their own service connection and monthly fees.

6.2.4 Sandwich Isle Communications

Sandwich Isle Communications has an underground fiber optic trunk line located along Honoapiilani Highway and will be offered the opportunity to provide telephone and internet service to the project on a competitive basis with Spectrum and Hawaiian Telcom.

SIC will design and construct an underground distribution system extending into the project from its trunk line on Honoapiilani Highway at its expense, and individual customers will be responsible for their own monthly fees.











Flood Hazard Assessment Report

Property Information

Notes:

TMK NO: (2) 3-5-002:002 WATERSHED:

PARCEL ADDRESS: HONOAPIILANI HWY WAILUKU, HI 96793

Flood Hazard Information

FIRM INDEX DATE: NOVEMBER 04, 2015 NONE

LETTER OF MAP CHANGE(S):

FEMA FIRM PANEL - EFFECTIVE DATE: 1500030391E - SEPTEMBER 25, 2009 1500030393F - NOVEMBER 04, 2015

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/



Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DUNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for fload insurance rating. Contact your county floadplain manager for fload zone determinations to be used for compliance with local floadplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

Zone A: No BFE determined.

Zone AE: BFE determined.

Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.

Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.

Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined. Zone VE: Coastal flood zone with velocity hazard (wave action);

Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

Zone X: Areas determined to be outside the 0.2% annual chance

OTHER FLOOD AREAS

Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.





Warren S. Unemori Engineering, Inc. Civil & Structural Engineers · Land Surveyors Wells Street Professional Center 2145 Wells Street, Suite 403 Wailuku, Maui, HI 96793

HYDROLOGIC CALCULATIONS - Surface Runoff

Project Name: Pu'unani Homestead Project No.: 18030 Engineer: Derek T. Ono

Date: 7/16/2018

Area

Description: Pre-development onsite surface runoff

Area (A): 48.3 acres

Runoff Coefficient

Infiltration:	[Medium]	\rightarrow	0.07
Relief:	[Rolling]	\rightarrow	0.03
Vegetal Cover:	[Good]	\rightarrow	0.03
Development:	[Agricultural]	\rightarrow	0.15
C	Composite Runoff	Coefficient:	0.28

Time of Concentration

Runoff Length: 970 ft.
Start Elevation: 450 ft. M.S.L.
End Elevation: 390 ft. M.S.L.
Average Slope: 6.2 %

Time of Concentration (T_c): 25 minutes

Intensity

Project Location: Wailuku, Maui, Hawaii

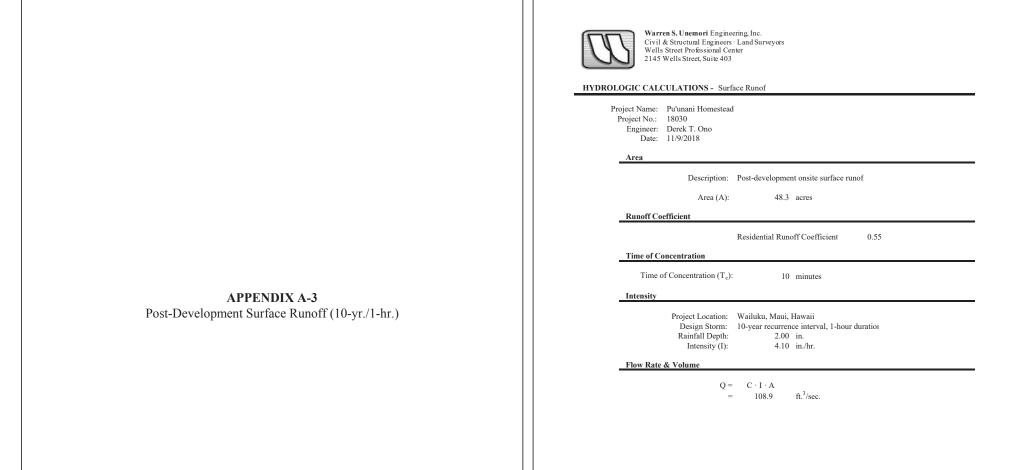
Design Storm: 10-year recurrence interval, 1-hour duration

Rainfall Depth: 2.00 in. Intensity (I): 3.05 in./hr.

Flow Rate

 $Q = C \cdot I \cdot A$

= 41.2 ft.³/sec.



 $V:\label{lem:projlog2} V:\label{lem:projlog2} V:\label{lem:projlog$

APPENDIX A-4 Detention Basin Sizing Calculations (50-yr./1-hr.)	APPENDIX A-4.1 Storage Capacity Needed to Meet Water Quality Requirements
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Warren S. Unemori Engineering, Inc. Civil & Structural Engineers · Land Surveyors Wells Street Professional Center 2145 Wells Street, Suite 403

HYDROLOGIC CALCULATIONS - Storm Water Treatment

Project Name: Pu'unani Homestead

Project No.: 18030 Engineer: Derek T. Ono Date: 11/9/2018

To determine the required basin volume to meet the County of Maui, Purpose:

Department of Public Works' "Rules for the Design of Storm Water

Treatment Best Management Practices"

The required design volume for detention based control is computed by

the MCC §15-111-5.a.1.C formula:

 $WQDV = C \cdot 1" \cdot A \cdot 3630$

where, WQDV = water quality design volume in cubic feet

C = EPA volumetric runoff coefficien A = gross area of the site in acres = 48.3 ac.

1" = design storm for detention based water quality system

3630 = conversion factor

The EPA volumetric runoff coefficient, C, calculated from the formula given is MCC §15-111-5.a.1.A is:

$$C = 0.05 + (0.009) \cdot (IMP)$$

where, IMP = percentage of impervious area = (impervious area) / (gross area) · 100 $= (13 \text{ ac.}) / (48.3 \text{ ac.}) \cdot 100$ = 27

Since IMP = 27, the value of C is:

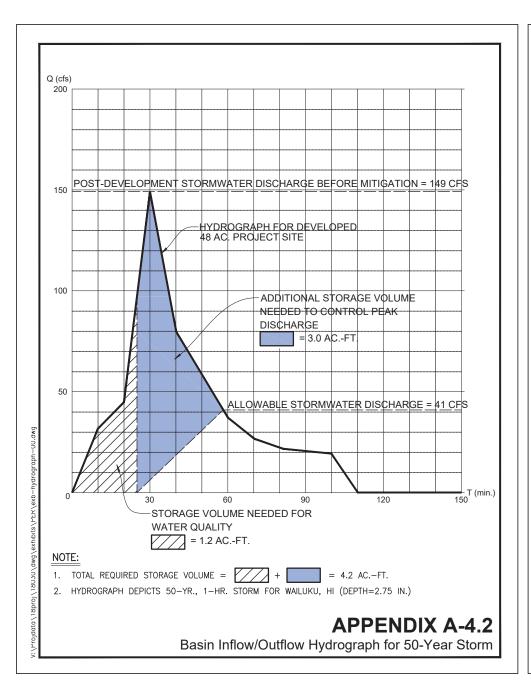
$$C = 0.05 + (0.009) \cdot (27)$$
$$= 0.29$$

Compute the required design volume for a 1" storm with C = 0.29:

$$\begin{aligned} WQDV &= C \cdot 1" \cdot A \cdot 3630 \\ &= 0.29 \cdot 1" \cdot 48.3 \cdot 3630 \\ &= 50,845 \text{ ft}^3 \\ &= 1.2 \text{ Ac.-ft.} \end{aligned}$$

APPENDIX A-4.2 Basin Inflow/Outflow Hydrograph

V:\Projdata\19proj\19028\Reports\PER\Calcs\dto-water quality volume rev2.xlsx





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HYDROLOGIC CALCULATIONS - Surface Runoff

Project Name: Pu'unani Homestead Project No.: 18030 Engineer: Derek T. Ono Date: 7/16/2018

Area

Description: Pre-development onsite surface runoff

Area (A): 48.3 acres

Runoff Coefficient

 $\begin{array}{cccc} & \text{Infiltration:} & [\text{Medium}] & \rightarrow & 0.07 \\ & & \text{Relief:} & [\text{Rolling}] & \rightarrow & 0.03 \\ & \text{Vegetal Cover:} & [\text{Good}] & \rightarrow & 0.03 \\ & & \text{Development:} & [\text{Agricultural}] & \rightarrow & 0.15 \\ & & & \text{Composite Runoff Coefficient:} & 0.28 \\ \hline \end{array}$

Time of Concentration

Runoff Length: 970 ft.
Start Elevation: 450 ft. M.S.L.
End Elevation: 390 ft. M.S.L.
Average Slope: 6.2 %

Time of Concentration (T_c): 25 minutes

Intensity

Project Location: Wailuku, Maui, Hawaii

Design Storm: 50-year recurrence interval, 1-hour duration

Rainfall Depth: 2.75 in. Intensity (I): 4.18 in./hr.

Flow Rate

 $Q = \quad C \cdot I \cdot A$

56.5 ft.3/sec.



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HYDROLOGIC CALCULATIONS - Surface Runoff

Project Name: Pu'unani Homestead

Project No.: 18030

Engineer: Derek T. Ono Date: 11/9/2018

Area

Description: Post-development onsite surface runof

Area (A): 48.3 acres

Runoff Coefficient

Residential Runoff Coefficient 0.55

Time of Concentration

Time of Concentration (T_c): 10 minutes

Intensity

Project Location: Wailuku, Maui, Hawaii

Design Storm: 50-year recurrence interval, 1-hour duration

Rainfall Depth: 2.75 in.
Intensity (I): 5.60 in./hr.

Flow Rate & Volume

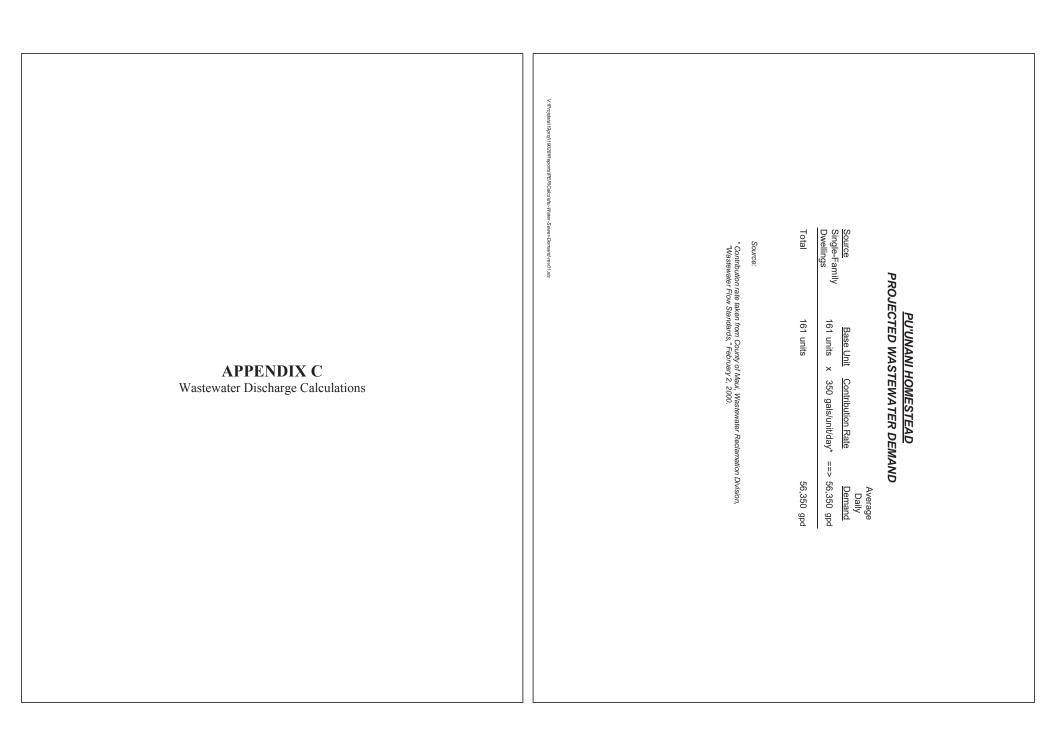
 $Q = C \cdot I \cdot A$ = 148.8 ft. \(^3/\)sec.

APPENDIX B

Potable Water Calculations

Land Use Total Irrigated Open Space Single-Family Houselots Sources: ² Max. daily demand factor taken from <u>Water System Standards</u>, Department of Water Supply, County of Mau, State of Hawaii, 2002, Table 100-20, p. 111-5. ¹ Rate taken from Water System Standards, Department of Water Supply, County of Maui, State of Hawaii, 2002, Table 100-18, p. 111-3 <u>PU'UNANI HOMESTEAD</u> ESTIMATE OF POTABLE WATER DEMAND 161 D.U. x 1.7 Ac. × 1,700 gals/Ac Average Daily Consumption Rate¹ 600 gals/D.U. ==> **APPENDIX B-1** Potable Water Demand Calculation 96,600 gpd × 1.5 ==> 144,900 gpd 99,490 gpd 2,890 gpd Average Daily Demand x 1.5 => Peaking Factor² 149,235 gpd Maximum Daily Demand 4,335 gpd

APPENDIX B-2 Potable Water Storage Capacity Calculation	Landscape Irrigation 2,890 gpd x 1.5* => 14. Total 5ource: *Max. daily demand factor taken from Water System Standards, Department of Water Supply, County of Maui, State of Hawaii, 2002, Table 100-20, p. 111-5.	PU'UNANI HOMESTEAD NEEDED POTABLE WATER STORAGE CAPACITY Average Daily Demand
Totable Water Storage Capacity Calculation	96,600 gpd x 1.5* => 14,900 gal. 2,890 gpd x 1.5* => 4,335 gal. 99,490 gpd 149,235 gal. 99,490 gpd 149,235 gal.	MESTEAD R STORAGE CAPACITY Average Daily Capacity Required Capacity



ANALYSIS OF THE PROJECT'S COMPLIANCE WITH PROVISIONS OF THE HAWAI'I STATE PLAN

APPENDIX



APPENDIX "M" HAWAI'I STATE PLAN ASSESSMENT OF PROJECT APPLICABILITY TO GOALS, OBJECTIVES, AND POLICIES

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies			
	А	IA	NA
HRS 226-1: Findings and Purpose			
HRS 226-2: Definitions			
HRS 226-3: Overall Theme			
 HRS 226-4: State Goals. In order to guarantee, for the present and future generations, thos of choice and mobility that insure that individuals and groups may approach their desired le reliance and self determination, it shall be the goal of the State to achieve: (1) A strong, viable economy, characterized by stability, diversity, and growth, that en fulfillment of the needs and expectations of Hawaii's present and future generations. (2) A desired physical environment, characterized by beauty, cleanliness, quiet as systems, and uniqueness, that enhances the mental and physical well-being of the generations. (3) Physical, social, and economic well-being, for individuals and families in Hawaii, that sense of community responsibility, of caring, and of participation in community life. 	able able ople nou	s of s es th natu e. rishe	e ural
Analysis: The proposed project provides additional homestead opportunities for beneficiaries in an area that is close to the government, business, and commerciated Wailuku and Kahului.			
Chapter 226-5 Objective and Policies for Population			
Objective: It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic and social objectives contained in this chapter.		✓	
Policies:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.		✓	
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.		✓	
(3) Promote increased opportunities for Hawaii's people to pursue their socio- economic aspirations throughout the islands.		✓	
(4) Encourage research activities and public awareness programs to foster an understanding of Hawaii's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawaii's population.			✓
(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.			√
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			✓
(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.		✓	
Analysis: The proposed project indirectly supports the objectives and pol population as it will be implemented in a developed area in Central Maui, in close p to existing government, business, and commercial destinations at Wailuku and Kahi providing employment opportunities for residents of the project.	rox	cimit	y

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Chapter 226-6 Objectives and policies for the economy – – in general	DA	IA	IVA
Objectives: Planning for the State's economy in general shall be directed toward a the following objectives:	achiev	emer	nt of
(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.		√	
(2) A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.		✓	
Policies:			
(1) Promote and encourage entrepreneurship within Hawaii by residents and nonresidents of the State.			✓
(2) Expand Hawaii's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.			✓
(3) Promote Hawaii as an attractive market for environmentally and socially sound investment activities that benefit Hawaii's people.			✓
(4) Transform and maintain Hawaii as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			✓
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawaii.			✓
(6) Seek broader outlets for new or expanded Hawaii business investments.			✓
(7) Expand existing markets and penetrate new markets for Hawaii's products and services.			1
(8) Assure that the basic economic needs of Hawaii's people are maintained in the event of disruptions in overseas transportation.			✓
(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.		✓	
(10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawaii's small scale producers, manufacturers, and distributors.			✓
(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.		✓	
(12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawaii.			✓
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawaii's employment and economic growth opportunities.		✓	
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			✓
(15) Maintain acceptable working conditions and standards for Hawaii's workers			/

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(16) Provide equal employment opportunities for all segments of Hawaii's population through affirmative action and nondiscrimination measures.			✓
(17) Stimulate the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			√
(18) Encourage businesses that have favorable financial multiplier effects within Hawaii's economy, particularly with respect to emerging industries in science and technology.		✓	
(19) Promote and protect intangible resources in Hawaii, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.			✓
(20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new or innovative potential growth industries in particular.			>
(21) Foster a business climate in Hawaiiincluding attitudes, tax and regulatory policies, and financial and technical assistance programs that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.			<
the economy by supporting design and construction activity which contributes employment opportunities, job choices, and living standards. Businesses positive	ely af	fecte	
by the project are those which support design and construction such as an engineers, material suppliers, equipment rental companies, and landscape com			d
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engineers, material suppliers, equipment rental companies, and landscape com	panies		
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Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies			
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawaii's food producers and consumers in the State, nation, and world.			✓
(8) Support research and development activities that strengthen economic productivity in agriculture, stimulate greater efficiency, and enhance the development of new products and agricultural by-products.			✓
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			✓
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			✓
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.			✓
(12) In addition to the State's priority on food, expand Hawaii's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.			✓
(13) Promote economically competitive activities that increase Hawaii's agricultural self-sufficiency, including the increased purchase and use of Hawaii-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D-104.			✓
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture.			✓
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			✓
(16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.			✓
(17) Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko i'a, māla, and irrigated lo'i, and growth of traditional Hawaiian crops, such as kalo, 'uala, and 'ulu.			✓
(18) Increase and develop small-scale farms.			✓
Analysis: The proposed action does not directly or indirectly affect the ob agriculture. As previously discussed, the proposed project will be develope designated for agriculture use. Although designated for agriculture, the lands ha in cultivation for over a decade, aside from intermittent cattle grazing. In the co amount of viable agriculture lands on the island of Maui, implementation of the action is not considered to adversely affect agricultural productivity on Maui. In is noted that the proposed action will be located adjacent to existing, simil residential subdivisions.	d on ve not ntext e prop addit	land t bee of th pose tion,	s n e d it
Chapter 226-8 Objective and policies for the economy – – visitor industry.			
Objective: Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy.			✓
Policies:			
(1) Support and assist in the promotion of Hawaii's visitor attractions and facilities.			✓
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.			✓

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objective and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(3) Improve the quality of existing visitor destination areas by utilizing Hawaii's strengths in science and technology.			✓
(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.			✓
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii's people.			✓
(6) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the visitor industry.			✓
(7) Foster a recognition of the contribution of the visitor industry to Hawaii's economy and the need to perpetuate the aloha spirit.			✓
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawaii's cultures and values.			✓
Analysis: The proposed action is not directly or indirectly applicable to the opolicies for the visitor industry. The proposed action has no implications for or growth of the visitor industry.			
Chapter 226-9 Objective and policies for the economy – – federal expenditures.			
Objective: Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawaii's economy.			✓
Policies:			
(1) Encourage the sustained flow of federal expenditures in Hawaii that generates long-term government civilian employment;			✓
(2) Promote Hawaii's supportive role in national defense, in a manner consistent with Hawaii's social, environmental, and cultural goals by building upon dual-use and defense applications to develop thriving ocean engineering, aerospace research and development, and related dual-use technology sectors in Hawaii's economy;			✓
(3) Promote the development of federally supported activities in Hawaii that respect statewide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawaii's environment;			✓
(4) Increase opportunities for entry and advancement of Hawaii's people into federal government service;			✓
(5) Promote federal use of local commodities, services, and facilities available in Hawaii;			✓
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaii; and			✓
(7) Pursue the return of federally controlled lands in Hawaii that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.			✓
Analysis: The proposed action is not reliant on federal funding, and does n indirectly advance the objective and policies for strengthening or increa expenditures for the betterment of Hawai'i's economy.			

hapter 226-10 Objective and policies for the economy – – potential growtl	and in	nova	tive
bjective: Planning for the State's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of evelopment and expansion of potential growth and innovative activities that serve to crease and diversify Hawaii's economic base.	f		*
olicies:	,		
 Facilitate investment and employment growth in economic activities that have the potential to expand and diversify Hawaii's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors;)		~
2) Facilitate investment in innovative activity that may pose risks or be less labor intensive than other traditional business activity, but if successful, will generate revenue in Hawaii through the export of services or products or substitution o imported services or products;			~
B) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements;			✓
4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable, and equipped with the attitude necessary to undertake innovative activity;	;		*
increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment culinary, athletic, or visitor-oriented events without a business focus;			*
 Expand Hawaii's capacity to attract and service international programs and activities that generate employment for Hawaii's people; 	ı		~
r) Enhance and promote Hawaii's role as a center for international relations trade, finance, services, technology, education, culture, and the arts;	,		٧
 Accelerate research and development of new energy-related industries based or wind, solar, ocean, underground resources, and solid waste; 	1		~
 Promote Hawaii's geographic, environmental, social, and technologica advantages to attract new or innovative economic activities into the State; 	ı		V
 Provide public incentives and encourage private initiative to attract new o innovative industries that best support Hawaii's social, economic, physical, and environmental objectives; 			*
 Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research; 	3		V
 Develop, promote, and support research and educational and training programs that will enhance Hawaii's ability to attract and develop economic activities o benefit to Hawaii; 			~
 Foster a broader public recognition and understanding of the potential benefits o new or innovative growth-oriented industry in Hawaii; 	f		٧
(4) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawaii's social, economic, physical, and environmental objectives;			٧

and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable DA	IA	N.
(15) Increase research and development of businesses and services in the telecommunications and information industries;		~
(16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation; and		*
(17) Recognize and promote health care and health care information technology as growth industries.		*
Analysis: As a residential project, the proposed action does not directly or in affect the development and expansion of innovative activities to increase and c Hawai'i's economic base.	direct iversi	ly fy
Chapter 226-10.5 Objectives and policies for the economy information industry.		
Objective: Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawaii as a leader in broadband and wireless communications and applications in the Pacific Region.		*
Policies:		
(1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawaii and between Hawaii and the world, and make high speed communication available to all residents and businesses in Hawaii;		*
(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawaii to accommodate future growth and innovation in Hawaii's economy;		~
(3) Facilitate the development of new or innovative business and service ventures in the information industry which will provide employment opportunities for the people of Hawaii;		*
(4) Encourage mainland- and foreign-based companies of all sizes, whether information technology-focused or not, to allow their principals, employees, or contractors to live in and work from Hawaii, using technology to communicate with their headquarters, offices, or customers located out-of-state;		*
 (5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry; 		~
(6) Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people;		*
(7) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the information industry;		~
(8) Foster a recognition of the contribution of the information industry to Hawaii's economy; and		¥
(9) Assist in the promotion of Hawaii as a broker, creator, and processor of information in the Pacific.		¥

enjoyment of mountains, ocean, scenic landscapes, and other natural features.

Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Chapter 226-11 Objectives and policies for the physical environment – – land bas and marine resources.	ed, sh	orel	ine,
<u>Objectives:</u> Planning for the State's physical environment with regard to land-based, marine resources shall be directed towards achievement of the following objectives:	shore	line,	and
(1) Prudent use of Hawaii's land-based, shoreline, and marine resources.		✓	
(2) Effective protection of Hawaii's unique and fragile environmental resources.			✓
Policies:			
(1) Exercise an overall conservation ethic in the use of Hawaii's natural resources.		✓	
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.		✓	
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.		✓	
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.			✓
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.			✓
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.		✓	
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			✓
8) Pursue compatible relationships among activities, facilities, and natural resources.			✓
 Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes. 			✓
Analysis: The proposed project will utilize Best Management Practices (BMP: hat natural resources such as the coastal environment is not impacted by cactivities. The use of BMPs also ensures compatibility between land-based and vunctions, resources, and ecological systems. The biological resources study coart of the environmental review process represents an effort to protect are produced plant and animal species, and their habitats native to Hawai'i that may in the vicinity of the proposed action.	onstru water- onduct ny rary y be pi	uctio base ted a e an reser	on ed as ad nt
Chapter 226-12 Objective and policies for the physical environment —— so beauty, and historic resources.	enic,	nati	ural
Objective: Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.	✓		
Policies:			
(1) Promote the preservation and restoration of significant natural and historic resources.		✓	
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.			✓
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic			1

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	ΝA
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.			√
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.	✓		
Analysis: The project has been carefully designed taking into considerate profiles and massing so as to not adversely impact scenic views and vistas. The turn-key homes will be similar in scale and size to existing residential developm and will be built in accordance with established subdivision standards. In landscaped buffer will be developed at the roadway frontage along Honoapi'ila providing a landscaped, open space setback from the roadway to the Archaeological investigations and coordination for the proposed action are ensuring the preservation of historic resources which may be impacted by Landscaping proposed in connection with the project is intended to enhance to visual relationship with its immediate surrounding environs.	ne pro ents r addit ni Hig house e aim the p	pose learb ion, hway lots led a rojec	d y a y, s. at
Chapter 226-13 Objectives and policies for the physical environment – – land, quality.	air, ar	nd wa	iter
<u>Objectives:</u> Planning for the State's physical environment with regard to land, air, a shall be directed towards achievement of the following objectives.	nd wa	ter qu	ıali
(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.	1		
(2) Greater public awareness and appreciation of Hawaii's environmental resources.		✓	
Policies:	•		
(1) Foster educational activities that promote a better understanding of Hawaii's limited environmental resources.			✓
(2) Promote the proper management of Hawaii's land and water resources.		✓	
(-) · · · · · · · · · · · · · · · · · · ·			~
(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.			
(3) Promote effective measures to achieve desired quality in Hawaii's surface,		✓	
 (3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters. (4) Encourage actions to maintain or improve aural and air quality levels to enhance 	✓	✓	
 (3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters. (4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people. (5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and 	✓	✓	✓
 (3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters. (4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people. (5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters. (6) Encourage design and construction practices that enhance the physical qualities 	✓ ✓	✓	✓

Analysis: The proposed project will be implemented in a developed area in Central Maui, in proximity to existing infrastructure and services. Improved land, air, and water quality are directly and indirectly advanced by the proposed action. Construction BMPs will be used to manage and control erosion control during grading operations to minimize downstream water quality impacts. Work on the project is not anticipated to be affected by natural hazards, and industry standard design and construction practices have been and will be employed for the project.

