Bernard P. Carvalho, Jr.
Mayor

Wallace G. Rezentes, Jr.
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Michael A. Dahilig
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PLANNING DEPARTMENT
Regulatory Division
County of Kaua'i, State of Hawai'i
4444 Rice Street, Suite A-473, Līhu'e, Hawai'i 96766
TEL (808) 241-4050 FAX (808) 241-6699

NOV 18 2016

Hon. Scott Glenn, Director
Office of Environmental Quality Control
Department of Health, State of Hawai'i
235 S. Beretania Street, Room 702
Honolulu, Hawai'i 96813

Re: FINDING OF NO SIGNIFICANT IMPACT: Final Environmental Assessment (FEA) for Kaua'i County General Plan Residential Community" for a parcel located in Kapa'a Homesteads, Kapa'a, Kaua'i, Hawai'i
Tax Map Key: (4) 4-4-013:002

Dear Mr. Glenn:

With this letter, the Kaua'i County Planning Department hereby transmits the final environmental assessment and finding of no significant impact (FEA-FONSI) for the General Plan Amendment, County of Kaua'i, Hawai'i: Re-designate Land Use of Real Property located at Tax Map Key no. (4) 4-4-013:002 from *"Agriculture"* to *"Residential Community"* in the Kawaihau District on the Island of Kaua'i for publication in the next available edition of the Environmental Notice.

Included with this letter are copies of public comments and the corresponding responses from the applicant that were received during the 30-day public comment period on the draft environmental assessment and anticipated finding of no significant impact (DEA- AFNSI).

Enclosed is a completed OEQC Publication Form, two copies of the FEA-FONSI, an Abobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions, please contact Mr. Dale Cua of our Department (808) 241-4053.

Sincerely,

FOR MICHAEL A. DAHILIG
Director of Planning

enclosures

An Equal Opportunity Employer

#17-228

APPLICANT PUBLICATION FORM

Project Name:	General Plan Amendment, County of Kaua'i, Hawai'i, Re-desginate Land Use of Real Property located at Tax Map Key no. (4) 4-4-013:002 from *Agriculture* to *Residential Community*
Project Short Name:	Baird Family Ltd. Partnership
HRS §343-5 Trigger(s):	Amendment to County General Plan
Island(s):	Kaua'i
Judicial District(s):	Kawaihau
TMK(s):	(4) 4-4-013:002
Permit(s)/Approval(s):	General Plan and Zoning Amendment
Approving Agency:	County of Kaua'i, Planning Department
Contact Name, Email, Telephone, Address	Dale Cua; dcua@kauai.gov; (808) 241-4050; County of Kaua'i, Planning Department, 4444 Rice Street, Suite A-273, Lihu'e, Hawai'i 96766
Applicant:	Baird Family Ltd. Partnership
Contact Name, Email, Telephone, Address	Dr. Mark Baird; (808) 822-9393; 4-976 Kuhio Highway, Kapaa, Hawaii 96746 mabdds@gmail.com
Consultant:	
Contact Name, Email, Telephone, Address	Galen Nakamura; galen.nakamura@hawaiiantel.net; (808) 632-2267; Shiramizu, Loo & Nakamura LLLP, 4357 Rice Street, Suite 102, Lihue, Hawaii 96766

Status (select one)	**Submittal Requirements**
____ DEA-AFNSI	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.
__X__ FEA-FONSI	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.
____ FEA-EISPN	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.
____ Act 172-12 EISPN ("Direct to EIS")	Submit 1) the approving agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.
____ DEIS	Submit 1) a transmittal letter to the OEQC and to the approving agency, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.
____ FEIS	Submit 1) a transmittal letter to the OEQC and to the approving agency, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.
____ FEIS Acceptance Determination	The approving agency simultaneously transmits to both the OEQC and the applicant a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice.
____ FEIS Statutory Acceptance	The approving agency simultaneously transmits to both the OEQC and the applicant a notice that it did not make a timely determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and therefore the applicant's FEIS is deemed accepted as a matter of law.
____ Supplemental EIS Determination	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon

publication in the Notice.

____ Withdrawal Identify the specific document(s) to withdraw and explain in the project summary section.

____ Other Contact the OEQC if your action is not one of the above items.

Project Summary

Applicant proposes to re-designate entire parcel's Kauai General Plan land use designation from *Agriculture* to *Residential Community*. This re-designation will then make the parcel's State Land Use District designation eligible to be changed from *Agriculture* to *Rural*, and the County's land use zoning district designation eligible to be changed from *Open* and *Agriculture* to *Residential (R-1)*. Upon such re-zoning, subject parcel's total residential density would change from one to three dwellings.

General Plan Amendment

County of Kaua'i, Hawai'i
Re-designate Land Use of Real Property located at
Tax Map Key no. (4) 4-4-013:002 from
Agriculture* to *Residential Community

Final Environmental Assessment

Submitted Pursuant to Hawai'i Revised Statutes
Chapter 343

Applicant:
Baird Family Ltd. Partnership
4-976 Kūhiō Highway
Kapa'a, HI 96746

Approving Agency:
Mr. Michael Dahilig, Director of Planning
County of Kaua'i
Department of Planning
4444 Rice Street, Suite A-473
Lihue, HI 96766

Prepared by:
Mr. Galen Nakamura
Shiramizu, Loo & Nakamura, LLLP
4357 Rice Street, Suite102
Lihue, HI 96766

November 2016

Project Name:	General Plan Amendment to re-designate land use of real property located at tax map key no. (4) 4-4-013:002 from *Agriculture* to *Residential Community*
Applicant:	Baird Family Ltd. Partnership. 4-976 Kūhiō Highway Kapa'a, HI 96746 Contact: Dr. Mark Baird (808) 635-6316
Project Owner:	Baird Family Ltd. Partnership 4-976 Kūhiō Highway Kapa'a, HI 96746
Accepting Agency:	County of Kaua'i Department of Planning 4444 Rice Street, Suite A-473 Lihue, HI 96766 Contact: Mr. Michael Dahilig, Director of Planning (808) 241-4050
Location:	Kapa'a Homesteads, Kauai
Tax Map Key:	(4) 4-4-013:002
Land Area:	3.38 acres (approximately)
Proposed Action:	Redesignation of entire parcel from General Plan land use designation of *Agriculture* to *Residential Community.*
Present Use:	Current owner/ family reside on subject property.
State Land Use District:	Agricultural
County Zoning:	Agriculture (A) and Open (O)
County General Plan:	Kawaihau Planning District: Agriculture (A)
Determination:	Finding of No Significant Impact ("FONSI")

Table of Contents

SECTION 1.0 INTRODUCTION

1.1 Project overview

The Baird Family Ltd. Partnership ("Baird") currently resides on the proposed project parcel located at tax map key no. (4) 4-4-013:002. The purpose of this project is to re-designate the County of Kaua'i ("County") General Plan ("General Plan") land use of this parcel from *Agriculture* to *Residential Community*.

The proposed project area, situated in the Kawaihau District of Kaua'i, is in a region that extends from the ocean to the mountains. The town of Kapa'a, beach resorts of Wailua and Waipouli, residential homes, agricultural farms, grazing lands, and large open spaces comprise the region. Most of the uplands are in the district are homestead lands that are in rural and agricultural uses. A mix of long-term residents, newcomers, and visitors populate the region.

Samuel Mahelona Memorial Hospital, Kapa'a High School, Kapa'a Middle School Kapa'a Elementary School, Kapahi Park, and several small light industrial/commercial businesses are located to the east of the project site.

To the east of the project site is the Upper Kapahi Dam which was originally constructed in 1910, and which is slated to be replaced[1] by the State of Hawai'i ("State") with a new box culvert spillway under Kainahola Road. Construction work is currently in progress.

Location of parcel related to the Upper Kapahi Reservoir.

[1] In August 2014, the Applicant for the project was the Department of Accounting and General Services, State of Hawai'i.

SECTION 2.0 PROJECT DESCRIPTION

2.1 Location & TMKs

The Baird Family Ltd. Partnership parcel is located in the district of Kawaihau on the island of Kaua'i. The property is bounded to the north by Kawaihau Road, to the east and south by the Kainahola Road, and to the west by Hoomaha Place. The parcel is located approximately 4.8 miles mauka of Kūhiō Highway.

The project site is located at Tax Map Key (4) 4-4-13:002, a 3.38 acre parcel of land. Currently there is one structure (a dwelling) on the parcel. Concerning the property's County land use zoning designation, the subject parcel is split-zoned; approximately 1.4 acres is within the County *Agriculture (A) District*, and the balance, containing about 1.98 acres, is within the County *Open (O) District*. The property's current County of Kaua'i General Plan designation is *Agriculture*, and the property's State of Hawaii Land Use District ("SLUD") designation is *Agricultural*. The Project Location, Parcel/Tax Map Key, State Land Use District, General Plan, and the County Zoning maps are found in **Exhibits A, B, C, D & E.**

2.2 Proposed Action

The proposed action concerning the subject property will include three separate and independent land use actions:

(1) General Plan Amendment: Revision of subject property's General Plan designation from *Agriculture* to *Residential Community*;
(2) County Zoning Amendment: Re-zoning of entire parcel from *Agriculture* and *Open* to *Residential (R-1)*
(3) SLUD designation: Amending subject property's SLUD designation from Agriculture to *Rural.*

An amendment to the County of Kaua'i General Plan requires an Environmental Assessment.[2]

2.3 Environmental Review Trigger

The proposed amendment to the subject General Plan triggers the environmental review process as defined by Chapter 343, Hawai'i Revised Statutes ("HRS"). Therefore, an Environmental Assessment is required.

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[2] HRS §343-5 *Applicability and requirements.* (a) Except as otherwise provided, an environmental assessment shall be required for actions that: (6) Propose any amendments to existing county general plans where the amendment would result in designations other than agriculture, conservation, or preservation, except actions proposing any new county general plan or amendments to any existing county general plan initiated by a county.

2.4 Land Use Classification and Zoning

The 2010 population of the Kawaihau District was 20,992. Wailua/Kapa'a is the largest populated area on Kaua'i. Areas inland of the coast were subdivided during Territorial Government days for agricultural homesteads; the area is now transitioning from agricultural to residential use. Home building continues to increase as small land holdings are subdivided or submitted to condominium use pursuant to H.R.S. chapter 514B.

As previously stated, the subject property's State Land Use District designation is *Agricultural*, the County of Kaua'i General Plan land use designation is *Agriculture*, and the County zoning designation is *Agriculture* and *Open*. The State Land Use and General Plan maps are found in **Exhibits C** and **D** respectively.

Lands in the general area of the subject property, whose SLUD classification is *Agricultural*, are further classified by the Hawaii State Office of Planning ("Office of Planning") *Land Study Bureau* as ""C" or "D". Further, the Office of Planning's Agricultural Lands of Importance to the State of Hawaii ("ALISH") map classifies land in the general area of the subject property as "Unique" or "Other".

According to the County of Kaua'i's, Important Agricultural Lands Study[3] the subject parcel and general surrounding area are not designated *Important Agricultural Lands ("IAL")*. In addition, the preliminary maps in the IAL Study do not indicate any agricultural uses in the general area of the proposed project.

Kaua'i General Plan

The Kaua'i General Plan is a direction-setting policy document that is intended to serve as a guide to help plan and improve the physical environment and quality of life for the people of Kaua'i, and to address the overall development of the island. The General Plan also states the County's vision for Kaua'i and establishes the strategies to help achieve that vision.

According to the current General Plan, Section 6.2.4.1, Land Use Map:

> *The Kawaihau Planning District has substantial capacity for additional residential development as described in Section 6.2.3.1 (Build-Out Analysis).*

[3] The *County of Kaua'i, Important Agricultural Lands Study (Final Draft 7-13-2015)* (the "IAL Study") was prepared for the General Plan Update 2035 which is currently underway. *See* Appendix C and E of IAL Study for Kaua'i maps of both IAL and lands currently in agriculture.

The General Plan policy for growth is primarily for the Wailua and Kapa'a Homestead areas[4]. On the north side of Kawaihau Road near the subject property are three residentially zoned properties (R-1); one of these properties is across the street from the subject property.

According to County Real Property Tax Division parcel maps, parcels in the area directly surrounding the subject parcel are classified for real property tax purposes as Homestead & Residential (60%), Commercialized Home Use (30%), and Agricultural (10%).

County Comprehensive Zoning Ordinance

The purpose of the County's Comprehensive Zoning Ordinance ("CZO") is to provide regulations and standards for land development and the construction of buildings and other structures in the County of Kaua'i. The regulations and standards prescribed in the CZO are intended to regulate development to ensure its compatibility with the overall character of the island.

The current County zoning for the project site is *Agriculture (A)* and *Open (O.)*

Article 4 of the Kaua'i County Code defines the purpose of *Residential Districts* (R) as:

> *(a) To establish standards governing the development, construction and use of housing and dwelling facilities.*
>
> ***(b) To provide opportunity for all groups of persons to obtain adequate housing within each area of the County suitable for residential use in relation to other land uses and consistent with the preservation of natural, scenic, and historic resources.*** [emphasis added]
>
> *(c) To establish the level of minimum services necessary to assure the adequacy of housing.*
>
> *(d) To encourage a variety of housing types, sizes and densities necessary to meet the needs of all economic groups and to avoid environmental monotony detrimental to the quality of life.*
>
> ***(e) To maintain the character and integrity of communities within residential districts and support residents in continuing to live and raise their families in these neighborhoods.*** [emphasis added]

2.5 Permits Required and Approvals

As described in Section 2.2 above, the following is a list of major land use approvals and permits required to implement the proposed project.

(1) General Plan Amendment: Revision of subject property's General Plan designation from *Agriculture* to *Residential Community*;

[4] Kaua'i General Plan, November 2000, page 6-14.

(2) County Zoning Amendment: Re-zoning of entire parcel from *Agriculture* and *Open* to *Residential (R-1)*
(3) State Land Use District ("SLUD") designation: Amending subject property's SLUD designation from *Agriculture*

2.6 Project Schedule & Approximate Cost

Tentative Project Schedule:

Draft Environmental Assessment ("DEA") published by OEQC[5]	03-23-2016
DEA Public Comment Period (30 days)	03-25-2016
Final Environmental Assessment submitted to OEQC	Nov-Dec 2016
Application for GP[6] amendment submitted to PC[7]	Dec 2016-Jan 2017 (estimated)
General Plan amendment, Zoning amendment, and SLUD amendment submitted to Council	Spring 2017 (estimated)

At present, there are no construction costs associated with the proposed project.

SECTION 3.0 TECHNICAL CHARACTERISTICS AND PUBLIC SERVICES

3.1 Transportation, Circulation, Vehicular Access

Transportation and vehicular circulation in the Kapa'a area consists of Kūhiō Highway (State Highway No. 56), which is part of the National Highway System going from Kapule Highway in Lihue to Princeville. Roads running inland are under the jurisdiction of the County, providing access to *mauka* properties. The primary County roads exiting Kūhiō Highway to the subject property include Kawaihau Road and Mailihuna Road.

The project area on Kalihiwai Road is about 4.5 miles *mauka* of Kūhiō Highway.

3.2 Fire, Police and Medical Services

The nearest County of Kaua'i fire station, known as Kaiakea, is located on Kūhiō Highway just below Mahelona Hospital, less than 10 miles from the project site.

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[5] "OEQC" means State of Hawaii Office of Environmental Quality Control, an office of the State's Department of Health ("DOH").

[6] "GP" means General Plan

[7] "PC" means Kauai County Planning Commission.

Mahelona Hospital provides inpatient, outpatient, and long-term care services, in addition to emergency room services.

The County's Police Department headquarters are located in Lihue on Kaana Street, while the department's Kapa'a Substation is located at 4670 Kahau Road, also less than 10 miles from the Baird property.

3.3 Sewage Treatment and Disposal

The current residential structure on the parcel was constructed around 1973. It currently has two legally permissible cesspools. New structures on the parcel would require septic systems to be installed in accordance with applicable State Department of Health ("DOH") requirements.

The proposed *County General Plan* land use re-designation of the subject property from *Agriculture* to *Residential Community* does not involve establishment of any new cesspools. If and when development occurs on the subject parcel because of the subject land use re-designation, all such development will comply with then-existing State of Hawai'i, Department of Health, Wastewater Branch requirements concerning wastewater, as well as applicable County of Kaua'i wastewater requirements.

3.4 Solid Waste

The County maintains an island-wide system of solid waste collection and disposal. Solid waste generated by the current project is picked up by the County and taken to either the Kapa'a Transfer Station[8] or to the County's main landfill in Kekaha. There is also a recycling station and a greenwaste diversion site in Kapa'a. The recycling station is one of six around the island operated by private contractors, which receives newspaper, glass, aluminum, and paper products. The recycling stations help relieve the increasing volume of solid waste taken to the County's principal landfill.

3.5 Water Supply Facilities

The County's Department of Water provides potable water service throughout the island. Water lines are generally located in the streets and distribute potable water for domestic and commercial consumption as well as fire protection. The existing transmission lines in the project area connect to these municipal systems. Concerning the subject parcel, two new, recently installed ⅝" water meters are available to serve the two new possible parcels that are proposed to ultimately result from the land use changes resulting from this project.[9] Any new service

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[8] Refuse from this transfer station is also taken to the County's principal landfill in Kekaha.

[9] A total of three ⅝" water meters currently serve the entire subject parcel.

lines required in the future will be designed and constructed in accordance with the applicable standards and conditions of the County's Department of Water.

3.6 Utilities: Electrical, Telephone, and Cable

Kaua'i Island Utility Cooperative ("KIUC") provides power to the entire island. The Kawaihau region is served by a tap off the *mauka* transmission line that connects to the Wainiha Hydroelectric Plant on the north shore and with Port Allen to the west. The tap provides power to Kapa'a Town, other developed coastal areas, and residential communities in the Kapa'a and Wailua homestead areas.

Hawaiian Telcom has telephone lines along Kūhiō Highway and up Kawaihau Road. Cable television is provided by Oceanic Time-Warner. Both Hawaiian Telcom and Oceanic Time-Warner provide internet service in the Kapa'a area, including service to the subject area.

3.7 Schools, Libraries and Recreational Facilities

There are several public schools in the Kapa'a area including Kapa'a Elementary, Middle, and High School. The Kapa'a Public Library is located on Kūhiō Highway in Kapa'a town.

Lydgate Park, a regional park, is located in Wailua. On Kawaihau Road, about two miles makai of the project is the Kapahi Park. Located within this park are a little league and soccer field, playground equipment, and a comfort station.