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Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Chapter 226-14 Objective and policies for facility systems in general.			
Objective: Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.		✓	
Policies:			
(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.		✓	
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.		✓	
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.		✓	
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.			✓
Analysis: The proposed action is indirectly applicable to the general ob policies for facility systems. By addressing automobile movement concern anticipated to result from implementation of the proposed project, the proposed reflects a coordinated effort to implement capital improvement priorities for residents.	ns tha	at ar actio	e n
Chapter 226-15 Objectives and policies for facility systems solid and liquid v	vaste.		
<u>Objectives</u> : Planning for the State's facility systems with regard to solid and liquid w directed towards the achievement of the following objectives:	vastes	shal	l be
(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.		✓	
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.		✓	
Policies:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.		✓	
(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.			✓
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			✓
Analysis: The proposed project indirectly supports the objectives and goals f liquid waste facility systems as it will connect to the County wastewat Coordination will be undertaken with the County Department of Environmental N	ter sy	/sten	n.

Coordination will be undertaken with the County Department of Environmental Management (DEM) to determine if certain improvements to the County's wastewater system will be required to service the project aside from the new sewerline that is proposed as part of the overall project. Furthermore, construction waste will be disposed at the County's Central Maui Landfill or appropriate construction recycling centers. In addition, once built and occupied, the project is anticipated to be served by the County's refuse collection service.

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Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Chapter 226-16 Objective and policies for facility systems – – water.			
Objective: Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.	✓		
Policies:			
 Coordinate development of land use activities with existing and potential water supply. 	✓		
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.			✓
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.			✓
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.			✓
(5) Support water supply services to areas experiencing critical water problems.			✓
(6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.			✓
Analysis: The project directly supports the objective and polices for we systems enhancement as it is located in an area that is serviced by existing infrastructure. Coordination will be undertaken with the County Department of W (DWS) to determine if certain improvements to the County's water system will be service the project.	ounty ater S	wate Suppl	er y
Chapter 226-17 Objectives and policies for facility systems – – transportation.			
<u>Objectives</u> : Planning for the State's facility systems with regard to transportation sh towards the achievement of the following objectives:	all be	direc	ted
 An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods. 		✓	
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			✓
Policies:			
 Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter; 		✓	
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;			✓
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;			\
(4) Provide for improved accessibility to shipping, docking, and storage facilities;			✓
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;			✓
 (6) Encourage transportation systems that serve to accommodate present and future development needs of communities; 			✓

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
 Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods; 			✓
 (8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs; 			✓
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;			✓
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment;			✓
(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;			✓
(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and			✓
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.		✓	
Analysis: The proposed project indirectly supports the objectives and transportation facility systems as it is located along an existing public bus route, the proposed highway improvements maintain an existing bike route and coordinated effort to implement capital improvement priorities for the island's re	in ad refle	dition ects	٦,
Chapter 226-18 Objectives and policies for facility systems energy.			
Objectives: Planning for the State's facility systems with regard to energy shall be of the achievement of the following objectives, giving due consideration to all:	directe	d tow	ard
 Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people; 			✓
(2) Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawaii's dependence on imported fuels for electrical generation and ground transportation.		✓	
(3) Greater diversification of energy generation in the face of threats to Hawaii's energy supplies and systems;		✓	
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and			✓
(5) Utility models that make the social and financial interests of Hawaii's utility customers a priority.			✓
(b) To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonably prices, and dependable energy services to accommodate demand.			✓
Policies:			
 Support research and development as well as promote the use of renewable energy sources; 		✓	
(2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;			✓
(3) Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits;			✓

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives			
and Policies			
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(4) Promote all cost-effective conservation of power and fuel supplies through measures, including:			✓
(A) Development of cost-effective demand-side management programs;			✓
(B) Education;			✓
(C) Adoption of energy-efficient practices and technologies; and			✓
(D) Increasing energy efficiency and decreasing energy use in public infrastructure		✓	
(5) Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply option and maximizes efficient technologies; and			✓
(6) Support research, development, demonstration, and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies;			✓
(7) Promote alternate fuels and transportation energy efficiency;			✓
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications;			✓
(9) Support actions that reduce, avoid, or sequester Hawaii's greenhouse gas emissions through agriculture and forestry initiatives;			✓
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects;			✓
(11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources; and			✓
(12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawaii.			✓
Analysis: In addition to solar water heating systems, individual homeowners to install solar PV systems on their homes if desired, thus indirectly supporting the and policies for energy facility systems by advancing measures to lessen depressil fuel based energy.	e obje	ctive	s
Chapter 226-18.5 Objectives and policies for facility systems telecommunicate	ions.		
Objectives:			
(a) Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.			✓
(b) To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand.			✓
Policies:			
(1) Facilitate research and development of telecommunications systems and resources;			✓

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;	- DA	17-4	✓
(3) Promote efficient management and use of existing telecommunications systems and services; and			✓
(4) Facilitate the development of education and training of telecommunications personnel.			✓
Analysis: The proposed action does not directly or indirectly affect telecome systems dependability, efficiency, and cost parameters. In particular, the project promote research and development of telecommunications systems and resource not advance efficient management and use of existing telecommunications services.	et do	es no d doe	ot s
Chapter 226-19 Objectives and policies for socio-cultural advancement hous	ing.		
<u>Objectives</u> : Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:			✓
(1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low, low- and moderate-income segments of Hawaii's population.	√		
(2) The orderly development of residential areas sensitive to community needs and other land uses.	✓		
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.			✓
Policies:	•		
(1) Effectively accommodate the housing needs of Hawaii's people.	✓		
(2) Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.	✓		
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.	✓		
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.			✓
(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.	√		
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			✓
(7) Foster a variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods that reflect the culture and values of the community.			✓
(8) Promote research and development of methods to reduce the cost of housing construction in Hawaii.			✓

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable DA IA NA Analysis: The proposed project is directly applicable to the objectives and policies related to housing as it provides needed additional homestead opportunities for DHHL beneficiaries in an area that is close to the government, business, and commercial centers of Wailuku and Kahului. In addition, the project will be implemented in a developed area in Central Maui with other similar residential subdivisions, in proximity to existing infrastructure and services. Chapter 226-20 Objectives and policies for socio-cultural advancement — health.				
<u>Objectives</u> : Planning for the State's socio-cultural advancement with regard to healt directed towards achievement of the following objectives:	h shall	be		
(1) Fulfillment of basic individual health needs of the general public.		✓		
(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.		✓		
(3) Elimination of health disparities by identifying and addressing social determinants of health.		✓		
Policies:				
(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.		✓		
(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.		✓		
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.		✓		
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.		✓		
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.		✓		
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.		✓		
(7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.		✓		
Analysis: The proposed action does not directly or indirectly affect the objecti policies for health. The proposed action does not affect individual health needs, so and health conditions, and health disparities.	nitatio			
Chapter 226-21 Objectives and policies for Socio-cultural advancement – – educatio	n.			
Objective: Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.	✓			

	y: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable licies:	DA	IA	
	Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.			Ī
(2)	Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.		✓	Ī
(3)	Provide appropriate educational opportunities for groups with special needs.			Ī
(4)	Promote educational programs which enhance understanding of Hawaii's cultural heritage.			Ī
(5)	Provide higher educational opportunities that enable Hawaii's people to adapt to changing employment demands.			Ī
(6)	Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.			
(7)	Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.			
(8)	Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.			Ī
(9)	Support research programs and activities that enhance the education programs of the State.			Ī
	alysis: Through the payment of impact fees, the proposed project indirect			
the		lequat	e ar	
the acc	alysis: Through the payment of impact fees, the proposed project indirect objectives and policies for education by supporting the provision of addressible educational services and facilities in Central Maui. apter 226-22 Objective and policies for socio-cultural advancement — – social jective: Planning for the State's socio-cultural advancement with regard to	lequat	e ar	
Ch Ob soo	alysis: Through the payment of impact fees, the proposed project indirect objectives and policies for education by supporting the provision of accessible educational services and facilities in Central Maui. apter 226-22 Objective and policies for socio-cultural advancement — social	lequat	e ar	
Ch Ob soo pul gro	alysis: Through the payment of impact fees, the proposed project indirect objectives and policies for education by supporting the provision of adcessible educational services and facilities in Central Maui. apter 226-22 Objective and policies for socio-cultural advancement — social jective: Planning for the State's socio-cultural advancement with regard to cial services shall be directed towards the achievement of the objective of improved olic and private social services and activities that enable individuals, families, and	lequat	e ar	
Ch Ob soo pul gro	alysis: Through the payment of impact fees, the proposed project indirect objectives and policies for education by supporting the provision of adcessible educational services and facilities in Central Maul. apter 226-22 Objective and policies for socio-cultural advancement — social jective: Planning for the State's socio-cultural advancement with regard to it is services shall be directed towards the achievement of the objective of improved olic and private social services and activities that enable individuals, families, and sups to become more self-reliant and confident to improve their well-being.	lequat	e ar	
Ch Ob soo pul gro Po	alysis: Through the payment of impact fees, the proposed project indirect objectives and policies for education by supporting the provision of adcessible educational services and facilities in Central Maul. apter 226-22 Objective and policies for socio-cultural advancement — social jective: Planning for the State's socio-cultural advancement with regard to itsial services shall be directed towards the achievement of the objective of improved olic and private social services and activities that enable individuals, families, and sups to become more self-reliant and confident to improve their well-being. Ilicies: Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal	lequat	e ar	
Ch Ob soo pul gro (1)	alysis: Through the payment of impact fees, the proposed project indirect objectives and policies for education by supporting the provision of adcessible educational services and facilities in Central Maui. apter 226-22 Objective and policies for socio-cultural advancement — social jective: Planning for the State's socio-cultural advancement with regard to it is services shall be directed towards the achievement of the objective of improved olic and private social services and activities that enable individuals, families, and ups to become more self-reliant and confident to improve their well-being. Basist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities. Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to	lequat	e ar	
Ch Ob Soo pul gro (1)	alysis: Through the payment of impact fees, the proposed project indirect objectives and policies for education by supporting the provision of adcessible educational services and facilities in Central Maui. apter 226-22 Objective and policies for socio-cultural advancement — social jective: Planning for the State's socio-cultural advancement with regard to cital services shall be directed towards the achievement of the objective of improved olic and private social services and activities that enable individuals, families, and sups to become more self-reliant and confident to improve their well-being. Bicies: Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities. Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society. Facilitate the adjustment of new residents, especially recently arrived immigrants,	lequat	e ar	
Ch Ob soo pul gro (1) (2)	alysis: Through the payment of impact fees, the proposed project indirect objectives and policies for education by supporting the provision of accessible educational services and facilities in Central Maui. apter 226-22 Objective and policies for socio-cultural advancement — social jective: Planning for the State's socio-cultural advancement with regard to all services shall be directed towards the achievement of the objective of improved olic and private social services and activities that enable individuals, families, and ups to become more self-reliant and confident to improve their well-being. Ilicies: Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities. Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society. Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawaii's communities. Promote alternatives to institutional care in the provision of long-term care for elder	lequat	e ar	

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies		
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable		NA
Analysis: The objective and policies for improving public and private social sindirectly supported by the proposed action through the provision of homesteading opportunities to beneficiaries of the State DHHL.		
Chapter 226-23 Objective and policies for socio-cultural advancement – – leisure		
Objective: Planning for the State's socio-cultural advancement with regard to		√
leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs		•
for present and future generations.		
Policies:		
 Foster and preserve Hawaii's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities. 		✓
(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.		✓
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.		✓
(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.		✓
(5) Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.		✓
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.		✓
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawaii's people.		✓
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.		✓
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawaii's population to participate in the creative arts.		✓
(10) Assure adequate access to significant natural and cultural resources in public ownership.		✓
Analysis: As a residential project, the proposed action does not directly cadvance the objective and policies for leisure.	or indirectly	у
Chapter 226-24 Objective and policies for socio-cultural advancement – – individ personal well-being.	ual rights a	nd
Objective: Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.		✓
Policies:		
(1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.		✓
(2) Uphold and protect the national and state constitutional rights of every individual.		✓

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Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N.A
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			✓
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			✓
Policies (Public Safety – Emergency Management):			
(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.			√
(2) Enhance the coordination between emergency management programs throughout the State.			~
Analysis: The proposed action does not directly or indirectly affect the objectives for public safety. In particular, the project does not address protection property parameters, organizational readiness and capacity, and community refor peoples' welfare and safety.	of lif	fe an	d
Chapter 226-27 Objectives and policies for socio-cultural advancement – – gover	nmen	t.	
<u>Objectives:</u> Planning the State's socio-cultural advancement with regard to govern directed towards the achievement of the following objectives:	nment	shall	be
(1) Efficient, effective, and responsive government services at all levels in the State.		✓	
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.			√
Policies:			
(1) Provide for necessary public goods and services not assumed by the private sector.			~
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.		✓	
(3) Minimize the size of government to that necessary to be effective.			√
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawaii.			~
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.			~
(6) Provide for a balanced fiscal budget.			~
(7) Improve the fiscal budgeting and management system of the State.			~
(8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.			~
Analysis: The proposed action has indirect applicability to the objectives and government. In particular, the project will comply with regulatory requirem advance transparency in the flow of project-related information to the purequirements include the Chapter 343, HRS environmental review process.	ents	whic	h

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES			
(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Chapter 226-101: Purpose. The purpose of this part is to establish overall priority guidel	ines t	o addı	ess
areas of statewide concern.			
Chapter 226-102: Overall direction. The State shall strive to improve the quality of I			
present and future population through the pursuit of desirable courses of action in seven			
statewide concern which merit priority attention: economic development, population g			
resource management, affordable housing, crime and criminal justice, quality education	n, pri	inciple	s of
sustainability, and climate change adaptation.			
Chapter 226-103: Economic priority guidelines.			
(a) Priority guidelines to stimulate economic growth and encourage business e			
development to provide needed jobs for Hawaii's people and achieve a stable a	ınd d	iversi	fied
economy:			_
(1) Seek a variety of means to increase the availability of investment capital for			✓
new and expanding enterprises.			
(A) Encourage investments which:			✓
(i) Reflect long term commitments to the State;			✓
(ii) Rely on economic linkages within the local economy;			✓
(iii) Diversify the economy;			✓
(iv) Reinvest in the local economy;		✓	
(v) Are sensitive to community needs and priorities; and		✓	
(vi) Demonstrate a commitment to provide management opportunities to			1
Hawaii residents; and			•
(B) Encourage investments in innovative activities that have a nexus to the Sta	ite, si	uch as	:
 (i) Present or former residents acting as entrepreneurs or principals; 			✓
(ii) Academic support from an institution of higher education in Hawaii;			√
(iii) Investment interest from Hawaii residents;			✓
(iv) Resources unique to Hawaii that are required for innovative activity;			√
and			
 (v) Complementary or supportive industries or government programs or projects. 			✓
(2) Encourage the expansion of technological research to assist industry			1
development and support the development and commercialization of			•
technological advancements.			
(3) Improve the quality, accessibility, and range of services provided by			1
government to business, including data and reference services and assistance			
in complying with governmental regulations.			
(4) Seek to ensure that state business tax and labor laws and administrative			✓
policies are equitable, rational, and predictable.			
(5) Streamline the processes for building and development permit and review, and			✓
telecommunication infrastructure installation approval and eliminate or			
consolidate other burdensome or duplicative governmental requirements			
imposed on business, where scientific evidence indicates that public health,			
safety and welfare would not be adversely affected.	-	-	_
(6) Encourage the formation of cooperatives and other favorable marketing or			V
distribution arrangements at the regional or local level to assist Hawaii's small- scale producers, manufacturers, and distributors.			
(7) Continue to seek legislation to protect Hawaii from transportation interruptions	-	-	-

between Hawaii and the continental United States.

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(8) Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the			✓
following characteristics: (A) An industry that can take advantage of Hawaii's unique location and			1
available physical and human resources.			
(B) A clean industry that would have minimal adverse effects on Hawaii's environment.			✓
(C) An industry that is willing to hire and train Hawaii's people to meet the industry's labor needs at all levels of employment.			✓
(D) An industry that would provide reasonable income and steady employment.			✓
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawaii business.			✓
(10) Enhance the quality of Hawaii's labor force and develop and maintain career opportunities for Hawaii's people through the following actions:			✓
(A) Expand vocational training in diversified agriculture, aquaculture, information industry, and other areas where growth is desired and feasible.			✓
(B) Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities.			✓
(C) Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired.			✓
(D) Promote career opportunities in all industries for Hawaii's people by encouraging firms doing business in the State to hire residents.			✓
(E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on- the- job training opportunities.			✓
(F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			✓
(b) Priority guidelines to promote the economic health and quality of the visitor	indus	try:	
(1) Promote visitor satisfaction by fostering an environment which enhances the			√
Aloha Spirit and minimizes inconveniences to Hawaii's residents and visitors.			
(2) Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.			√
(3) Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.			✓
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawaii's significant natural, scenic, historic, and cultural resources.			✓
Develop and maintain career opportunities in the visitor industry for Hawaii's people, with emphasis on managerial positions.			✓
(6) Support and coordinate tourism promotion abroad to enhance Hawaii's share of existing and potential visitor markets.			✓
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			✓
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.			✓
(9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.			✓

HAWAI'I STATE PLAN, CHAPTER 226, HRS - PART III. PRIORITY GUIDELINES (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(c) Priority guidelines to promote the continued viability of the sugar and pineap	ple in	dustr	ies:
(1) Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.			✓
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawaii.			✓
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			✓
(d) Priority guidelines to promote the growth and development of diversified a aquaculture:	gricu	lture	and
(1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.			✓
(2) Assist in providing adequate, reasonably priced water for agricultural activities.			✓
(3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.			✓
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			✓
(5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawaii's agricultural community.			✓
(6) Seek favorable freight rates for Hawaii's agricultural products from interisland and overseas transportation operators.			✓
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.			✓
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.			✓
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.			✓
(10) Support the continuation of land currently in use for diversified agriculture.			✓
(11) Encourage residents and visitors to support Hawaii's farmers by purchasing locally grown food and food products.			✓
(e) Priority guidelines for water use and development:			
 Maintain and improve water conservation programs to reduce the overall water consumption rate. 			✓
(2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.			✓
(3) Increase the support for research and development of economically feasible alternative water sources.			✓
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.			✓
(f) Priority guidelines for energy use and development:			
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.		✓	
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.			✓
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			✓
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			✓

	1 STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
	ority guidelines to promote the development of the information industry:	DA	IA	NA
	Establish an information network, with an emphasis on broadband and wireless			./
(.)	infrastructure and capability that will serve as the foundation of and catalyst for			v
	overall economic growth and diversification in Hawaii.			
(2)	Encourage the development of services such as financial data processing, a			1
	products and services exchange, foreign language translations, telemarketing,			
	teleconferencing, a twenty-four-hour international stock exchange,			
(0)	international banking, and a Pacific Rim management center.			_
(3)	Encourage the development of small businesses in the information field such			✓
	as software development; the development of new information systems, peripherals, and applications; data conversion and data entry services; and			
	home or cottage services such as computer programming, secretarial, and			
	accounting services.			
(4)	Encourage the development or expansion of educational and training			-/
(- /	opportunities for residents in the information and telecommunications fields.			
(5)	Encourage research activities, including legal research in the information and			1
. ,	telecommunications fields.			•
(6)	$Support\ promotional\ activities\ to\ market\ Hawaii's\ information\ industry\ services.$			✓
(7)	Encourage the location or co-location of telecommunication or wireless			1
	information relay facilities in the community, including public areas, where			,
	scientific evidence indicates that the public health, safety, and welfare would			
	not be adversely affected. is: The proposed action indirectly supports the economic priority g			
	oices, and living standards. In addition, solar water heating systems will meowners will be able to install solar PV systems in their individual home			
thereb	meowners will be able to install solar PV systems in their individual home y advancing measures to lessen dependence on fossil fuel based energy.			
thereb	meowners will be able to install solar PV systems in their individual home y advancing measures to lessen dependence on fossil fuel based energy. r 226-104: Population growth and land resources priority guidelines.			
thereby Chapte (a) Pri	meowners will be able to install solar PV systems in their individual home y advancing measures to lessen dependence on fossil fuel based energy. r 226-104: Population growth and land resources priority guidelines. ority guidelines to effect desired statewide growth and distribution:			
Chapte (a) Pri	meowners will be able to install solar PV systems in their individual home y advancing measures to lessen dependence on fossil fuel based energy. r 226-104: Population growth and land resources priority guidelines. ority guidelines to effect desired statewide growth and distribution: Encourage planning and resource management to insure that population			
thereby Chapte (a) Pri	meowners will be able to install solar PV systems in their individual home y advancing measures to lessen dependence on fossil fuel based energy. r 226-104: Population growth and land resources priority guidelines. ority guidelines to effect desired statewide growth and distribution:			
Chapte (a) Pri (1)	meowners will be able to install solar PV systems in their individual home y advancing measures to lessen dependence on fossil fuel based energy. r 226-104: Population growth and land resources priority guidelines. ority guidelines to effect desired statewide growth and distribution: Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned			
Chapte (a) Pri (1)	meowners will be able to install solar PV systems in their individual home y advancing measures to lessen dependence on fossil fuel based energy. r 226-104: Population growth and land resources priority guidelines. ority guidelines to effect desired statewide growth and distribution: Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawaii's people.			
Chapte (a) Pri (1)	meowners will be able to install solar PV systems in their individual home y advancing measures to lessen dependence on fossil fuel based energy. r 226-104: Population growth and land resources priority guidelines. ority guidelines to effect desired statewide growth and distribution: Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawaii's people. Manage a growth rate for Hawaii's economy that will parallel future employment needs for Hawaii's people. Ensure that adequate support services and facilities are provided to			
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HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			✓
(3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.			✓
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			✓
(5) In order to preserve green belts, give priority to state capital-improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a noncontiguous new urban core.			✓
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.			✓
(7) Pursue rehabilitation of appropriate urban areas.			✓
(8) Support the redevelopment of Kakaako into a viable residential, industrial, and commercial community.			✓
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.	✓		
(10) Identify critical environmental areas in Hawaii to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.			✓
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			✓
(12) Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.	√		
(13) Protect and enhance Hawaii's shoreline, open spaces, and scenic resources.			✓
Analysis: The proposed project supports population growth and land resou guidelines as it repurposes agricultural land while providing additional opportunities for DHHL beneficiaries in an area that is close to the government, b commercial centers of Wailuku and Kahului. In addition, the project will be imple developed area in Central Maui, in proximity to existing infrastructure and service Chapter 226-105: Crime and criminal justice.	hom usine emen	iestea ss, ar	ad nd
Priority guidelines in the area of crime and criminal justice:			
(1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.			✓
(2) Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.			✓
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			✓
(4) Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.			√

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES			
(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable) (5) Provide a range of appropriate sanctions for juvenile offenders, including	DA	IA	NA
community-based programs and other alternative sanctions.			~
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			✓
Analysis: The proposed action does not directly or indirectly affect the priority	y gui	deline	es
for crime and criminal justice.			
Chapter 226-106: Affordable housing.			
Priority guidelines for the provision of affordable housing:			
(1) Seek to use marginal or nonessential agricultural land and public land to meet housing needs of low- and moderate-income and gap-group households.	✓		
(2) Encourage the use of alternative construction and development methods as a			./
means of reducing production costs.			v
(3) Improve information and analysis relative to land availability and suitability for			1
housing.			•
(4) Create incentives for development which would increase home ownership and			✓
rental opportunities for Hawaii's low- and moderate-income households, gap-			
group households, and residents with special needs.			
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawaii's people for the purchase of initial	✓		
owner-occupied housing.			
(6) Encourage public and private sector cooperation in the development of rental			./
housing alternatives.			v
(7) Encourage improved coordination between various agencies and levels of			1
government to deal with housing policies and regulations.			•
(8) Give higher priority to the provision of quality housing that is affordable for	<		
Hawaii's residents and less priority to development of housing intended			
primarily for individuals outside of Hawaii.			
Analysis: The proposed project directly affects the priority guidelines for			
housing as it repurposes agricultural land while providing additional homestead of for DHHL beneficiaries in an area that is close to the government, business, and			
centers of Wailuku and Kahului.	COIII	1110101	aı
Chapter 226-107: Quality education.			
Priority guidelines to promote quality education:			
(1) Pursue effective programs which reflect the varied district, school, and student			1
needs to strengthen basic skills achievement;			
(2) Continue emphasis on general education "core" requirements to provide			✓
common background to students and essential support to other university			
programs; (3) Initiate efforts to improve the quality of education by improving the capabilities			_
of the education work force;			✓
(4) Promote increased opportunities for greater autonomy and flexibility of			-
educational institutions in their decision making responsibilities;			v
(5) Increase and improve the use of information technology in education by the			1
availability of telecommunications equipment for:			•
(A) The electronic exchange of information;			√
(B) Statewide electronic mail; and			1
(C) Access to the Internet.			1
(6) Encourage programs that increase the public's awareness and understanding			-
of the impact of information technologies on our lives;			٧
(7) Pursue the establishment of Hawaii's public and private universities and			1
colleges as research and training centers of the Pacific			

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PA				
(Key: DA = Directly Applicable, IA = Indirectly Ap		4	IA	NA
(8) Develop resources and programs for early	childhood education;			\checkmark
(9) Explore alternatives for funding and delivery	of educational services to improve			✓
the overall quality of education; and				
(10) Strengthen and expand educational progra special needs.	ams and services for students with			✓
	ectly or indirectly affect the priority g	uide	line	
for education.	city of manecity affect the priority g	uiuc	,,,,,,	3
CHAPTER 226-108: Sustainability				
Priority guidelines and principles to promote su	stainability shall include:			
(1) Encouraging balanced economic, social,	. community, and environmental			1
priorities;				
(2) Encouraging planning that respects and	promotes living within the natural			1
resources and limits of the State;				
(3) Promoting a diversified and dynamic econo	omy;			✓
(4) Encouraging respect for the host culture;				√
(5) Promoting decisions based on meeting t	the needs of the present without	+		
compromising the needs of future generation		'	Y	
(6) Considering the principles of the ahupuaa s				1
() 0 1 1	• •			*
(7) Emphasizing that everyone, including in				✓
businesses, and government, has the respo	onsibility for achieving a sustainable			
Hawaii.	54- 4h		L :114	
	fects the priority guidelines for sust	aına	IDIIII	.y
by providing much needed affordable homestea CHAPTER 226-109: Climate change adaptation	id for DHHL beneficiaries.			
Priority guidelines and principles to promote cli	mate change adaptation shall include	٥.		
(1) Ensure that Hawaii's people are educated, i		٠.		
climate change may have on their commun				✓
(2) Encourage community stewardship gro				
participate in planning and implementation				~
(3) Invest in continued monitoring and research		+	_	
impacts of climate change on the State;	aron or riawaii s climate and the			v
(4) Consider native Hawaiian traditional knowledge	edge and practices in planning for			
the impacts of climate change;	cage and practices in planning for			v
(5) Encourage the preservation and restoration	on of natural landscape features	_	./	
such as coral reefs, beaches and dunes,			•	
wetlands, that have the inherent capacity				
impacts of climate change;	to avoid, minimizo, or magato are			
(6) Explore adaptation strategies that mode	erate harm or exploit heneficial	-		
opportunities in response to actual or exped				V
natural and built environments:	cted climate change impacts to the			
(7) Promote sector resilience in areas such as	water roads airports and public	+	_	
health, by encouraging the identification				v
assessment of potential consequences, and				
(8) Foster cross-jurisdictional collaboration be		+		
agencies and partnerships between govern				٧
nongovernmental entities, including nonpro				
(9) Use management and implementation		+		
continual collection, evaluation, and inte				✓
strategies into new and existing practices, p				
strategies into new and existing practices, p	Jonoso, and plans, and			

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.		✓	
Analysis: The proposed project indirectly supports the climate change priority guidelines as it will be implemented in an area that is outside of natural landscape features such as flood zones, the tsunami evacuation zone, as well as the projected sea level rise hazard area in order to avoid impacts related to climate change.			