SECTION 4.0 SOCIO-ECONONIC CHARACTERISTICS

4.1 Demographic Data

The 2010 population for Kaua'i was 67,091 persons, and the population in the Kawaihau District was 20,992 persons. Within the Kapa'a Census Designated Place ("CDP") area, there were 10,699 persons.[10]

Kapa'a Census Designated Place (CDP 403)	2010 Census Data:
Households	3,501 households
Persons per household 2009-2013	2.97 persons
Median Household Income 2009-2013	$60,362

In 2010 the Kapa'a white-alone population was 38%, the population of two or more races was 29%, and the population of Asian-alone was 27%.

[10] State of Hawai'i 2010 Data Book: http://dbedt.hawaii.gov/economic/databook/2010-individual/_01/

4.2 Historic, Cultural and Archaeological Resources

Kapa'a's modern history roots were with the sugar plantations, and later, with rice and pineapple cultivation, and finally with small businesses. Sugar was introduced in 1877 and a mill was constructed in Kapa'a. The mill was later abandoned with the consolidation of sugar operations at the Makee Sugar Company mill in Kealia. Swampy lands in Kapa'a owned by the government were leased by rice farmers in the 1920s. As the sugar industry declined and worker contracts expired, private and government land became available for homesteading.[11]

Historically, the subject parcel was not used for sugar cane production.

A cultural impact assessment ("CIA") was completed of a down-gradient, approximately 15 acre area within a 28 acre parcel adjacent to the subject parcel, in conjunction with the State's *Upper Kapahi Reservoir Dam Replacement* project. This CIA, conducted by Cultural Surveys Hawai'i (2014), was completed to document archeological, historical, and cultural resources that existed within the dam replacement's approximately 15 acre project area. According to this CIA:

> There have not been as many archaeological studies done in upland Kapa'a compared to the shoreline. No archaeological sites were observed during a reconnaissance of 52.56 acres of mostly *kula* land in upland Kapa'a (Hammatt 1981), nor were there any terraces or other sites apparent during a 1986 reconnaissance of the upper reaches of the Makaleha stream valley (Hammatt 1986). Although no historic properties have been documented in the project area, the Upper Kapahi Reservoir, built in 1910, qualifies as a potentially eligible property for the National Register of Historic Places. An old *'auwai* (ditch) was also found in Kapahi in 1896 according to one of the participants in the community consultations.
>
> The community consultations indicated that a burial may be located about 200 feet (61 meters) from the project area, but no burials are known to occur within the actual project area. Participants in the interviews that were conducted also noted supernatural phenomenon and "spooky" beliefs surrounding accidents that have been associated with the area. All participants that were interviewed expressed concern over these accidents.

Section 3.5, *Final Environmental Assessment, Upper Kapahi Dam Replacement Project (August 2014).*

Concerning the subject parcel, no known historic or archaeological resources occur on it. As the project moves forward through the land use permitting process, the State Historic Preservation Division ("SHPD") of the Department of Land and Natural Resources ("DLNR") will be consulted as necessary.

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[11] Wilcox, Carol, *The Kaua'i Album.* Kaua'i Historical Society, 1981.

In the Kapa'a area, listed on the State and National Register of Historic Places are: the Opaekaa Road Bridge, the Pu'u'opae Bridge, and the Seto Building.

4.3 Environmental Justice

According to the U.S. Environmental Protection Agency ("EPA"), "environmental justice" is defined as:

> *Environmental Justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.*[12]

The State Department of Health, draft definition of Environmental Justice for Hawai'i is:

> *Environmental justice is the right of every person in Hawai`i to live in a clean and healthy environment, to be treated fairly, and to have meaningful involvement in decisions that affect their environment and health; with an emphasis on the responsibility of every person in Hawai`i to uphold traditional and customary Native Hawaiian practices that preserve, protect, and restore the `aina for present and future generations. Environmental justice in Hawai`i recognizes that no one segment of the population or geographic area should be disproportionately burdened with environmental and/or* ES-2 *health impacts resulting from development, construction, operations and/or use of natural resources.*

Concerning environmental justice generally and according to the U.S. Environmental Protection Agency's EJScreen[13] website, the one mile ring centered at TGC's proposed project area possesses the demographic and environmental indicators shown in Exhibit "F" attached to this environmental assessment.

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[12] *See* State of Hawai'i, Department of Health, http://health.hawaii.gov/epo/ej/.

[13] EJSCREEN is an environmental justice mapping and screening tool that provides EPA with a nationally consistent dataset and approach for combining environmental and demographic indicators. EJSCREEN users choose a geographic area; the tool then provides demographic and environmental information for that area. All of the EJSCREEN indicators are publicly-available data. (https://www.epa.gov/ejscreen/what-ejscreen)

SECTION 5.0 ENVIRONMENTAL CHARACTERISTICS[14]

5.1 Air Quality, Noise, and Water Quality

According to the State Department of Health, the current air quality on Kauai is characterized as "good". The DOH maintains an air quality monitoring station approximately 10 miles south of the project area. Minimal noise occurs from local residential traffic and activities from some nearby residences and farmlands.

Potential Impacts and Mitigation Measures

The proposed amendment to the General Plan will not affect air quality or substantially affect noise in the area. However, if and when additional dwellings or other structures are constructed on the subject property as a result of the land use designation changes sought, there may be short-term temporary increases in noise and dust during construction of such dwellings or structures.

If the subject parcel's requested General Plan and SLUD designations, and then County zoning district designations, are revised as described in this environmental assessment, and if two additional dwellings are then eventually constructed on the subject parcel due to the parcel's change in residential density[15], secondary or cumulative impacts[16] to air quality and noise arising from the existence of such additional dwellings may include those impacts to air quality and noise generally associated with activities of occupants living in residential dwellings in a rural, residential neighborhood- for example, vehicular traffic coming and going from such dwellings, use of yard maintenance equipment, etc. Such impacts are anticipated to be generally minimal and normal within the context of surrounding land uses, and could be mitigated by measures such as use of properly maintained vehicles or equipment, use of hybrid or electric vehicles, etc.

Secondary or cumulative impacts to water quality arising from the existence of two additional dwellings on the subject property, if such dwellings are constructed, would include wastewater generated by such dwellings; however, any such adverse impacts will be mitigated by septic systems installed in compliance with applicable State DOH and County of Kaua'i wastewater requirements.

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[14] Portions of section 5.0 of this environmental assessment include various additional environmental characteristics in response to comments received by the State of Hawai'i Department of Health's Environmental Planning Office; such comments were provided in response to the published Draft Environmental Assessment regarding the proposed project.

[15] Under present County zoning laws, the subject parcel is entitled to one (existing) dwelling. If the subject parcel's described land use designations change as explained above, two *additional* dwellings may be entitled to be constructed on the subject parcel.

[16] As such terms are defined in Hawaii Administrative Rules ("HAR") §11-200-2.

The proposed *County General Plan* land use re-designation of the subject parcel from *Agriculture* to *Residential Community* involves no construction or demolition involving asbestos, or construction in general. Future construction, if any, will comply with HAR §11-60.1-33 concerning *Fugitive Dust.*

Further, the proposed land use re-designation of the subject property will not impact the State's water quality standards (HAR chapter 11-54). Future activities on the subject parcel will comply with State water quality requirements to the extent such requirements may apply to such activities.

Also, the proposed land use re-designation not create a public water system, dual water system, a potential contaminating activity (as identified in the Hawai'i Source Water Assessment Plan), or propose the use of a non-potable water system. Neither does the proposed re-designation involve underground injection wells or development of a golf course.

The proposed project does not involve use of recycled water.

5.2 Biological, Flora, and Fauna Resources

A biological survey in the area of the Upper Kapahi Dam Replacement Project situated at tax map key no. (4) 4-6-007-011 (which is adjacent to the project site) was conducted AECOS, Inc. a Hawaii environmental consulting firm.[17] The survey identified 105 plant taxa, only three of which were native plants common in Hawai'i: *hau*, *hala*, and possibly a small grass (*manienie*). Several grass species were abundant in the surveyed area. Fauna detected in the surveyed area included 21 species, with two endemic waterbird species listed as endangered under both federal and state endangered species statutes. The two species were the Hawaiian Coot (*Fulica alai*) and the Common Gallinule (*Gallinula galeata sandvicensis*).

Potential Impacts and Mitigation Measures

The project area itself has been subjected to disturbance for many years by agricultural uses, traditional maintenance of the residential structure, introduced landscaping, and various yard and property maintenance activities. No known rare, threatened or endangered floral or faunal species or their habitats are known to exist on the site. No significant impacts to native or endangered flora or fauna species are anticipated; however, landscaping with native or indigenous drought tolerant species may be added in conjunction with the proposed project. Given the foregoing, no mitigation measures other than those mentioned are proposed.

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[17] The "Biological Surveys for Upper Kapahi Dam Replacement Project" was conducted in December 2013 and January 2014. Available online at: http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Kauai/2010s/2014-08-23-KA-5B-FEA-Upper-Kapahi-Reservoir-Dam.pdf . See page 230 for report.

If two additional dwellings are eventually constructed on the subject parcel[18], in light of the foregoing discussion, no secondary or cumulative impacts to native or endangered flora or fauna are anticipated to occur because of the construction or existence of such dwellings; as such, no mitigation measures other than those mentioned are proposed in this regard.

5.3 Climate, Rainfall and Wind

The last month of the year 2013 saw most of the gages on Kauai reporting near to above average rainfall totals. The U.S. Geological Survey's ("USGS") gage atop Mount Waialeale recorded the highest monthly total of 18.81 inches (62 percent of average) and the highest daily total of 4.38 inches on December 1, 2013. Port Allen's total of 12.04 inches marked the wettest month at this site since December 2008.

Rainfall totals for 2013 ended up in the near average range at most of Kauai's rain gages. Mount Waialeale's 316.70 inches (80 percent of average) was the highest annual total in the state, though it also marked the seventh consecutive year where the running 30-year average has decreased.[19] For the Kapahi area the annual average was 97.43 inches.

The project site faces the predominant northeast tradewinds of the Kapa'a coastline. These winds are typically breezy; the air is generally warm with temperatures averaging 70°F throughout the year.

Potential Impacts and Mitigation Measures

The proposed project is not expected to have an impact on climate conditions; as such, no climate mitigation measures are planned.

If two additional dwellings are eventually constructed on the subject parcel[20], no secondary or cumulative impacts to rainfall or wind conditions are anticipated to occur because of the construction or existence of such dwellings; as such, no mitigation measures are proposed in this regard.

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[18] *See* discussion under *Potential Impacts and Mitigation Measures* in section 5.1 of this environmental assessment.

[19] Pacific Region Headquarters, National Oceanic and Atmospheric Administration. Available at: http://www.prh.noaa.gov/hnl/hydro/pages/dec13sum.php

[20] *See* discussion under *Potential Impacts and Mitigation Measures* in section 5.1 of this environmental assessment.

5.4 Hazards: Flooding, Hurricanes and Tsunami

All developments in the State are subject to the risk of natural hazards such as earthquakes, volcanic eruptions, flooding, and hurricanes. Since 1982, the State of Hawai'i, and especially Kaua'i as the northernmost in the main island chain, has been affected twice by devastating hurricanes, Iwa in 1982 and Iniki in 1992. While it is difficult to predict these natural occurrences, it is reasonable to assume that these events could recur.

The project area is no more or less vulnerable that the rest of the island to the destructive winds and torrential rains associated with hurricanes.

Flood hazards are primarily identified by the Flood Insurance Rate Map ("FIRM")[21] prepared by the Federal Emergency Management Agency ("FEMA"). The project site is outside the FEMA flood designations and is listed on the FIRM map as Zone X. Zone X is an area determined to be outside of the 0.2% annual chance floodplain. No base flood elevations or depths are shown within these zones. It is not in a tsunami inundation zone.

A *Flood Study*[22] of the project area was prepared by Hawai'i licensed engineers to determine flood limits, drainage ways, and building setback lines applicable to the subject property. This study is attached as **Appendix A. Attached as Appendix B** is a July 28, 2015 letter from the County's Department of Public Works' ("DPW") Engineering Division accepting the *Flood Study* as final.

Potential Impacts and Mitigation Measures

Although hurricanes and earthquakes cannot be prevented, their impacts will be mitigated, and any future subdivision of the property or submission of the property to a condominium property regime and construction of new dwellings will comply with applicable law, including the Uniform Building Code adopted by the County. County and State civil defense requirements will be adhered to as to evacuation procedures, and building specifications of future dwellings and other improvements will conform to the County's Uniform Building Code.

Future dwellings and other improvements will accommodate the flood limits and other recommendations, if any, described in the *Flood Study* attached as **Appendix A**.

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[21] National Flood Insurance Program, flood maps available at: http://gis.hawaiinfip.org/FHAT/

[22] *See Final Flood Study Mark Baird (August 2015).*

If two additional dwellings are eventually constructed on the subject property[23], such dwellings may generate secondary or cumulative impacts with regard to increased runoff (drainage or flow of water) from or on the subject property. However, any such increased runoff will be mitigated by including on-site retention/detention basins or other drainage features, if deemed necessary as a matter of engineering judgment or because of requirements imposed by government regulatory agencies. Additional information regarding flooding, drainage ways, etc. concerning the subject property is provided in **Appendix A.**[24]

Future development on the subject parcel will in any event comply with all Hawai'i State Department of Health and County of Kaua'i requirements relating to flooding and drainage.

If two additional dwellings are eventually constructed on the subject parcel[25], no secondary or cumulative impacts with regard to hurricanes or tsunamis are anticipated to occur because of the construction or existence of such dwellings; as such, no mitigation measures are proposed in this regard.

5.5 Geology, Topography, Soils

The Hawaiian Islands are at the southeast end of a chain of volcanic seamounts and islands that began to form more than 70 million years ago.

Kaua'i, the oldest of the major Hawaiian Islands and the most weathered or eroded geologically, consists of at least one extinct volcano. Lavas from the shield, post shield, and rejuvenated stages formed the island. Over time, numerous landslides and long-term erosion have modified Kaua'i's northern, northeaster, eastern and southern flanks.

The topography of the project area generally slopes from its western elevation of about 400 feet to the eastern elevation of about 350 feet.[26]

The project is situated on the eastern side of Kaua'i, west (mauka) of Kūhiō Highway. According to the *General Soil Map*[27] for Kaua'i, soil associations in the general area the project site may have the following characteristics:

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[23] *See* discussion under *Potential Impacts and Mitigation Measures* in section 5.1 of this environmental assessment.

[24] The *Flood Study* describes, among other matters, local drainageways, facilities, and/or easements within and adjacent to the proposed project, flood information, and determines flood limits on the subject property.

[25] *See* discussion under *Potential Impacts and Mitigation Measures* in section 5.1 of this environmental assessment.

[26] See Appendix A. Elevations on the parcel are described in the *Final Flood Study Mark Baird (August 2015)* prepared by Esaki Surveying & Mapping, Inc.

Kapa'a-Pooku-Halii-Makapili association: Deep, nearly level to steep, well drained and moderately well drained soils that have a fine textured or moderately fine textured subsoil; on uplands.

The elevation ranges from 100 to 1,000 feet. The annual rainfall is 70 to 200 inches. The mean annual soil temperature is between 72° and 74° F. This association is used for sugarcane, pasture, pineapple, woodland, wildlife habitat, and water supply. Pooku and Makapili soils are used mainly for pasture, Kapa'a soils for sugarcane, and Halii soils for water supply. Upland game birds and wild pigs are the principal kinds of wildlife.

Rough mountainous land-Rough broken land-Rock outcrop association: Well-drained to excessively drained, very steep to precipitous lands of mountains and gulches.

The elevation ranges from near sea level to 5,170 feet. The annual rainfall amounts to as little as 22 inches in leeward lowlands and as much as 450 inches over windward slopes of Mr. Waialeale. The association is used for water supply, pasture, woodland, and wildlife habitat. Rough mountainous land and Rock outcrop serve mainly as watershed.

Potential Impacts and Mitigation Measures

The project area has been subject to man-made maintenance activities for many years. Significant adverse impacts to soils, geology, and natural water features are not expected from this project.

No water resources are expected to be affected by the project. No measures to mitigate impacts to water resources are proposed or planned, unless such measures are deemed necessary as a matter of engineering judgment or because of requirements imposed by government regulatory agencies.

Subject to the following paragraph concerning fugitive dust emission, secondary or cumulative adverse impacts to soils, geology, and natural water features arising from the existence of two additional dwellings on the subject property, if such dwellings are constructed[28], are not anticipated to occur because of this project. As such, no mitigation measures are proposed in this regard unless such measures are deemed necessary as a matter of engineering judgment or because of

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[27] U.S. Department of Agriculture Soil Conservation Service *General Soil Map*, Kaua'i Island, Hawai'i, available at: http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/hawaii/islandsHI1972/maps/gsm_1.pdf

[28] *See* discussion under *Potential Impacts and Mitigation Measures* in section 5.1 of this environmental assessment.

requirements imposed by government regulatory agencies in response to any such perceived impacts.

A watering program will be implemented during construction of additional dwellings (if such dwellings are constructed) to minimize soil loss through fugitive dust emission. Landscaping and yard maintenance of the current parcel will continue so as to reduce any potential for soil erosion. Other mitigation measures generally associated with best management practices will be followed.

5.6 Hazardous Materials and Waste, Noise, Radiation, and Indoor Air Quality

The proposed *County General Plan* land use re-designation of the subject property from *Agriculture* to *Residential Community* does not involve hazardous materials. Because the subject land use re-designation is pending, no development is scheduled to occur on the subject property. If and when development occurs on the subject property because of the subject land use re-designation, all such development will comply with State of Hawai'i Department of Health requirements concerning hazardous materials.

Future development of the subject property, if any, resulting from the proposed land use re-designation of the subject property shall comply with requirements of the following Hawaii Administrative Rules, to the extent applicable:

- Chapter 11-39 (Air conditioning and Ventilating);
- Chapter 11-45 (Radiation Control);
- Chapter 11-46 (Community Noise Control);
- Chapter 11-501 (Asbestos Requirements);
- Chapter 11-502 (Asbestos-Containing Materials in Schools);
- Chapter 11-503 (Fees for Asbestos Removal and Certification);
- Chapter 11-504 (Asbestos Abatement Certification Program).