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ANALYSIS OF THE PROJECT'S COMPLIANCE WITH PROVISIONS OF THE COUNTYWIDE POLICY PLAN

APPENDIX

M-1

APPENDIX "M-1" COUNTYWIDE POLICY PLAN ASSESSMENT OF PROJECT APPLICABILITY TO GOALS, OBJECTIVES, AND POLICIES

COUNTYWIDE POLICY PLAN			
(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable) A. PROTECT THE NATURAL ENVIRONMENT	DA	IA	NA
<u>Goal</u> : Maui County's natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.	✓		
Objective:			
(1) Improve the opportunity to experience the natural beauty and native biodiversity of	1		
the islands for present and future generations.	•		
Policies:			
(a) Perpetuate native Hawaiian biodiversity by preventing the introduction of invasive			✓
species, containing or eliminating existing noxious pests, and protecting critical habitat areas.			
(b) Preserve and reestablish indigenous and endemic species' habitats and their			./
connectivity.			v
(c) Restore and protect forests, wetlands, watersheds, and stream flows, and guard			1
against wildfires, flooding, and erosion.			Ĺ
(d) Protect baseline stream flows for perennial streams, and support policies that			✓
ensure adequate stream flow to support Native Hawaiian aquatic species, traditional kalo cultivation, and self-sustaining ahupua'a.			
(e) Protect undeveloped beaches, dunes, and coastal ecosystems, and restore natural			
shoreline processes.			V
(f) Protect the natural state and integrity of unique terrain, valued natural			1
environments, and geological features.			
(g) Preserve and provide ongoing care for important scenic vistas, view planes,	✓		
landscapes, and open-space resources. (h) Expand coordination with the State and nonprofit agencies and their volunteers to			
reduce invasive species, replant indigenous species, and identify critical habitat.			√
Implementing Actions:			
(a) Develop island-wide networks of greenways, watercourses, and habitat corridors.			1
Analysis: This project directly improves the opportunity for future benefic	laria	-6 41	
Analysis: This project directly improves the opportunity for future benefic DHHL to experience, live, and thrive in the natural beauty of our island home. This			
cared for in years to come while also providing much needed housing oppor			
project has been carefully designed taking into consideration building profiles			
The proposed dwellings will be similar in scale and size to existing residential d			
nearby and will be built in accordance with established subdivision standards.			
landscaped buffer will be developed at the roadway frontage along Honoapi'il		ighwa	ıy,
providing a landscaped, open space setback from the roadway to the house lots.			
Objective: (2) Improve the quality of environmentally sensitive, locally valued natural resources			1
and native ecology of each island.		✓	
Policies:			
(a) Protect and restore nearshore reef environments and water quality.			1
(b) Protect marine resources and valued wildlife.			√
(c) Improve the connection between urban environments and the natural landscape,		1	Ė
and incorporate natural features of the land into urban design.		•	
(d) Utilize land-conservation tools to ensure the permanence of valued open spaces.			✓

COUNTYWIDE POLICY PLAN			
(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(e) Mitigate the negative effects of upland uses on coastal wetlands, marine life, and		✓	
coral reefs.			
(f) Strengthen coastal-zone management, re-naturalization of shorelines, where			✓
possible, and filtration or treatment of urban and agricultural runoff.			
(g) Regulate the use and maintenance of stormwater-treatment systems that incorporate the use of native vegetation and mimic natural systems.			√
(h) Advocate for stronger regulation of fishing, boating, cruise ship, and ecotourism			_
activities.			V
Restore watersheds and aquifer-recharge areas to healthy and productive status,			
and increase public knowledge about the importance of watershed stewardship,			v
water conservation, and groundwater protection.			
Implementing Actions:			-
(a) Develop regulations to minimize runoff of pollutants into nearshore waters and			1
reduce nonpoint and point source pollution.			•
Analysis: The proposed project will utilize BMPs to ensure that natural resou	rces s	such a	as
the coastal environment is not impacted by construction activities. The use of	f BMF	Ps als	80
ensures compatibility between land-based and water-based functions, res	ource	s, ar	nd
ecological systems. The biological resources study conducted as part of the el	nviror	ment	al
review process represents an effort to protect any rare and endangered plant		anim	al
species, and their habitats that may be present in the vicinity of the proposed act	ion.		
Objective:			
(3) Improve the stewardship of the natural environment.		✓	
Policies:			
(a) Preserve and protect natural resources with significant scenic, economic, cultural,			√
environmental, or recreational value.			•
(b) Improve communication, coordination, and collaboration among government			1
agencies, nonprofit organizations, communities, individuals, and land owners that			
work for the protection of the natural environment.			
(c) Evaluate development to assess potential short-term and long-term impacts on	✓		
land, air, aquatic, and marine environments.			
(d) Improve efforts to mitigate and plan for the impact of natural disasters, human			√
influenced emergencies, and global warming.			
(e) Regulate access to sensitive ecological sites and landscapes.			✓
(f) Reduce air, noise, light, land, and water pollution, and reduce Maui County's	1		
contribution to global climate change.			
(g) Plan and prepare for and educate visitors and residents about the possible effects			1
of global warming.			
(h) Provide public access to beaches and shorelines for recreational and cultural			✓
purposes where appropriate.			
(i) Educate the construction and landscape industries and property owners about the	✓		
use of best management practices to prevent erosion and nonpoint source			
pollution.			
(j) Support the acquisition of resources with scenic, environmental, and recreational			√
value, and encumber their use.			
(k) Improve enforcement activities relating to the natural environment.			✓
(I) For each shoreline community, identify and prioritize beach-conservation			√
objectives, and develop action plans for their implementation.			•
Implementing Actions:			
(a) Document, record, and monitor existing conditions, populations, and locations of			√
flora and fauna communities			•

COUNTYWIDE POLICY PLAN			
(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(b) Implement Federal and State policies that require a reduction of greenhouse-gas emissions.			✓
(c) Establish a baseline inventory of available natural resources and their respective carrying capacities.			√
Analysis: The proposed project directly meets the objective of improving the of the natural environment. The project will employ BMPs to prevent in construction, including temporary erosion control, stormwater management and In addition, the EA thoroughly evaluated the proposed action's potential impenvironment, and where applicable, advances mitigative measures aimed at reduc Objective:	npacts dust o pacts	s fro contro on th	m ol. he
4) Educate residents and visitors about responsible stewardship practices and the			√
interconnectedness of the natural environment and people.			Y
Policies:			_
(a) Expand education about native flora, fauna, and ecosystems.			✓
(b) Align priorities to recognize that the health of the natural environment and the health of people are inextricably linked.			√
(c) Promote programs and incentives that decrease greenhouse-gas emissions and improve environmental stewardship.			√
integral value to Native Hawaiians who are beneficiaries of this project. B. PRESERVE LOCAL CULTURES AND TRADITIONS Goal: Maui County will foster a spirit of pono and protect, perpetuate, and reinvigorate			
Goal: Maui County will foster a spirit of pono and protect, perpetuate, and reinvigorate its residents multi-cultural values and traditions to ensure that current and future generations will enjoy the benefits of their rich island heritage.	✓		
Objective:			
(1) Perpetuate the Hawaiian culture as a vital force in the lives of residents.	\		
Policies:			
 (a) Protect and preserve access to mountain, ocean, and island resources for traditional Hawaiian cultural practices. 			~
(b) Prohibit inappropriate development of cultural lands and sites that are important for	√		
traditional Hawaiian cultural practices, and establish mandates for the special protection of these lands in perpetuity.			
protection of these lands in perpetuity.			~
protection of these lands in perpetuity. c) Promote the use of ahupua'a and moku management practices.			
protection of these lands in perpetuity. (c) Promote the use of ahupua'a and moku management practices. (d) Encourage the use of traditional Hawaiian architecture and craftsmanship.			√
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(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)		
Analysis: The proposed project will directly benefit Native Hawaiian people for and ensure the perpetuation of Hawaiian culture. This development is an		
development of lands for Native Hawaiians. A CIA was prepared for the propose		
part of the environmental review process. The CIA fosters increased knowled		
Hawaiian cultural practices, as well as the history of the project area. As such, the		
recommendations that an archaeological field inspection be conducted by		
archaeologist prior to the commencement of any construction related ground alter		
in an effort to locate Pōhākoʻi a legendary grinding stone and that archaeologica	al mon	itoring
be conducted during all construction-related ground-altering activities. An archae		
inspection was conducted in August 2020. No discoveries were made. Noneth		
efforts to locate this important stone will occur during the archaeological moni		
project area during future ground altering activities. In this context, the prop		action
advances the objective and policies related to preserving local cultures and tradit Objective:	tions.	
(2) Emphasize respect for our island lifestyle and our unique local cultures, family, and		
natural environment.	V	
Policies:		
(a) Acknowledge the Hawaiian culture as the host culture, and foster respect and		
humility among residents and visitors toward the Hawaiian people and their		•
practices.		
(b) Perpetuate a respect for diversity, and recognize the historic blending of cultures		1
and ethnicities.		
(c) Encourage the perpetuation of each culture's unique cuisine, attire, dance, music,		√
and folklore, and other unique island traditions and recreational activities.		
(d) Recognize the interconnectedness between the natural environment and the	1	
cultural heritage of the islands.		
(e) Protect and prioritize funding for recreational activities that support local cultural		✓
practices, such as surfing, fishing, and outrigger-canoe paddling. Analysis: The project supports this objective and policy as the CIA ackno	wloda	oo tho
relationship between the natural environment and cultural resources found in		
vicinity.		Ji Ojoot
Objective:		
(3) Preserve for present and future generations the opportunity to know and		✓
experience the arts, culture, and history of Maui County.		
Policies:		
(a) Foster teaching opportunities for cultural practitioners to share their knowledge and		✓
skills.		
(b) Support the development of cultural centers.		✓
(c) Broaden opportunities for public art and the display of local artwork.		✓
(d) Factor the Alaba Cairit by calabrating the Hayeiian heat culture and other Mayi	-	•
(d) Foster the Aloha Spirit by celebrating the Hawaiian host culture and other Maui County cultures through support of cultural-education programs, festivals,		✓
celebrations, and ceremonies.		
(e) Support the perpetuation of Hawaiian arts and culture.	$\overline{}$	✓
. , . , . , . , . , . , . , . , . , . ,		•
(f) Support programs and activities that record the oral and pictorial history of		✓
residents.		
(g) Support the development of repositories for culture, history, genealogy, oral history,		✓
film, and interactive learning.		
Implementing Actions: (a) Establish incentives for the display of public art.		
(a) Lotabilott incentives for the display of public art.		✓
(b) Establish centers and programs of excellence for the perpetuation of Hawaiian arts	T	√
and culture.		

COUNTYWIDE POLICY PLAN

(4) Preserve and restore significant historic architecture, structures, cultural sites, cultural districts, and cultural landscapes. Policies: (a) Support the development of island-wide historic, archaeological, and cultural resources inventories. (b) Promote the rehabilitation and adaptive reuse of historic sites, buildings, and structures to perpetuate a traditional sense of place. (c) Identify a sustainable rate of use and set forth specific policies to protect cultural resources. (d) Protect and preserve lands that are culturally or historically significant. (e) Support programs that protect, record, restore, maintain, provide education about, and interpret cultural districts, landscapes, sites, and artifacts in both natural and museum settings. (f) Perpetuate the authentic character and historic integrity of rural communities and small towns. (g) Seek solutions that honor the traditions and practices of the host culture while recognizing the needs of the community. (h) Support the development of an Archaeological District Ordinance. (i) Protect summits, slopes, and ridgelines from inappropriate development. (j) Support the registering of important historic sites on the State and Federal historic registers. (k) Provide opportunities for public involvement with restoration and enhancement of all types of cultural resources. (l) Foster partnerships to identify and preserve or revitalize historic and cultural sites. Implementing Actions: (a) Identify, develop, map, and maintain an inventory of locally significant natural cultural, and historical resources for protection. (b) Prepare, continually update, and implement a cultural-management plan for cultural sites, districts, and landscapes, where appropriate. (c) Enact an Archaeological District Ordinance. (d) Nominate important historic sites to the State and Federal historic registers. Analysis: The proposed action is directly applicable to these objectives and related policies and implementing actions. Archaeological investigations and c	COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable) Analysis: The proposed project does not have direct or indirect relation objective of preserving the arts, culture, and history of Maui County for presei generations. This is a residential project for Native Hawaiians that will help meet need in Maui. Objective:	nt and	futu	re
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Objective:		
 Encourage the State to attract and retain school administrators and educators of the highest quality. 		✓
olicies:		
 a) Encourage the State to provide teachers with nationally competitive pay and benefit packages. 		~
 Encourage the State to ensure teachers will have the teaching tools and support staff needed to provide students with an excellent education. 		✓
 Explore Maui County district- and school-based decision making in public education. 		~
Analysis: Indirectly, this project meets the goal of giving residents access to lif and informal educational options. This is an affordable homestead development p will provide homes for a number of families, putting them and their children close allowing for easier access to education. Dijective: 2) Provide nurturing learning environments that build skills for the 21st century.	roject v	which
Policies:		
Expand professional-development opportunities in disciplines that support the economic-development goals of Maui County.		~
b) Plan for demographic, social, and technological changes in a timely manner.		
c) Encourage collaborative partnerships to improve conditions of learning environments.		·
Promote development of neighborhood schools and educational centers.	-	✓
 Integrate schools, community parks, and playgrounds, and expand each community's use of these facilities. 		~
f) Support coordination between land use and school-facility planning agencies.		V
g) Encourage the upgrade and ongoing maintenance of public-school facilities.	-	✓
 h) Encourage the State Department of Education to seek reliable, innovative, and alternative methods to support a level of per-pupil funding that places Hawai'i among the top tier of states nationally for its financial support of public schools. 		~
 Encourage the State to promote healthier, more productive learning environments, including by providing healthy meals, more physical activity, natural lighting, and passive cooling. 		v
) Encourage the State to support the development of benchmarks to measure the success of Hawai'i's public-education system and clarify lines of accountability.		~
k) Design school and park facilities in proximity to residential areas.		✓
) Support technology- and natural-environment-based learning.		
m) Encourage the State to support lower student-teacher ratios in public schools.		~
n) Encourage alternative learning and educational opportunities.		✓
mplementing Actions:		
a) Develop safe walking and bicycling programs for school children.		✓
Analysis: Through the payment of impact fees to the Department of Ed proposed project indirectly ensures the provision of adequate and accessible services and facilities in Central Maui.		
Objective:		

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IΔ	NA
Policies:	DA	IA	NA
(a) Encourage the State to improve Maui Community College as a comprehensive community college that will serve each community.			✓
(b) Broaden the use of technology and telecommunications to improve educational opportunities throughout the County.			✓
(c) Attract graduate-level research programs and institutions.			√
(d) Promote the teaching of traditional practices, including aquaculture; subsistence agriculture; Pacific Island, Asian, and other forms of alternative health practices; and indigenous Hawaiian architecture.			✓
 (e) Integrate cultural and environmental values in education, including self-sufficiency and sustainability. 			✓
(f) Foster a partnership and ongoing dialogue between business organizations, formal educational institutions, and vocational training centers to tailor learning and mentoring programs to County needs.			1
(g) Ensure teaching of the arts to all ages.			✓
(h) Expand and develop vocational learning opportunities by establishing trade schools.			✓
(i) Encourage the State to integrate financial and economic literacy in elementary, secondary, and higher-education levels.			✓
[mplementing Actions: (a) Encourage the State to establish a four-year university, and support the development of other higher-education institutions to enable residents to obtain bachelor degrees and postgraduate degrees in Maui County.			✓
afford many Native Hawaiian families the opportunity to be closer in proximity to services that can support their educational experience. Objective:	SCHO	OIS al	Iu
(4) Maximize community-based educational opportunities.			✓
Policies:			
(a) Encourage the State and others to expand pre-school, after-school, and homebased (parent-child) learning.			✓
 (b) Support public-private partnerships to develop youth-internship, -apprenticeship, and - mentoring programs. 			✓
(c) Support the development of a wide range of informal educational and cultural programs for all residents.			✓
 (d) Improve partnerships that utilize the skills and talents at Hawai'i's colleges and universities to benefit the County. 			✓
(e) Support career-development and job-recruitment programs and centers.			✓
 (f) Attract learning institutions and specialty schools to diversify and enhance educational opportunities. 			✓
(g) Expand education of important life skills for the general public.			✓
(h) Support community facilities such as museums, libraries, nature centers, and open spaces that provide interactive-learning opportunities for all ages.			✓
Analysis: The project does not directly or indirectly maximize come educational opportunities. While these objectives and policies are valuable, concentrates on fulfilling Native Hawaiian housing needs.			
D. STRENGTHEN SOCIAL AND HEALTHCARE SERVICES Goal: Health and social services in Maui County will fully and comprehensively serve			
Health and social services in Maul County Will rully and comprenensively serve all segments of the population.			1

COUNTYWIDE POLICY PLAN			NI A
(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Objective:			
(1) In cooperation with the Federal and State governments and nonprofit agencies,		\checkmark	
broaden access to social and healthcare services and expand options to improve			
the overall wellness of the people of Maui County.			
Policies:			
(a) Work with other levels of government and the nonprofit sector to expand services			✓
to address hunger, homelessness, and poverty.			
(b) Support the improvement of opportunities for disadvantaged youth, encourage the			1
tradition of hanai relatives, and support expanded opportunities for foster care.			
(c) Support expanded long-term-care options, both in institutions and at home, for			1
patients requiring ongoing assistance and medical attention.			
(d) Encourage the expansion and improvement of local hospitals, facilitate the			-/
establishment of new healthcare facilities, and facilitate prompt and high-quality			
emergency- and urgent-care services for all.			
(e) Support broadened access to affordable health insurance and health care, and	-		1
recognize the unique economic challenges posed to families when healthcare			v
services are provided off-island.			
(f) Encourage equal access to social and healthcare services through both	-+	_	
		✓	
technological and traditional means.	D	! .!!	
Analysis: Indirectly, this proposed project will support access to services.			
affordable housing to families in a centrally located area, they will have easier acc	ess to	utili	ze
social and healthcare services, if needed.			
Objective:			
(2) Encourage the Federal and State governments and the private sector to improve			√
the quality and delivery of social and healthcare services.			
Policies:			
(a) Strengthen partnerships with government, nonprofit, and private organizations to			1
provide funding and to improve counseling and other assistance to address			,
substance abuse, domestic violence, and other pressing social challenges.			
(b) Encourage the State to improve the quality of medical personnel, facilities, services,			1
and equipment.			
(c) Encourage investment to improve the recruitment of medical professionals and the			./
quality of medical facilities and equipment throughout Maui County.			v
(d) Promote the development of continuum-of-care facilities that provide assisted	-+		-
			✓
living, hospice, home-care, and skilled-nursing options allowing the individual to be			
cared for in a manner congruent with his or her needs and desires.	\rightarrow		
(e) Support improved social, healthcare, and governmental services for special needs			✓
populations.			
(f) Plan for the needs of an aging population and the resulting impacts on social			✓
services, housing, and healthcare delivery.			
(g) Improve coordination among the police, the courts, and the public in the			1
administration of social and healthcare services.			,
(h) Support programs that address needs of veterans.			1
(i) Support programs that address the needs of immigrants.			✓
Implementing Actions:			
(a) Invest in programs designed to improve the general welfare and quality of life of	$\overline{}$		I
		✓	
Native Hawaiians.	\rightarrow		_
(b) Assist and facilitate the State Department of Public Safety and others in efforts to			✓
strengthen programs and facilities that will improve the mental and social health of			
incarcerated people and assist in prison inmates' successful transition back into			
Maui County communities.			1

(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable) (c) Develop and maintain a comprehensive index that will measure the health and			1
wellness needs of families.			•
d) Provide heliports countywide for emergency health and safety purposes.			✓
Analysis: While most of these policies are not directly or indirectly applicable one of the implementing actions of investing in programs designed to improv welfare and quality of life of Native Hawaiians holds merit. This project directly lawaiians and aspires to improve their quality of life by providing affordable hor objective:	e the affects	genei	raĺ
 Strengthen public-awareness programs related to healthy lifestyles and social and medical services. Policies: 			V
a) Expand public awareness about personal safety and crime prevention.			√
b) Encourage residents to pursue education and training for careers in the healthcare, social services, and community-development fields.			V
 c) Expand public awareness and promote programs to achieve healthy eating habits and drug-free lifestyles. 			√
applicable to this affordable homestead project. E. EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS Goal: Quality, island-appropriate housing will be available to all residents. Objective:	✓		
Reduce the affordable housing deficit for residents.	✓		
Policies:			
(a) Ensure that an adequate and permanent supply of affordable housing, both new and existing units, is made available for purchase or rental to our resident and/or workforce population, with special emphasis on providing housing for low- moderate-income families, and ensure that all affordable housing remains affordable in perpetuity.	✓		
(b) Seek innovative ways to lower housing costs without compromising the quality of our island lifestyle.		√	
(c) Seek innovative methods to secure land for the development of low- and moderate- income housing.		√	
(d) Provide the homeless population with emergency and transitional shelter and other supportive programs.			✓
 Provide for a range of senior-citizen and special needs housing choices on each island that affordably facilitates a continuum of care and services. 			✓
f) Support the Department of Hawaiian Home Lands' development of homestead lands.	✓		
g) Manage property-tax burdens to protect affordable resident homeownership.			v
 Explore taxation mechanisms to increase and maintain access to affordable housing. 			✓
			√
			1 2
j) Redevelop commercial areas with a mixture of affordable residential and business uses, where appropriate.			~
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(Ney: DA = Directly Applicable, IA = Indirectly Applicable) DA IA NA (m) Develop neighborhoods with a mixture of accessible and integrated community facilities and services. (n) Provide alternative regulatory frameworks to facilitate the use of Kuleana lands by the descendants of Native Hawaiians who received those lands pursuant to the Kuleana Act of 1850. (o) Work with lending institutions to expand housing options and safeguard the financial security of homeowners. (o) Promote the use of the community land trust model and other land-lease and land-financing options. (o) Support the opportunity to age in place by providing accessible and appropriately designed residential units. Analysis: The proposed project supports this objective and related policies and implementing actions as it provides additional affordable homestead opportunities for DHHL beneficiaries in an area that is close to the government, business, and commercial centers of Wailuku and Kahului. In addition, the project will be implemented in a developed area in Central Maul, in proximity to existing infrastructure and services. Oblective: (2) Increase the mix of housing types in towns and neighborhoods to promote sustainable land use planning, expand consumer choice, and protect the County's rural and small town character. Policies: (a) Seek innovative ways to develop 'chana cottages and accessory-dwelling units as affordable housing. (b) Design neighborhoods to foster interaction among neighbors. (c) Encourage a mix of social, economic, and age groups within neighborhoods. (d) Promote infill housing in urban areas at scales that capitalize on existing infrastructure, lower development costs, and are consistent with existing or desired patterns of developments. (e) Encourage the building industry to use environmentally sustainable materials, technologies, and site planning, every properties and transit facilities. (b) Promote infill housing in proximity to job centers and transit facilities. (c) Provide incentives to developers	COUNTYWIDE POLICY PLAN			
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(b) Prioritize available infrastructure capacity for affordable housing. (c) Improve communication, collaboration, and coordination among housing providers and social-service organizations. (d) Study future projected housing needs, monitor economic cycles, and prepare for ✓				
(c) Improve communication, collaboration, and coordination among housing providers and social-service organizations. (d) Study future projected housing needs, monitor economic cycles, and prepare for	(a) Recognize housing as a basic human need, and work to fulfill that need.	✓		
and social-service organizations. (d) Study future projected housing needs, monitor economic cycles, and prepare for ✓	(b) Prioritize available infrastructure capacity for affordable housing.			✓
(d) Study future projected housing needs, monitor economic cycles, and prepare for	(c) Improve communication, collaboration, and coordination among housing providers			1
	and social-service organizations.			Ľ
				√