The programs related to the State Department of Health's Solid Waste and Hazardous Waste Branch include the management of hazardous waste, regulation of underground storage tanks, and management of solid waste by the counties, as well as programs related to recycling of glass and beverage container deposits. These programs are not related to the proposed *County General Plan* land use re-designation of the subject property from *Agriculture* to *Residential Community*.

SECTION 6.0 ALTERNATIVES TO THE PROPOSED ACTION

"No Action" Alternative

The purpose of the amendment to the General Plan is to change the designation of subject property from *Agriculture* to *Residential Community*. This revision will then allow the parcel's SLUD to be eligible to be changed from *Agriculture* to *Rural* , and the property's County land use zoning designation to be eligible to be changed from *Agriculture* and *Open* to *Residential (R-1)*. Upon such changes, the

subject parcel would have density of two dwellings in addition to the parcel's existing dwelling. Applicant desires his property to have a total density of three dwellings for estate planning purposes.[29] Upon achieving the desired land use zoning changes, Applicant may also consider subdividing his property or submitting it to a condominium property regime pursuant to H.R.S. chapter 514B, again for estate planning purposes.

A "No Action" alternative would prevent the subject parcel's density from being increased from one to a total of three dwellings, and frustrate Applicant's estate planning intentions with regard to this property.

Preferred Alternative

The preferred alternative is to change the subject parcel's General Plan designation from *Agriculture* to *Residential Community* to facilitate the Applicant's ability to then attempt to change the parcel's SLUD and County zoning designations as previously described.

Allowing the subject parcel's General Plan designation to be changed to *Residential Community* will facilitate Applicant's desire to achieve his estate planning goals.

Again, Applicant ultimately seeks to change the subject parcel's County land use zoning designation to *R-1*; noteworthy is that other parcels in the area of the subject parcel, including a parcel across the street from the subject parcel, are zoned *R-1*. As such, rezoning of the subject parcel to *R-1* is not inconsistent with the existing land use zoning of some other parcels in the area.

As some other parcels in the general area have been re-zoned to *Residential District*, the desired land use zoning changes would provide opportunities for landowners and families, such as the Applicant, to provide housing for members of our community.

SECTION 7.0 SIGNIFICANT DETERMINATION

The impacts of the proposed action have been assessed. The proposed project is not anticipated to cause significant negative impacts to the environment. Therefore, a Finding of No Significant Impact ("FONSI") is anticipated to be found. The determination of a FONSI is based on the following:

1. ***The proposed action does not involve an irrevocable commitment to loss or destruction of any natural or cultural resources;***

[29] Currently, Applicant's ultimate plan contemplates dividing the subject property into three subdivided lots or condominium units to facilitate Applicant's ability to convey three separate lots or units to each of his offspring, with accompanying density of one dwelling for each of the lots or units so created.

No significant natural or cultural resources have been identified on the property since the construction of the existing residence in 1974.

2. ***The proposed action will not curtail the range of beneficial uses of the environment;***
   The proposed action is only to change the subject parcel's General Plan designation from *Agriculture* to *Residential Community*; this change is not expected to curtail the range of beneficial uses of the environment.

3. ***The proposed action does not conflict with the State's long-term goals or guidelines as expressed in Chapter 344, HRS, the State Environmental Policy;***
   This proposed action is consistent with the State's guidelines and will not have any significant negative effects on the environment.

4. ***The proposed action does not substantially affect the economic or social welfare of the community or state;***
   The proposed action will not substantially affect the economic or social welfare of the community or state.

5. ***The proposed action does not substantially affect public health;***
   A *General Plan* re-designation of the subject parcel from *Agriculture* to *Residential Community* will not have any effects on public health, as the proposed action involves only a change in the parcel's General Plan land use designation only.

6. ***The proposed action does not involve substantial secondary effects;***
   No substantial secondary effects from the General Plan re-designation are anticipated to occur.

   Regarding such *secondary effects* and *cumulative impacts* generally, as such terms are defined in HAR §11-200-2[30], the proposed General Plan re-designation in and of itself has no such effects or impacts absent the additional discretionary re-designation of the parcel's SLUD (from *Agriculture* to *Rural*) and County land use zoning

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[30] "*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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. HAR §11-200-2

"*Secondary impact*" or "*secondary effect*" or "*indirect effect*" means effects which are caused by the action and 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. HAR §11-200-2

districts (from *Open* and *Agriculture* to *Residential (R-1)*). However, if and when such SLUD and zoning district re-designations occur, and if and only if two additional dwellings are then subsequently constructed on the subject parcel, the secondary effects and/or cumulative impacts discussed in this environmental assessment may be reasonably anticipated to occur; however, such effects or effects are not anticipated to be substantial in nature.[31]

Other incremental secondary effects and/or cumulative impacts that may be reasonably foreseeable not necessarily from the proposed action, but from the ultimate possible construction of two additional dwellings are: increased demand for potable water and electrical power, the generation of additional residential solid waste attributable from the existence of two new residential dwellings, and an incremental increase in population density arising from humans residing in such dwellings. Again, such effects and impacts though are not anticipated to be substantial though and are anticipated to be normal within the context of residential and surrounding existing land uses.

7. ***The proposed action does not involve substantial degradation of environmental quality;***
The proposed action on this application does not involve substantial degradation of environmental quality.

8. ***The proposed action does not cumulatively have a considerable effect on the environment or involve a commitment to larger actions;***
The proposed project will not cumulatively have a considerable effect on the environment. Inasmuch as the proposed action is only the first step amongst additional discretionary government regulatory approvals and steps needed to achieve Applicant's ultimate goal (to re-zone applicant's property to *R-1*) the proposed action does not involve a commitment to larger actions.

With regard to secondary and/or cumulative impacts, as such terms are defined in HAR §11-200-2, and as discussed in significance criterion 6 above, the proposed General Plan re-designation, in and of itself, will not have a cumulative effect on the environment; further, the proposed re-designation especially will not involve a commitment to larger actions given that any further re-designation of the subject parcel's SLUD and County zoning districts must involve discretionary approvals from Kauai County legislative and quasi-legislative bodies. Again though, if and when such SLUD and zoning district re-designations occur, and if and only if two additional dwellings are then subsequently constructed on the subject parcel, the construction of two

[31] *See* sections 5.1, 5.2, 5.3, 5.4, and 5.5 of this environmental assessment.

additional residential dwellings is not anticipated to have a considerable effect on the environment, especially given government regulatory requirements relating to development which are expected to be or may be imposed in conjunction with the construction of such dwellings (egs- installation of septic systems, required on-site retention or detention basins to address flood concerns, etc.) Also, the described SLUD and zoning district re-designations will not involve a commitment to larger actions (for example, the development of more than two additional dwellings), since anticipated building restrictions related to the subject parcel's flood areas and the subject parcel's *R-1* zoning itself (if such zoning is approved) would limit the residential density of the subject parcel to a maximum of three total dwellings (existing dwelling plus two new dwellings, assuming all land use district or designation approvals being sought are granted).

9. ***The proposed action does not affect a rare, threatened, or endangered species or its habitat;***
   Rare, threatened, or endangered species or its habitat will not be affected by this proposed action, inasmuch as none have been identified on the subject parcel.

10. ***The proposed action does not detrimentally affect air or water quality or ambient noise levels;***
    The proposed action will not detrimentally affect air or water quality or substantially affect ambient noise levels. *See* Section 5.1 of this document.

11. ***The proposed action does not affect an environmentally sensitive area;***
    The project site is not considered an environmentally sensitive area. There are no rare, threatened, or endangered native plants species specifically located on the subject parcel.

12. ***The proposed action does not substantially affect scenic vistas and view planes; and***
    The subject parcel has not been specifically identified as a scenic resource; therefore the proposed action will not substantially affect scenic vistas and view planes.

13. ***The proposed action does not require substantial energy consumption.***
    The current proposed project will not require substantial energy consumption.

SECTION 8.0 CONSULTED PARTIES

In addition to publication in OEQC's *The Environmental Notice*, copies of the Draft EA were sent to the entities listed below. Agency comment letters and response letters are found in Appendix "C".

County of Kaua'i, Department of Planning
Kapa'a Public Library
Līhu'e Public Library

SECTION 9.0 REFERENCES

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SECTION 10.0 EXHIBITS

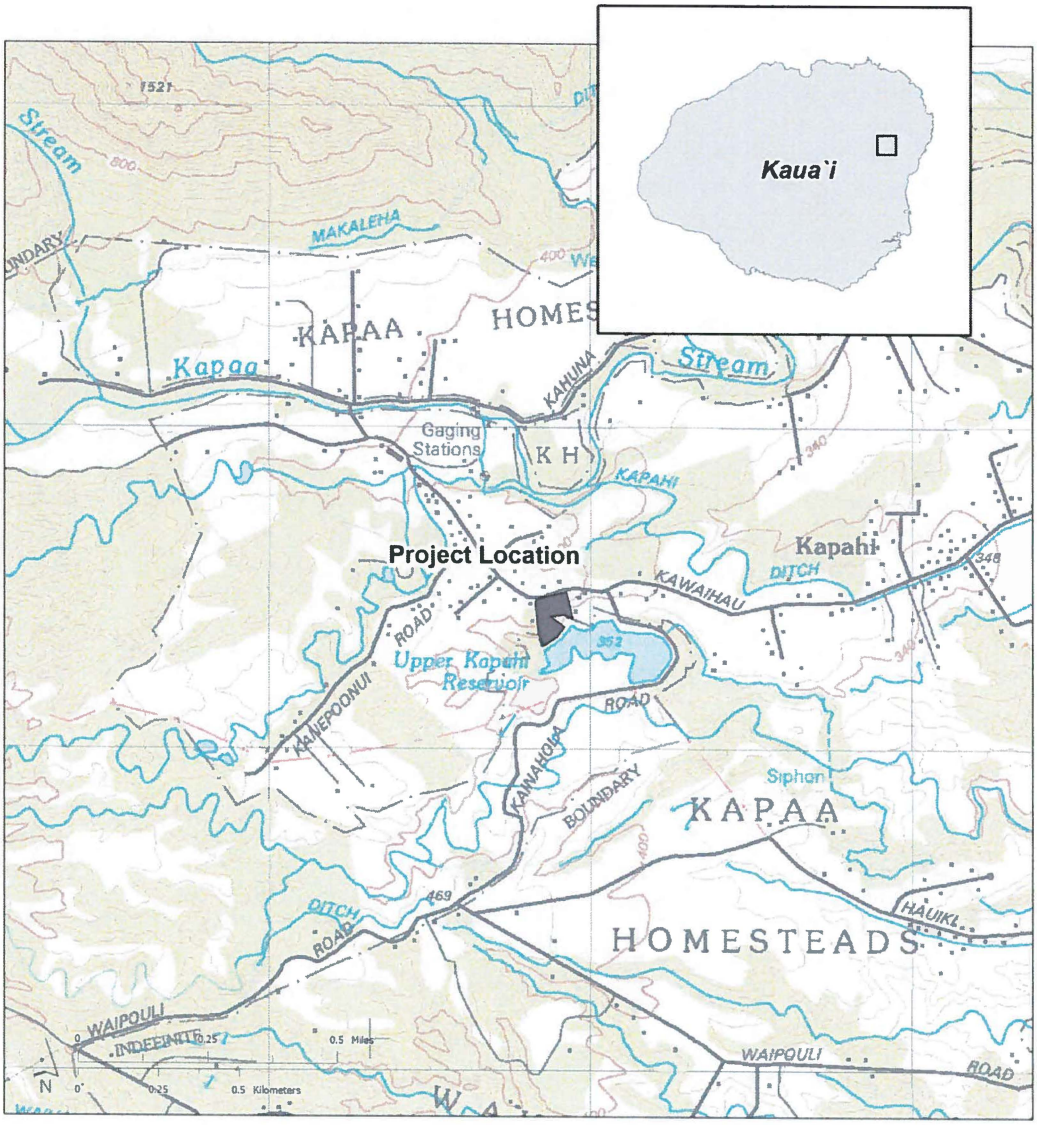
A - Location Map
B - Parcel Map/Tax Map Key (4) 4-4-013:002
C - State of Hawai'i Land Use District Map
D - County of Kaua'i General Plan Map
E - County of Kaua'i Zoning Map
F – U.S. EPA EJSCREEN Report relating to Project Area

SECTION 11.0 APPENDICES

Appendix A: *Final Flood Study Mark Baird*, Esaki Surveying & Mapping, August 2015.

Appendix B: County of Kaua'i, Department of Public Works letter dated July 28, 2015, regarding acceptance of the *Final Flood Study Mark Baird*.