COUNTYWIDE POLICY PLAN			
(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(e) Develop public-private and nonprofit partnerships that facilitate the construction of quality affordable housing.	√		
(f) Streamline the review process for high-quality, affordable housing developments that implement the goals, objectives, and policies of the General Plan.			✓
(g) Minimize the intrusion of housing on prime, productive, and potentially productive agricultural lands and regionally valuable agricultural lands.			✓
(h) Encourage long-term residential use of existing and future housing to meet	✓		
residential needs. Implementing Actions:			
(a) Develop policies to even out the peaks and valleys in Maui County's construction-			
demand cycles.			✓
Analysis: Although the proposed project repurposes land designated for agr			
for housing, the land has not been in active agricultural production for some time presents an opportunity to provide affordable homesteads for DHHL beneficiarie	es in a	an are	
that is close to the government, business, and commercial centers of Wailuku an	d Kah	ului.	
Objective:			
(4) Expand access to education related to housing options, homeownership, financing, and residential construction.		✓	✓
Policies:			
(a) Broaden access to information about County, State, and Federal programs that provide financial assistance to renters and home buyers.			√
(b) Expand access to information about opportunities for homeownership and self-help housing.			✓
(c) Educate residents about making housing choices that support their individual			✓
needs, the needs of their communities, and the health of the islands' natural systems.			
(d) Improve home buyers' education on all aspects of homeownership.		✓	✓
Analysis: Indirectly, this project will help to educate the DHHL beneficiaries about home ownership and financing. The DHHL provides educational p beneficiaries regarding financing and financial planning. Through the process home, owners will need to educate themselves about home ownership thereby incknowledge base.	rogra of ov	ms f	or a
F. STRENGTHEN THE LOCAL ECONOMY			
Goal: Maui County's economy will be diverse, sustainable, and supportive of community values.		✓	
Objective:			
(1) Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of economic growth.		✓	
Policies:			
(a) Support economic decisions that create long-term benefits.		✓	
(b) Promote lifelong education, career development, and technical training for existing and emerging industries.			✓
(c) Invest in infrastructure, facilities, and programs that foster economic diversification.			✓
(d) Support and promote locally produced products and locally owned operations and businesses that benefit local communities and meet local demand.			✓
(e) Support programs that assist industries to retain and attract more local labor and facilitate the creation of jobs that offer a living wage.			√
(f) Encourage work environments that are safe, rewarding, and fulfilling to employees.			✓
(g) Support home-based businesses that are appropriate for and in character with the community.			✓

Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable) (h) Encourage businesses that promote the health and well-being of the residents,	DA	IA	N/
produce value-added products, and support community values.			•
i) Foster an understanding of the role of all industries in our economy.			✓
 Support efforts to improve conditions that foster economic vitality in our historic small towns. 			~
(k) Support and encourage traditional host-culture businesses and indigenous agricultural practices.			✓
 Support public and private entities that assist entrepreneurs in establishing locally operated businesses. 			V
mplementing Actions:			
(a) Develop regulations and programs that support opportunities for local merchants, farmers, and small businesses to sell their goods and services directly to the public.			~
 Monitor the carrying capacity of the islands' social, ecological, and infrastructure systems with respect to the economy. 			~
have positive economic and fiscal impacts to the County of Maui during and after Refer to Appendix "J". Dijective: 2) Diversify and expand sustainable forms of agriculture and aquaculture.			~
Policies:		L	
 Support programs that position Maui County's agricultural products as premium export products. 			~
b) Prioritize the use of agricultural land to feed the local population, and promote the use of agricultural lands for sustainable and diversified agricultural activities.			v
 Capitalize on Hawai'i's economic opportunities in the ecologically sensitive aquaculture industries. 			~
d) Assist farmers to help make Maui County more self-sufficient in food production.			V
 Support ordinances, programs, and policies that keep agricultural land and water available and affordable to farmers. 			٧
f) Support a tax structure that is conducive to the growth of the agricultural economy.			٧
g) Enhance County efforts to monitor and regulate important agricultural issues.			٧
h) Support education, research, and facilities that strengthen the agricultural industry.			٧
Maintain the genetic integrity of existing food crops.			٧
 Encourage healthy and organic farm practices that contribute to land health and regeneration. 			٧
(k) Support cooperatives and other types of nontraditional communal farming I and efforts.			٧
 Encourage methods of monitoring and controlling genetically modified crops to prevent adverse effects. 			٧
NAME			٧
fish ponds.			Ξ
mplementing Actions:		1	
fish ponds.			•

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(c) Create agricultural parks in areas distant from genetically modified crops.			√
Analysis: The objective and policies as it relates to diversification and a sustainable forms of agriculture and aquaculture are not directly or indirectly app proposed project. Objective:			
(3) Support a visitor industry that respects the resident culture and the environment.			
(3) Support a visitor industry that respects the resident culture and the environment.			✓
Policies:			
(a) Promote traditional Hawaiian practices in visitor-related facilities and activities.			√
(b) Encourage and educate the visitor industry to be sensitive to island lifestyles and cultural values.			✓
(c) Encourage a spirit of welcome for residents at visitor facilities, such as by offering kama'aina incentives and discount programs.			✓
(d) Support the renovation and enhancement of existing visitor facilities.			1
(e) Support policies, programs, and a tax structure that redirect the benefits of the visitor industry back into the local community.			1
(f) Encourage resident ownership of visitor-related businesses and facilities.			1
(g) Develop partnerships to provide educational and training facilities to residents employed in the visitor industry.			√
(h) Foster an understanding of local cultures, customs, and etiquette, and emphasize the importance of the Aloha Spirit as a common good for all.			✓
(i) Support the diversification, development, evolution, and integration of the visitor industry in a way that is compatible with the traditional, social, economic, spiritual, and environmental values of island residents			✓
Improve collaboration between the visitor industry and the other sectors of Maui County's economy.			✓
(k) Perpetuate an authentic image of the Hawaiian culture and history and an appropriate recognition of the host culture.			✓
(I) Support the programs and initiatives outlined in the Maui County Tourism Strategic Plan 2006-2015.			✓
(m) Promote water conservation, beach conservation, and open-space conservation in areas providing services for visitors.			✓
 (n) Recognize the important contributions that the visitor industry makes to the County's economy, and support a healthy and vibrant visitor industry. 			√
Analysis: The proposed project is an affordable homestead project fo beneficiaries. The objectives and policies around supporting a visitor indapplicable to the project. Objective:			
(4) Expand economic sectors that increase living-wage job choices and are compatible		1	Т
with community values.		•	
Policies:			
(a) Support emerging industries, including the following: • Health and wellness industry; • Sports and recreation industry; • Film and entertainment industry; • Arts and culture industry; • Renewable-energy industry; • Research and development industry; • High-technology and knowledge-based industries; • Education and training industry; • Ecotourism industry; and		✓	
Agritourism industry.			

choices compatible with community values is indirectly applicable to the propose		ential
project through supporting solar water heating system vendors as these will be every home within the proposed development.	installe	∌a on
G. IMPROVE PARKS AND PUBLIC FACILITIES		
Goal: A full range of island-appropriate public facilities and recreational opportunities		7
will be provided to improve the quality of life for residents and visitors.	١,	<i>'</i>
Objective:		
1) Expand access to recreational opportunities and community facilities to meet the		/
present and future needs of residents of all ages and physical abilities.		
Policies:		
a) Protect, enhance, and expand access to public shoreline and mountain resources.		✓
b) Expand and enhance the network of parks, multi-use paths, and bikeways.		V
a) Assist communities in developing regrestional facilities that promote physical	_	
 Assist communities in developing recreational facilities that promote physical fitness. 		~
d) Expand venue options for recreation and performances that enrich the lifestyles of	-+	_
Maui County's people.		Y
e) Expand affordable recreational and after-school programs for youth.		✓
f) Encourage and invest in recreational, social, and leisure activities that bring people		
together and build community pride.		✓
g) Promote the development and enhancement of community centers, civic spaces,		
and gathering places throughout our communities.		v
h) Expand affordable access to recreational opportunities that support the local		_
lifestyle.		•
mplementing Actions:		
a) Identify and reserve lands for cemeteries, and preserve existing cemeteries on all		▼
islands, appropriately accommodating varying cultural and, faith-based traditions.		
	biective	. and
Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facil the needs of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities.	ities to	meet
Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facilithe needs of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. Objective:	ities to	meet
Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facilitie needs of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. Dijective: 2) Improve the quality and adequacy of community facilities.	ities to	meet
Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facilithe needs of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. Dijective: 2) Improve the quality and adequacy of community facilities.	ities to	meet et will
Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facilitie needs of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. Dijective: 2) Improve the quality and adequacy of community facilities.	ities to	meet et will
Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facilithe needs of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. Dijective: 2) Improve the quality and adequacy of community facilities.	ities to	meet et will
Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facilities of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. Describe: 2) Improve the quality and adequacy of community facilities. Policies: a) Provide an adequate supply of dedicated shelters and facilities for disaster relief. b) Provide and maintain community facilities that are appropriately designed to reflect the traditions and customs of local cultures.	ities to	meet et will
Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facilities of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. Description Description Description Description Description	ities to	meet et will
Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facilities of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. 2) Improve the quality and adequacy of community facilities. 2) Improve the quality and adequacy of community facilities. 3) Provide an adequate supply of dedicated shelters and facilities for disaster relief. 4) Provide and maintain community facilities that are appropriately designed to reflect the traditions and customs of local cultures. 5) Ensure that parks and public facilities are safe and adequately equipped for the needs of all ages and physical abilities to the extent reasonable. 6) Maintain, enhance, expand, and provide new active and passive recreational	ities to	meet et will
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Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facilities of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. 2) Improve the quality and adequacy of community facilities. 2) Improve the quality and adequacy of community facilities. 2) Provide an adequate supply of dedicated shelters and facilities for disaster relief. 3) Provide and maintain community facilities that are appropriately designed to reflect the traditions and customs of local cultures. 3) Provide that parks and public facilities are safe and adequately equipped for the needs of all ages and physical abilities to the extent reasonable. 4) Maintain, enhance, expand, and provide new active and passive recreational facilities in ways that preserve the natural beauty of their locations. 4) Redesign or retrofit public facilities to adapt to major shifts in environmental or urban conditions to the extent reasonable.	lities to	weet et will
Analysis: The proposed residential project will indirectly support the goal, o policies of expanding access to recreational opportunities and community facilities of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. Discrive 20 Improve the quality and adequacy of community facilities.	lities to	weet et will
Analysis: The proposed residential project will indirectly support the goal, opolicies of expanding access to recreational opportunities and community facilitie needs of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. Discretive: 20 Improve the quality and adequacy of community facilities. Provide an adequate supply of dedicated shelters and facilities for disaster relief. Provide and maintain community facilities that are appropriately designed to reflect the traditions and customs of local cultures. Provide and maintain community facilities are safe and adequately equipped for the needs of all ages and physical abilities to the extent reasonable. Maintain, enhance, expand, and provide new active and passive recreational facilities in ways that preserve the natural beauty of their locations. Redesign or retrofit public facilities to adapt to major shifts in environmental or urban conditions to the extent reasonable. Redesign or retrofit public facilities to adapt to major shifts in environmental or urban conditions to the extent reasonable. Analysis: The objective and policies to improve the quality and adequacy of facilities does not apply to this housing project.	lities to	weet et will
Analysis: The proposed residential project will indirectly support the goal, opolicies of expanding access to recreational opportunities and community facilities of residents. The centrally located and highly desirable site of this provide easy access to existing recreational activities and community facilities. Dijective: 20 Improve the quality and adequacy of community facilities. Policies: 20 Provide an adequate supply of dedicated shelters and facilities for disaster relief. 21 Provide and maintain community facilities that are appropriately designed to reflect the traditions and customs of local cultures. 22 Ensure that parks and public facilities are safe and adequately equipped for the needs of all ages and physical abilities to the extent reasonable. 23 Maintain, enhance, expand, and provide new active and passive recreational facilities in ways that preserve the natural beauty of their locations. 24 Provide and provide new active and passive recreational facilities in ways that preserve the natural beauty of their locations. 25 Provide and provide new active and passive recreational facilities. 26 Provide and provide new active and passive recreational facilities. 27 Provide and provide new active and passive recreational facilities.	lities to	weet et will
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COUNTYWIDE POLICY PLAN			
(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(b) Manage park use and control access to natural resources in order to rest sensitive			√
places and utilize the resources in a sustainable manner.			
(c) Provide public-recreational facilities that are clean and well-maintained.			✓
(d) Develop partnerships to ensure proper stewardship of the islands' trails, public			1
lands, and access systems.			<u> </u>
(e) Ensure that there is an adequate supply of public restrooms in convenient locations.			✓
mplementing Actions:			
(a) Encourage the State to allow for overnight fishing along the shoreline in accordance			1
with management plans and regulations.			ļ.,
(b) Develop and regularly update functional plans, including those relating to public			√
facilities, parks, and campgrounds.			۰,
(c) Develop and adopt local level-of service standards for public facilities and parks.			✓
d) Identify, acquire, and develop lands for parks, civic spaces, and public uses.			✓
Analysis: The proposed project does not meet the objective of enhanc management, and planning of public facilities and park lands. The policies out this objective does not apply to the proposed project. H. DIVERSIFY TRANSPORTATION OPTIONS			
Goal: Maui County will have an efficient, economical, and environmentally sensitive		1	
means of moving people and goods.		•	
Objective:			
(1) Provide an effective, affordable, and convenient ground-transportation system that		1	
is environmentally sustainable.			
Policies:			
(a) Execute planning strategies to reduce traffic congestion.		✓	
(b) Plan for the efficient relocation of roadways for the public benefit.		✓	
(c) Support the use of alternative roadway designs, such as traffic-calming techniques			1
and modern roundabouts.			1
(d) Increase route and mode options in the ground-transportation network.		✓	
(e) Ensure that roadway systems are safe, efficient, and maintained in good condition.	✓		
(f) Preserve roadway corridors that have historic, scenic, or unique physical attributes		1	\vdash
that enhance the character and scenic resources of communities.			
(g) Design new roads and roadway improvements to retain and enhance the existing		1	
character and scenic resources of the communities through which they pass.		•	
(h) Promote a variety of affordable and convenient transportation services that meet			✓
countywide and community needs and expand ridership of transit systems.			
 (i) Collaborate with transit agencies, government agencies, employers, and operators to provide planning strategies that reduce peak-hour traffic. 			V
(j) Develop and expand an attractive, island-appropriate, and efficient public			./
transportation system.			•
(k) Provide and encourage the development of specialized transportation options for			1
the young, the elderly, and persons with disabilities.			ļ.
(I) Evaluate all alternatives to preserve quality of life before widening roads.			✓
(m) Encourage businesses in the promotion of alternative transportation options for			√
resident and visitor use.			Ļ
(n) Support the development of carbon-emission standards and an incentive program			√
aimed at achieving County carbon-emission goals.			

(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	N
Implementing Actions:			
 (a) Create incentives and implement strategies to reduce visitor dependence on rental cars. 			٧
(b) Establish efficient public-transit routes between employment centers and primary workforce residential areas.			٧
(c) Create attractive, island-appropriate, conveniently located park-and-ride and ride- share facilities.			٧
Analysis: The proposed project will provide specific roadway improvements a by the TIAR and as discussed with the State Department of Transports improvements will comply with applicable federal policies for roadway safety a which will benefit the greater community. In addition, the proposed road with Honoapi'ilani Highway will maintain an existing bike route and provide for transcaped lot.	ition. nd eff dening	Sud ficiend alor	ch cy ng
Objective: (2) Reduce the reliance on the automobile and fossil fuels by encouraging walking,			Г
bicycling, and other energy-efficient and safe alternative modes of transportation.		✓	
Policies:			
(a) Make walking and bicycling transportation safe and easy between and within communities.		✓	
(b) Require development to be designed with the pedestrian in mind.			٧
(c) Design new and retrofit existing rights-of-way with adequate sidewalks, bicycle lanes, or separated multi-use transit corridors.		✓	
(d) Support the development of a countywide network of bikeways, equestrian trails, and pedestrian paths.			٧
(e) Support the reestablishment of traditional trails between communities, to the ocean, and through the mountains for public use.			٧
(f) Encourage educational programs to increase safety for pedestrians and bicyclists.			٧
Implementing Actions:			_
(a) Design, build, and modify existing bikeways to improve safety and separation from automobiles.			٧
(b) Increase enforcement to reduce abuse of bicycle and pedestrian lanes by motorized vehicles.			٧
(c) Identify non-motorized transportation options as a priority for new sources of funding.			٧
Analysis: The proposed affordable homestead project is centrally located small towns of Waikapū and Wailuku. The widening of Honoapi'ilani Highway wil existing bike route in the paved shoulder that will provide residents with an alterr transportation. Objective: (3) Improve opportunities for affordable, efficient, safe, and reliable air transportation.	l mair	ntain a	an
Policies:			
(a) Discourage private helicopter and fixed-wing landing sites to mitigate environmental and social impacts.			٧
(b) Encourage the use of quieter aircraft and noise-abatement procedures for arrivals and departures.			٧
(c) Encourage the modernization and maintenance of air-transportation facilities for general-aviation activities.			٧
(d) Encourage a viable and competitive atmosphere for air carriers to expand service and ensure sufficient intra-County flights and affordable fares for consumers.			٧
(e) Continue to support secondary airports, and encourage the State to provide them			١.,

COUNTYWIDE POLICY PLAN

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COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(f) During Community Plan updates, explore the use of the smaller airports.			1
(g) Encourage the State to provide efficient, adequate, and affordable parking and transit connections within and around airports.			√
Analysis: This residential project does not meet the objective and policies opportunities for affordable, efficient, safe, and reliable air transportation.	of im	provir	ng
Objective:			
(4) Improve opportunities for affordable, efficient, safe, and reliable ocean transportation.			✓
Policies:			
(a) Support programs and regulations that reduce the disposal of maritime waste and prevent spills into the ocean.			✓
(b) Encourage the upgrading of harbors to resist damage from natural hazards and disasters.			✓
(c) Encourage the State to study the use of existing harbors and set priorities for future use.			✓
(d) Explore all options to protect the traditional recreational uses of harbors, and mitigate harbor-upgrade impacts to recreational uses where feasible.			✓
(e) Encourage the upgrading of harbors and the separation of cargo and bulk materials from passenger and recreational uses.			✓
(f) Encourage the State to provide for improved capacity at shipping, docking, and storage facilities.			✓
(g) Encourage the State to provide adequate parking facilities and transit connections within and around harbor areas.			✓
(h) Encourage the redevelopment and revitalization of harbors while preserving historic and cultural assets in harbor districts.			✓
 Encourage the State to provide adequate facilities for small-boat operations, including small-boat launch ramps, according to community needs. 			✓
(j) Support the maintenance and cleanliness of harbor facilities.			✓
(k) Support the redevelopment of harbors as pedestrian-oriented gathering places.			✓
Analysis: Improving opportunities for affordable, efficient, safe, and rel transportation is not applicable to the goal of providing affordable homestead beneficiaries.			
Objective:			
(5) Improve and expand the planning and management of transportation systems.	✓		
Policies:			
 (a) Encourage progressive community design and development that will reduce transportation trips. 		√	
(b) Require new developments to contribute their pro rata share of local and regional infrastructure costs.		✓	
(c) Establish appropriate user fees for private enterprises that utilize public transportation facilities for recreational purposes.			✓
(d) Support the revision of roadway-design criteria and standards so that roads are compatible with surrounding neighborhoods and the character of rural areas.			✓
(e) Plan for multi-modal transportation and utility corridors on each island.			✓
(f) Support designing all transportation facilities, including airport, harbor, and mass- transit stations, to reflect Hawaiian architecture.			✓
(g) Utilize transportation-demand management as an integral part of transportation planning.			✓
(h) Accommodate the planting of street trees and other appropriate landscaping in all			

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Analysis: The proposed project will directly support the improvement of tr			
systems. The project is centrally located which will allow families to be closer to v			
activities, and services, thereby limiting long distance road trips. The project			
widening Honoapi'ilani Highway, maintaining a bike route and making road impro			
the safety of the larger community. As mentioned previously, existing trees along l	Hono	api'ila	ni
Highway will be removed and replaced at a minimum of 1:1 with healthier trees.			
I. IMPROVE PHYSICAL INFRASTRUCTURE			
Goal: Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean		✓	
and sustainable technologies.			
Objective:			
1) Improve water systems to assure access to sustainable, clean, reliable, and		_/	
affordable sources of water.			
olicies:			
a) Ensure that adequate supplies of water are available prior to approval of	√		
subdivision or construction documents.	•		
Develop and fund improved water-delivery systems.			✓
) Ensure a reliable and affordable supply of water for productive agricultural uses.			✓
) Promote the reclamation of gray water, and enable the use of reclaimed, gray, and			1
brackish water for activities that do not require potable water.			ľ
e) Retain and expand public control and ownership of water resources and delivery			√
systems.			
Improve the management of water systems so that surface-water and groundwater			✓
resources are not degraded by overuse or pollution. 1) Explore and promote alternative water-source-development methods.			_
, , , , ,			✓
) Seek reliable long-term sources of water to serve developments that achieve			✓
consistency with the appropriate Community Plans.			
nplementing Actions:			
Develop a process to review all applications for desalination.			✓
Analysis: The project directly supports this objective and related policies as it			
an area that is serviced by existing County water infrastructure. Coordinate			
undertaken with the DWS to determine if certain improvements to the County's v	water	syste	m
will be required to service the project.			
Dbjective: 2) Improve waste-disposal practices and systems to be efficient, safe, and as			1
environmentally sound as possible.		✓	
cliving mentally sound as possible.			<u> </u>
a) Provide sustainable waste-disposal systems and comprehensive, convenient		./	
recycling programs to reduce the flow of waste into landfills.		•	
b) Support innovative and alternative practices in recycling solid waste and			1
wastewater and disposing of hazardous waste.			•
c) Encourage vendors and owners of automobile, appliance, and white goods to			1
participate in the safe disposal and recycling of such goods, and ensure greater			•
accountability for large waste producers.			
d) Develop strategies to promote public awareness to reduce pollution and litter, and			1
encourage residents to reduce, reuse, recycle, and compost waste materials.			
e) Pursue improvements and upgrades to existing wastewater and solid-waste	\checkmark		
systems consistent with current and future plans and the County's Capital Improvement Program.			
improvement rrogram.			

Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable) mplementing Actions:	DA	IA N
 a) Establish recycling, trash-separation, and materials recovery programs and facilities to reduce the flow of waste into landfills. 		١
b) Study the feasibility of developing environmentally safe waste-to-energy facilities.		١
c) Utilize taxes and fees as means to encourage conservation and recycling.		1
d) Implement and regularly update the Integrated Solid Waste Management Plan.		1
e) Phase out the use of injection wells.		1
proposed project. The project proposes connection to the County wastewate mprovements that would be needed to connect to the system. Coordination will be with the DEM to determine if certain improvements to the County's wastewater strequired to service the project aside from the new sewerline that is proposed overall project. Construction waste will be disposed at the County's Central Mappropriate construction recycling centers. In addition, once built and occupies a anticipated to be served by the County's refuse collection service. Objective:	oe unde system as par aui Lar	ertaken will be t of the ndfill or
3) Significantly increase the use of renewable and green technologies to promote energy efficiency and energy self-sufficiency.	✓	
Policies:		
 a) Promote the use of locally renewable energy sources, and reward energy efficiency. 		١
 Consider tax incentives and credits for the development of sustainable- and renewable-energy sources. 		١
c) Expand education about energy conservation and self-sufficiency.		1
 d) Encourage small-scale energy generation that utilizes wind, sun, water, biowaste, and other renewable sources of energy. 	✓	
e) Expand renewable-energy production.	✓	
 Develop public-private partnerships to ensure the use of renewable energy and increase energy efficiency. 		,
g) Require the incorporation of locally appropriate energy-saving and green building design concepts in all new developments by providing energy efficient urban design guidelines and amendments to the Building Code.		,
n) Encourage the use of sustainable energy to power vehicles.		١
) Promote the retrofitting of existing buildings and new development to incorporate energy-saving design concepts and devices.		١
) Encourage green footprint practices.		1
Reduce Maui County's dependence on fossil fuels and energy imports.	✓	
		1
 Support green building practices such as the construction of buildings that aim to minimize carbon dioxide production, produce renewable energy, and recycle water. 		١
minimize carbon dioxide production, produce renewable energy, and recycle water. m) Promote and support environmentally friendly practices in all energy sectors. mplementing Actions:		
minimize carbon dioxide production, produce renewable energy, and recycle water. m) Promote and support environmentally friendly practices in all energy sectors.		١

Analysis: Each home built, whether turn-key or lessee built, will be required to have a solar water heater system pursuant to MCC, Section 16.16B.R403.5.5. In addition, individual homeowners may choose to install solar PV systems on their homes if desired thus directly supporting this objective and related policies by advancing measures to lessen dependence on fossil fuel based energy.

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Objective:			
(4) Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.	1		
Policies:			
(a) Capitalize on existing infrastructure capacity as a priority over infrastructure expansion.	✓		
(b) Planning for new towns should only be considered if a region's growth is too large to be directed into infill and adjacent growth areas.			✓
(c) Utilize appropriate infrastructure technologies in the appropriate locations.			1
(d) Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.	✓		
(e) Support catchment systems and on-site wastewater treatment in rural areas and aggregated water and wastewater systems in urban areas if they are appropriately located.			✓
Implementing Actions:			
(a) Develop a streamlining system for urban infill projects.			✓
(b) Identify appropriate areas for urban expansion of existing towns where infrastructure and public facilities can be provided in a cost-effective manner.	✓		
near jobs, schools, recreation, and other services. Objective: (5) Improve the planning and management of infrastructure systems.	✓		
Policies:			1
(a) Provide a reliable and sufficient level of funding to enhance and maintain infrastructure systems.			✓
(b) Require new developments to contribute their pro rata share of local and regional infrastructure costs.			✓
(c) Improve coordination among infrastructure providers and planning agencies to minimize construction impacts.			✓
 (d) Maintain inventories of infrastructure capacity, and project future infrastructure needs. 			✓
(e) Require social-justice and -equity issues to be considered during the infrastructure- planning process.			✓
(f) Discourage the development of critical infrastructure systems within hazard zones and the tsunami-inundation zone to the extent practical.			✓
(g) Ensure that infrastructure is built concurrent with or prior to development.	✓		
(h) Ensure that basic infrastructure needs can be met during a disaster.			✓
 Locate public facilities and emergency services in appropriate locations that support the health, safety, and welfare of each community and that minimize delivery inefficiencies. 			✓
 Promote the undergrounding of utility and other distribution lines for health safety, and aesthetic reasons. 			✓
Implementing Actions:			
(a) Develop and regularly update functional plans for infrastructure systems.			✓
(b) Develop, adopt, and regularly update local or community-sensitive level-of service standards for infrastructure systems.			✓
Analysis: The proposed project will be implemented in a developed area in Ce	entral !	Maui,	in

Analysis: The proposed project will be implemented in a developed area in Central Maui, in proximity to existing infrastructure and services. It is important to note that this project will support the Native Hawaiian population to provide equitable access to housing. The project will also be implementing infrastructure improvements to service the proposed homes.

COUNTYWIDE POLICY PLAN			
(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NΑ
J. PROMOTE SUSTAINABLE LAND USE AND GROWTH MANAGEMENT			
Goal: Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.	✓		
Objective:			
(1) Improve land use management and implement a directed-growth strategy.	✓		
Policies:			
(a) Establish, map, and enforce urban- and rural-growth limits.		✓	
(b) Direct urban and rural growth to designated areas.	✓		
(c) Limit the number of visitor-accommodation units and facilities in Community Plan Areas.			✓
(d) Maintain a sustainable balance between the resident, part-time resident, and visitor populations.			√
(e) Encourage redevelopment and infill in existing communities on lands intended for urban use to protect productive farm land and open-space resources.			✓
(f) Discourage new entitlements for residential, resort, or commercial development along the shoreline.			✓
(g) Restrict development in areas that are prone to natural hazards, disasters, or sea- level rise.		✓	
(h) Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources.	✓		
 (i) Establish and maintain permanent open space between communities to protect each community's identity. 		✓	
(j) Support the dedication of land for public uses.			✓
(k) Preserve the public's rights of access to and continuous lateral access along all shorelines.			✓
 Enable existing and future communities to be self-sufficient through sustainable land use planning and management practices. 			√
(m) Protect summits, slopes, and ridgelines from inappropriate development.			√
Implementing Actions:			
(a) Regularly update urban- and rural-growth boundaries and their maps.			√
(b) Establish transfer and purchase of development rights programs.			✓
(c) Develop and adopt a green infrastructure plan.			√
(d) Develop studies to help determine a sustainable social, environmental, and economic carrying capacity for each island.			√
(e) Identify and define resort-destination areas.			√
Analysis: Although the proposed project repurposes lands designated for agr for homes, the project area is located within the Urban and Rural Growth B designated by the County of Maui's Maui Island Plan and within an area planne The proposed project will be implemented in a developed area in Central Maui, ir existing infrastructure and services and in an area outside of flood, tsunami, and hazard areas. Objective:	ounda d for n prox	ries grow imity	as th. to
(2) Improve planning for and management of agricultural lands and rural areas.			✓
Policies: (a) Protect prime, productive, and potentially productive agricultural lands to maintain the islands' agricultural and rural identities and economies.			✓
and the second s		L	1

(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable) (b) Provide opportunities and incentives for self-sufficient and subsistence homesteads and farms. (c) Discourage developing or subdividing agriculturally designated lands when nonagricultural activities would be primary uses. (d) Conduct agricultural-development planning to facilitate robust and sustainable 1 agricultural activities. Implementing Actions: (a) Inventory and protect prime, productive, and potentially productive agricultural lands from competing non-agricultural land uses. Analysis: As previously discussed, the proposed project will be developed on lands designated for agriculture use. Although designated for agriculture, the lands have not been in cultivation for over a decade, aside from intermittent cattle grazing. In the context of the amount of viable agriculture lands on the island of Maui, implementation of the proposed action to create much needed housing in a developed area with other residential subdivisions is not considered to adversely affect agricultural productivity on Maui. As such, the objective of improving planning for and managing agriculture lands and rural areas are not applicable to this project. Objective: (3) Design all developments to be in harmony with the environment and to protect each community's sense of place. Policies: (a) Support and provide incentives for green building practices. (b) Encourage the incorporation of green building practices and technologies into all ✓ government facilities to the extent practicable. (c) Protect and enhance the unique architectural and landscape characteristics of each **√** Community Plan Area, small town, and neighborhood. (d) Ensure that adequate recreational areas, open spaces, and public-gathering places **√** are provided and maintained in all urban centers and neighborhoods. (e) Ensure business districts are distinctive, attractive, and pedestrian-friendly destinations. (f) Use trees and other forms of landscaping along rights-of-way and within parking lots to provide shade, beauty, urban-heat reduction, and separation of pedestrians from automobile traffic in accordance with community desires. (g) Where appropriate, integrate public-transit, equestrian, pedestrian, and bicycle facilities, and public rights-of-way as design elements in new and existing communities. (h) Ensure better connectivity and linkages between land uses. (i) Adequately buffer and mitigate noise and air pollution in mixed-use areas to √ maintain residential quality of life. (j) Protect rural communities and traditional small towns by regulating the footprint, ✓ locations, site planning, and design of structures. (k) Support small-town revitalization and preservation ✓ (I) Facilitate safe pedestrian access, and create linkages between destinations and within parking areas. Implementing Actions: (a) Establish design guidelines and standards to enhance urban and rural \checkmark environments. (b) Provide funding for civic-center and civic-space developments. ✓ (c) Establish and enhance urban forests in neighborhoods and business districts.

COUNTYWIDE POLICY PLAN

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DΑ	IΔ	NΔ
Analysis: The objectives and policies are directly applicable to the propose	ed pro	oject.	Α
landscaped lot will be developed along the project's frontage along Honoapi'ilan set the houses back and provide open space relief from the right-of-way. Also,			
planted along Honoapi'ilani Highway to provide further separation between the hi			
and the neighborhood. Further the widening of Honoapi'ilani Highway will maintain	n a bik	e rou	te
in the paved shoulder, providing connectivity in the larger regional area.			
Objective:			
(4) Improve and increase efficiency in land use planning and management.	✓		
Policies:			
 (a) Assess the cumulative impact of developments on natural ecosystems, natural resources, wildlife habitat, and surrounding uses. 	✓		
(b) Ensure that new development projects requiring discretionary permits demonstrate			-/
a community need, show consistency with the General Plan, and provide an analysis of impacts.			•
(c) Encourage public and private partnerships to preserve lands of importance,	√		
develop housing, and meet the needs of residents.	•		
(d) Promote creative subdivision designs that implement best practices in land	✓		
development, sustainable management of natural and physical resources,			
increased pedestrian and bicycle functionality and safety, and the principles of livable communities.			
(e) Coordinate with Federal, State, and County officials in order to ensure that land use			-/
decisions are consistent with County plans and the vision local populations have			•
for their communities.			
(f) Enable greater public participation in the review of subdivisions.			✓
 (g) Improve land use decision making through the use of land- and geographic information systems. 			✓
Implementing Actions:			l
(a) Institute a time limit and sunsetting stipulations on development entitlements and			1
their implementation.			
Analysis: The proposed project entails the development of affordable hor			
beneficiaries of the DHHL. The design and environmental review processes invo analysis of the proposed project's potential impacts on the environment, infrasi			
socio-economic conditions. In addition, opportunities for public input were affor			
the environmental review process.		• 5	,
K. STRIVE FOR GOOD GOVERNANCE			
Objective:			
 Strengthen governmental planning, coordination, consensus building, and decision making. 		✓	
Policies:			
(a) Plan and prepare for the effects of social, demographic, economic, and environmental shifts.			✓
(b) Plan for and address the possible implications of Hawaiian sovereignty.			✓
(c) Encourage collaboration among government agencies to reduce duplication of efforts and promote information availability and exchange.		✓	
(d) Expand opportunities for the County to be involved in and affect State and Federal decision making.			✓
(e) Plan and prepare for large-scale emergencies and contingencies.			✓
 (f) Improve public awareness about preparing for natural hazards, disasters, and evacuation plans. 			✓
(g) Improve coordination among Federal, State, and County agencies.			1

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)			
	DA	IA	N/
Implementing Actions:	DA	1/1	10.7
(a) Develop policies, regulations, and programs to protect and enhance the unique	ρ		
character and needs of the County's various communities.			v
b) Evaluate and if necessary, recommend modifications to the County Charter that	ıt		V
could result in a possible change to the form of governance for Maui County.			
(c) Study and evaluate the feasibility and implications of voting in Maui County Counc elections.	il		✓
(d) Study and evaluate the feasibility of authorizing town governments in Maui County	<i>1</i> .		٧
Analysis: The objective of strengthening governmental planning, coordinat building, and decision making along with the policies that support this objective applicable to the proposed project. However, it is important to note the coordination between government entities is critical to the success of the projective:	e is not o hat con	direct	ly
(2) Promote civic engagement.		✓	
Policies:			
 (a) Foster consensus building through in-depth, innovative, and accessible public participatory processes. 	С	✓	
(b) Promote and ensure public participation and equal access to government among all citizens.	g		٧
 (c) Encourage a broad cross-section of residents to volunteer on boards and commissions. 	d		٧
(d) Encourage the State to improve its community-involvement processes.			٧
(e) Support community-based decision making.		✓	
(f) Expand advisory functions at the community level.			~
 (g) Expand opportunities for all members of the public to participate in public meeting and forums. 	S	√	
(h) Facilitate the community's ability to obtain relevant documentation.			~
(i) Increase voter registration and turnout.			٧
mplementing Actions:			
 (a) Implement two-way communication using audio-visual technology that allow residents to participate in the County's planning processes. 	S		٧
b) Ensure and expand the use of online notification of County business and public	С		_
meetings, and ensure the posting of all County board and commission meeting	g		•
minutes.	d		-
(c) Explore funding mechanisms to improve participation by volunteers on boards and	ا ا		
			٠

COUNTY/MIDE DOLLOY BLAN			
COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(b) Simplify and clarify the permitting process to provide uniformity, reliability,	בת	-	-
efficiency, and transparency.			•
(c) Improve communication with Lana'i and Moloka'i through the expanded use of			1
information technologies, expanded staffing, and the creation and expansion of			•
government-service centers.			
(d) Ensure that laws, policies, and regulations are internally consistent and effectuate			✓
the intent of the General Plan.			
Implementing Actions:			
(a) Update the County Code to be consistent with the General Plan.			✓
(b) Identify and update County regulations and procedures to increase the productivity			✓
and efficiency of County government.			
 (c) Develop local level-of-service standards for infrastructure, public facilities, and services. 			✓
(d) Implement plans through programs, regulations, and capital improvements in a timely manner.			✓
(e) Expand government online services.			1
Analysis: The objective and policies as it relates to improving the efficiency, r	oliabili	tv and	,
transparency of County government's internal processes and decision ma			
applicable to the proposed project.	annig		•
Objective:			
(4) Adequately fund in order to effectively administer, implement, and enforce the			✓
General Plan.			•
Policies:			
(a) Adequately fund, staff, and support the timely update and implementation of			✓
planning policy, programs, functional plans, and enforcement activities.			
(b) Ensure that the County's General Plan process provides for efficient planning at			✓
the County, island, town, and neighborhood level. (c) Encourage ongoing professional development, education, and training of County			_
employees.			✓
(d) Encourage competitive compensation packages for County employees to attract			1
and retain County personnel.			•
(e) Enable the County government to be more responsive in implementing our General			✓
Plan and Community Plans.			
(f) Review discretionary permits for compliance with the Countywide Policy Plan.			✓
(g) Strengthen the enforcement of County, State, and Federal land use laws.			✓
Implementing Actions:		-	
(a) Establish penalties to ensure compliance with County, State, and Federal land use			1
laws.			•
Analysis: The objective and policies regarding the funding of the General Plan	do no	t apply	y
to the proposed action.			
Objective:			
(5) Strive for County government to be a role model for implementing cultural and environmental policies and practices.			✓
Policies:			
(a) Educate residents on the benefits of sustainable practices.			1
(b) Encourage the retention and hiring of qualified professionals who can improve			1
cultural and environmental practices.			*
(c) Incorporate environmentally sound and culturally appropriate practices in			✓
government operations and services.			

COUNTYWIDE POLICY PLAN					
(Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA		
(d) Encourage all vendors with County contracts to incorporate environmentally sound and culturally appropriate practices.			✓		
Analysis: The objective and policies regarding the County of Maui implementing cultural and environmental practices does not apply to the proposed DHHL project.					

ANALYSIS OF THE PROJECT'S COMPLIANCE WITH PROVISIONS OF THE MAUI ISLAND PLAN

APPENDIX

M-2

APPENDIX "M-2" MAUI ISLAND PLAN ASSESSMENT OF PROJECT APPLICABILITY TO GOALS, OBJECTIVES, AND POLICIES

	sland Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
CHAPT	ER 1 – POPULATION			
Goal:				
1.1	Maui's people, values, and lifestyles thrive through strong, healthy, and vibrant island communities.	✓		
Objecti	ve:			
1.1.1	Greater retention and return of island residents by providing viable work, education, and lifestyle options.	✓		
Policies	<u>s:</u>	_		
1.1.1.a	Expand programs that enable the community to meet the education, employment, housing, and social goals of youth and young adults.	✓		
1.1.1.b	Expand housing, transportation, employment, and social opportunities to ensure residents are able to comfortably age within their communities.	✓		
1.1.1.c	Measure and track resident satisfaction through surveys and community indicators.			✓
1.1.1.d	Support funding for transportation, housing, health care, recreation, and social service programs that help those with special needs (including the elderly and disabled).			1
Wailuk for loc	ciaries in an area that is close to the government, business, and commercia u and Kahului. Further, the proposed project will provide for additional hous al families seeking to live on Maui island to be closer to their familie ment, education, and social opportunities.	sing o	ptio	ns
CHAPT	ER 2 – HERITAGE RESOURCES			
CULTU	RAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES ISSUES			
Goal:				
2.1	Our community respects and protects archaeological and cultural resources while perpetuating diverse cultural identities and traditions.		✓	
Objecti	ve:			
2.1.1	An island culture and lifestyle that is healthy and vibrant as measured by the ability of residents to live on Maui, access and enjoy the natural environment, and practice Hawaiian customs and traditions in accordance with Article XII, Section 7, Hawai'i State Constitution, and Section 7-1, Hawai'i Revised Statutes (HRS).			√
Policies	<u>s:</u>			
2.1.1.a	Perpetuate the spirit of aloha and celebrate the host Hawaiian culture and other ethnic cultures.			1
2.1.1.b	Perpetuate a respect for diversity and recognize the broad blending of cultures and ethnicities as vital to the quality of life on Maui.			✓

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.1.1.c	Ensure traditional public access routes, including native Hawaiian trails, are maintained for public use.			✓
2.1.1.d	Support the education of visitors and new residents about the customs and etiquette of the Hawaiian culture, as well as other cultures.			✓
Analys				/le
Objecti	, , , , , , , , , , , , , , , , , , , ,	proje		
2.2	A more effective and efficient planning and review process that incorporates the best available cultural resources inventory, protection techniques, and preservation strategies.		✓	
Policies	<u>s:</u>			
2.1.2.a	Ensure that the island has a comprehensive and up-to-date inventory of historic and archaeological resources, and their cultural significance.		1	
2.1.2.b	Require the update of existing planning and regulatory mechanisms to protect the natural, cultural, scenic, and historic resources within designated Heritage Areas (see Cultural Resources Overlay/Scenic Corridor Protection Technical Reference Map).			>
2.1.2.c	Ensure that cultural, historic, and archaeological resources are protected for the benefit of present and future generations.		✓	
Objecti	ve:			
2.3	Enhance the island's historic, archaeological, and cultural resources.	✓		
Policies	<u>8:</u>			
2.1.3.a	Identify and pursue a listing of the properties and sites on the State and National Register of Historic Places.			✓
2.1.3.b	Support the use of easements, dedications, and other mechanisms to acquire, maintain, and protect lands with cultural, archaeological, and historic significance.			\
2.1.3.c	Support regulations to require developers, when appropriate, to prepare an Archaeological Inventory Survey, Cultural Impact Assessment, and Ethnographic Inventories that are reviewed and commented upon by the Office of Hawaiian Affairs, Native Hawaiian advisory bodies, the State Historic Preservation Division (SHPD), and the Office of Environmental Quality Control, and systematically comply with the steps listed in SHPD's administrative rules, including consultation and monitoring during construction phases of projects.	√		
2.1.3.d	Promote the rehabilitation and adaptive reuse of historic sites, buildings, and structures.			✓
2.1.3.e	Encourage property owners to register historic and archaeological sites on the State and National Register.			✓
2.1.3.f	Support opportunities for public involvement with the intent to facilitate the protection and restoration of historic and archeological sites, including consultation with stakeholders.	1		
2.1.3.g	Encourage the resolution of land title questions relating to Land Commission Awards and Royal patents.			✓
2.1.3.h	Ensure compliance with historic preservation laws, and discourage demolition of properties that are determined to be eligible for listing on the National or State Register of Historic Places.	✓		

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable DA IA NA

The objectives and policies relating to ensuring an effective and efficient planning and review process incorporating best available cultural resources inventory, protection techniques, and preservation strategies and enhancement of the island's historic. archaeological, and cultural resources are directly and indirectly applicable to the proposed project. An AlS was prepared in 2005 for a 215.8-acre area in Walkapu, which included the proposed subdivision site. In its acceptance letter of the AIS, the SHPD concurred that no further mitigation was necessary. In addition, an AA was completed for the parcel on which the proposed sewerline will be located in relation to the Wailuku Apartment Rental Housing Project. In its acceptance letter, the SHPD concurred that archaeological monitoring must be undertaken. Should any archaeological resources be discovered during ground altering activities, work shall cease in the immediate area of the find and mitigation coordination will be undertaken with the SHPD. In addition, a CIA was prepared for the Proposed Pu'unani Homestead Subdivision project and noted that based on historical research and consultation, there is evidence of cultural practices related to Hawaiian rights related to agricultural pursuits, access to resources, and other customary activities presently occurring in the vicinity of the proposed project, but not necessarily within the proposed project area itself. In addition, a legendary grinding stone (Pōhāko'i) is believed to be located in the vicinity of the site of the proposed subdivision. The CIA also noted that given the project site's proximity to sand dunes. there is a potential for human burials to be present. As such, the CIA provided recommendations that an archaeological field inspection be conducted by a qualified archaeologist prior to the commencement of any construction related ground altering activities in an effort to locate Pōhāko'i and that archaeological monitoring be conducted during all construction-related ground-altering activities. An archaeological field inspection was undertaken in August 2020, no discoveries were made. Nonetheless, future efforts to locate this important stone will occur during the archaeological monitoring of the project area during future ground altering activities.

SHORELINE, REEFS, AND NEARSHORE WATERS Goal: 2.2 An intact, ecologically functional system of reef, shoreline, and nearshore waters that are protected in perpetuity. Objective: 2.2.1 A more comprehensive and community-based ICZM program. Policies: 2.2.1.a Encourage a management system that protects and temporarily rests the reef ecosystems from overuse. 2.2.1.b Support the establishment of additional MMAs and reef replenishment areas. 1 2.2.1.c Work with appropriate agencies and community members to protect any special managed conservation areas from overuse and ensure that surrounding land uses do not contribute to the degradation of the natural resources, such as 'Ahihi-Kina'u Natural Area Reserve. Honolua-Mokulē'ia Bay Marine Life Conservation District, and Makena State Park. 2.2.1.d Incorporate the following into the MIP, where consistent with the MIP: (1) Beach Management Plan for Maui; 1 (2) Coastal Nonpoint Pollution Control Program Management Plan; (3) Implementation Plan for Polluted Runoff Control; and

	A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable (4) Ocean Resource Management Plan.	DA	IA	N/
2.2.1.e	Support greater coordination among governmental agencies involved with the protection of the island's marine resources.			·
Objecti				
2.2.2	Improved reef health, coastal water quality, and marine life.		1	
Policies	\$'			
	Create additional mechanisms where needed to contain and control runoff and pollution.		✓	
2.2.2.b	Allow extraction of high quality, Class A, low silt sands only when they will be used to protect or restore Maui's shorelines and beaches.			٧
2.2.2.c	Carefully manage beach nourishment activities to protect the coastal and marine ecosystem. $ \\$			٧
2.2.2.d	Require, where appropriate, a buffer between landscaped areas and the shoreline, gulches, and streams to reduce the runoff of fertilizers, pesticides, herbicides, and other pollutants into coastal waters.			*
2.2.2.e	Strictly regulate shoreline armoring in accordance with adopted Shoreline Rules, with an intent to protect the coastal and marine ecosystem.			*
2.2.2.f	Support greater protection of Keālia Pond National Wildlife Refuge through the following:			٧
	(1) Enhancement of marine ecosystems;			٧
	(2) Beach and sand dune restoration; and			v
	(3) Expansion of habitat for Maui's threatened or endangered sea turtles, birds, and other species.			v
2.2.2.g	Support the development of regulations to prevent the excessive depletion of fish stocks due to non-sustainable practices and gear such as SCUBA spear-fishing and lay nets, within the context of nearshore ecosystems.			٧
2.2.2.h	Encourage the State to conduct a regular census of fish populations and monitor coral health. $\label{eq:conduct}$			٧
2.2.2.i	Encourage the State to significantly increase the number of park rangers, enforcement officers, and marine biologists to protect coastal resources.			٧
2.2.2.j	Encourage the State to prohibit the collection and exportation of fish, coral, algae, and other marine species for the ornamental and aquarium trade.			٧
Objecti	ve:	ı	r	
2.2.3 V	Nater quality that meets or exceeds State Clean Water Act standards.		1	
Policie	<u>s:</u>			
2.2.3.a	Reduce the amount of impervious surface and devise site plan standards that aim to minimize storm runoff and NPS pollution.		✓	
2.2.3.b	Support the revision of existing regulations to require an Erosion and Sedimentation Control Plan (ESCP) for development activities that may pose a threat to water quality.			٧

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.2.3.c	Require an on-site monitoring program, where applicable, when grading may pose a threat to water quality or when recommended in the ESCP.			✓
2.2.3.d	Avoid development actions that impair Maui's reef systems and remove identified stressors.			1
2.2.3.e	Phase out cesspools and restrict the use of septic systems in ecologically sensitive coastal areas by converting to environmentally-friendly alternative sewage treatment systems, and connecting to central sewerage systems when and where feasible.			✓
2.2.3.f	Prohibit the development of new wastewater injection wells, except when unavoidable for public health and safety purposes.			√
2.2.3.g	Ensure that the County upholds its affirmative duty under the Clean Water Act by monitoring and reducing point and NPS pollution to help safeguard coastal waters.			✓
Objecti	ve:			
2.2.4	Acquire additional shoreline lands and shoreline access rights.			✓
Policies	<u>s:</u>	•		
2.2.4.a	Promote the use of conservation easements, land trusts, transfer and purchase of development rights, and mitigation banking.			√
2.2.4.b	Require the dedication of public beach and rocky shoreline access ways to and along the shoreline where it serves a practical public interest as a condition of development or subdivision approval; future subdivisions and developments shall be consistent with and effectuate, to the extent practicable, the Shoreline Access Inventory Update - Final Report (March 2005), and its updates.			✓
2.2.4.c	Incorporate the <i>Shoreline Access Inventory Update - Final Report</i> (March 2005), and its regular updates, into this plan.			√
2.2.4.d	Identify access points while further acquiring key shoreline parcels and easement rights to enhance and protect beach access and shoreline recreation.			√
to sho shoreli grading applica BMPs advers	is: The proposed project is located inland, and not in close proxine. With the spatial separation, there are no direct project considerations reline management programming, reef health, coastal water quality, man leands and access rights. However, inasmuch as the proposed action of any and earth moving activities, the project may be considered to hability to objectives and policies relating to coastal water quality. As such, will be implemented during construction to ensure that soil erosion and reley affect coastal waters. ISHEDS, STREAMS, AND WETLANDS ISSUES	as it arine loes i ave i appr	relat life invol ndire opria	es or ve ct te
Goal:	SHEDS, STREAMS, AND WEILANDS 1330ES			
2.3	Healthy watersheds, streams, and riparian environments.		✓	
Objecti	ve:			
2.3.1	Greater protection and enhancement of watersheds, streams, and riparian environments.			✓
Policies	<u>s:</u>	•	•	
2.3.1.a	All present and future watershed management plans shall incorporate concepts of ahupua'a management based on the interconnectedness of upland and coastal ecosystems/species.			√
				_

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.3.1.b	Continue to support and be an active member of watershed partnerships.			√
2.3.1.c	Support the establishment of regional water trusts, composed of public and private members, to manage water resources.			✓
2.3.1.d	Support regulations to require developments to utilize ahupua'a management practices.			√
2.3.1.e	Work with private and non-profit entities to educate the public about the connection between upland activities within the watershed and the impacts on nearshore ecosystems and coral reefs.			1
2.3.1.f	Provide adequate funding and staff to develop and implement watershed protection plans and policies, including acquisition and management of watershed resources and land.			✓
2.3.1.g	Encourage the State to mandate instream assessment to provide adequate water for native species.			✓
2.3.1.h	Maui will protect all watersheds and streams in a manner that guarantees a healthy, sustainable riparian environment.			√
Objecti	ve:			
2.3.2	Decreased NPS and point source pollution.			√
Policies	<u>s:</u>			
2.3.2.a	Enforce water pollution related standards and codes.			✓
2.3.2.b	Support the use of LID Techniques such as those described in the State of Hawai'i LID Practitioner's Guide (June 2006), as amended.			✓
2.3.2.c	Encourage farmers and ranchers to use agricultural BMPs to address NPS pollution.			✓
Objecti	ve:			
2.3.3	Preserve existing wetlands and improve and restore degraded wetlands.			√
Policies	<u>s:</u>			
2.3.3.a	Prohibit the destruction and degradation of existing upland, mid-elevation, and coastal wetlands.			√
2.3.3.b	Support and fund wetland protection and improvement, and restoration of degraded wetlands. $ \\$			✓
2.3.3.c	Where applicable, require developers to provide a wetland protection buffer and/or other protective measures around and between development and wetland resources.			✓
Objecti	ve:			
2.3.4	Greater preservation of native flora and fauna biodiversity to protect native species.			✓
Policies	<u> </u>			
2.3.4.a	Work with appropriate agencies to eliminate feral ungulate populations and invasive species. $ \\$			✓
2.3.4.b	Encourage the State to provide adequate funding to preserve biodiversity, protect native species, and contain or eliminate invasive species.			√