EXHIBITS A – F



Baird Family Ltd. Partnership.
4-976 Kūhiō Highway
Kapa'a, HI 96746

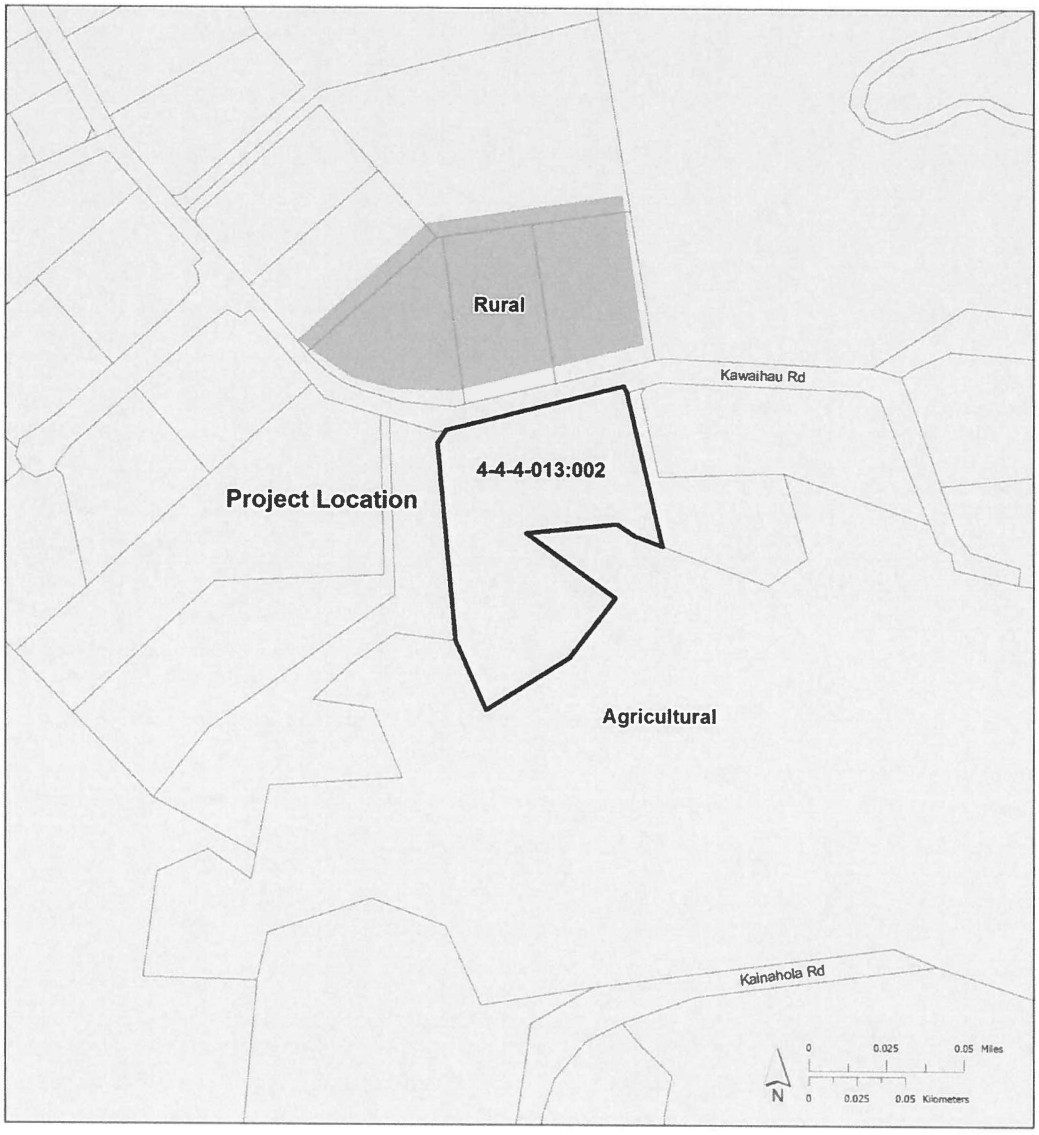
Exhibit A

Location Map

Baird Family Ltd. Partnership.
4-976 Kūhiō Highway
Kapa'a, HI 96746

Exhibit B

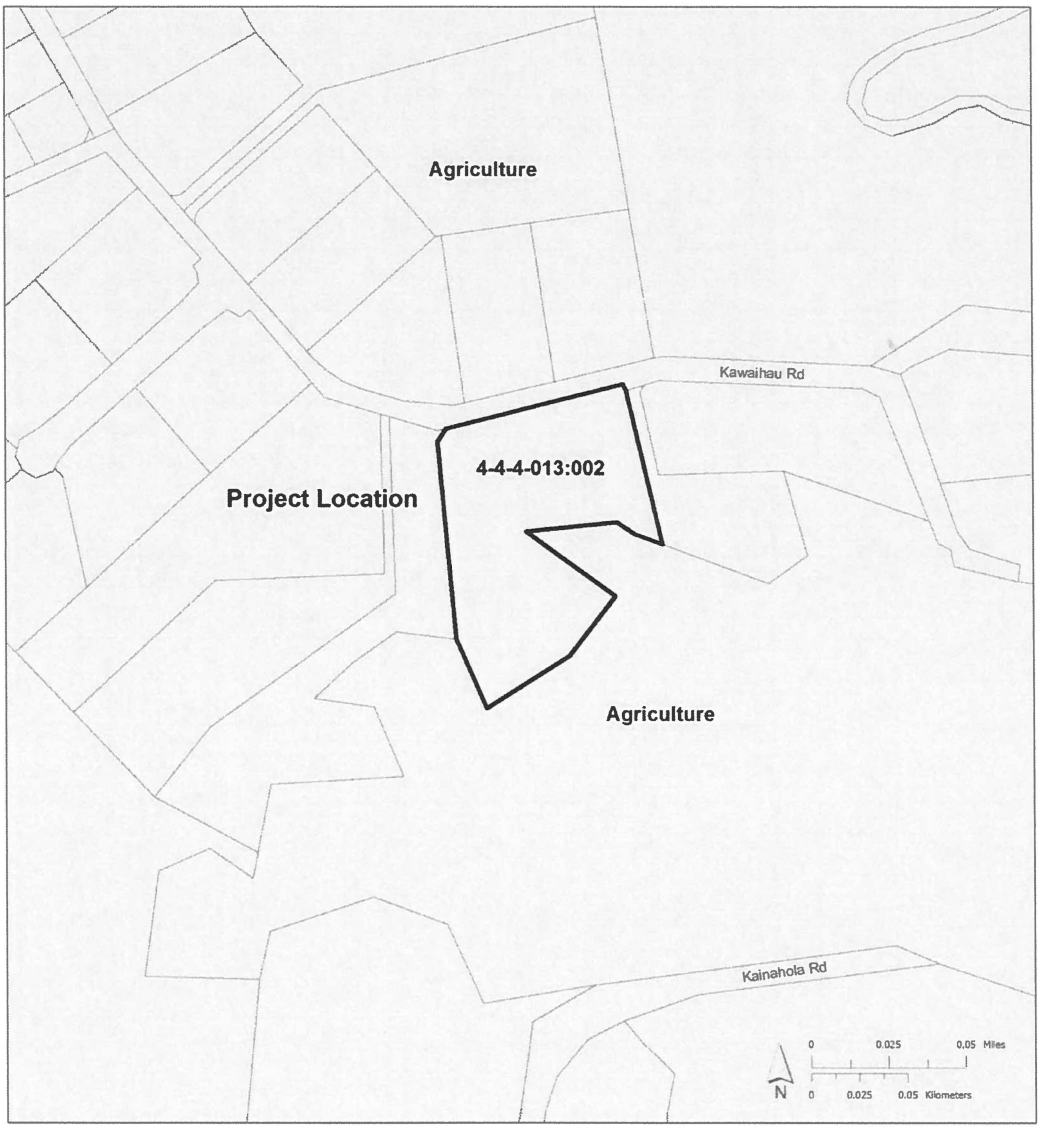
TMK (4) 4-4-013:002 Map



Baird Family Ltd. Partnership.
4-976 Kūhiō Highway
Kapa'a, HI 96746

Exhibit C

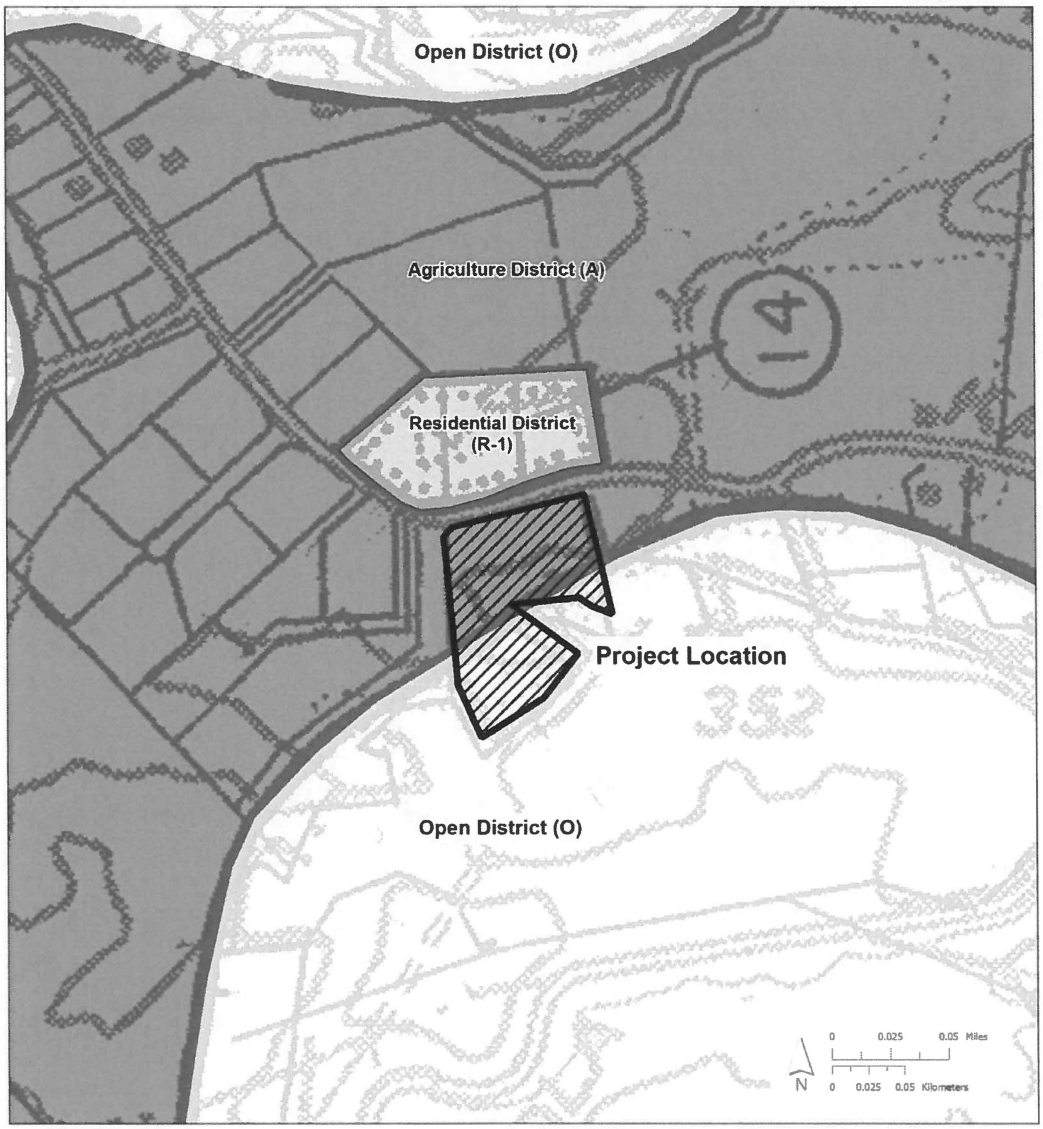
State of Hawai'i
Land Use District Map



Baird Family Ltd. Partnership.
4-976 Kūhiō Highway
Kapa'a, HI 96746

Exhibit D

County of Kaua'i
General Plan Map



Baird Family Ltd. Partnership.
4-976 Kūhiō Highway
Kapa'a, HI 96746

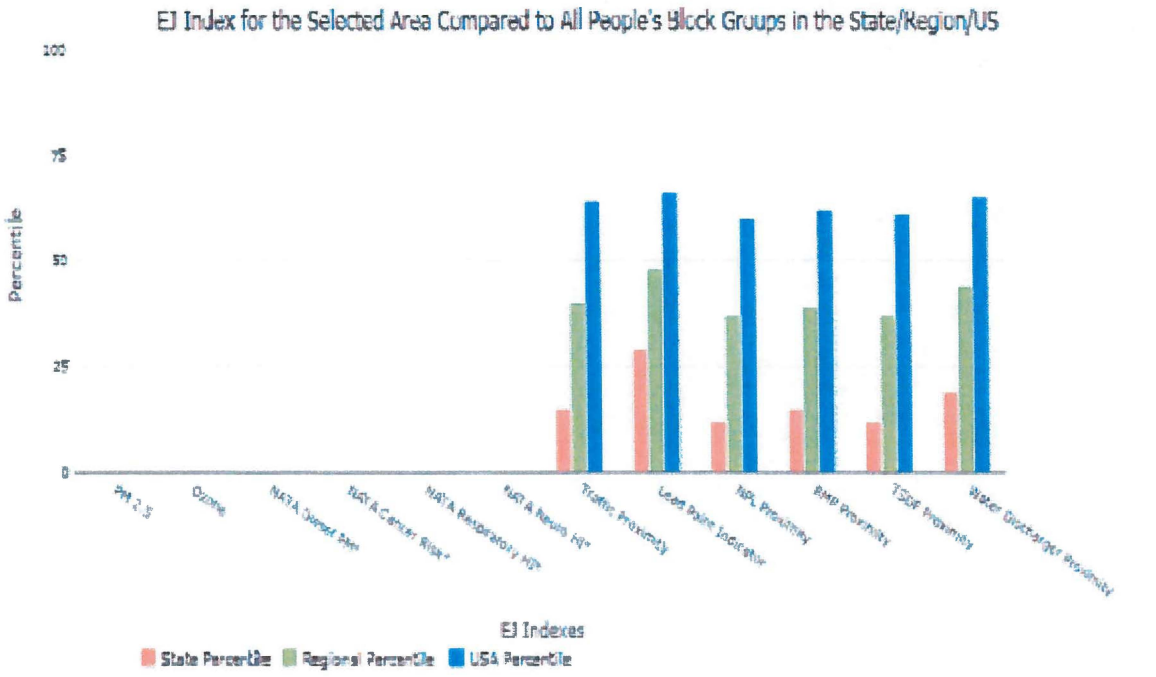
Exhibit E

County of Kaua'i
Zoning Map

Exhibit F

1 mile Ring Centered at 22.094864,-159.367497
HAWAII, EPA Region 9
Approximate Population: 1294

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	15	40	84
EJ Index for Lead Paint Indicator	29	48	86
EJ Index for NPL Proximity	12	37	80
EJ Index for RMP Proximity	15	39	82
EJ Index for TSDF Proximity	12	37	81
EJ Index for Water Dischargar Proximity	19	44	85



This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

Selected Variables	Raw data	State Average	%ile in State	EPA Region Average	%ile in EPA Region	USA Average	%ile in USA
Environmental Indicators							
Particulate Matter (µg/m³)	N/A	N/A	N/A	9.85	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	48.7	N/A	45.1	N/A
NATA Diesel PM (µg/m³)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Air Toxics Cancer Risk (risk per MM)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	14	280	17	190	16	110	26
Lead Paint Indicator (% pre-1960s housing)	0.074	0.37	41	0.25	40	0.3	30
NPL Proximity (site count/km distance)	0.0081	0.082	29	0.11	8	0.008	2
RMP Proximity (facility count/km distance)	0.071	0.16	29	0.41	13	0.31	22
TSDF Proximity (facility count/km distance)	0.006	0.092	21	0.12	2	0.064	13
Water Discharger Proximity (count/km)	0.15	0.93	33	0.98	62	0.25	57
Demographic Indicators							
Demographic Index	38%	51%	12	48%	41	35%	63
Minority Population	53%	77%	12	57%	46	36%	71
Low Income Population	24%	26%	65	35%	38	34%	38
Linguistically Isolated Population	0%	6%	25	9%	20	5%	49
Population with Less Than High School Education	10%	10%	61	18%	41	14%	47
Population under Age 5	6%	6%	50	7%	45	7%	49
Population over Age 64	18%	14%	80	12%	78	13%	70

The National-Scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the most-up-to-date 2014 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides good estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and limitations apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

APPENDICES "A" through "C"

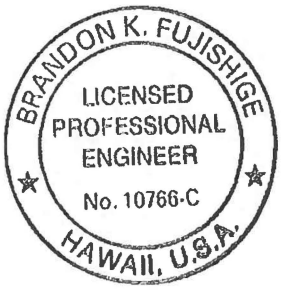
Appendix A

Final Flood Study- Mark Baird

Esaki Surveying & Mapping, Inc.
August 2015

FINAL FLOOD STUDY
MARK BAIRD

Owner: Mark Baird
Tax Map Key: (4) 4-4-13: 02
Date: August 2015



Brandon K. Fujishige

This work was prepared by
me or under my supervision
Expires: April 30, 2016

ESAKI SURVEYING & MAPPING, INC.
1610 Haleukana Street
Lihue, Kauai, Hawaii 96766

TABLE OF CONTENTS

I. FACTS SHEET

FACTS SHEET

General Location and Description

1. Name of town: Kapa`a
2. Tax Map Key: (4) 4-4-13: 02
3. Names of local streets within and adjacent to the proposed project: Kawaihau Road
4. Identification of major and local drainageways, facilities, and/or easements within and adjacent to the proposed project: see Flood Limits Map (sheet 24)
5. Names of surrounding developments: the project is located within Kapa`a Homesteads, Second Series
6. Flood Information: See this report
7. Property Boundaries: see Location Map (sheet 7)
8. Area of property in acres: 3.377 acres
9. Ground cover (type of trees, shrubs, vegetation, general soil conditions, topography and average slope): typical agricultural lot; see Flood Limits Map (sheet 24) for topography and slope
10. General project description: the project involves determining flood limits on the subject property
11. Proposed land use: agricultural

Hydrologic map and data for the existing drainage condition

See this report

Hydrologic map and data for the proposed onsite and offsite drainage improvements

N/A

Drainage Report Items

1. Plan and profile of proposed onsite and offsite drainage improvements: N/A
2. Drainage sub-areas and discharges: Yes
3. Catch basin/drain inlet interception and bypass rates: N/A
4. Street flooding or dry pavement widths: N/A
5. Design flows between manholes and catch basin inlets: N/A
6. Hydraulic grade lines in culverts, manholes and catch basin inlets: N/A

7. Hydraulic grade lines and velocities at outlet structures: N/A

8. Detention basin hydrology and hydraulics: N/A

9. Drainageway and building setback lines and/or floodway, flood fringe and flood elevation lines: Yes

10. Description of changes to existing drainage patterns on adjacent and downstream properties and "unreasonable risk": N/A

Conclusions

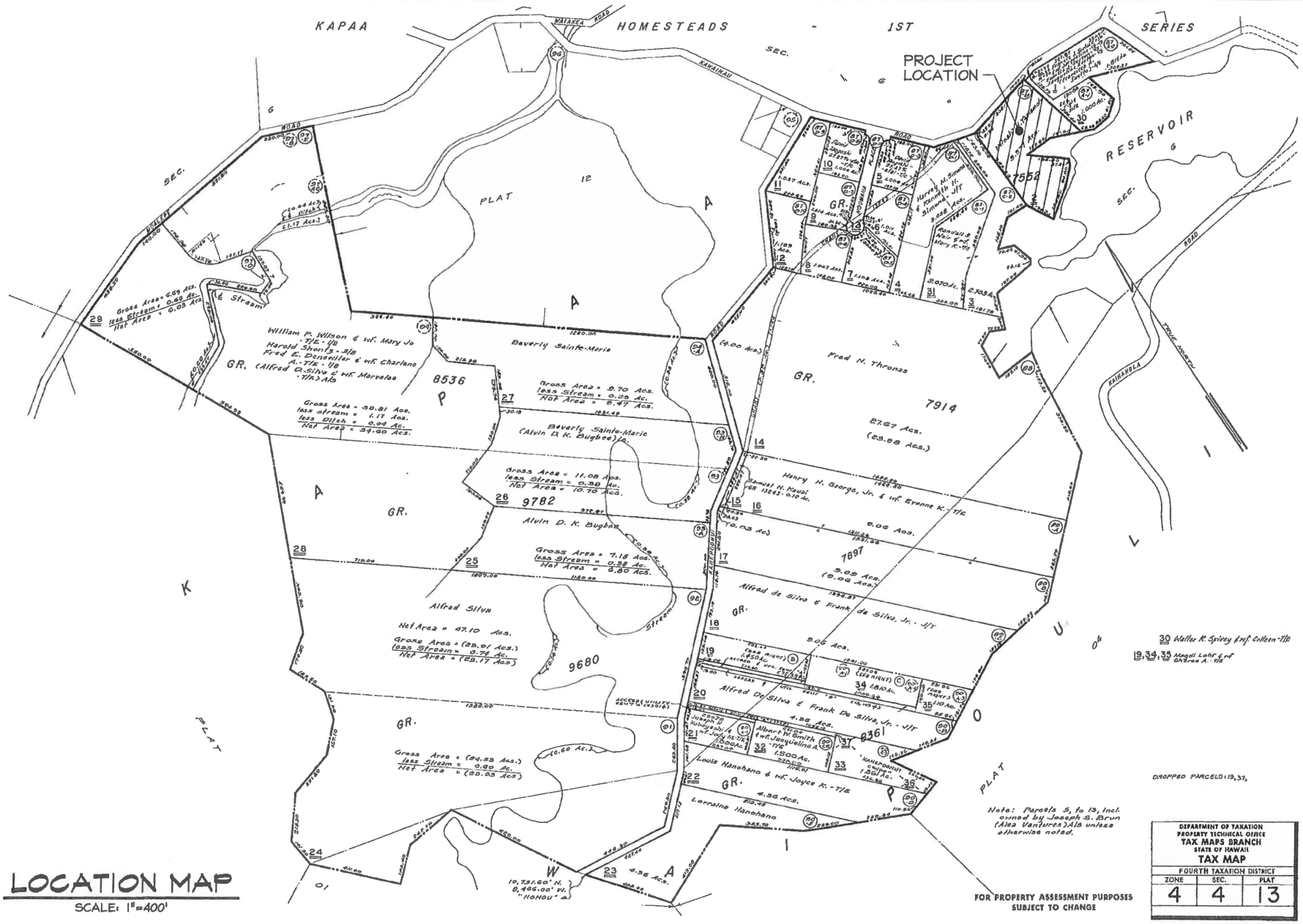
1. Compliance with the MANUAL: Yes

2. The Drainage Concept will not adversely affect adjacent and downstream properties: Yes

II. PURPOSE

PURPOSE

This report is being done to determine flood limits on the subject property.



LOCATION MAP

SCALE: 1"=400'

DEPARTMENT OF TAXATION
PROPERTY TECHNICAL OFFICE
TAX MAPS BRANCH
STATE OF HAWAII

TAX MAP

FOURTH TAXATION DISTRICT

ZONE	SEC.	PLAT
4	4	13

III. RUNOFF COMPUTATIONS

RUNOFF COMPUTATIONS

The Rational Method was used to compute the runoff from the drainage basins (see Drainage Basin Map, sheet 10).

Rational Method: $Q(cfs) = C \times i \times i_{CF} \times A$

Q = Flow Rate in cubic feet per second
C = Runoff Coefficient
i = 1-Hour Rainfall for the design recurrence interval
i_{CF} = Intensity Correction Factor
A = Drainage Area in acres

Runoff Coefficient (C):

Residential (R-1)
$C_{100} = 0.40$

Rainfall Intensity (i):

$i_{100} = 5.9$ inches

Intensity Correction Factor (i_{CF}):

A minimum of 6 minutes Time of Concentration was used in determining the Intensity Correction Factor.