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.3.4.c	Support the work of conservation groups and organizations that protect, reestablish, manage, and nurture sensitive ecological areas and threatened indigenous ecosystems.			√
Objecti	ve:			
2.3.5	Limited development in critical watershed areas.			✓
Policies	<u>s:</u>			
2.3.5.a	Discourage development and subdivision of land within critical watersheds and in areas susceptible to high erosion and sediment loss.			✓
2.3.5.b	Designate critical watershed areas as conservation lands.			✓
2.3.5.c	Strongly encourage new subdivisions and developments that are proximate to environmentally sensitive watershed resources to prepare and implement CSD plans.			✓
Objecti	ve:			
2.3.6	Enhance the vitality and functioning of streams, while balancing the multiple needs of the community.		✓	
Policies	·			
2.3.6.a	Protect and enhance natural streambeds and discourage stream alteration.		✓	
2.3.6.b	Work with appropriate agencies to establish minimum stream flow levels and ensure adequate stream flow to sustain riparian ecosystems, traditional kalo cultivation, and self-sustaining ahupua'a.			✓
2.3.6.c	Respect and participate in the resolution of native Hawaiian residual land and water rights issues (kuleana lands, ceded lands, and historic agricultural and gathering rights).			✓
2.3.6.d	Ensure that stream flows implement laws and policies found in the State Constitution and Water Code.			✓
2.3.6.e	Work with appropriate agencies and stakeholders to establish minimum stream flow levels, promote actions to support riparian habitat and the use of available lo'i, and maintain adequate flows for the production of healthy kalo crops.			✓
during	is: The proposed project is not directly applicable to the goal of maintaineds, streams, and riparian environments, however, appropriate BMPs vonstruction and applicable drainage detention and water quality meased for the long-term habitation of the site.	vill b	e us	ed
WILDLI	FE AND NATURAL AREAS			
Goal:				
2.4	Maui's natural areas and indigenous flora and fauna will be protected.	✓		
Objecti	ve:			
2.4.1	A comprehensive management strategy that includes further identification, protection, and restoration of indigenous wildlife habitats.	✓		
Policie	<u>s:</u>			
2.4.1.a	Identify and inventory the following:			✓

	sland Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
	(1) Natural, recreational, and open space resources;			✓
	(2) Flora and fauna with medium, high, and very high concentrations of threatened or endangered species; and			✓
	(3) Location and extent of invasive species.			✓
2.4.1.b	Require flora and fauna assessment and protection plans for development in areas with concentrations of indigenous flora and fauna; development shall comply with the assessment and protection plan and shall use the avoidance, minimization, and mitigation approach respectively, with an emphasis on avoidance.	✓		
2.4.1.c	Support the implementation of Hawai'i's Comprehensive Wildlife Conservation Strategy (October 2005).			✓
Objecti	ve:			
2.4.2	A decrease in invasive species through programs and partnerships that eradicate undesirable species and protect native habitat.			✓
Policies	<u>s:</u>			
2.4.2.a	Prevent the introduction of invasive species at all of Maui's airports and harbors.			✓
2.4.2.b	Encourage the State to increase funding in support of invasive species interception, control, and eradication.			\
2.4.2.c	Encourage the State to develop programs that allow students to participate in invasive species eradication projects.			✓
Object	ive:			
2.4.3	Greater protection of sensitive lands, indigenous habitat, and native flora and fauna.		✓	
Policies	<u>s:</u>			
2.4.3.a	Secure an interconnected network of sensitive lands, greenways, watercourses, and habitats. $% \label{eq:constraint}$			✓
2.4.3.b	Protect Maui's sensitive lands (see Sensitive Lands on Protected Areas Diagrams).			1
2.4.3.c	Promote innovative environmental-planning methods and site-planning standards that preserve and re-establish indigenous flora and fauna habitat, to preserve and restore connected habitat corridors and open space.			✓
2.4.3.d	Utilize protection tools such as conservation easements, land trusts, land banks, Purchase of Developments Rights (PDRs), Transfer of Development Rights (TDRs), and other stewardship tools to acquire natural areas			✓
2.4.3.e	Encourage discussions with communities to designate heritage areas that protect recreational and cultural lifestyles and resources.			✓
2.4.3.f	Support the expansion of Haleakalā National Park, and the creation of new national parks, where appropriate and supported by local communities.			✓
2.4.3.g	Encourage reforestation efforts that increase native species' habitat.			✓
2.4.3.h	Utilize the Natural Area Partnership Program (NAPP) and other programs to protect natural lands.			✓

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	eland Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.4.3.i	Support increased dedicated funding for the acquisition, protection, restoration, or preservation of important natural areas or open space through the following: grants from the Land and Water Conservation Fund; dedicated funding from real property taxes or other appropriate revenues; bond issues; real estate transfer tax; revenues from the Transient Accommodations Tax; development mitigation fees; and other appropriate funding sources.			✓
	is: The environmental review process for the proposed action included survey addressing biological resources in the project area. This assessmen ective of identification and protection (as applicable) restoration of wildlife	t add	Iress	
SCENIC	RESOURCES			
Goal:				
2.5	Maui will continue to be a beautiful island steeped in coastal, mountain, open space, and historically significant views that are preserved to enrich the residents' quality of life, attract visitors, provide a connection to the past, and promote a sense of place.	✓		
Objecti	ve:			
2.5.1	A greater level of protection for scenic resources.	✓		
Policies	<u>s:</u>			
2.5.1.a	Protect views to include, but not be limited to, Haleakalā, 'Īao Valley, the Mauna Kahalawai (West Maui Mountains), Pu'u Ô'la'i, Kaho'olawe, Molokini, Moloka'i, and Lāna'i, Mauna Kea, Mauna Loa, sea stacks, the Pacific Ocean, and significant water features, ridgelines, and landforms.	✓		
2.5.1.b	Identify, preserve, and provide ongoing management of important scenic vistas and open space resources, including mauka-to-makai and makai-to-mauka view planes.			✓
2.5.1.c	Protect "night sky" resources by encouraging the implementation of ambient light ordinances and encouraging conversion of all sources that create excessive light pollution, affecting our ability to view the stars.			✓
2.5.1.d	Protect ridgelines from development where practicable to facilitate the protection of public views.			1
2.5.1.e	Protect scenic resources along Maui's scenic roadway corridors.	✓		
Objecti	ve:			
2.5.2.	Reduce impacts of development projects and public-utility improvements on scenic resources.	✓		
Policies	<u></u>			
2.5.2.a	Enforce the policies and guidelines of the SMA regarding the protection of views. $ \\$			✓
2.5.2.b	Require any new subdivision of land, development, or redevelopment adjacent to a "high" or "exceptional" scenic corridor to submit an impact assessment of the project's scenic impacts; this assessment shall use the avoidance, minimization, and mitigation steps respectively, with an emphasis on avoidance.			✓
2.5.2.c	Require appropriate building setbacks and limits on wall heights to protect views along scenic corridors. $ \\$	✓		

	sland Plan Goals, Objectives and Policies	l		
	A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.5.2.d	Encourage the State of Hawai`i Board of Land and Natural Resources to deny any development within the State Conservation District that interferes with a scenic landscape or disrupts important open space resources.			√
2.5.2.e	Require Urban Design and Review Board (UDRB) review and approval of utility poles, facilities, and other visible infrastructure improvements along scenic corridors.			√
2.5.2.f	Ensure little or no effect on scenic resources from utility improvements, primarily power poles.			√
2.5.2.g	Protect scenic vistas from intrusion by power poles.			✓
Object	ive:			
2.5.3	Greater protection of and access to scenic vistas, access points, and scenic lookout points.	✓		
Policy	<u> </u>			
2.5.3.a	Protect, enhance, and acquire access to Maui's scenic vistas and resources.	✓		
profile reside standa Honoa	Mountains. The project has been carefully designed taking into considerat s and massing. The proposed dwellings will be similar in scale and size ntial developments nearby and will be built in accordance with established ards. In addition, a landscaped buffer will be developed at the roadway fo pi'ilani Highway, providing a landscaped, open space setback from the roa	to e subd otage	xisti livisi alo	ng on ng
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Maui I profile reside standa Honoa house CHAP Goal: 3.1 Object 3.1.1	s and massing. The proposed dwellings will be similar in scale and size ntial developments nearby and will be built in accordance with established ards. In addition, a landscaped buffer will be developed at the roadway for pitilani Highway, providing a landscaped, open space setback from the road lots. TER 3 - NATURAL HAZARDS Maui will be disaster resilient. We: Increased inter-agency coordination. Reinforce the island's preparedness capacity by: (1) Applying the latest data-gathering techniques/technology;	to e subd otage	xisti livisi alo	ng on ng he
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Maui I profile reside standa Honoa house CHAP Goal: 3.1 Object 3.1.1	s and massing. The proposed dwellings will be similar in scale and size ntial developments nearby and will be built in accordance with established ands. In addition, a landscaped buffer will be developed at the roadway for pitilani Highway, providing a landscaped, open space setback from the road lots. TER 3 - NATURAL HAZARDS Maui will be disaster resilient. ive: Increased inter-agency coordination. Reinforce the island's preparedness capacity by: (1) Applying the latest data-gathering techniques/technology; (2) Pursuing funding opportunities; (3) Improving monitoring and advance warning systems;	to e subd otage	xisti livisi alo	ng on ng
Maui I profile reside standa Honoa house CHAP Goal: 3.1 Object 3.1.1	s and massing. The proposed dwellings will be similar in scale and size ntial developments nearby and will be built in accordance with established ands. In addition, a landscaped buffer will be developed at the roadway for pitilani Highway, providing a landscaped, open space setback from the road lots. TER 3 – NATURAL HAZARDS Maui will be disaster resilient. ive: Increased inter-agency coordination. Reinforce the island's preparedness capacity by: (1) Applying the latest data-gathering techniques/technology; (2) Pursuing funding opportunities; (3) Improving monitoring and advance warning systems; (4) Fostering public awareness; and (5) Working with external agencies to coordinate disaster mitigation and response.	to e subd otage	xisti livisi alo	ng on ng he

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies	<u>8:</u>			
3.1.2.a	Identify critical infrastructure, lifelines, roads, and populations that are vulnerable to coastal hazards, and encourage strategic retreat and relocation to safer areas.			✓
3.1.2.b	Consider the location of dams, reservoirs, holding ponds, and other water- containing entities that are upstream of inhabited areas to anticipate, avoid, and mitigate inundation risks, and discourage new development in areas where possible inundation hazards may exist.			✓
3.1.2.c	Strengthen current development standards to minimize destruction of land and property.			✓
3.1.2.d	Encourage the use of construction techniques that reduce the potential for damage from natural hazards.			✓
3.1.2.e	Increase the County's resilience to drought.			✓
3.1.2.f	Increase food and energy security through local production and storage.			✓
Object	ve:			
3.1.3	A more coordinated emergency response system that includes clearly defined and mapped evacuation routes.			✓
Policy:				
3.1.3.a	Identify and expand shelter facilities and evacuation routes away from areas susceptible to natural hazards.			✓
Objecti	ve:			
3.1.4	A more educated and involved public that is aware of and prepared for natural hazards.			✓
Policies	<u>s:</u>			
3.1.4.a	Promote public education and involvement related to natural hazards awareness and preparedness.			✓
3.1.4.b	Coordinate a multi-agency effort to establish and promote a comprehensive public education program that will focus on practical approaches to preparedness, damage prevention, and hazard mitigation.			✓
	is: The objectives and policies related to making Maui disaster-resili or or indirectly applicable to the proposed project. The proposed action is lipperent of a new residential subdivision for beneficiaries of the DHHL.			
CHAPT	ER 4 – ECONOMIC DEVELOPMENT			
ECONO	MIC DIVERSIFICATION			
Goal:				
4.1	Maui will have a balanced economy composed of a variety of industries that offer employment opportunities and well-paying jobs and a business environment that is sensitive to resident needs and the island's unique natural and cultural resources.	✓		
Objecti	ve:			
4.1.1	A more diversified economy.		✓	

Policies	<u> </u>			
4.1.1.a	Encourage an economy that is driven by innovation, research and development, and human resource development, including but not limited to, increasing technology- and knowledge-based sectors to be a major component in Maui County's economic base.			٧
4.1.1.b	Support the creation of new jobs and industries that provide a living wage.		✓	
4.1.1.c	Facilitate and expedite permits and approvals.			١
4.1.1.d	Develop linkages and partnerships among international research and development activities and Maui businesses.			١
Objecti	ve:			
4.1.2 l	ncrease activities that support principles of sustainability.			١
Policies	<u>u</u>			
4.1.2.a	Support industries that are sustainable, and culturally and environmentally sensitive.			١
4.1.2.b	Encourage and support local businesses.		✓	
4.1.2.c	Substitute imports with locally-produced services and products where practicable.			١
4.1.2.d	Support the development of economic development clusters in targeted industry sectors.			١
4.1.2.e	Encourage all businesses to save energy, water, and other resources.			١
Objecti	ve:			
4.1.3	Improve the island's business climate.		✓	
Policies	<u>x</u>			
4.1.3.a	Upgrade, maintain the quality of, and improve access to telecommunications infrastructure.			١
4.1.3.b	Ensure an adequate supply of affordable workforce housing.	✓		
4.1.3.c	Develop neighborhoods and communities that are attractive to the workforce of a diversified economy.			١
4.1.3.d	Encourage, nurture, and reward entrepreneurship and innovation.			1
4.1.3.e	Encourage employers to establish incentive programs. Support flexibility in workforce policies compatible with business and quality of life goals.			١
4.1.3.f	Assist community development organizations with revitalization and development of neighborhoods and communities that are attractive to the workforce of a diversified economy.			١

opportunities, as well as supporting the construction industry as a whole, including local businesses that rely on said industry. Further, the proposed action will indirectly affect the local economy, as it is anticipated that residents of the project will support small businesses nearby. The proposed project also provides affordable housing options for Native Hawaiian beneficiaries of the DHHL.

		1	1	
	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
TOURIS	<u>6M</u>			
Goal:				
4.2	A healthy visitor industry that provides economic well-being with stable and diverse employment opportunities.			✓
Objecti	ve:			
4.2.1	Increase the economic contribution of the visitor industry to the island's environmental well-being for the island's residents' quality of life.			✓
Policies	<u>s:</u>			,
4.2.1.a	$\label{thm:engage} \mbox{Engage the visitor industry in the growth of emerging sectors where practicable.}$			✓
4.2.1.b	Support the implementation of the Maui County TSP, when consistent with the MIP.			\
4.2.1.c	Focus economic growth in the visitor industry through enhanced visitor experiences and an emphasis on attracting higher-spending.			✓
4.2.1.d	Provide a rich visitor experience, while protecting the island's natural beauty, culture, lifestyles, and aloha spirit.			✓
4.2.1.e	Diversify the tourism industry by supporting appropriate niche activities such as ecotourism, cultural tourism, voluntourism, ag-tourism, health and wellness tourism, educational tourism, medical tourism, and other viable tourism-related businesses in appropriate locations.			\
4.2.1.f	Recognize the important economic contributions that the visitor industry makes and support a healthy and vibrant visitor industry.			✓
4.2.1.g	Support the increased availability of kama'āina discount programs.			1
Objecti	ve:			
4.2.2	Comprehensively manage future visitor-unit expansion.			✓
Policies	<u>s:</u>			
4.2.2.a	Mitigate the impact of tourism on the host culture, natural environment, and resident lifestyles.			1
4.2.2.b	Allow, where permitted by the community plan, the development of business hotels and small, sensitively-designed inns.			✓
4.2.2.c	Manage impacts from transient vacation rentals, hotels, bed and breakfast units, timeshares, and resort condominiums on residential communities, public infrastructure, and community facilities.			√
4.2.2.d	Discourage supplanting of existing island housing to visitor accommodations that may have a negative impact on long-term rental housing, price of housing, and price of land.			√
4.2.2.e	Allow the designation of retreat/mini-conference centers in appropriate locations through the community plan process.			1
4.2.2.f	Community plans should consider establishing standards such as limits on building size, room count, and the number of inns, if any, that will be allowed in small towns.			1
Objecti	ve:			
4.2.3	Maximize residents' benefits from the visitor industry.			✓

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies	<u>SI</u>			
4.2.3.a	Promote a desirable island population by striving to not exceed an island-wide visitor population of roughly 33 percent of the resident population.			√
4.2.3.b	Use the required General Plan Annual Status Report to monitor trends related to residents and visitors. $$			✓
to our i	is: The proposed project does not have direct or indirect relationships rism and its accompanying objectives for increasing the visitor industry's c sland's quality of life, managing future visitor unit expansion, and maximizir s from the visitor industry.	ontrik	outio	ns
AGRIC	JLTURE			
Goal:				
4.3	$\label{eq:main_main} \mbox{Maui will have a diversified agricultural industry contributing to greater economic, food, and energy security and prosperity.}$			1
Objecti	ve:			
4.3.1	Strive for at least 85 percent of locally-consumed fruits and vegetables and 30 percent of all other locally-consumed foods to be grown in-State.			✓
Policies	<u>s:</u>			
4.3.1.a	Strive to substitute food/agricultural product imports with a reliable supply of locally produced food and agricultural products.			√
4.3.1.b	Facilitate and support the direct marketing/sale of the island's agricultural products to local consumers, through farmers markets and similar venues.			✓
4.3.1.c	Encourage growing a diverse variety of crops and livestock to ensure the stewardship of our land while safeguarding consumer safety.			√
4.3.1.d	Work with the State to regulate and monitor genetically-modified-organism (GMO) crops to ensure the safety of all crops and label all GMO products.			✓
Objecti	ve:			
4.3.2	Maintain or increase agriculture's share of the total island economy.			✓
Policies	<u>s:</u>			
4.3.2.a	Encourage the export of the island's agricultural products to offshore markets.			✓
4.3.2.b	Support infrastructure investments at harbors, such as ferry service, airports, and other facilities for the rapid and cost-effective export of island-grown products.			✓
4.3.2.c	Encourage the continued viability of sugar cane production, or other agricultural crops, in central Maui and all of Maui Island.			✓
4.3.2.d	Work with the State to reduce excise taxes for commercial agricultural products produced within the State.			√
4.3.2.e	Coordinate with appropriate State and Federal Departments and agencies, private shipping companies, and farmers associations to assist in the rapid and cost-effective export of Maui's agricultural products to off-island markets.			✓
Objecti	ve:			
4.3.3	Expand diversified agriculture production at an average annual rate of 4 percent.			✓

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies	<u>s:</u>			
4.3.3.a	Promote the development of locally-grown and ecologically-sound biofuels, aquaculture, and forest products.			✓
4.3.3.b	Support the development of farming associations/cooperatives.			✓
4.3.3.c	Work with educational institutions and appropriate agencies to provide education and training for farm owners and entrepreneurs.			✓
vegeta diversi that ha action DHHL i	iculture and its related objectives for consumption for locally produced bles, maintaining or increasing agriculture's share in the local economy, and fied agricultural production. The proposed project is located on fallow agricultured we not been used for active agricultural production in many years. As such, the is a prudent use of the land to provide much needed housing for benefic n a developed area with other similar residential subdivisions.	d frui d exp ultura ne pro	ts a andi Il lan opos	nd ng ds ed
	ING SECTORS			
Goal:		1		1 .
4.4	A diverse array of emerging economic sectors.			✓
Objecti	ve:			
4.4.1	Support increased investment and expanded activity in emerging industries.			✓
Policies	<u>8</u>			
4.4.1.a	Support the development of and access to state-of-the-art voice, video, and data telecommunications systems and high-speed Internet.			✓
4.4.1.b	Attract and assist industries to compete in high technology activities such as those related to renewable energy, green technologies, diversified agriculture, ocean sciences, health sciences, space technologies, and other knowledge-based industries.			✓
4.4.1.c	Support new industries that are environmentally and culturally sensitive such as health and wellness, sports and outdoor activities, cultural activities, the arts, film-making, entertainment, and digital media.			✓
4.4.1.d	Support a sustainable, culturally sensitive, astronomy industry.			✓
4.4.1.e	Support the continued development of the Maui Research and Technology Park in Kihei, as a center for research and development, education, and diversified economic development, as provided by the Maui County Code.			✓
4.4.1.f	Work with appropriate organizations to support the development of high technology clusters around renewable energy, diversified agriculture, ocean sciences, health sciences, and other knowledge-based industries.			✓
Objecti	ve:			
4.4.2	Increase the development of renewable energy technologies that are supported by the local community.	<u>✓</u>		
Policies	·	1		
4.4.2.a	Support the expansion of the renewable energy sector and the use of solar, wind, wave, and biofuel technologies.	✓		

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
4.4.2.b Provide incentives to encourage renewable energy development, the use of green energy technologies, and energy conservation.			✓
4.4.2.c Ensure an adequate supply of land and facilitate permitting to meet the needs for renewable energy technologies such as solar, wind, wave, biofuel, and other technologies, provided that environmental, view plane, and cultural impacts are addressed.			✓
4.4.2.d Support the Maui County Energy Alliance Plan where consistent with the MIP.			✓
Analysis: The proposed project has a direct has a relationship to the goal for sectors, particularly the objective and policy related to developing renewatechnologies, as solar water heating systems will be installed on every residence.			
SMALL BUSINESS DEVELOPMENT			
Goal:			
4.5 Small businesses will play a key role in Maui's economy.		\	
Objective:			
4.5.1 Increase the number of and revenue generated by small businesses and decrease the percentage of small business failures.		✓	
Policies:			
4.5.1.a Provide incentives and support for small businesses and entrepreneurs that incorporate sustainable technologies and practices into their operations, utilize local materials, or produce and sell locally-made goods or services.			✓
4.5.1.b Assist traditional "mom and pop" business establishments.		✓	
4.5.1.c Reduce barriers to small business development.			✓
4.5.1.d Require, where feasible, the government procurement of goods and services from locally-owned, small businesses.			✓
4.5.1.e Support community markets and venues that sell locally-made produce, goods, and services.		✓	
Analysis: The proposed project consists of the development of a new subdivision in the Waikapū community for beneficiaries of the DHHL. Though making small businesses play a key role in Maui's economy is not directly appli proposed project, it is anticipated that residents of the project will support small, lo businesses that are in the vicinity. As such, the objective and policies relate business development are indirectly applicable to the proposed action.	the (cable cally-	goal to the	of ne ed
HEALTH CARE SECTOR			
Goal:		-	
4.6 Maui will have a health care industry and options that broaden career opportunities that are reliable, efficient, and provide social well-being.			✓
Objective:			
4.6.1 Expand the economic benefits of the health care sector.			✓
Policies:			
4.6.1.a Encourage expanded services at MMMC and at other medical facilities.			1

	sland Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
4.6.1.b	Support expansion of federally qualified health centers with the direct involvement of the residents of the communities served.			✓
4.6.1.c	Support the use of multimedia as a means to provide healthcare information.			✓
4.6.1.d	Encourage digitalization of all diagnostic equipment at all facilities on Maui to enable sharing of data and more efficient use of limited provider workforce, consistent with data protection and patient privacy.			✓
4.6.1.e	Support the expansion of telemedicine.			✓
4.6.1.f	Encourage expansion and improved access to emergency care in all communities.			✓
Objecti	ve:			
4.6.2	Be more efficient in the delivery of health care services and in minimizing health care costs.			✓
Policie	S:			
4.6.2.a	Support expansion of health care providers and facilities to improve access to quality care throughout the island.			✓
4.6.2.b	Encourage the expansion of veteran health care services.			✓
4.6.2.c	Allow home-based out-patient medical care that does not interfere with surrounding neighborhoods.			✓
Objecti	ve:			
4.6.3.	Expand Maui's alternative health care services, including spiritual practices.			✓
Policie	<u>8:</u>			
4.6.3.a	Support efforts to promote alternative medicine.			✓
4.6.3.b	Allow small-scale home-alternative medicine businesses such as massage, chiropractic care, traditional Hawaiian healing, and acupuncture that do not interfere with surrounding neighborhoods.			✓
care s	is: The proposed project does not have direct or indirect relationships health care and its related objectives for expanding the economic benefits of ector, increasing efficiency of the health care delivery system, minimizing care, and expanding Maui's alternative health care system.	of the	hea	lth
EDUCA	TION AND WORKFORCE DEVELOPMENT			
Goal:				
4.7	Maui will have effective education and workforce development programs and initiatives that are aligned with economic development goals.			✓
Objecti	ve:			
4.7.1	Improve preschool and K-12 education to allow our youth to develop the skills needed to successfully navigate the 21st century.			✓
Objecti	ve:			
4.7.1.a	Encourage the State to implement programs such as:			✓
	(1) Universally available preschool for children between the ages of one and five;			1

(2) Mandatory kindergarten; (3) Mandatory K-5th grade classroom size limits of 1 teacher to 20 students; (4) Mandatory nutrition programs; and (5) Mandatory Native Hawaiian programs at all grade levels. 4.7.1.b Encourage the DOE to extend the school day by at least an hour. 4.7.1.c Encourage the State to increase funding for public education so that Hawai'i is among the top 10 states nationally as measured by investment per pupil. 4.7.1.d Encourage the State to ensure teacher certifications relate to effective delivery and improved student performances, and develop an industry experience/equivalency certification to assure our DOE students have access to career technical education and training. 4.7.1.e Encourage the UHMC to provide dormitory space for high school students. 4.7.1.f Encourage the development and implementation of curriculum on native Hawaiian history, culture, and practices, in consultation with native Hawaiian groups and associations. Objective: 4.7.2 Encourage an increase in the number of certificate recipients and associate, bachelors, and graduate degrees conferred. Policies: 4.7.2.a Encourage the State to increase the number of articulation agreements between the UHMC and four-year universities, particularly the University of Hawai'i at Manoa. 4.7.2.b Encourage the State to expand accredited 2-year, 4-year, and graduate programs through the UHMC. 4.7.2.c Encourage the education and training of our residents to meet the needs of a diversified economy. 4.7.2.d Support education and training programs such as student internships, vocational	NA	IA	DA	Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable
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diversified economy. 4.7.2.d Support education and training programs such as student internships, vocational	✓			
	✓			
training, and career development opportunities to ensure a highly skilled workforce	✓			training, and career development opportunities to ensure a highly skilled
4.7.2.e Work with educational institutions to improve and expand access to education and training through multiple modes, including distance learning.	✓			
Objective:				Objective:
4.7.3 Strive to ensure that more of Maui's jobs are developed in STEM-related sectors by 2030.	✓			
Policies:				Policies:
4.7.3.a Support the development of STEM-related certificates and degrees at the two- and four year levels.	✓			
4.7.3.b Support the education initiatives of the Maui Agricultural Development Plan.	✓			4.7.3.b Support the education initiatives of the Maui Agricultural Development Plan.
4.7.3.c Expand and seek funding for internships, mentoring, job shadowing, etc. to foster interest in health and green workforce careers.	✓			