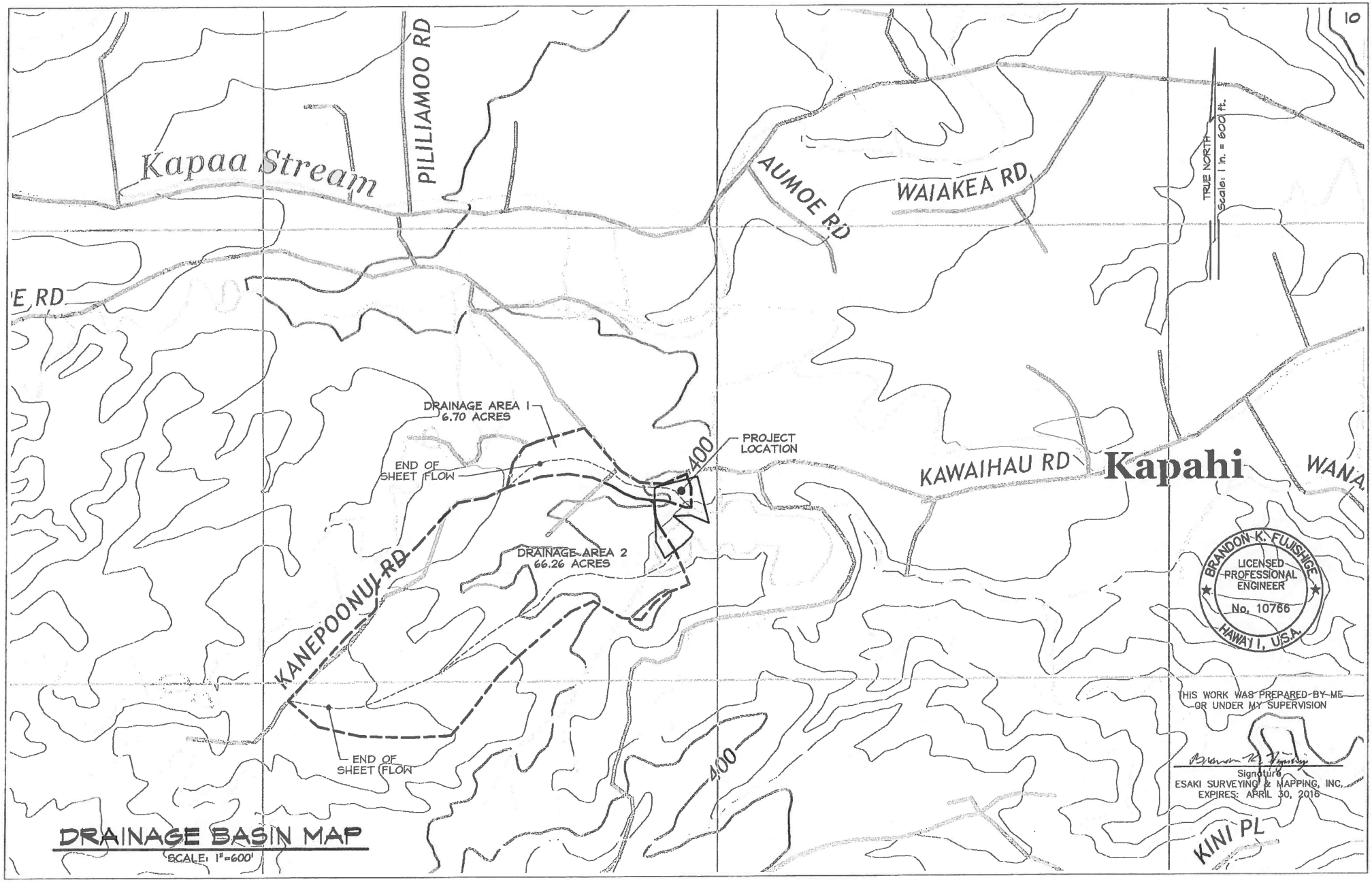
$i_{CF;1} = 2.5$
$i_{CF;2} = 1.9$

Area (A):

$A_1 = 6.70$ acres
$A_2 = 66.26$ acres

Runoff (Q):

$Q_1 = C_{100} \times i_{100} \times i_{CF;1} \times A_1$
$= 0.40(5.9)(2.5)(6.70)$
$= 39.53$ cfs
$Q_2 = C_{100} \times i_{100} \times i_{CF;2} \times A_2$
$= 0.40(5.9)(1.9)(66.26)$
$= 297.11$ cfs



DRAINAGE BASIN MAP

SCALE: 1"=600'

Table 1

TYPICAL RUNOFF COEFFICIENTS FOR BUILT-UP AREAS

LAND USE OR SURFACE CHARACTERISTICS	AVERAGE* PERCENT IMPERVIOUS	STORM FREQUENCY "C" 2	100
Business:			
General Commercial	90	0.82	0.84
Neighborhood Commercial	70	0.60	0.80
Residential:			
R-1	10	0.20	0.40
R-2	20	0.38	0.55
R-4	50	0.43	0.70
R-6	50	0.45	0.75
R-10	50	0.50	0.80
R-20	50	0.55	0.80
5 Acre Lot	8	0.15	0.30
Industrial:			
Limited Industrial	80	0.71	0.82
General Industrial	90	0.80	0.90
Parks, Cemeteries:	7	0.10	0.45
Playgrounds:	13	0.15	0.50
Schools:	50	0.45	0.70
Streets:			
Paved	100	0.87	0.93
Unpaved	95	0.80	0.90
Driveways and Walks:	96	0.87	0.93
Roofs:	90	0.80	0.90
Lawns, Sandy Soil:	0	0.00	0.20
Lawns, Clayey Soil:	0	0.05	0.50

NOTE: (These Rational formula coefficients may not be valid for large basins. These coefficients are also average values and may require adjustments depending on the surface characteristics, soil type, slope, infiltration, evaporation, depression storage, etc. The Engineer shall use sound engineering judgement in selecting the proper coefficient(s).) For composite drainage areas compute "weighted" Rational formula coefficient(s).

*** Average impervious areas do not correlate directly to allowable impervious area.**

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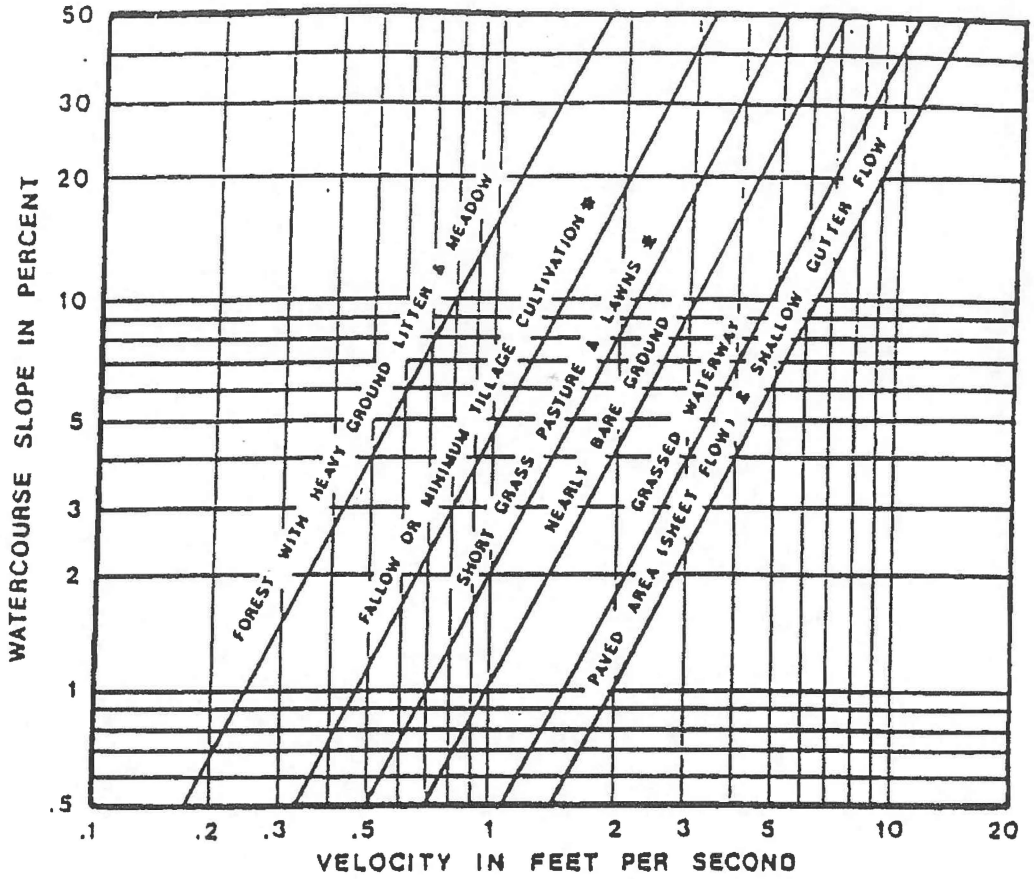
EXPIRES: APRIL 30, 2016

PLATE 1

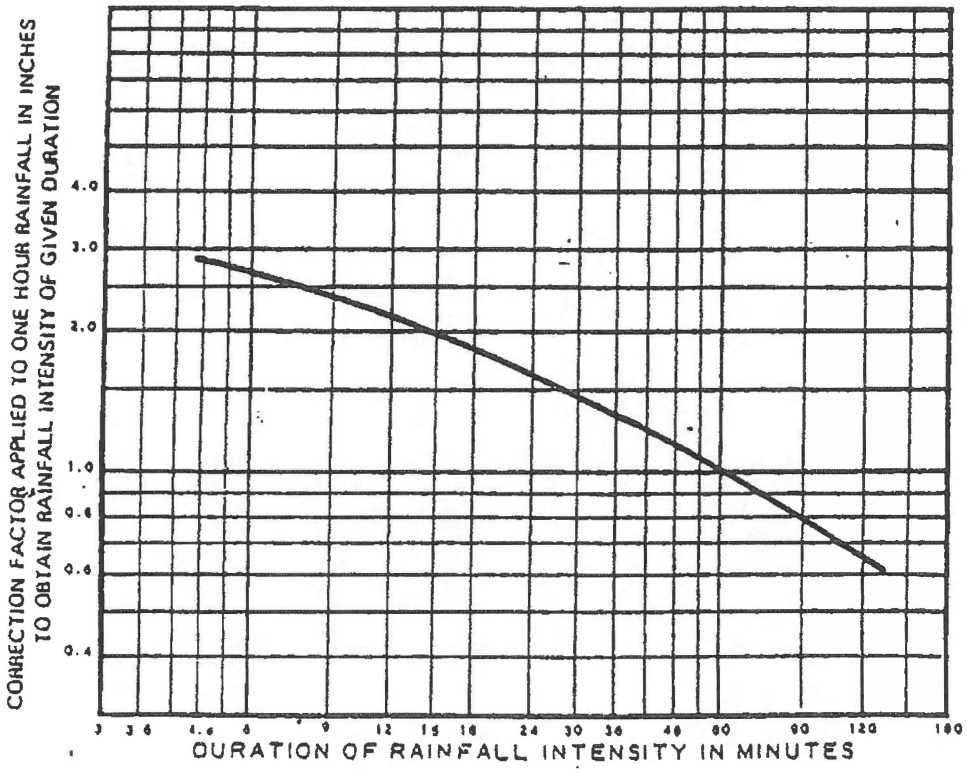
Drainage Area 1



L_{Total} = 1,517 ft.
S_1 = 0.0393 ft./ft.
L_1 = 300 ft.
Nearly Bare Ground
V = 1.95 fps
$T_{C/1}$ = 2.56 minutes
S_2 = 0.0625 ft./ft.
L_2 = 1,217 ft.
Grassed Waterway
V = 3.82 fps
$T_{C/2}$ = 5.31 minutes
$T_{C/Total}$ = 7.87 minutes

ESTIMATE OF AVERAGE FLOW VELOCITY FOR USE WITH THE RATIONAL FORMULA.

PLATE 2



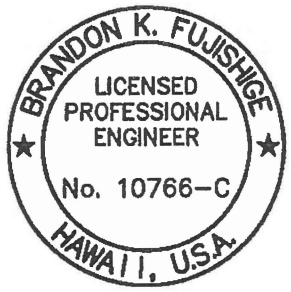
T_C = 7.87 minutes
I_{CF} = 2.5

CORRECTION FACTOR
FOR CONVERTING 1 HR. RAINFALL TO RAINFALL INTENSITY OF VARIOUS DURATIONS

TO BE USED FOR AREA LESS THAN 100 ACRES

PLATE 1

Drainage Area 2



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L_{Total} = 3,196 ft.

S_1 = 0.0423 ft./ft.

L_1 = 300 ft.

Nearly Bare Ground

V = 2.00 fps

$T_{C;1}$ = 2.50 minutes

S_2 = 0.0514 ft./ft.

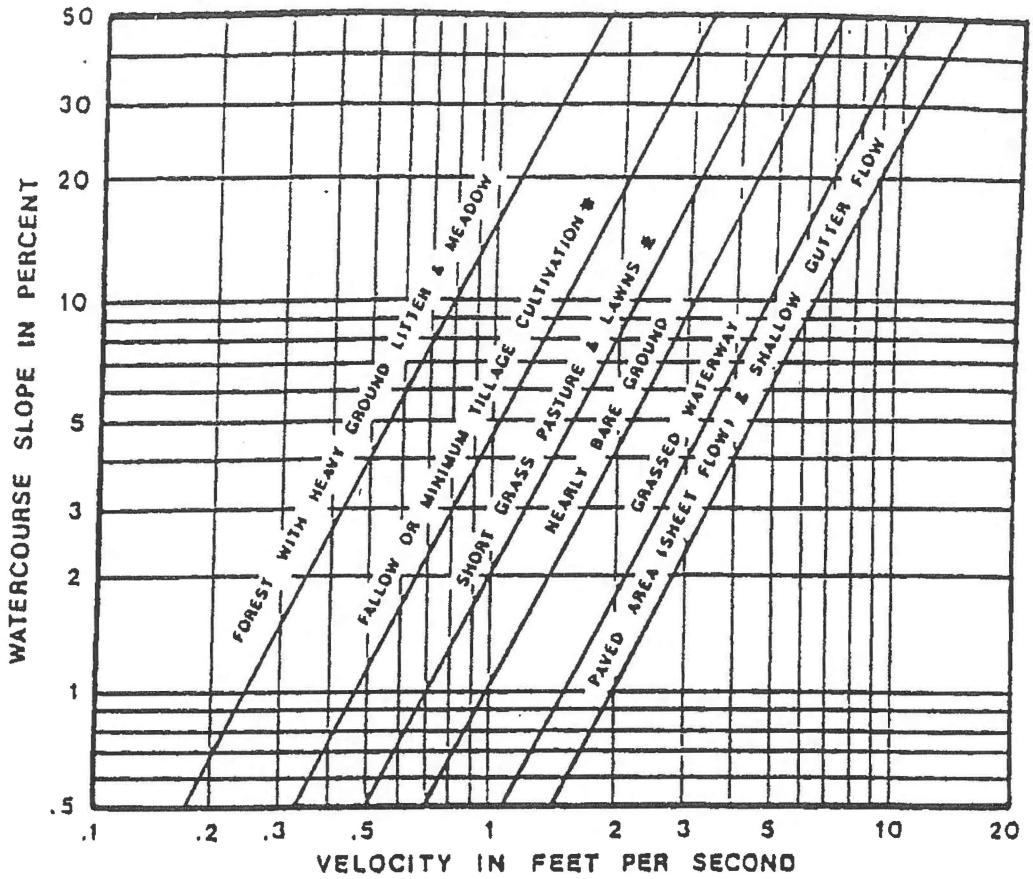
L_2 = 2,896 ft.

Grassed Waterway

V = 3.47 fps

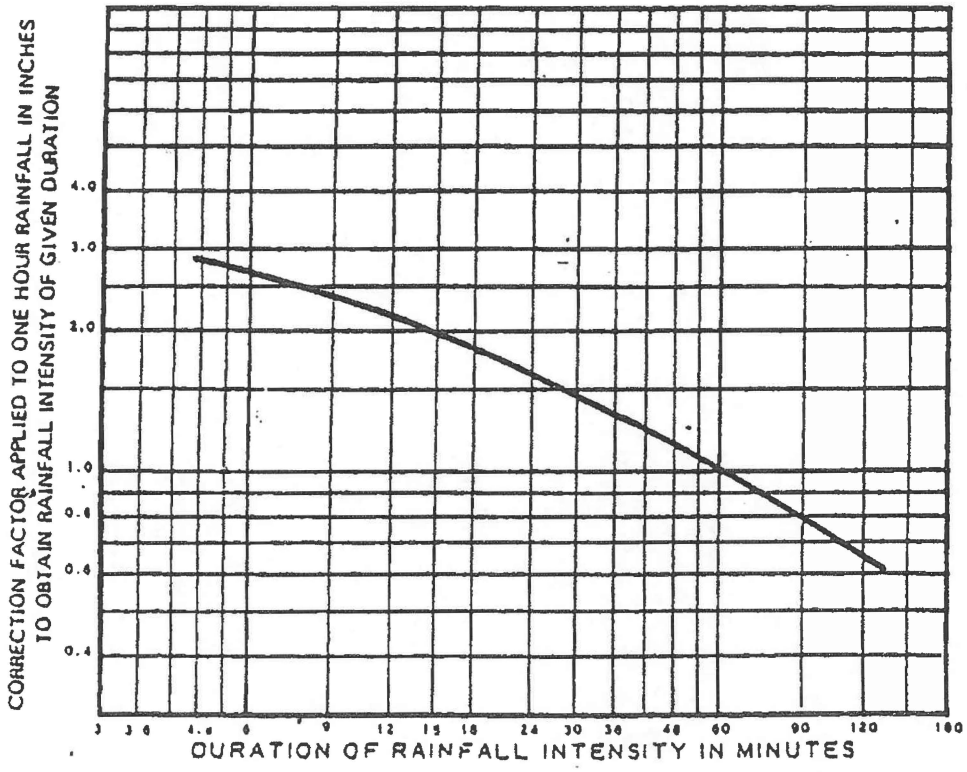
$T_{C;2}$ = 13.91 minutes

$T_{C;Total}$ = 16.41 minutes



ESTIMATE OF AVERAGE FLOW VELOCITY FOR USE WITH THE RATIONAL FORMULA.