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4.7.3.d	Work with MEDB, UHMC, and other similar organizations to expand internship/education programs to support STEM careers.			✓
4.7.3.e	Continue to partner with the MEDB and other similar organizations to recruit, assist, and retain emerging industries, research and development activities, and educational/workforce opportunities.			✓
K-12 e	is: The goal for education and workforce development is not directly ible to the proposed action. As well, the related objectives of improving preducation, increasing higher education certificates and degrees, and deve the STEM-related sectors are not affected by the proposed project.	escho	ool a	nď
CHAPT	ER 5 – HOUSING			
Goal:				
5.1	Maui will have safe, decent, appropriate, and affordable housing for all residents developed in a way that contributes to strong neighborhoods and a thriving island community.	✓		
Objecti	ve:			
5.1.1	More livable communities that provide for a mix of housing types, land uses, income levels, and age. $ \\$	✓		
Policies	<u>3:</u>			
5.1.1.a	Promote livable communities (compact/walkable/bikeable, access to transit) that provide for a mix of housing types and land uses, including parks, open space, and recreational areas.	✓		
5.1.1.b	Promote planning approaches that provide a mix of multifamily and single-family housing units to expand housing choices.			✓
5.1.1.c	Discourage gated communities.		✓	
5.1.1.d	Provide incentives for the rehabilitation or adaptive reuse of historic structures to facilitate more housing choices.			✓
5.1.1.e	Use planning and regulatory approaches to provide higher housing densities.		✓	
<u>Objecti</u>	ve:			
5.1.2	Better monitoring, evaluation, and refinement of affordable housing policy in conjunction with the economic cycle. $ \\$	✓		
Policies	<u>3:</u>			
5.1.2.a	Improve data on resident and nonresident housing.			✓
5.1.2.b	Utilize the following approaches to promote resident housing and to minimize offshore market impacts: $ \\$			
	(1) Ensure that the future housing stock is composed of a mix of housing types (multifamily, small lots, ohana units, co-housing, cottage houses, etc.);			✓
	(2) Encourage new housing in proximity to jobs and services, in places that are conducive/affordable to island residents; and	✓		
	(3) Explore taxation alternatives and building fee structures.			✓
Objecti	ve:	•		
5.1.3	Provide affordable housing, rental or in fee, to the broad spectrum of our island community.	✓		

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies	<u>s:</u>			
5.1.3.a	Consider regulations that can help keep affordable housing available at affordable rents. $ \\$			√
5.1.3.b	Seek to have ownership of affordable for-sale and rental housing vested in a non-profit community land trust, or other qualified housing provider, committed to keeping such housing affordable in perpetuity.	✓		
5.1.3.c	Facilitate the use of public lands in urban areas that are suitable for affordable housing.			\
5.1.3.d	Develop or support partnerships and initiatives that provide housing-related education/outreach. $ \\$			✓
5.1.3.e	Support the continuing efforts of the County and its community partners to:			
	(1) Disseminate information on different housing/financial assistance programs (loans, grants, etc.) including information on housing rehabilitation/restoration/adaptive reuse;			✓
	(2) Provide housing-related counseling including budget, credit, and financial planning assistance; and			√
	(3) Create and maintain a comprehensive/master list of available affordable housing to help residents secure a unit that satisfies their need.			√
Objecti	ve:			
5.1.4	Provide infrastructure in a more timely manner to support the development of affordable housing. $ \\$			✓
Policies	<u>s:</u>	•		
5.1.4.a	Prioritize the development of infrastructure that supports the development of affordable housing. $ \\$			✓
5.1.4.b	Utilize appropriate financing approaches and assistance tools to encourage the development of infrastructure and public facilities. $ \\$			\
5.1.4.c	Tailor infrastructure requirements to correspond with appropriate level-of-service standards to help control housing costs and to maintain safety.			✓
<u>Objecti</u>	ve:			
5.1.5	A wider range of affordable housing options and programs for those with special needs. $\label{eq:programs}$			✓
Policies	<u>s:</u>			
5.1.5.a	Ensure that residents with special needs have access to appropriate housing.			✓
5.1.5.b	Encourage housing to be built or rehabilitated to allow the elderly and those with special needs to live in their homes.			\
5.1.5.c	Ensure and facilitate programs to assist those with special needs from becoming homeless.			✓
5.1.5.d	Promote programs that stimulate the production of sustainable homeless shelters and alternative housing technologies.			✓
5.1.5.e	Support programs that offer home modification counseling on low-interest retrofit loans and grants to those with special needs.			✓

Objecti	ve:	1		
5.1.6	Reduce the cost to developers of providing housing that is affordable to families with household incomes 160 percent and below of annual median income.			>
Policies	<u>s:</u>			
5.1.6.a	Support fast-track processing procedures for the following housing-related entitlements: affordable housing projects/units; indigenous Hawaiian housing/units; and special-needs housing units (seniors, disabled, homeless, etc.).	✓		
5.1.6.b	Require the construction of affordable for-sale and rental housing units as part of the construction of new housing developments.			✓
5.1.6.c	Offer extra incentives in boom periods and withdraw incentives during slack periods.			>
<u>Objecti</u>	ve:			
5.1.7	Increased preservation and promotion of indigenous Hawaiian housing and architecture.	✓		
Policies	<u>s:</u>			
	Preserve, promote, and give priority to Hawaiian housing/architecture forms to	1		
5.1.7.a	preserve Hawaiian culture.			
5.1.7.b Analys DHHL centers	preserve Hawaiian culture. Provide for indigenous architecture as an allowable structure for native Hawaiian uses to include hula and la au lapa au. is: The proposed project provides additional affordable homestead oppobeneficiaries in an area that is close to the government, business, and sof Wailuku and Kahului. The proposed development will be located near	comi	nerc urb	ial an
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	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N.A
Policies	<u>s:</u>	•		
6.1.2.a	Require residents and commercial enterprises that generate waste to pay a fair proportion of disposal costs.			√
6.1.2.b	Encourage environmentally safe waste-to-energy solutions.			✓
6.1.2.c	Facilitate the reduction of solid waste generated by packaging, food service products, construction waste, etc. $ \\$			✓
6.1.2.d	Educate residents and visitors about the impacts of and methods to reduce, reuse, and recycle. $ \\$			√
6.1.2.e	Discourage the disposal of landfill leachate by diversion to wastewater treatment plants, where practicable.			✓
Analys extent	is: Solid waste generated by the project during construction will be rec practicable and disposed at appropriately permitted construction waste dis			
WASTE	WATER			
Goal:				
6.2	Maui will have wastewater systems that comply with or exceed State and Federal regulations; meet levels-of-service needs; provide adequate capacity to accommodate projected demand; ensure efficient, effective, and environmentally sensitive operation; and maximize wastewater reuse where feasible.		✓	
Objecti	ve:	•	•	
6.2.1	A wastewater planning program capable of efficiently providing timely and adequate capacity to service projected demand where economically feasible and practicable.	✓		
Policies	<u>s:</u>			
6.2.1.a	Encourage the use of renewable energy in support of wastewater treatment facilities.			√
6.2.1.b	Focus the expansion of wastewater systems to accommodate planned growth consistent with the MIP Directed Growth Strategy.		1	
6.2.1.c	Establish new wastewater treatment plant(s) outside the tsunami zone.			√
Objecti	ve:			
6.2.2	Adequate levels of wastewater service with minimal environmental impacts.			√
Policies	<u>s:</u>			
6.2.2.a	Meet or exceed all State and Federal standards regulating wastewater disposal or reuse.			√
6.2.2.b	Encourage tertiary treatment for all municipal wastewater that is disposed through deep injection wells. Phase out all municipal and private injection wells in coordination with water reuse programs, where feasible, by 2020.			V
6.2.2.c	Improve and upgrade the County's existing wastewater collection, treatment, and reuse facilities consistent with current and future plans and the County's CIP.			√
6.2.2.d	Maintain an ongoing sewer inspection program for public and private multi-user systems to identify potential problems and forecast each system's residual life.			V

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, Na = Indirectly Applicable, Na = Not Applicable 6.2.2e Require all new developments to fund system improvements in proportion to the development impact and in accordance with the County's wastewater functional plan. 6.2.2.f Require appropriate funding mechanisms, such as a sinking fund, to adequately maintain or replace aging water-system components. 6.2.2.g Strongly encourage the phase out of cesspools. Objective: 6.2.3 Increase the reuse of wastewater. Policies: 6.2.3. Strengthen coordination between the Department of Water Supply (DWS) and the WWRD to promote reuse/recycling of wastewater. 6.2.3.b Expand the reuse of wastewater from the Central Maui, Kihei, Lahaina, and other wastewater systems. Analysis: The proposed project will connect to the County wastewater system. Analysis: The proposed project will connect to the County wastewater system will be required to service the project aside from the new sewerline that is proposed as part of the overall project. WATER Goal: 6.3.1 More comprehensive approach to water resources planning to effectively protect, recharge, and manage water resources including watersheds, groundwater, streams, and aquifers. Policies: 6.3.1.a Ensure that DWS actions reflect its public trust responsibilities toward water. 6.3.1.b Ensure the WUDP implements the State Water Code and MIP's goals, objectives, and policies. 6.3.1.e Regularly update the WUDP, to maintain compliance with the General Plan. 6.3.1.e Broure the the County's CIP for water-source development is consistent with the WUDP and the MIP. 6.3.1.e Under the desirable, retain and expand public ownership and management of watersheds and fresh-water systems. Objective: 6.3.1 Increase the efficiency and capacity of the water systems in striving to meet the needs and balance the island's water needs.					
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6.3.2 Increase the efficiency and capacity of the water systems in striving to meet the	6.3.1.f	County, and private land use planning and water resource management			✓
	<u>Objecti</u>	ve:			
	6.3.2			✓	

Maui Is	land Plan Goals, Objectives and Policies			
	A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies	<u>s:</u>			
6.3.2.a	Ensure the efficiency of all water system elements including well and stream intakes, water catchment, transmission lines, reservoirs, and all other system infrastructure.			√
6.3.2.b	Encourage increased education about and use of private catchment systems where practicable for nonpotable uses.			✓
6.3.2.c	Maximize the efficient use of reclaimed wastewater to serve nonpotable needs.			✓
6.3.2.d	Work with appropriate State and County agencies to achieve a balance in resolving the needs of water users in keeping with the water allocation priorities of the MIP.		✓	
6.3.2.e	Ensure water conservation through education, incentives, and regulations.			√
6.3.2.f	Acquire and develop additional sources of potable water.			✓
Objecti	ve:			
6.3	Improve water quality and the monitoring of public and private water systems.			✓
Policy:				
Analys indirec	tly applicable to the project. The project is located in an area that is serviced water infrastructure. Coordination will be undertaken with the DWS to o	l by e deter	xistiı mine	ng
Analys indirec County certain	is: The objective and policies related to water service, systems and tly applicable to the project. The project is located in an area that is serviced water infrastructure. Coordination will be undertaken with the DWS to dimprovements to the County's water system will be required to service the	l by e deter	xistiı mine	ng
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	OA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N/
Policie				
6.4.2.a	Ensure transit-, roadway-, and pedestrian-facilities design and level-of-service standards respect the unique character of our communities.		✓	
6.4.2.b	Prioritize transportation improvements list to cost-effectively meet existing and future needs consistent with the MIP.			~
6.4.2.c	Require new development, where appropriate, to integrate sidewalks, pathways, bikeways, and transit infrastructure into new commercial and residential projects while enhancing community character.	✓		
6.4.2.d	Identify and improve hazardous and substandard sections of roadways, drainage infrastructure, and bridges, provided that the historical integrity of the roads and bridges are protected.			*
6.4.2.e	Consider identification, acquisition where appropriate, and utilization of abandoned right of-ways for bikeways, pedestrian pathways, and open-space networks.			*
6.4.2.f	Support the implementation of the Central Maui Pedestrian & Bicycle Master Plan (March 2012), when consistent with the MIP.			v
Object	ive:			
6.4.3	An island-wide, multimodal transportation system that respects and enhances the natural environment, scenic views, and each community's character.		✓	
Policie	<u>s:</u>			
6.4.3.a	Ensure that the roadway and transit alignments respect the natural environment and scenic views.		✓	
6.4.3.b	Ensure that roadways and transit systems in rural areas and small towns enhance community character.			~
6.4.3.c	enhance community character. Design all transit systems to respect visual corridors and Maui's character.	the	proie	v ect
6.4.3.c Analys genera create Highw and to and in pedes	enhance community character. Design all transit systems to respect visual corridors and Maui's character. Sis: The proposed project will provide improvements to safely integrate ated traffic to local roadways. DHHL will provide pedestrian sidewalk improvements on Hay include a road widening lot for the provision of turning lanes, a median maintain a bike route within the paved shoulder. These additional improvemed directly support the objectives of providing a safe, interconnected roadway, trian network, as well as a multimodal transportation system that respects an tural environment, scenic views, and the surrounding community's character.	ovemone lonoa refug ents o bicyc id enl	ents ipiʻila je lar direc :le, a	to ani ne, tly nd
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	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.5.1.b	Expand regional and inter-regional transit services, where appropriate, in heavily traveled corridors and within communities			✓
6.5.1.c	Increase the frequency of current service, add additional bus routes as demand requires, and transition to nonpolluting transit vehicles, as funding permits.			✓
6.5.1.d	Provide adequate transit infrastructure (e.g., bus pullouts, waiting benches and shelters, signs) along existing and future transit right-of-ways.			✓
6.5.1.e	Require new development where appropriate, to provide right-of-ways (ROWs) to accommodate transit circulation and support facilities.			✓
6.5.1.f	Identify, protect, and preserve, or acquire corridors for future inter-community transit use, including but not limited to, rail and also multimodal use corridors.			✓
6.5.1.g	Establish transit corridors by planning for and securing right-of-way when appropriate for alternative modes of transportation (such as rail and water ferry service).			✓
6.5.1.h	Pursue improvements and upgrades to the existing transit system consistent with updated MDOT planning studies/transit plans (within the framework of comprehensive island-wide multimodal transportation plans).			✓
6.5.1.i	Increase inter-agency coordination between the Department of Planning, State Department of Transportation, County Department of Public Works, and other applicable agencies.			✓
Objecti	ve:			
6.5.2	Plan for a more diversified and stable funding base to support transportation goals.			✓
Policies	<u>X</u>			
6.5.2.a	Support alternative methods and sources of funding transportation improvements (including impact fees, higher taxes, fare adjustments, dedicated sources of funding, and assessments).			✓
6.5.2.b	Collaborate with public-private entities or nonprofit organizations to reduce public transit operational expenses.			✓
6.5.2.c	Coordinate with appropriate Federal, State, and County agencies to fund transportation projects in areas where growth is anticipated.			✓
those r	is: While the proposed project includes roadway improvements to H y, it does not directly or indirectly affect the goal and objectives for transit, elating to the advancement of an integrated island wide transit system, and t transit improvements and operations.	spec	ifical	lly
PARKS				
Goal:				
6.6	Maui will have a diverse range of active and passive recreational parks, wilderness areas, and other natural-resource areas linked, where feasible, by a network of greenways, bikeways, pathways, and roads that are accessible to all.		✓	
Objecti	ve:			
6.6.1	More effective, long-range planning of parks and recreation programs able to meet community needs.			✓

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Policies	<u>s:</u>			
6.6.1.a	Support, consistent with the MIP, the implementation of open-space and recreational plans, such as the <i>Pali to Puamana Parkway</i> Master Plan and the <i>Upcountry Greenways Master Plan</i> .			✓
6.6.1.b	Utilize the ahupua'a approach by integrating mauka-to-makai natural landscapes into an island-wide parks and recreation functional plan.			✓
6.6.1.c	Provide a balanced mix of passive and active parks, including neighborhood, community, and regional parks, in each community plan area.			✓
6.6.1.d	Support the expansion of Haleakala National Park, where supported by affected communities. $ \\$			✓
6.6.1.e	Support lo'i and dryland taro restoration in County, State, and Federal parks.			✓
6.6.1.f	Encourage private landowners to dedicate land to Federal, State, or County governments, or nonprofit land trusts, for parks and open-space protection consistent with the MIP.			✓
6.6.1.g	Strengthen inter-agency coordination including State and County departments, such as resolving joint use of facilities and properties.			✓
6.6.1.h	Work with the State to prepare and implement a master management plan for 'Āhihi-Kīna'u and La Perouse-Keone'ō'io Bay to Kanaloa Point region.			✓
Objecti	ve:			
6.6.2	Achieve parks and recreation opportunities to meet the diverse needs of our community.			✓
<u>Policies</u>	<u>s:</u>			
6.6.2.a	Establish appropriate level-of-service standards at the neighborhood, community, and regional levels.			✓
6.6.2.b	Identify and acquire parks and recreational facilities that address existing park inadequacies and complement and enhance neighborhoods, communities, and natural land features.			✓
6.6.2.c	Design park facilities to preserve and enhance natural site characteristics, maximize views, protect environmental and cultural sites, and minimize water demands.			✓
6.6.2.d	Acquire lands along the shoreline, between coastal roadways and the ocean.			✓
6.6.2.e	Encourage the development of regional parks, district parks, and greenways in a manner that helps to contain sprawl, provide separation between distinct communities, or offer open space within urban communities.			✓
6.6.2.f	Require large master-planned communities that incorporate a mixture of park facilities pursuant to parks standards and functional plans.			✓
6.6.2.g	Support appropriate areas for cultural parks (e.g., Kepaniwai) in each community plan area.			✓
6.6.2.h	Incorporate community input to determine the appropriate location, design, and long-term stewardship of parks and recreation facilities.			✓
6.6.2.i	Manage commercial activities at public parks to minimize impacts to residents.			✓
6.6.2.j	Support public-private partnerships to implement the acquisition and development of parks when consistent with the General Plan.			✓

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6.6.2.k	Support a coordinated program to improve, operate, and maintain joint-use facilities and grounds.			√
Objecti	ve:	1		
6.6.3	An expanded network of greenways, trails, pathways, and bikeways.		✓	
Policies	<u>s:</u>			
6.6.3.a	Link existing and future park sites, natural areas, the shoreline, and residential areas with a network of bikeways, pedestrian paths, trails, and greenways.		✓	
6.6.3.b	Support the implementation of plans and programs that facilitate pedestrian mobility and access to active and passive recreation areas and sites.			✓
6.6.3.c	Collaborate with the State and private land owners to ensure perpetual access and proper stewardship of traditional trails and access systems.			✓
6.6.3.d	Facilitate the development of well-managed noncommercial campgrounds throughout the island.			✓
6.6.3.e	Consider requiring commercial bike rental businesses to provide funding that supports a mauka-to-makai Haleakalā bikeway improvement program.			1
6.6.3.f	Ensure ADA compliance and seek opportunities to make all parks and recreational facilities accessible to people with disabilities.			✓
roadwa the obj	is: Though the proposed project mainly consists of the developmential subdivision for beneficiaries of the DHHL, the proposed action also ay improvements including maintaining a bike route within the paved should ective and policy relating to linking existing residential areas with a network rectly supported by the proposed project.	cons	ists s suc	of :h,
resider roadwa the obj is indir	ntial subdivision for beneficiaries of the DHHL, the proposed action also ay improvements including maintaining a bike route within the paved should ective and policy relating to linking existing residential areas with a network	cons	ists s suc	of :h,
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resider roadwa the obj is indir PUBLIC Goal: 6.7	ntial subdivision for beneficiaries of the DHHL, the proposed action also ay improvements including maintaining a bike route within the paved should ective and policy relating to linking existing residential areas with a network ectly supported by the proposed project. C FACILITIES Maui will have adequate public facilities that meet the diverse needs of residents.	cons	ists s suc	of ch, ys
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resider roadwathe objis indir PUBLIC Goal: 6.7 Objectio 6.7.1 Policies 6.7.1.a 6.7.1.b	ntial subdivision for beneficiaries of the DHHL, the proposed action also ay improvements including maintaining a bike route within the paved should ective and policy relating to linking existing residential areas with a network ectly supported by the proposed project. CFACILITIES Maui will have adequate public facilities that meet the diverse needs of residents. Ve: More effective planning for public facilities to meet community needs. S: Ensure the development and update of island-wide public facilities functional plans that incorporate prioritized facilities, programs, and a financial component. Establish appropriate level-of-service standards for public facilities provided by	cons	ists s suc	of ch, ys
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6.7.1.g	Increase joint facilities utilization and program coordination between State and County agencies such as baseyards, communication centers, recreational facilities, etc., where feasible.			✓
6.7.1.h	Focus future expenditures for additional government office space, parking, and related facilities in Wailuku's Civic Center District.			✓
6.7.1.i	Encourage continuous and safe walkways for children within one mile of each school.			✓
6.7.1.j	Encourage public-private partnerships to identify and resolve public facility plan shortcomings when consistent with the General Plan.			✓
6.7.1.k	Incorporate community/area residents' input to determine the appropriate location and design of public facilities.			✓
	is: The proposed action does not have direct or indirect relationships to facilities. In this context, the project does not advance or promote the object we planning for public facilities which meet community needs.			
SCHOO	DLS AND LIBRARIES			
Goal:				
6.8	Maui will have school and library facilities that meet residents' needs and goals.		✓	
<u>Objecti</u>	ve:			
6.8.1	Assist in providing appropriate school and library facilities in a timely manner and in strategic locations.		✓	
Policie:	<u>s:</u>			
6.8.1.a	Work in partnership with all educational institutions to meet current and future needs including appropriate location, timing, and design of future facilities.			✓
6.8.1.b	Allow for the expansion and intensification of uses at the UHMC including satellite campuses operating in remote areas.			✓
6.8.1.c	Encourage the DOE to build and maintain smaller, community-oriented schools.			✓
6.8.1.d	Encourage better cooperation by the State and County for use of State and County facilities. $ \\$			✓
6.8.1.e	Encourage the State to upgrade, modernize, and expand school facilities, including those in remote communities.		✓	
6.8.1.f	Work with the State to develop a master plan for the expansion of UHMC in accordance with the MIP.			✓
6.8.1.g	Support partnerships (public/private/nonprofit) to build and staff new schools and improve existing facilities.			✓
6.8.1.h	Work with the BOE HSPLS to provide centralized library services (including telecommunications) to all areas of Maui. $ \\$			✓
6.8.1.i	Work with the State to expedite planning and construction of Kīhei High School, including the integration of the high school with the Maui Research and Technology Park.			✓
6.8.1.j	Work with the State to identify intermediate school sites in Central Maui and other areas where needed.			1
			1 1	

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Objecti	ve:			
6.8.2	Provide a more expansive network of safe and convenient pedestrian-friendly streets, trails, pathways, and bikeways between neighborhoods and schools where appropriate.		✓	
Policies	<u>s:</u>			
6.8.2.a	Encourage the State to build new school facilities in appropriate locations that minimize time and distance for students to travel to and from school.			√
6.8.2.b	Encourage the State to implement the Safe Routes to School initiative with funding commitments to help the County plan and fund projects that ensure safe access routes to school.		✓	
Maui. F and c neighb sidewa bike ro	es the provision of adequate and accessible educational services and facilities. Further, the objective and policy related to providing a more expansive networkers to provide the pedestrian-friendly streets, trails, pathways, and bikeway to proposed and schools is indirectly supported by the proposed action, as talks installed within the project site, and roadway improvements such as moute within the paved shoulder along Honoapi ilani Highway.	s in (vork s be here	Cent of sa etwe will	ral ife en be
	H CARE			
Goal:	All of Mari regidents will have the best possible health gave to include health.			
6.9	All of Maui residents will have the best possible health care to include healthy living, disease prevention, as well as acute and long-term care.			✓
Objecti	ve:			
6.9.1	Greater autonomy to the Maui region in their efforts to improve medical care on the island.			✓
Policies	<u>s:</u>			
6.9.1.a	Encourage the State to give greater autonomy to the Maui region in their efforts to improve medical care on the island.			✓
6.9.1.b	Support innovative financial solutions, such as capital partnerships, joint ventures, and consolidations for MMMC and other health institutions.			✓
6.9.1.c	Support MMMC as a major core medical center that provides a greater range of services.			√
6.9.1.d	Support the immediate development of a critical access hospital in West Maui.			✓
6.9.1.e	Support the expansion of regional critical-access facilities, where allowed by Federal regulations.			✓
6.9.1.f	Improve medical service to remote and outlying regions.			✓
6.9.1.g	Support transportation services for dialysis patients and community dialysis programs.			✓
6.9.1.h	Work with the State to determine the feasibility of appropriate medical facilities in South Maui and Hāna, including the possible reestablishment of a small community hospital in Hāna, the establishment of a hospital in South Maui, and assist the State in securing funding to meet Maui's health care needs.			√
<u>Objecti</u>	ve:			
6.9.2	An expansion of long-term care facilities and long-term care alternatives to meet the needs of our aging population.			✓

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies	<u>s:</u>			
6.9.2.a	Support efforts to increase Maui's long-term care bed capacity to cover current and future needs, close to large population centers.			✓
6.9.2.b	Recognize that facilities for low-income elders who need long-term care are a needed form of affordable and subsidized housing.			✓
6.9.2.c	Evaluate the needs of the long-term disabled and provide planning support for their care, if there is a need for long-term care facilities.			✓
6.9.2.d	Consider long-term care facilities as a major potential employment base and encourage the recruitment and training of potential employees.			✓
Objecti	ve:			
6.9.3	More support to home-care and community-based programs so they become alternatives to traditional nursing homes.			✓
Policies	<u>s:</u>			
6.9.3.a	Support the establishment of a program to assist the elderly and people with disabilities to remain in their homes or in a home-like setting.			✓
6.9.3.b	Support the establishment of senior and adult-day-care centers and senior housing. $ \\$			✓
6.9.3.c	Continue to support existing senior centers (e.g. Kaunoa), and establish new senior centers that will provide day-care sites and programs for the disabled and elderly.			✓
6.9.3.d	Support funding alternatives for community-based services that assist homecare efforts.			✓
6.9.3.e	Encourage the State to adopt the recommendations contained within the Legislative Reference Bureau's report entitled "Gimme a Break: Respite Care Services in Other States," (December 2007) where appropriate, feasible, and consistent with the MIP.			✓
Objecti	ve:			
6.9.4	Improved preventative medicine and primary health care.			✓
Policies	<u>s:</u>			
6.9.4.a	Develop and utilize health-status benchmarks to measure prevention and primary health care service delivery. $ \\$			✓
6.9.4.b	Support programs that provide family planning assistance.			✓
objecti alterna	is: The proposed action does not have direct or indirect relationships to are. In this context, the residential housing project does not advance or ves for greater healthcare system autonomy, increase long-term care c tives, support home care and community based programs, and improve ne and primary health care.	promo	ote tl	ne nd
ENERG	<u>Y</u>			
Goal:				
6.10	Maui will meet its energy needs through local sources of clean, renewable energy, and through conservation.		✓	