PLATE 2



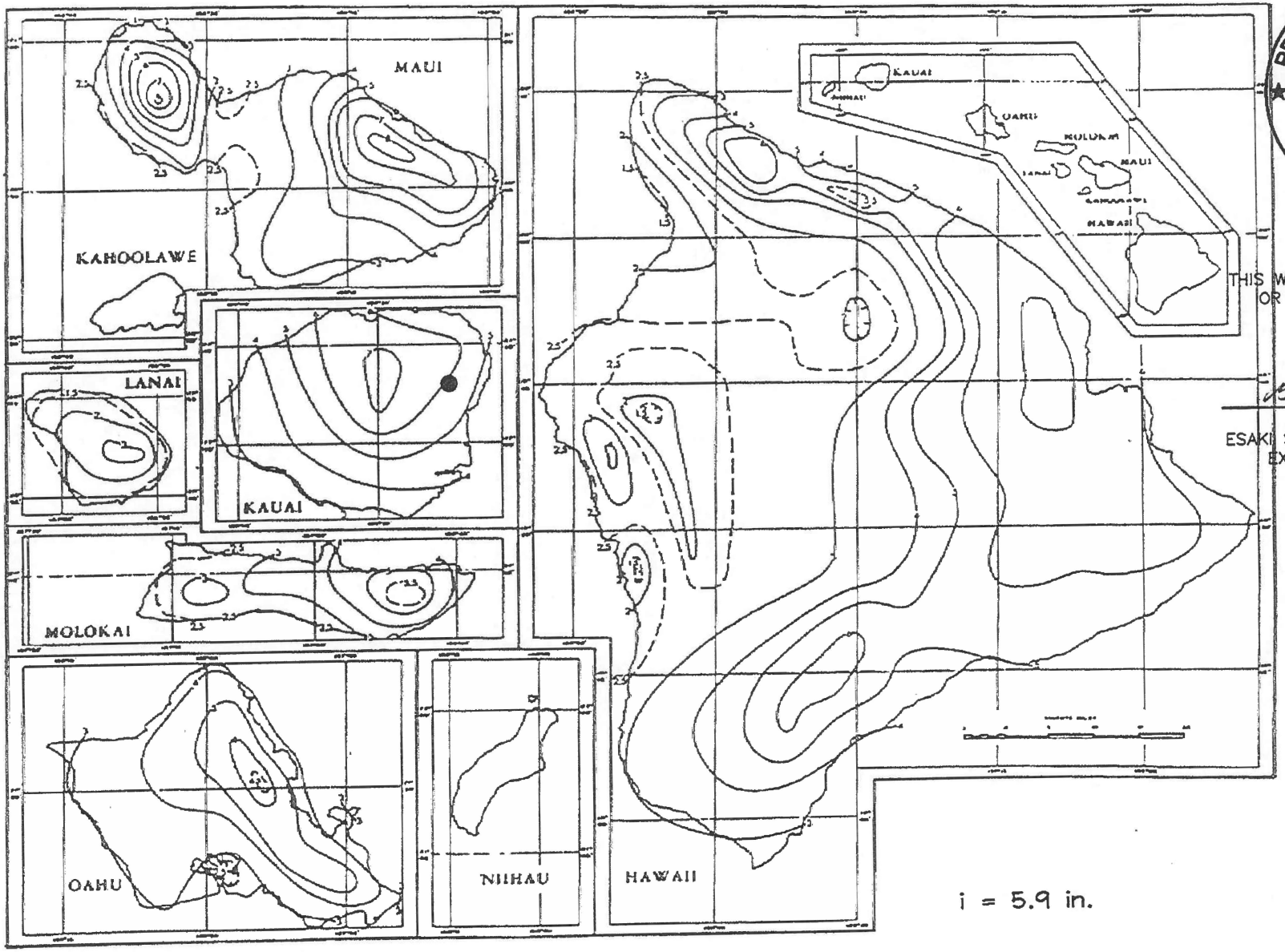
T_C = 16.41 minutes

I_{CF} = 1.9

CORRECTION FACTOR

FOR CONVERTING 1 HR. RAINFALL
TO RAINFALL INTENSITY
OF VARIOUS DURATIONS

TO BE USED FOR AREA
LESS THAN 100 ACRES



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i = 5.9 in.

100-Year 1-Hour Rainfall (in.)

Plate 4

IV. FLOOD LIMITS DETERMINATION

FLOOD LIMITS DETERMINATION

100-Year Building Setback Line and Drainageway shall be based on multiple sections on the subject property.

PROJ TITLE: Mark Baird Flood Study
LOCATION: Kapa`a
ITEM : HYDRAULIC CALCULATIONS

JOB NO.: 11-47
PREPARED BY: BF
DATE: 04-24-2015

STREAM: *Drainage Area 1*
CROSS SECTION STATION: *Section A*

GIVEN:

DISCHARGE (Q) = 40 CFS
SLOPE (s) = 0.1055 FT/FT
n VALUE = 0.0500
INVERT ELEV. = 376.0 FT
$AR^{2/3} = Qn/s^{1/2}(1.486)$
$= 40(0.0500) / (0.1055)^{1/2}(1.486)$
$= 4.1$

CROSS SECTION PTS:

DIST	ELEV	
-28.7	382.0	LEFT
-23.0	380.0	LEFT
-16.9	378.0	LEFT
0.0	376.0	CENTER LINE
21.4	378.0	RIGHT
26.5	380.0	RIGHT
31.5	382.0	RIGHT

FLOOD LIMITS:

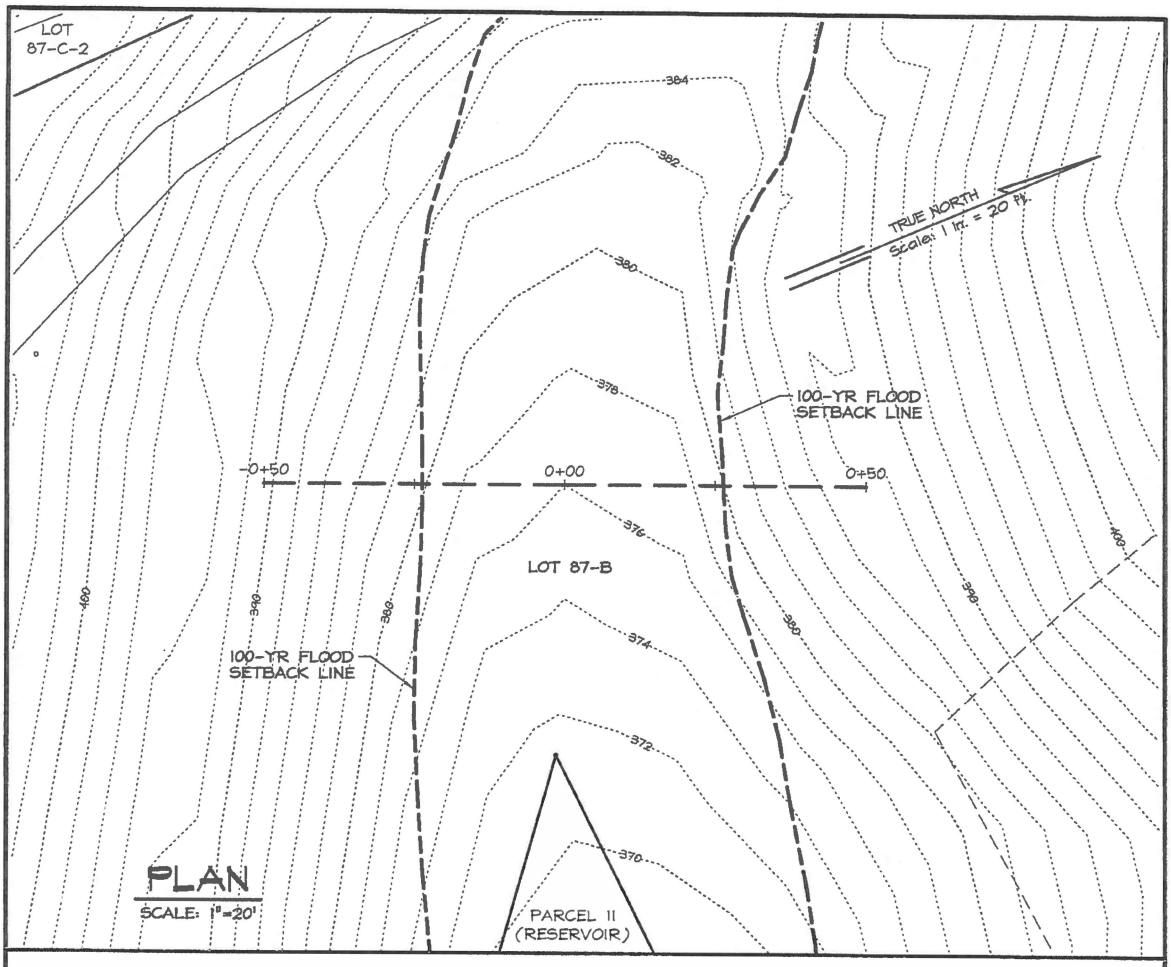
COMPUTED :
DEPTH (d) = 0.9 FT
AREA (A) = 7.2 SF
WETTED PERIMETER (WP) = 16.8 FT
HYDRAULIC RADIUS (R) = A/WP = 7.2/ 16.8 = 0.4
$AR^{2/3} = (7.2)(0.4)^{2/3} =$ 4.1
Q = 40 CFS

RESULTS:
WATER SURFACE ELEVATION (WSE) = INV ELEV + d = 376.0 + 0.9 = 376.9 FT
VELOCITY = Q/A = 40.0/ 7.2 = 5.5 FT/SEC
FREEBOARD (FB) = $2 + 0.025(V)d^{1/3}$
$= 2 + 0.025(5.5)(0.9)^{1/3}$
$= 2.1$ FT 3.0
SETBACK ELEVATION = WSE + FB = 376.9 + ~~2.1~~ = ~~379.0~~ 379.9 FT

FLOODWAY:

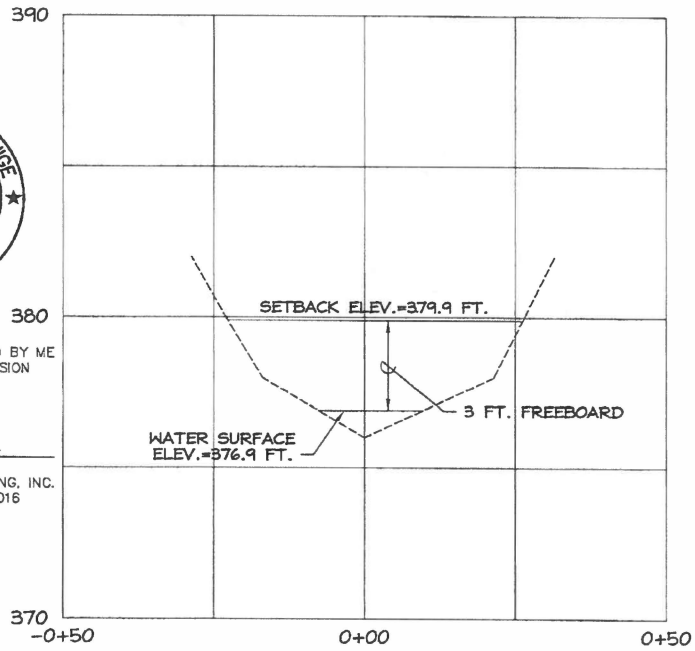
COMPUTED :
DEPTH (d) = 1.9 FT
AREA (A) = 5.2 SF
WETTED PERIMETER (WP) = 6.3 FT
HYDRAULIC RADIUS (R)= A/WP = 5.2/ 6.3 = 0.8
$AR^{2/3} = (5.2)(0.8)^{2/3} =$ 4.5
Q = 43 CFS

RESULTS :
WATER SURFACE ELEVATION (WSE) = INV ELEV + d = 376.0 + 1.9 = 377.9 FT
VELOCITY = Q/A = 40.0 / 5.2 = 7.8 FT/SEC
FLOODWAY WIDTH :
DISTANCE LEFT OF CENTER LINE = -1.3 FT
DISTANCE RIGHT OF CENTER LINE = 1.6 FT



PLAN

SCALE: 1"=20'



SECTION A

SCALE: 1"=20' HORIZONTAL
1"=4' VERTICAL

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EXPIRES: APRIL 30, 2016

PROJ TITLE: Mark Baird Flood Study
LOCATION: Kapa`a
ITEM : HYDRAULIC CALCULATIONS

JOB NO.: 11-47
PREPARED BY: BF
DATE: 04-24-2015

STREAM: *Drainage Area 1*
CROSS SECTION STATION: *Section B*

GIVEN:

DISCHARGE (Q) = 40 CFS
SLOPE (s) = 0.0705 FT/FT
n VALUE = 0.0500
INVERT ELEV. = 362.0 FT

$AR^{2/3} = Qn/s^{1/2}(1.486)$
$= 40(0.0500) / (0.0705)^{1/2}(1.486)$
$= 5.1$

CROSS SECTION PTS:

DIST	ELEV	
-38.1	368.0	LEFT
-33.1	366.0	LEFT
-27.0	364.0	LEFT
0.0	362.0	CENTER LINE
34.7	364.0	RIGHT
41.7	366.0	RIGHT
48.6	368.0	RIGHT

FLOOD LIMITS:

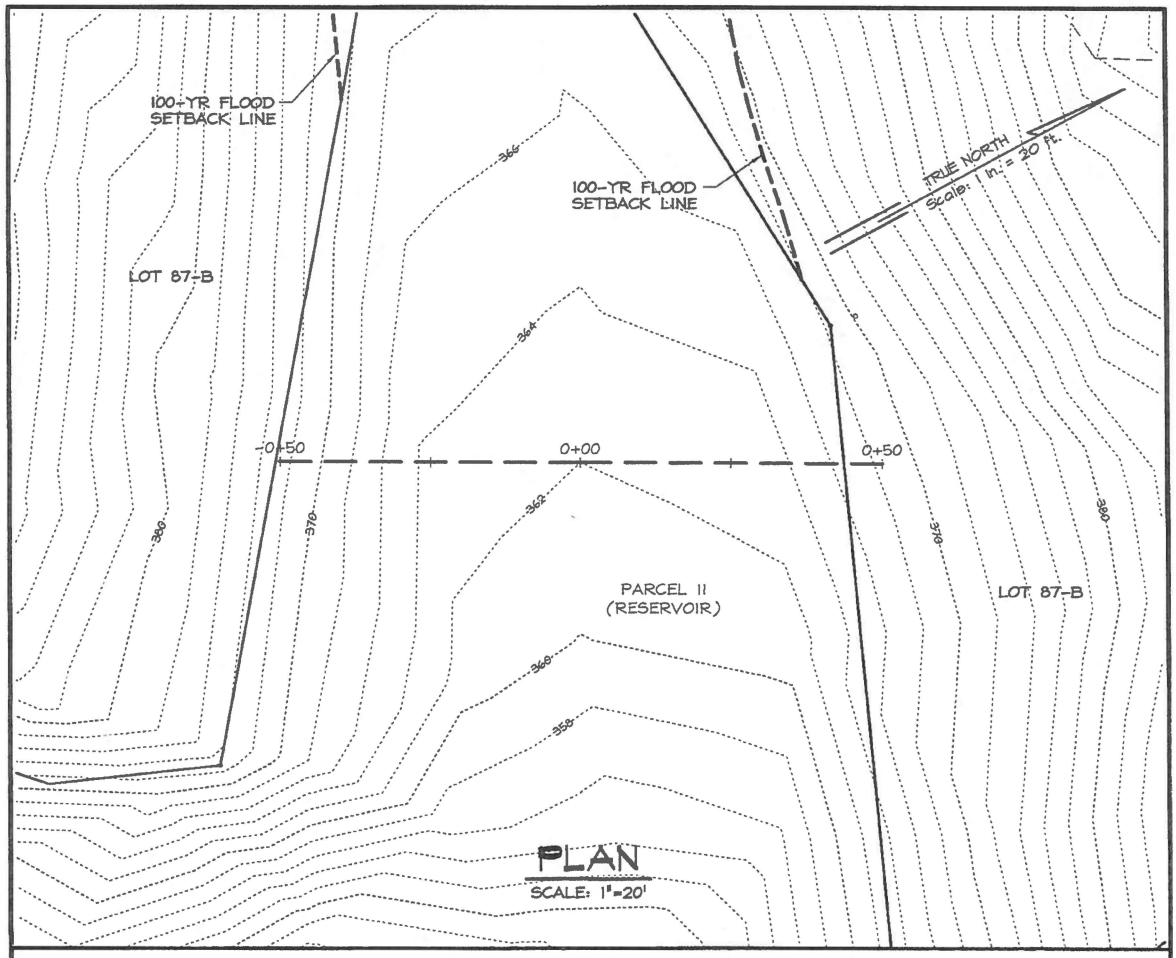
COMPUTED :
DEPTH (d) = 0.8 FT
AREA (A) = 9.6 SF
WETTED PERIMETER (WP) = 24.4 FT
HYDRAULIC RADIUS (R) = A/WP = 9.6/ 24.4 = 0.4
$AR^{2/3} = (9.6)(0.4)^{2/3} =$ 5.2
Q = 41 CFS

RESULTS:
WATER SURFACE ELEVATION (WSE) = INV ELEV + d = 362.0 + 0.8 = 362.8 FT
VELOCITY = Q/A = 40.0/ 9.6 = 4.2 FT/SEC
FREEBOARD (FB) = $2 + 0.025(V)d^{1/3}$
$= 2 + 0.025(4.2)(0.8)^{1/3}$
$= 2.1$ FT 3.0
SETBACK ELEVATION = WSE + FB = 362.8 + ~~2.1~~ = ~~364.9~~ 365.8 FT

FLOODWAY:

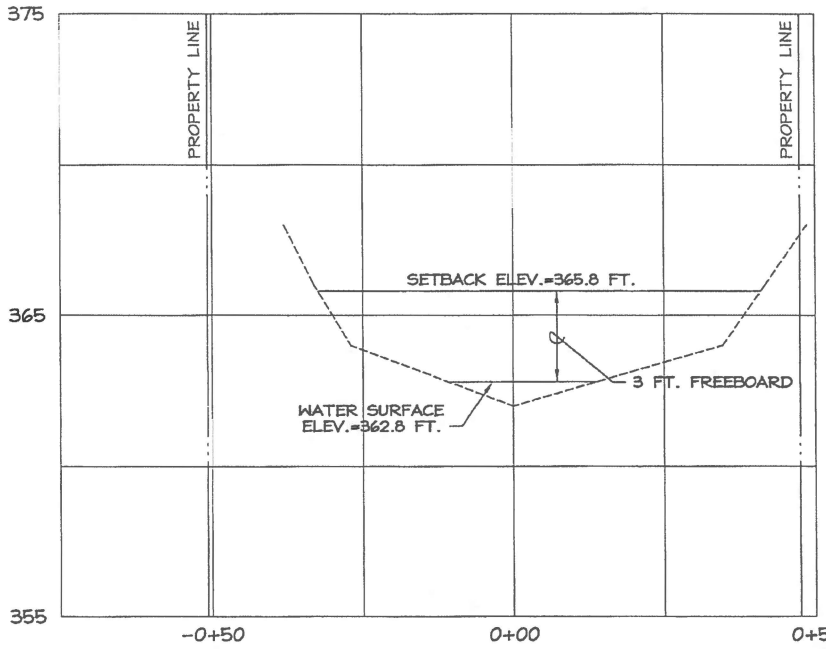
COMPUTED :
DEPTH (d) = 1.8 FT
AREA (A) = 5.9 SF
WETTED PERIMETER (WP) = 6.8 FT
HYDRAULIC RADIUS (R)= A/WP = 5.9/ 6.8 = 0.9
$AR^{2/3} = (5.9)(0.9)^{2/3} =$ 5.4
Q = 42 CFS

RESULTS :
WATER SURFACE ELEVATION (WSE) = INV ELEV + d = 362.0 + 1.8 = 363.8 FT
VELOCITY = Q/A = 40.0 / 5.9 = 6.8 FT/SEC
FLOODWAY WIDTH :
DISTANCE LEFT OF CENTER LINE = -1.5 FT
DISTANCE RIGHT OF CENTER LINE = 1.9 FT



PLAN

SCALE: 1"=20'



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SECTION B

SCALE: 1"=20' HORIZONTAL
1"=4' VERTICAL

Signature
ESAKI SURVEYING & MAPPING, INC.
EXPIRES: APRIL 30, 2016

PROJ TITLE: Mark Baird Flood Study
LOCATION: Kapa`a
ITEM : HYDRAULIC CALCULATIONS

JOB NO.: 11-47
PREPARED BY: BF
DATE: 04-24-2015

STREAM: *Drainage Area 2*
CROSS SECTION STATION: *Section C*

GIVEN:

DISCHARGE (Q) = 298 CFS
SLOPE (s) = 0.0123 FT/FT
n VALUE = 0.0500
INVERT ELEV. = 342.5 FT
$AR^{2/3} = Qn/s^{1/2}(1.486)$
$= 298(0.0500) / (0.0123)^{1/2}(1.486)$
$= 90.4$

CROSS SECTION PTS:

DIST	ELEV	
-101.4	352.0	LEFT
-71.2	350.0	LEFT
-40.2	348.0	LEFT
-9.2	346.7	LEFT
-3.6	343.9	LEFT
0.0	342.5	CENTER LINE
3.6	342.6	RIGHT
44.0	380.6	RIGHT

FLOOD LIMITS:

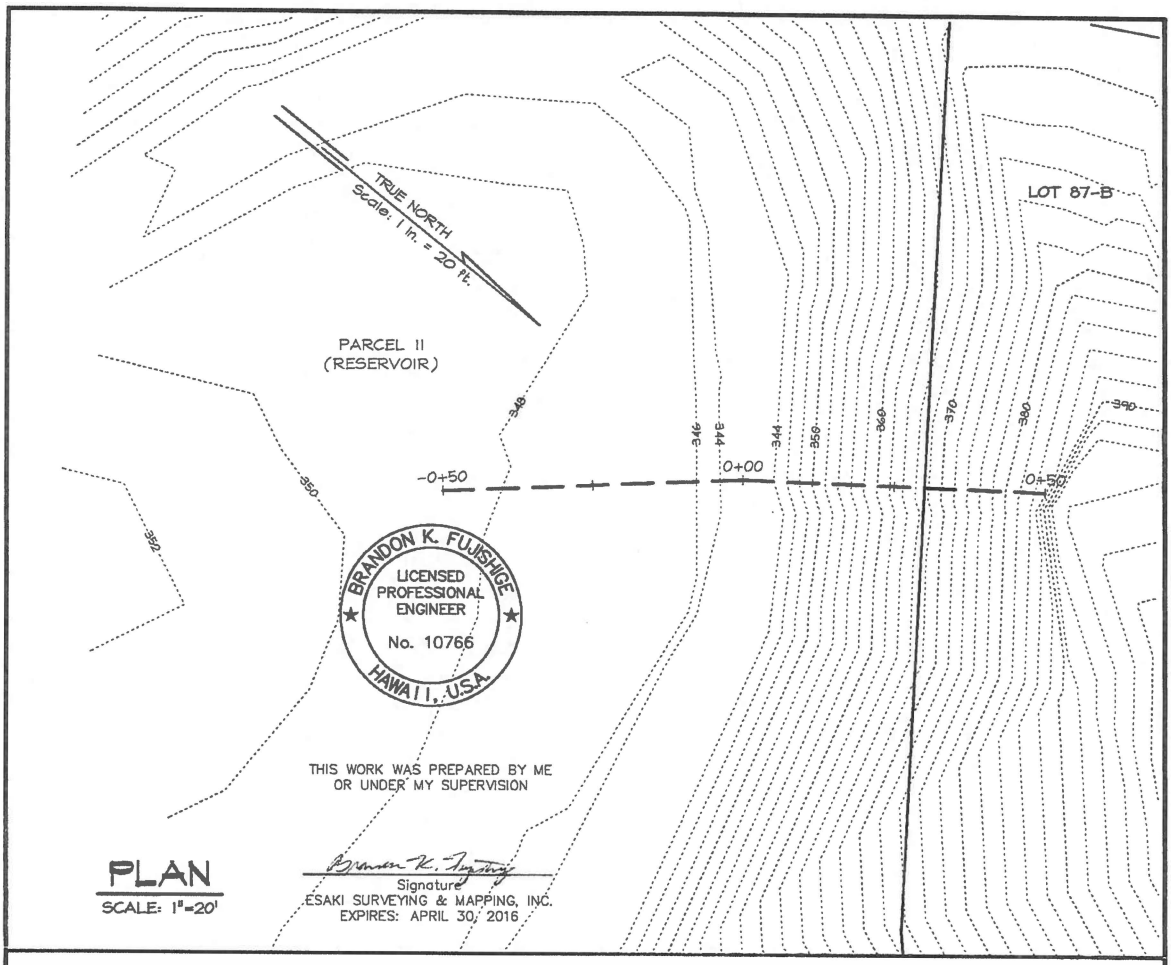
COMPUTED :
DEPTH (d) = 5.0 FT
AREA (A) = 64.9 SF
WETTED PERIMETER (WP) = 39.2 FT
HYDRAULIC RADIUS (R) = A/WP = 64.9/ 39.2 = 1.7
$AR^{2/3} = (64.9)(1.7)^{2/3} = 90.8$
Q = 299 CFS

RESULTS:
WATER SURFACE ELEVATION (WSE) = INV ELEV + d = 342.5 + 5.0 = 347.5 FT
VELOCITY = Q/A = 298.0/ 64.9 = 4.6 FT/SEC
FREEBOARD (FB) = $2 + 0.025(V)d^{1/3}$
$= 2 + 0.025(4.6)(5.0)^{1/3}$
$= 2.2$ FT
SETBACK ELEVATION = WSE + FB = 347.5 + ~~2.2~~ 3.0 = ~~349.7~~ 350.5 FT

FLOODWAY:

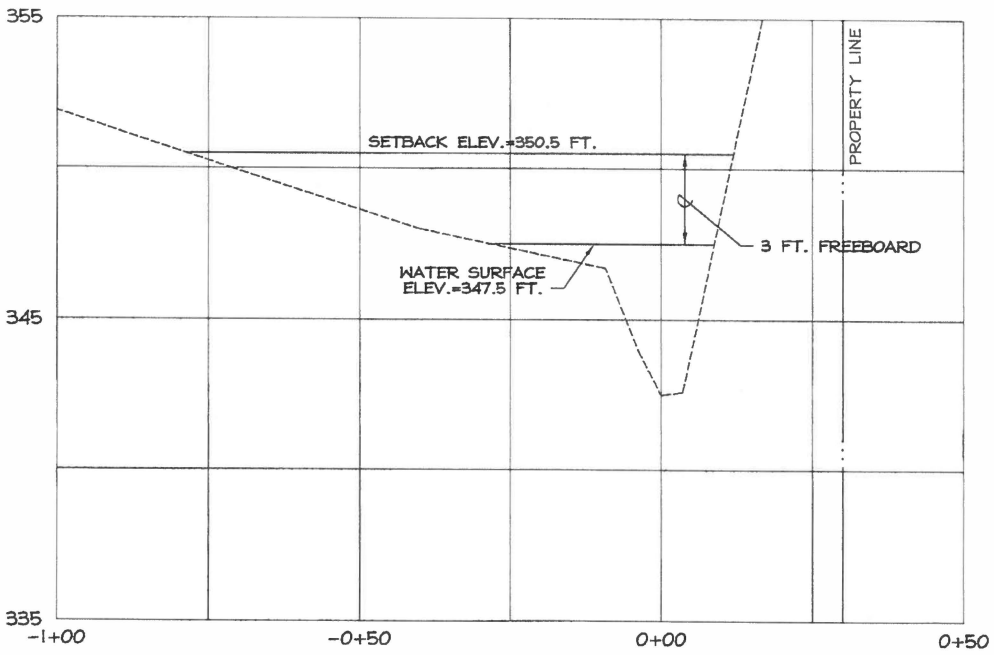
COMPUTED :
DEPTH (d) = 6.0 FT
AREA (A) = 48.1 SF
WETTED PERIMETER (WP) = 18.6 FT
HYDRAULIC RADIUS (R)= A/WP = 48.1/ 18.6 = 2.6
$AR^{2/3} = (48.1)(2.6)^{2/3} = 90.6$
Q = 299 CFS

RESULTS :
WATER SURFACE ELEVATION (WSE) = INV ELEV + d = 342.5 + 6.0 = 348.5 FT
VELOCITY = Q/A = 298.0 / 48.1 = 6.2 FT/SEC
FLOODWAY WIDTH :
DISTANCE LEFT OF CENTER LINE = -3.7 FT
DISTANCE RIGHT OF CENTER LINE = 5.0 FT



PLAN

SCALE: 1"=20'



SECTION C

SCALE: 1"=20' HORIZONTAL
1"=4' VERTICAL

PROJ TITLE: Mark Baird Flood Study
LOCATION: Kapa`a
ITEM : HYDRAULIC CALCULATIONS

JOB NO.: 11-47
PREPARED BY: BF
DATE: 07-01-2015

STREAM: ***Drainage Area 1***
CROSS SECTION STATION: ***Section D***

GIVEN:

DISCHARGE (Q) = 40 CFS
SLOPE (s) = 0.1904 FT/FT
n VALUE = 0.0500
INVERT ELEV. = 396.0 FT

$AR^{2/3} = Qn/s^{1/2}(1.486)$
$= 40(0.0500) / (0.1904)^{1/2}(1.486)$
$= 3.1$

CROSS SECTION PTS:

DIST	ELEV	
-24.3	400.0	LEFT
-11.7	398.0	LEFT
0.0	396.0	CENTER LINE
16.9	398.0	RIGHT
24.3	400.0	RIGHT

FLOOD LIMITS:

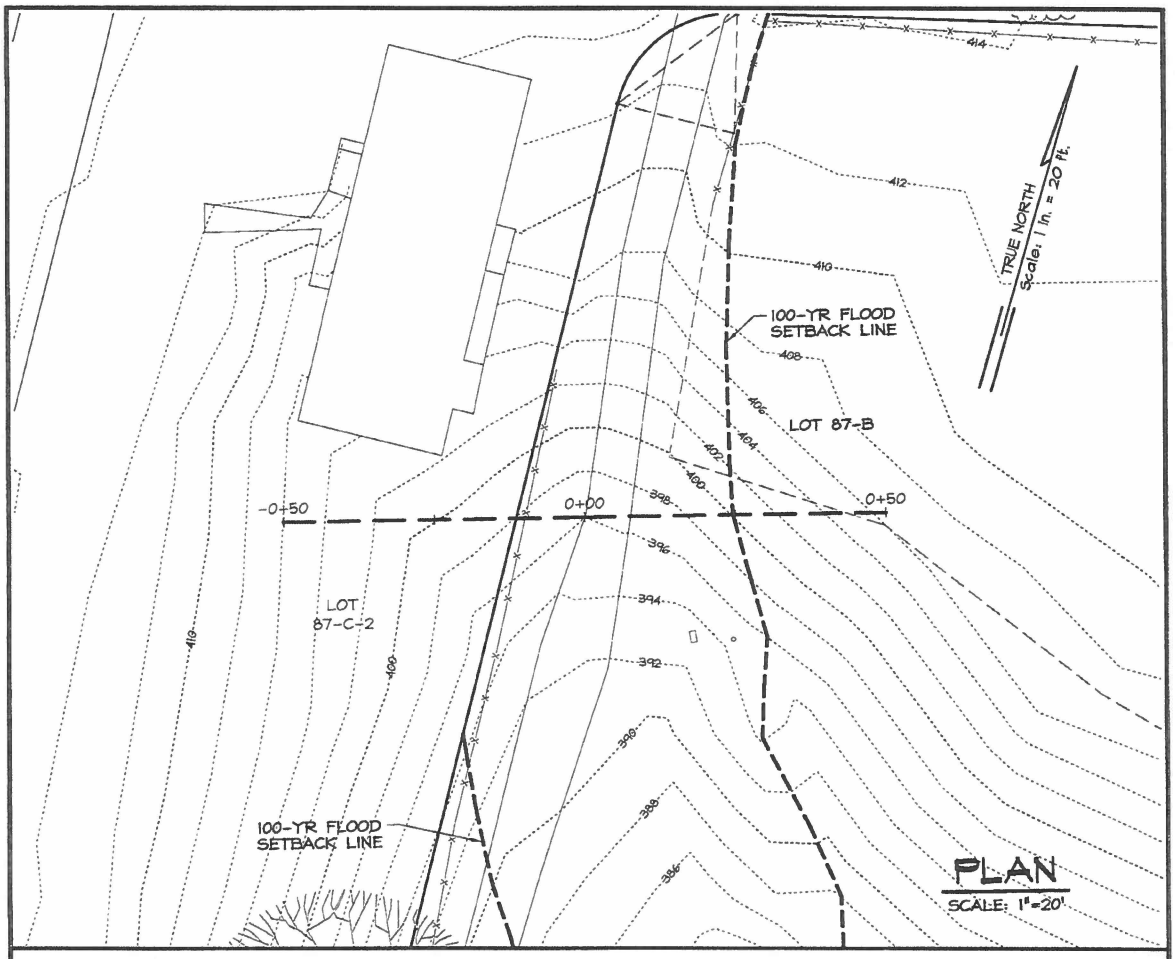
COMPUTED :
DEPTH (d) = 0.9 FT
AREA (A) = 5.4 SF
WETTED PERIMETER (WP) = 12.6 FT
HYDRAULIC RADIUS (R) = A/WP = 5.4/ 12.6 = 0.4
$AR^{2/3} = (5.4)(0.4)^{2/3} =$ 3.1
Q = 40 CFS

RESULTS:
WATER SURFACE ELEVATION (WSE) = INV ELEV + d = 396.0 + 0.9 = 396.9 FT
VELOCITY = Q/A = 40.0/ 5.4 = 7.4 FT/SEC
$FREEBOARD (FB) = 2 + 0.025(V)d^{1/3}$
$= 2 + 0.025(7.4)(0.9)^{1/3}$
= 2.2 FT 3.0
SETBACK ELEVATION = WSE + FB = 396.9 + ~~2.2~~ = ~~399.1~~ 399.9 FT

FLOODWAY:

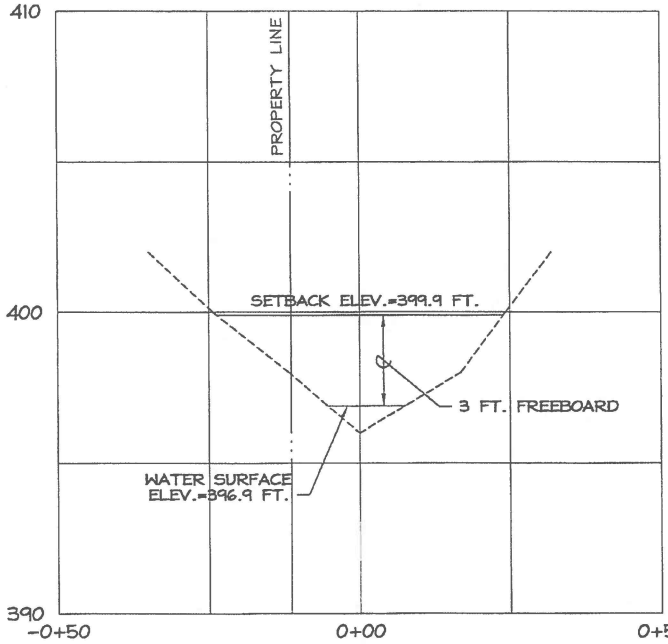
COMPUTED :
DEPTH (d) = 1.9 FT
AREA (A) = 4.1 SF
WETTED PERIMETER (WP) = 5.7 FT
HYDRAULIC RADIUS (R)= A/WP = 4.1/ 5.7 = 0.7
$AR^{2/3} = (4.1)(0.7)^{2/3} =$ 3.3
Q = 42 CFS

RESULTS :
WATER SURFACE ELEVATION (WSE) = INV ELEV + d = 396.0 + 1.9 = 397.9 FT
VELOCITY = Q/A = 40.0 / 4.1 = 9.8 FT/SEC
FLOODWAY WIDTH :
DISTANCE LEFT OF CENTER LINE = -0.9 FT
DISTANCE RIGHT OF CENTER LINE = 1.4 FT



PLAN

SCALE: 1"=20'



BRANDON K. FUJISHIGE
LICENSED PROFESSIONAL ENGINEER
No. 10766
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SECTION D