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objective:			
6.10.1 Reduce fossil fuel consumption. Using the 2005 electricity consumption as a baseline, reduce by 15 percent in 2015; 20 percent by 2020; and 30 percent by 2030.		✓	
Policies:			
6.10.1.a Support energy efficient systems, processes, and methods in public and private operations, buildings, and facilities.		✓	
6.10.1.b Support the Maui Solar Rooftop initiative.		✓	
6.10.1.c Support Hawai'i Energy and other Public Utility Commission (PUC) approved energy efficiency programs.	T	✓	
Objective:			
6.10.2 Increase the minimum percentage of electricity obtained from clean, renewable energy sources. By 2015, more than 15 percent of Maui's electricity will be produced from locally-produced, clean, renewable energy sources, 25 percent by 2020, and 40 percent by 2030.		✓	
Policies:			
6.10.2.a Evaluate available renewable energy resource sites and applicable technologies.			✓
6.10.2.b Encourage the installation of renewable energy systems, where appropriate.		✓	
6.10.2.c Support the establishment of new renewable energy facilities at appropriate locations provided that environmental, view plane, and cultural impacts are addressed.			✓
6.10.2.d Encourage all new County facilities completed after January 1, 2015, to produce at least 15 percent of their projected electricity needs with onsite renewable energy.			✓
Objective:			
6.10.3 Increased use of clean, renewable energy.	✓		
Policies:			
6.10.3.a Support efforts in the PUC to upgrade Maui's power grid to integrate renewable energy from multiple sources and wheeling of electricity.			✓
6.10.3.b Encourage the PUC to work with the County to implement and expedite community supported renewable energy projects.			✓
6.10.3.c Encourage efforts to produce more renewable energy using distributed generation.			✓
6.10.3.d Encourage import substitution by MECO and the broader community to become more self-sufficient in energy production.			✓
6.10.3.e Educate the public on the economic and environmental benefits from the increased use of renewable energy.			✓
6.10.3.f Encourage support from the Federal government, State, and the private sector for Maui's renewable energy objectives.			✓
6.10.3.g Encourage incentives to support the development and use of renewable energy.			1

Objecti	A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable ve:	DA	IA	N.A
	More efficient distribution of power throughout the island while preserving island beauty.			√
Analys	· · · · · · · · · · · · · · · · · · ·	have	a so	lar
homeo inform throug	heater system pursuant to MCC, Section 16.16B.R403.5.5. In addition wners may install photovoltaic panels on their homes if they so choose ation in mind, the objectives and policies of the goal to meeting Maui's er h local sources of clean, renewable energy and through conservation and able to the proposed project.	, ind e. Wi nergy	ividu th th nee	ıal nis ds
HARBO	DRS AND AIRPORT			
Goal:				
6.11	Maui will have harbors and airports that will efficiently, dependably, and safely facilitate the movement of passengers and cargo.			√
Objecti	ve:			
6.11.1	Upgraded harbor facilities to handle larger volumes of freight and passengers and additional small boat harbors.			√
Policies	<u>s:</u>			
6.11.1.	a Support the expansion and upgrade of Kahului Harbor through the following, provided that any expansion is respectful of cultural practices and existing recreational uses and supports improved water quality:			✓
	(1) Accommodate increasing volumes of cargo;			✓
	(2) Provide deeper pier depths and greater fuel-receiving and storing capacities; and			√
	(3) Ensure safe and efficient work areas, including separating passenger operations from fuel and cargo operations.			\
6.11.1.1	b Work with public and private entities to provide adequate pier slips, utilities, repair facilities, and waste-disposal capabilities.			✓
6.11.1.	c Encourage the State to safely separate passenger (cruise and ferry) operations from hazardous bulk fuels and heavy cargo transporting operations, while not decreasing harbor's capacity to safely support various recreational uses.			\
6.11.1.	d Encourage the State to develop cargo inspecting sites and facilities for efficient cargo and container processing and transportation and to prevent alien species entry.			✓
6.11.1.	e Support a State and County task force to study the feasibility of a second commercial harbor on Maui.			√
Objecti	ve:			
6.11.2	Establish more economically thriving and environmentally sensitive small boat harbors accommodating resident and business activity, including fishing, recreation, and tour boats.			✓
Policy:				
6.11.2.	a Provide for needed shore-side facilities and capabilities to support small boat harbor users (e.g. repair facilities, parking, cold storage, and mass-transit connections).			V

Objecti		DA	IA	NA
Opjecti	ve:			
6.11.3	Upgraded airport facilities and navigation aids to serve the needs of passengers, freight movements, and general aviation.			✓
Policies	<u>s:</u>			
6.11.3.	a Protect the island's airports from encroaching urbanization that may negatively impact the airport operations.			✓
6.11.3.	b Support State efforts to improve Kahului Airport operations to better serve passenger and cargo needs.			✓
6.11.3.	c Support State efforts to identify sites and plan to relocate and accommodate small and rotary wing aircraft.			✓
6.11.3.	d Encourage the State to improve airport safety including lighting, fuel transmission, fuel safety, etc.			✓
6.11.3.	e Consider expansion of rental car facilities in West and South Maui.			✓
6.11.3.	f Consider expansion of mass transit (bus, fixed-rail, shuttle, and taxis, bicycle, and pedestrian facilities) to and from Kahului Airport and not limited to passenger movements (allowing for luggage and cargo).			✓
6.11.3.	g Encourage the State to maintain airport capacity and to encourage more responsive air services to Hāna and Kapalua.			✓
	ER 7 – LAND USE			
AGRIC	ER 7 – LAND USE ULTURAL LANDS			
				√
AGRIC Goal: 7.1	Maui will have a prosperous agricultural industry and will protect agricultural lands.			✓
AGRIC Goal:	Maui will have a prosperous agricultural industry and will protect agricultural lands.			✓
AGRICI Goal: 7.1 Objecti 7.1.1	Maui will have a prosperous agricultural industry and will protect agricultural lands. Ye: Significantly reduce the loss of productive agricultural lands.			✓
AGRICI Goal: 7.1 Objecti 7.1.1	Maui will have a prosperous agricultural industry and will protect agricultural lands. Ye: Significantly reduce the loss of productive agricultural lands.			✓
AGRICI Goal: 7.1 Objecti 7.1.1 Policie: 7.1.1.a	Maul will have a prosperous agricultural industry and will protect agricultural lands. ve: Significantly reduce the loss of productive agricultural lands. Lands: Allow, where appropriate, the clustering of development on agricultural lands			✓ ✓ ✓
AGRICI Goal: 7.1 Objecti 7.1.1 Policie: 7.1.1.a	Maui will have a prosperous agricultural industry and will protect agricultural lands. Ve: Significantly reduce the loss of productive agricultural lands. S: Allow, where appropriate, the clustering of development on agricultural lands when approved as a CSD plan or similar approval mechanism. Require, where appropriate, the review and approval of CSD plans prior to the			✓ ✓ ✓ ✓ ✓ ✓ ✓
AGRICI Goal: 7.1 Objecti 7.1.1 Policie: 7.1.1.a 7.1.1.b 7.1.1.c	Maui will have a prosperous agricultural industry and will protect agricultural lands. ve: Significantly reduce the loss of productive agricultural lands. Lands: Allow, where appropriate, the clustering of development on agricultural lands when approved as a CSD plan or similar approval mechanism. Require, where appropriate, the review and approval of CSD plans prior to the subdivision of agricultural land. Discourage developing or subdividing productive agricultural lands for residential uses in which the residence would be the primary use and any			✓ ✓ ✓ ✓
AGRICI Goal: 7.1 Objecti 7.1.1 Policie: 7.1.1.a 7.1.1.b 7.1.1.c	Maui will have a prosperous agricultural industry and will protect agricultural lands. Ve: Significantly reduce the loss of productive agricultural lands. S: Allow, where appropriate, the clustering of development on agricultural lands when approved as a CSD plan or similar approval mechanism. Require, where appropriate, the review and approval of CSD plans prior to the subdivision of agricultural land. Discourage developing or subdividing productive agricultural lands for residential uses in which the residence would be the primary use and any agricultural activities would be secondary uses. Consider requirements for public notification and review of the subdivision of			✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
	Further develop the requirements for agricultural assessments found under Section 19.510, MCC.			✓
7.1.1.h	Provide incentives for landowners to preserve and protect agricultural lands from development through the use of TDR/PDR, tax credits, easement programs, or similar means.			✓
7.1.1.i	Promote the use of U.S.D.A. Farm and Ranch Lands Protection Program grants to fund the acquisition of conservation easements on eligible agricultural lands.			✓
7.1.1.j	Require all major developments adjacent to agricultural lands to provide an appropriate and site-specific agricultural protection buffer as part of a required site plan.			✓
7.1.1.k	Support and promote the viability of Maui's agricultural businesses through property tax incentives and other programs and subsidies.			✓
7.1.1.1	Encourage future community plan efforts to identify lands within the County Agricultural zoning district that are primarily being used for large-lot residential or rural use and consider such lands for reclassification to an appropriate County Rural zone.			✓
Objecti	ve:			
7.1.2	Reduction of the island's dependence on off-island agricultural products and expansion of export capacity. $ \\$			✓
Policies	<u>s:</u>			
7.1.2.a	Coordinate with the agricultural community, associations/community groups, agricultural landowners, and the State to designate IALs.			✓
7.1.2.b	Support an incentive package for productive Agricultural Lands which aims to ensure agricultural viability for small- and commercial-scale agricultural producers.			✓
7.1.2.c	Actively look to acquire land and provide infrastructure to expand the agricultural park and establish new agricultural parks.			✓
7.1.2.d	Support the designation of a research and development area within agricultural parks to help farmers stay attuned to new technology and research.			✓
7.1.2.e	Support local cooperative extension services to facilitate timely technology transfer opportunities.			✓
7.1.2.f	Support plans and programs to develop additional sources of water for irrigation purposes.			✓
7.1.2.g	Consider appropriate subdivision requirements (gravel roads, above-ground utilities, etc.) in those subdivisions creating Agricultural Parks where lots are limited to agricultural production with no dwellings.			✓
7.1.2.h	Support the recommendations, policies, and actions contained within the Maui Agricultural Development Plan, July 2009, when consistent with the MIP.			✓
7.1.2.i	Allow water and tax discounts for legitimate farming operations on rural and agricultural land. $ \\$			✓
7.1.2.j	Give priority in delivery and use of agricultural water and agricultural land within County agricultural parks to cultivation of food crops for local consumption.			✓
7.1.2.k	Support programs that control pests and diseases that affect agriculture.			1
7.1.2.I	Support the development of training and apprenticeship programs to encourage an adequate supply of agricultural workers.			✓

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objecti	ve:			
7.1.3	Support and facilitate connectivity between communities.			✓
Policies	<u>s:</u>			
7.1.3.a	Evaluate the impact of gated communities on interconnectivity.			✓
7.1.3.b	Discourage land use and urban design that impedes interconnectivity between adjacent communities.			√
design cultivat of viab consid	is: The proposed action does not have direct or indirect relationships to ture. As previously discussed, the proposed project will be develope ated for agriculture use. Although designated for agriculture, the lands have tion for over a decade, aside from intermittent cattle grazing. In the context of le agriculture lands on the island of Maui, implementation of the proposed ered to adversely affect agricultural productivity on Maui. In addition, it is no led action will be located adjacent to existing, similarly scaled residential su	d on not l the a action oted t	land been amou n is n	ds in int iot he
RURAL	AREAS			
Goal:				
7.2	Maui will have a rural landscape and lifestyle where natural systems, cultural resources and farm lands are protected and development enhances and compliments the viability and character of rural communities.			√
Objecti	ve:	•		
7.2.1	Reduce the proliferation and impact of residential development outside of urban, small town, and rural growth boundaries.			✓
Policies	<u>s:</u>			
7.2.1.a	Focus development to areas inside urban, small town, and rural growth boundaries to preserve natural, cultural, and agricultural resources.			✓
7.2.1.b	Encourage cluster development with a mandatory buffer requirement/clear edge at the interface of country towns, agricultural uses, and surrounding rural landscapes.			√
7.2.1.c	Encourage or require, where appropriate, CSDs and the use of green spaces/natural separations to protect the character of rural landscapes.			✓
7.2.1.d	Encourage basic goods/services in business country towns.			✓
7.2.1.e	Allow for mixed uses, including residential uses, within Business Country Town Districts.			✓
7.2.1.f	Encourage the use of alternative stormwater management techniques that minimize land disturbance and preserve natural drainage features.			✓
	Encourage green belts, open space buffers, and riparian zones to minimize conflicts between agriculture and residential uses.			✓
7.2.1.h	Evaluate the impact of gated communities on inter-connectivity.			✓
Objecti	ve:	•		
7.2.2	More appropriate service/infrastructure standards to enhance and protect the island's rural character and natural systems.			1
				ш_

	and Plan Goals, Objectives and Policies = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies:				
7.2.2.a N	Minimize impermeable surfaces within rural areas.			✓
	Protect and support the character, economic viability, and historic integrity of Maui's small towns.			✓
	Use infrastructure, public service, and design standards that are appropriate to ural areas.			✓
	Discourage land use and urban design that impede interconnectivity between adjacent communities.			✓
Rural Gi DHHL, w may pro not direc	mated by the County of Maui MIP. Although the remainder of the property i rowth Boundary, as previously stated, the property is under the jurisdi which has vested authority to develop its lands at its discretion, and as such ceed without the lands being fully entitled for residential use. The propose ctly or indirectly applicable with these policies.	is wit ction , the	hin ti of ti proje	he he ct
URBAN	AREAS			
Goal:				
S	Maui will have livable human-scale urban communities, an efficient and sustainable land use pattern, and sufficient housing and services for Maui esidents.	✓		
Objective	<u>e:</u>			
	Facilitate and support a more compact, efficient, human-scale urban development pattern.	✓		
Policies:				
	Ensure higher-density compact urban communities, infill, and redevelopment of underutilized urban lots within Urban Growth Boundaries.	✓		
V a N	Maintain a distinct separation between communities, such as but not limited to, Wailuku and Waikapū; Wailuku and Waihe'e; Pukalani and Makawao; Pukalani and Kula; Makawao and Hāli'imaile; Lahaina and Kā'anapali; Kīhei and Mā'alaea; and Mā'alaea and Waikapū, to protect the character and identity of Maui's communities.		<	
r	Strengthen evaluation requirements for new urban expansion, new towns, and major urban infill projects within urban growth areas. Tailor submittal equirements to reflect the impact or scale of different projects.			✓
(v	Ensure future amendments to urban growth boundaries achieve the following: 1) provide a beneficial extension of the existing community; (2) are in areas where it is cost-effective to provide and operate infrastructure/public service acilities; and (3) do not promote automobile-oriented land use patterns.			✓
7.3.1.e E	Evaluate the impact of gated communities on inter-connectivity.			✓
S	Encourage the development and implementation of neighborhood design standards that are environmentally friendly, such as LEED for Neighborhood Development (LEED – ND) standards.			✓
	Discourage future pyramid zoning within the industrial zoning districts, while allowing accessory commercial uses and grandfathering existing uses.			✓

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
7.3.1.h	Promote agriculture by encouraging community gardening, community-supported agricultural programs, and farmers markets within and adjacent to urban areas.			>
7.3.1.i	Discourage land use and urban design that impedes inter-connectivity between adjacent communities.			\
Objecti	ve:			
7. 3.2	Facilitate more self-sufficient and sustainable communities.			✓
Policies	<u>s:</u>			
7.3.2.a	When developing new communities, provide sufficient lands for commercial, appropriate industrial, educational, spiritual, and non-profit uses to serve the daily needs of community residents.			>
7.3.2.b	Site community facilities such as schools, parks, libraries, and community centers within walking and biking distance of residences.			✓
7.3.2.c	Facilitate self-sufficient communities and shorten commutes by:			✓
	(1) Directing residential development to job-rich areas;	✓		
	(2) Allowing for appropriate commercial development and community services to shorten commutes; and			✓
	(3) Allowing home occupations or home-based businesses that are compatible with surrounding neighborhoods and lifestyles.			✓
7.3.2.d	Ensure, where appropriate, that affordable employee housing and multi-modal transportation opportunities are located near major employment centers.			✓
7.3.2.e	Discourage the establishment of bedroom communities where long commutes are required to employment centers.			✓
7.3.2.f	Facilitate the development of housing by focusing projects in locations where land and infrastructure costs facilitate the development of affordably-priced housing.	✓		
7.3.2.g	Provide incentives to facilitate the development of multifamily housing.			√
7.3.2.h	Encourage the placement of rental housing projects in the same areas as for- sale housing to facilitate mixed-income communities.			✓
7.3.2.i	Develop communities that provide sufficient parks, schools, libraries, and other essential public facilities and services to serve resident needs.			✓
7.3.2.j	Promote agriculture by encouraging community gardening, edible landscaping, community-supported agricultural programs, and farmers markets within and adjacent to urban areas.			✓
Objecti	ve:			
7.3.3	Strengthen the island's sense of place.			✓
Policies	<u>s:</u>			
7.3.3.a	Protect and enhance the unique architectural and landscape characteristics of each community.			✓
7.3.3.b	Encourage Hawaiian architecture and tropical building designs.			✓

	land Plan Goals, Objectives and Policies A = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NΑ
7.3.3.c	Support the continued revitalization of historic country towns, Wailuku Town, and Kahului's commercial core and harbor-front without displacing traditional, cultural, recreational and customary uses.			√
7.3.3.d	Strongly encourage the preservation of buildings, structures, and sites of historic significance.			√
7.3.3.e	Require community input through Design Workshops for major new urban expansion, new towns, and major urban infill projects.			√
7.3.3.f	Require design enhancement, landscaping, and integration of park and rides, bicycle parking areas, and mass-transit infrastructure to mitigate the effect of parking lots and structured parking on the urban landscape.			✓
7.3.3.g	Ensure that safe and attractive public spaces (e.g., plazas, parks, town/village squares) are provided throughout the island's urban areas.			1
Objecti	ve:	•		
7.3.4	Strengthen planning and management for the visitor industry to protect resident quality of life and enhance the visitor experience.			✓
Policies	<u>):</u>	•		
7.3.4.a	$\label{thm:conversion} \mbox{Discourage the conversion of hotel units to time shares and fractional ownership.}$			√
7.3.4.b	Monitor and manage the amount of, and impacts from, timeshares and fractional ownership. $ \\$			√
7.3.4.c	Manage short-term rentals and bed-and-breakfast homes through a permitting and regulatory process in accordance with adopted ordinances and community plan policies.			\
7.3.4.d	Limit large-scale resort development to the four existing resort destination areas of Wailea, Mākena, Kapalua and Kā'anapali. "Large Scale Resort" is defined as complexes that include multiple accommodation facilities, activity businesses, retail complexes, and other amenities.			✓
<u>Objecti</u>	ve:			
7.3.5	Ensure that Maui's planning and development review process becomes more transparent, efficient, and innovative.			√
Policies	<u>):</u>	•		
7.3.5.a	Encourage greater community involvement in land use planning and decision making.		✓	
7.3.5.b	Establish a predictable and timely development review process that facilitates the approval of projects that meet planning and regulatory requirements.			√
7.3.5.c	Increase inter-agency coordination between the Department of Planning and all State and County agencies responsible for infrastructure and public facilities provision, particularly as it relates to the mitigation of long-term cumulative impacts resulting from development projects.		✓	
7.3.5.d	Provide greater certainty and transparency in the development review process.			√
7.3.5.e	Expand and maintain land use and geographic information system databases for improved decisions, and make data and products available to the public.			✓

Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable businesses and public facilities that are offered to the community. Further, the proposed project has and continues to seek community involvement and input in the land use planning process. Ongoing coordination with various State and County agencies ensures that the proposed action accounts for and mitigates, to the extent possible, potential long-term cumulative impacts resulting from the residential subdivision. **CHAPTER 8 - DIRECTED GROWTH PLAN URBAN AND SMALL TOWN GROWTH AREA** Goal: Maui will have well-serviced, complete, and vibrant urban communities and traditional small towns through sound planning and clearly defined development expectations. Policies: 8.1.a The County, with public input, will be responsible for designating new growth areas where infrastructure and public facilities will be provided, consistent with the policies of the MIP and in accordance with State and County infrastructure 8.1.b Amendments to a UGB or STB shall be reviewed as a MIP amendment. A UGB or STB shall only be expanded if the island-wide inventory (maintained by the Department of Planning) of existing land uses (residential, commercial, industrial) indicates that additional urban density land is necessary to provide for the needs of the projected population growth within ten years of that inventory; or, during the decennial update of the MIP. 8.1.c Community plans shall provide for urban density land use designations only within UGBs and Small Towns. The County may only support and approve State Urban Land Use Designations for areas within UGBs, STBs, and Rural Villages. 8.1.d The unique character and function of existing small towns shall be protected to retain and preserve their sense of place. 8.1.e New development shall be consistent with the UGBs. STBs, and all other applicable policies of the MIP. New urban-density development shall not be allowed outside of a UGB or STB. 8.1.f The County, as a condition of development approval, shall require developers of privately owned infrastructure systems to provide financial insurance (bonding, etc.) for the operation and maintenance of these systems. 8.1.g The County shall implement a zoning program to comprehensively redistrict and ✓ rezone lands within UGBs according to updated community plan policies and map designations. 8.1.h The County will seek to focus capital improvements (schools, libraries, roads, and other infrastructure and public facilities) within the UGBs and STBs in accordance with the MIP. 8.1.i The County will promote (through incentives, financial participation, expedited 1 project review, infrastructure/public facilities support, etc.) appropriate urban infill, redevelopment and the efficient use of buildable land within UGBs to avoid the need to expand the UGBs. The MIP's UGBs and STBs shall not be construed or implemented to prohibit the construction of a single-family dwelling on any existing parcel where otherwise permitted by law.

Maui Island Plan Goals, Objectives and Policies

Wailuku and Kahului. The proposed project will be located in Waikapū, in proximity to the small

Key: I Analy Bound The p	sland Plan Goals, Objectives and Policies DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable sis: The northern portion of proposed project is located within the Ur dary of the County of Maui's MIP while the remainder is within the Rural Growt project is not located within the Small Town Growth Boundary. The personance with the related UGB objective and policies of the MIP.	h Boı	ındaı	y.
RURA	L GROWTH AREA			
Goal:				
8.2	Maui will maintain opportunities for agriculture and rural communities through sound planning and clearly defined development expectations.			✓
Policie	<u>98:</u>			
8.2.a	Amendments to a RGB shall be reviewed as an MIP amendment. A RGB shall only be expanded if an island-wide inventory of existing land uses (residential, commercial, industrial) indicates that additional lands are necessary to provide for the needs of the projected population growth within ten years of that inventory; or, during the decennial update of the MIP.			✓
8.2.b	New development shall be consistent with RGB and all other applicable policies and requirements of the MIP. Public, quasi-public, civic, and limited commercial or industrial uses may be allowed in the RGB when the proposed uses demonstrate a public need and are consistent with the Community Plan and zoning.			✓
8.2.c	Environmental protection and compatibility will be a top priority in rural growth areas.			✓
8.2.d	All development within rural growth areas should avoid encroachment upon prime agricultural land.			✓
8.2.e	Rural growth areas include Rural Residential Areas and Rural Villages. Rural residential areas may be designated when they are located in association with or on the border of urban growth areas or Small Towns; and/or when they provide for complete, self-sufficient rural communities with a range of uses to be developed at densities that do not require urban infrastructure.			✓
8.2.f	Community plans shall provide for rural density land use designations only within RGBs; provided that limited community plan urban designations may be allowed within Rural Villages. New rural growth areas shall not be located where urban expansion may ultimately become necessary or desirable. New rural-density development shall not be allowed outside of a RGB.			✓
8.2.g	New rural growth areas intended to be complete, self-sufficient rural communities must be located a significant distance from existing urban areas, distinctly separated by agricultural or open lands.			✓
8.2.h	Urban-scale infrastructure and public facilities shall not be provided in rural areas except as described in the defined Level-of-Service (LOS) standards. There should be no expectations of urban services in rural areas.			✓
8.2.i	Urban development standards shall not be required within RGBs except in fulfillment of Federal law.			✓
8.2.j	The unique character and function of existing small towns and rural communities shall be protected to retain and preserve their sense of place.			✓
8.2.k	Preserve rural landscapes in which natural systems, cultural resources, and agricultural lands are protected and development compliments rural character and contributes to the viability of communities and small towns.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA	
8.2.1 The MIP's RGBs shall not be construed or implemented to prohibit the construction of a single family dwelling on any existing parcel where otherwise permitted by law.			√	
8.2.m The County shall implement a zoning program to comprehensively redistrict and rezone lands within RGBs, and to implement community plan policies and map designations.			✓	
8.2.n At the time of zoning from agricultural to rural, Council will consider prohibiting restrictions on agricultural activity.			\	

Analysis: The northern portion of the proposed project is located within the Urban Growth Boundary of the County of Maui's MIP while the remainder of the property is within the Rural Growth Boundary. It is noted that although the remainder of the property is within the Rural Growth Boundary, as previously stated, the property is under the jurisdiction of the DHHL, which has vested authority to develop its lands at its discretion, and as such, the project may proceed without the lands being fully entitled for residential use.

PROTECTED AREA POLICY

8.3.a The Protected Areas in Diagrams E-1, NW-1, N-1, NE-1, S-1, SE-1, and WC-1 should be concurrently reviewed with Table 8-2 and with any proposed land uses that may result in an adverse impact on a Protected Area. The County Council and the Administration should be notified if a Protected Area may be compromised by a development proposal.

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Analysis: Protected areas, as defined in Table 8-2 of the MIP are those lands categorized as preservation, park, greenbelt, greenway, and sensitive land. Diagram WC-1 shows that the project site has preservation lands and a greenway/greenbelt along the south and east sides of the property, respectively, which correspond to buffers noted within the Maui Island Plan's Pu'unani Growth Area. As discussed previously, an analysis was undertaken by the DHHL to determine if the required 500-foot greenbelt along Honoapi'ilani Highway and 200-foot greenbelt along the project's boundary with the existing Waiolani Mauka subdivision could be accommodated. Based on this analysis, the inclusion of these two (2) greenbelts would result in the loss of approximately 68 out of the total 161 residential lots available for DHHL beneficiaries. As the waiting lists for DHHL homestead lots are in currently the thousands, the DHHL determined that the inclusion of these two (2) greenbelts is not feasible and would be contrary to the mission and purpose of both the HHCA and DHHL, which are to provide as many homestead opportunities to beneficiaries, as possible.