SCALE: 1"=20' HORIZONTAL
1"=4' VERTICAL

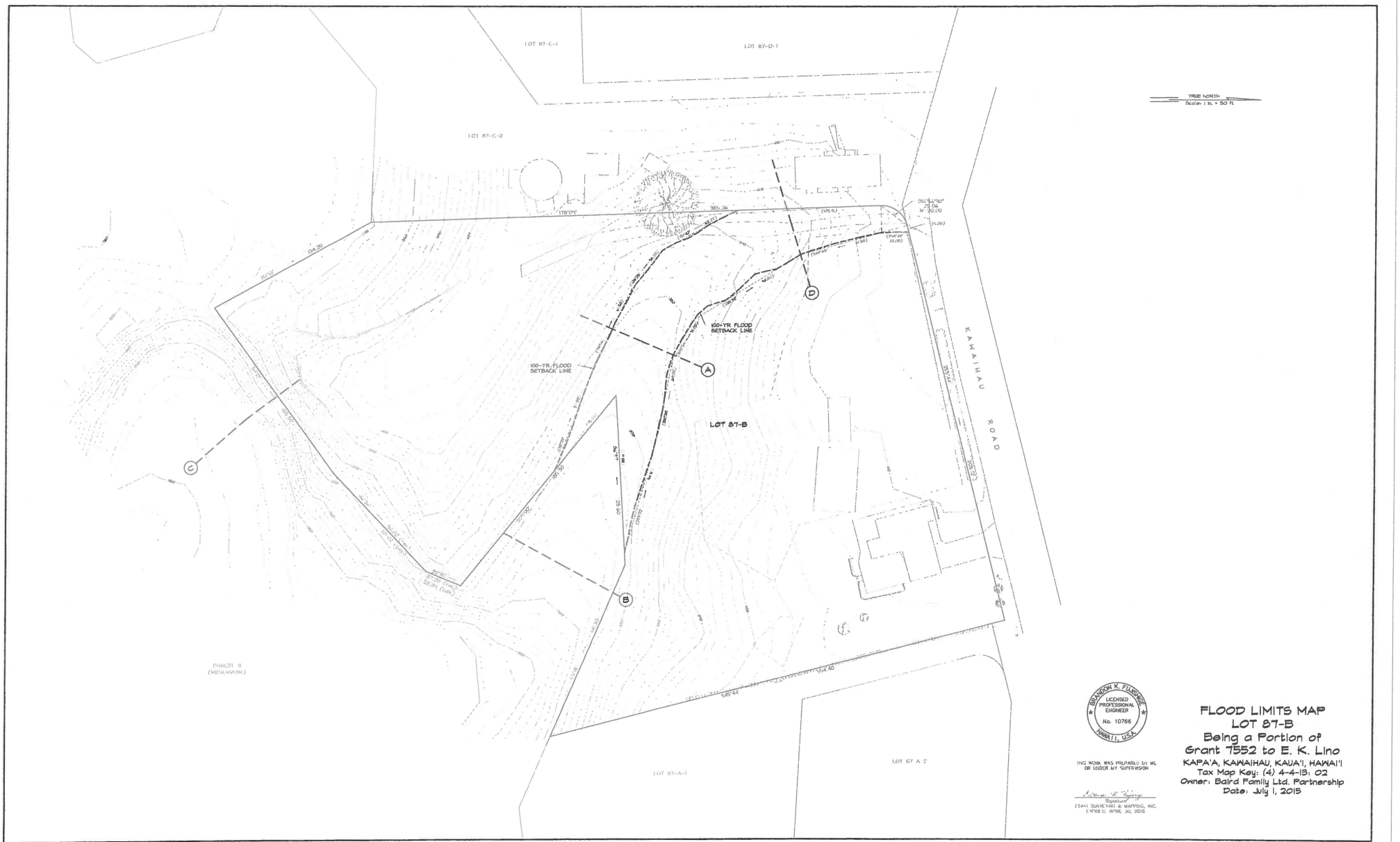
Signature

ESAKI SURVEYING & MAPPING, INC.
EXPIRES: APRIL 30, 2016

Values of n to Be Used with the Manning Equation

Surface	Best	Good	Fair	Bad
Uncoated cast-iron pipe	0.012	0.013	0.014	0.015
Coated cast-iron pipe	0.011	0.012*	0.013*	
Commercial wrought-iron pipe, black	0.012	0.013	0.014	0.015
Commercial wrought-iron pipe, galvanized	0.013	0.014	0.015	0.017
Smooth brass and glass pipe	0.009	0.010	0.011	0.013
Smooth lockbar and welded "OD" pipe	0.010	0.011*	0.013*	
Riveted and spiral steel pipe	0.013	0.015*	0.017*	
Vitrified sewer pipe	0.010 0.011	0.013*	0.015	0.017
Common clay drainage tile	0.011	0.012*	0.014*	0.017
Glazed brickwork	0.011	0.012	0.013*	0.015
Brick in cement mortar; brick sewers	0.012	0.013	0.015*	0.017
Neat cement surfaces	0.010	0.011	0.012	0.013
Cement mortar surfaces	0.011	0.012	0.013*	0.015
Concrete pipe	0.012	0.013	0.015*	0.016
Wood stave pipe	0.010	0.011	0.012	0.013
Plank Flumes:				
Planed	0.010	0.012*	0.013	0.014
Unplaned	0.011	0.013*	0.014	0.015
With battens	0.012	0.015*	0.016	
Concrete-lined channels	0.012	0.014*	0.016*	0.018
Cement-rubble surface	0.017	0.020	0.025	0.030
Dry-rubble surface	0.025	0.030	0.033	0.035
Dressed-ashlar surface	0.013	0.014	0.015	0.017
Semicircular metal flumes, smooth	0.011	0.012	0.013	0.015
Semicircular metal flumes, corrugated	0.0225	0.025	0.0275	0.030
Canals and Ditches:				
Earth, straight and uniform	0.017	0.020	0.0225*	0.025
Rock cuts, smooth and uniform	0.025	0.030	0.033*	0.035
Rock cuts, jagged and irregular	0.035	0.040	0.045	
Winding sluggish canals	0.0225	0.025*	0.0275	0.030
Dredged earth channels	0.025	0.0275*	0.030	0.033
Canals with rough stony beds, weeds on earth banks	0.025	0.030	0.035*	0.040
Earth bottom, rubble sides	0.028	0.030*	0.033*	0.035
Natural Stream Channels:				
(1) Clean, straight bank, full stage, no rifts or deep pools	0.025	0.0275	0.030	0.033
(2) Same as (1), but some weeds and stones	0.030	0.033	0.035	0.040
(3) Winding, some pools and shoals, clean	0.033	0.035	0.040	0.045
(4) Same as (3), lower stages, more ineffective slope and sections	0.040	0.045	0.050	0.055
(5) Same as (3), some weeds and stones	0.035	0.040	0.045	0.050
(6) Same as (4), stony sections	0.045	0.050	0.055	0.060
(7) Sluggish river reaches, rather weedy or with very deep pools	0.050	0.060	0.070	0.080
(8) Very weedy reaches	0.075	0.100	0.125	0.150

* Values commonly used in designing.



BRANDON K. FUJIOKA
LICENSED PROFESSIONAL ENGINEER
No. 10766
HAWAII, U.S.A.

THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION

Signature
ESAKI SURVEYING & MAPPING, INC.
LICENSE EXPIRES: APRIL 30, 2016

FLOOD LIMITS MAP
LOT 87-B
Being a Portion of Grant 7552 to E. K. Lino

KAPA'A, KAWAIHAU, KAUA'I, HAWAI'I
Tax Map Key: (4) 4-4-13: 02
Owner: Baird Family Ltd. Partnership
Date: July 1, 2015

Appendix B

Letter dated July 28, 2015
from County of Kaua'i, Department of Public Works
accepting *Final Flood Study- Mark Baird* (August 2015)

Bernard P. Carvalho, Jr.
Mayor

Nadine K. Nakamura
Managing Director

Larry Dill, P.E.
County Engineer

Lyle Tabata
Deputy County Engineer

DEPARTMENT OF PUBLIC WORKS
County of Kaua'i, State of Hawai'i
4444 Rice Street, Suite 275, Līhu'e, Hawai'i 96766
TEL (808) 241-4992 FAX (808) 241-6604

July 28, 2015

Wayne Wada, P.E.
Esaki Surveying & Mapping, Inc.
1610 Haleukana Street
Līhu'e, HI 96766

SUBJECT: Mark Baird Flood Study
Kapaa Homesteads
Kapaa, Kaua'i, Hawai'i
TMK: 4-4-013: 002

PW 07.15.038

Dear Mr. Wada;

We reviewed the revised flood study that was submitted with your transmittal letter dated July 2, 2015. The revised flood study is acceptable. You may label the Flood Study as "**FINAL**" and submit two (2) sets of the flood study along with a CD in pdf format with the above corrections.

Please note that an approval of the County does not relieve the owner, engineer, or designer of the responsibility for ensuring that the calculations, plans, specifications, construction, and as-built drawings are in compliance with the Manual (Storm Water Runoff System Manual, July 2001) and that the necessary or desired drainage objectives will be accomplished. Should you have any questions, or need additional information, please contact Stanford Iwamoto at (808) 241-4896 or by email at siwamoto@kauai.gov.

Sincerely,

MICHAEL MOULE, P.E.
Chief, Engineering Division

MM/SI
copy: Design and Permitting

Appendix C

Agency comment letters concerning Draft Environmental Assessment and Letters in response thereto

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

DAVID Y. IGE
GOVERNOR

SCOTT GLENN
DIRECTOR

DEPARTMENT OF HEALTH, STATE OF HAWAI'I
235 South Beretania Street, Suite 702, Honolulu, HI 96813

Phone (808) 586-4185
Email oeqchawaii@doh.hawaii.gov

April 8, 2016

Mr. Michael Dahilig, Director
County of Kauai
Department of Planning
4444 Rice Street, Suite A-473
Lihue, HI 96766

Dear Mr. Dahilig:

SUBJECT: Draft Environmental Assessment (DEA) for a General Plan Amendment, County of Kauai, to Redesignate Land Use of Real Property at TMK (4) 4-4-013:002 from Agriculture to Residential Community, Baird Family Ltd. Partnership, Applicant

The Office of Environmental Quality Control (OEQC) has reviewed the subject document and responds as follows.

1. Potential Impacts and Mitigation Measures: Throughout the document, it seems that the description of potential impacts was for direct impacts only. Impacts, by definition, also include indirect (growth inducing) and cumulative impacts. For the sections of the DEA containing the header "Potential Impacts and Mitigation Measures" please describe any secondary or cumulative impacts and their resultant mitigation that may result from implementing the proposed action.
2. Analysis of Significance: On pages 12 and 13 of the DEA, is a listing of the thirteen significance criteria set forth in Section 11-200-12, Hawaii Administrative Rules (HAR). In light of comment 1 above, please re-evaluate criteria 6 and 8 (to discern the nature and extent of any secondary and cumulative impacts).

Please contact Mr. Leslie Segundo, Environmental Health Specialist if you have further questions.

Sincerely,

Scott Glenn
Director

c: Shiramizu, Loo, and Nakamura, LLLP

16-460

Rec 4-12-16

SHIRAMIZU LOO & NAKAMURA
A LIMITED LIABILITY LAW PARTNERSHIP
4357 RICE STREET, SUITE 102
LIHUE, KAUAI, HAWAII 96766

CURTIS H. SHIRAMIZU
LAUREL K. S. LOO
GALEN T. NAKAMURA

TELEPHONE: (808) 632-2267
FACSIMILE: (808) 440-0399

July 26, 2016

Hon. Scott Glenn, Director
Office of Environmental Quality Control
Department of Health, State of Hawai'i
235 South Beretania Street, Suite 702
Honolulu, Hawai'i 96813

Re: **DRAFT Environmental Assessment for Baird Family General Plan Amendment; Kapaa, Kauai, Hawaii (TMK (4) 4-4-013-002)**

Dear Mr. Glenn,

Thank you for your April 8, 2016 response to the Draft Environmental Assessment for the proposed re-designation of the County of Kaua'i General Plan land use of the subject real property from *Agriculture* to *Residential Community*.[1]

The comments and recommendations the Office of Environmental Quality Control ("OEQC") made are generally described below in bold italics. Our responses then follow.

1. Potential Impacts and Mitigation Measures: Throughout the document, it seems that the description of potential impacts was for direct impacts only. Impacts, by definition, also include indirect (growth inducing) and cumulative impacts. For the sections of the DEA containing the header "Potential Impacts and Mitigation Measures" please describe any secondary or cumulative impacts and their resultant mitigation that may result from implementing the proposed action.

Consistent with OEQC's comments, we have reviewed and revised our Draft Environmental Assessment in sections 5.1, 5.2, 5.3, 5.4, and 5.5 to include a discussion of secondary and/or cumulative impacts and corresponding mitigative measures that may or will be undertaken in response to such impacts. This discussion will be included in the Final Environmental Assessment.

[1] OEQC's letter was addressed to Kauai County Planning Director Michael A. Dahilig, but we are responding on behalf of the Planning Department.

2. Analysis of Significance: On pages 12 and 13 of the DEA, is a listing of the thirteen significance criteria set forth in Section 11-200-12, Hawaii Administrative Rules (HAR). In light of comment 1 above, please re-evaluate criteria 6 and 8 (to discern the nature and extent of any secondary and cumulative impacts).

Consistent with OEQC's comments, we have reviewed and revised our Draft Environmental Assessment by expanding criteria 6 and 8 to include a more robust discussion of the nature and extent of any secondary and cumulative impacts of the proposed action. This discussion will be included in the Final Environmental Assessment.

Should you have questions or require additional information, please contact me at (808) 632-2267.

Sincerely,

Galen T. Nakamura

cc: Client

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

EPO 16-095

March 23, 2016

Mr. Galen T. Nakamura, Esq.
Shiramizu, Loo & Nakamura, LLLP
4357 Rice Street, #102
Lihue, Hawaii 96766

Dear Mr. Nakamura:

SUBJECT: Draft Environmental Assessment (DEA) for Baird Family General Plan Amendment
Kapaa, Kauai
TMK: (4) 4-4-013:002

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your DEA to our office via the OEQC link:
http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Kauai/2010s/2016-03-08-KA-5E-DEA-Baird-Family-General-Plan-Amendment.pdf

EPO strongly recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments. EPO has recently updated the environmental Geographic Information System (GIS) website page. It now compiles various maps and viewers from our environmental health programs. The eGIS website page will be continually updated so please visit it regularly at: http://health.hawaii.gov/epo/egis.

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal at: https://eha-cloud.doh.hawaii.gov. This site provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings.

You may also wish to review the draft Office of Environmental Quality Control (OEQC) viewer at: http://eha-web.doh.hawaii.gov/oeqc-viewer. This viewer geographically shows where previous Hawaii Environmental Policy Act (HEPA) {Hawaii Revised Statutes, Chapter 343} documents have been prepared.

In order to better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed a new environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: http://www2.epa.gov/ejscreen.

nee 3/31/16

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

Mahalo nui loa,

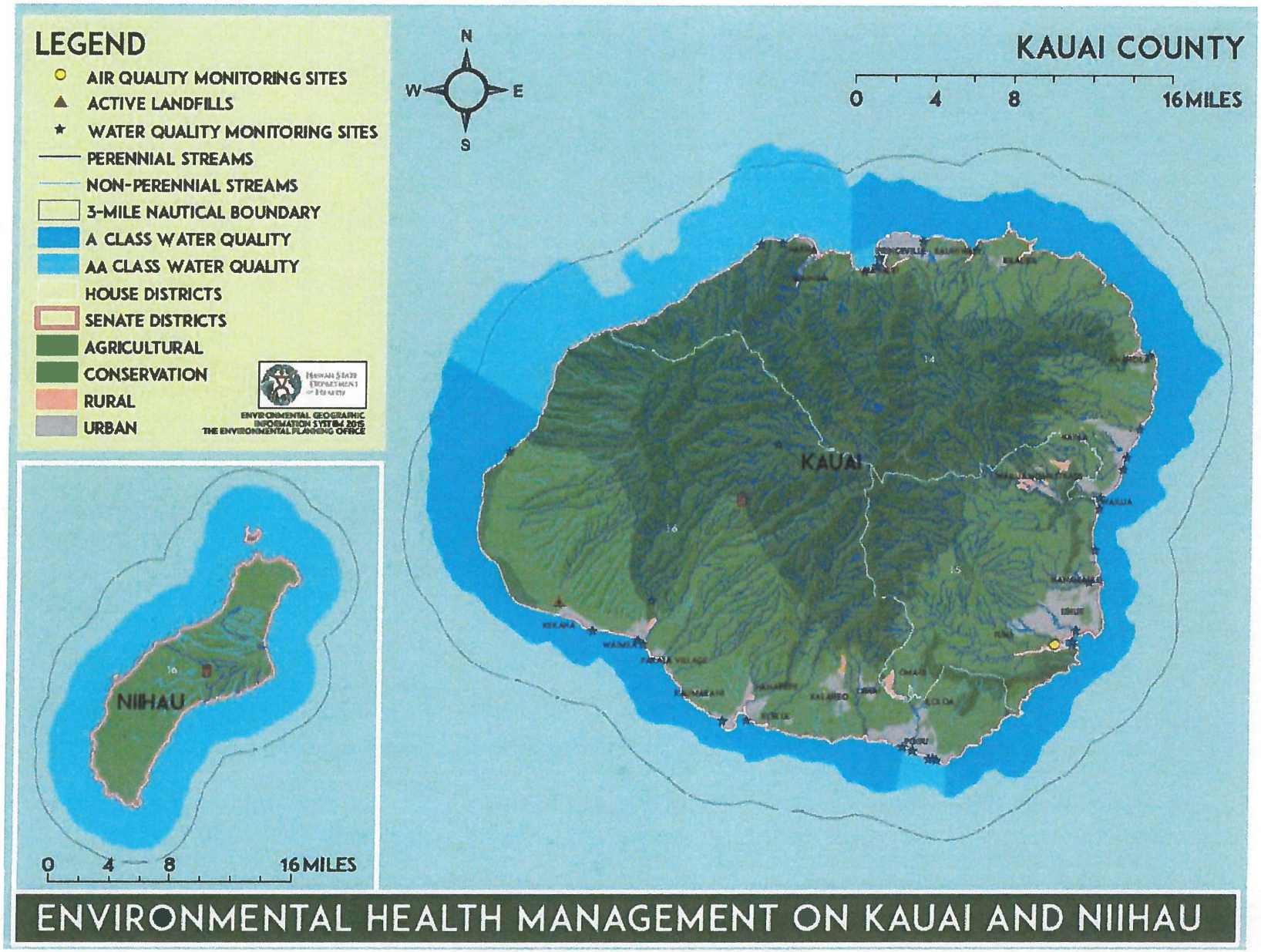
Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

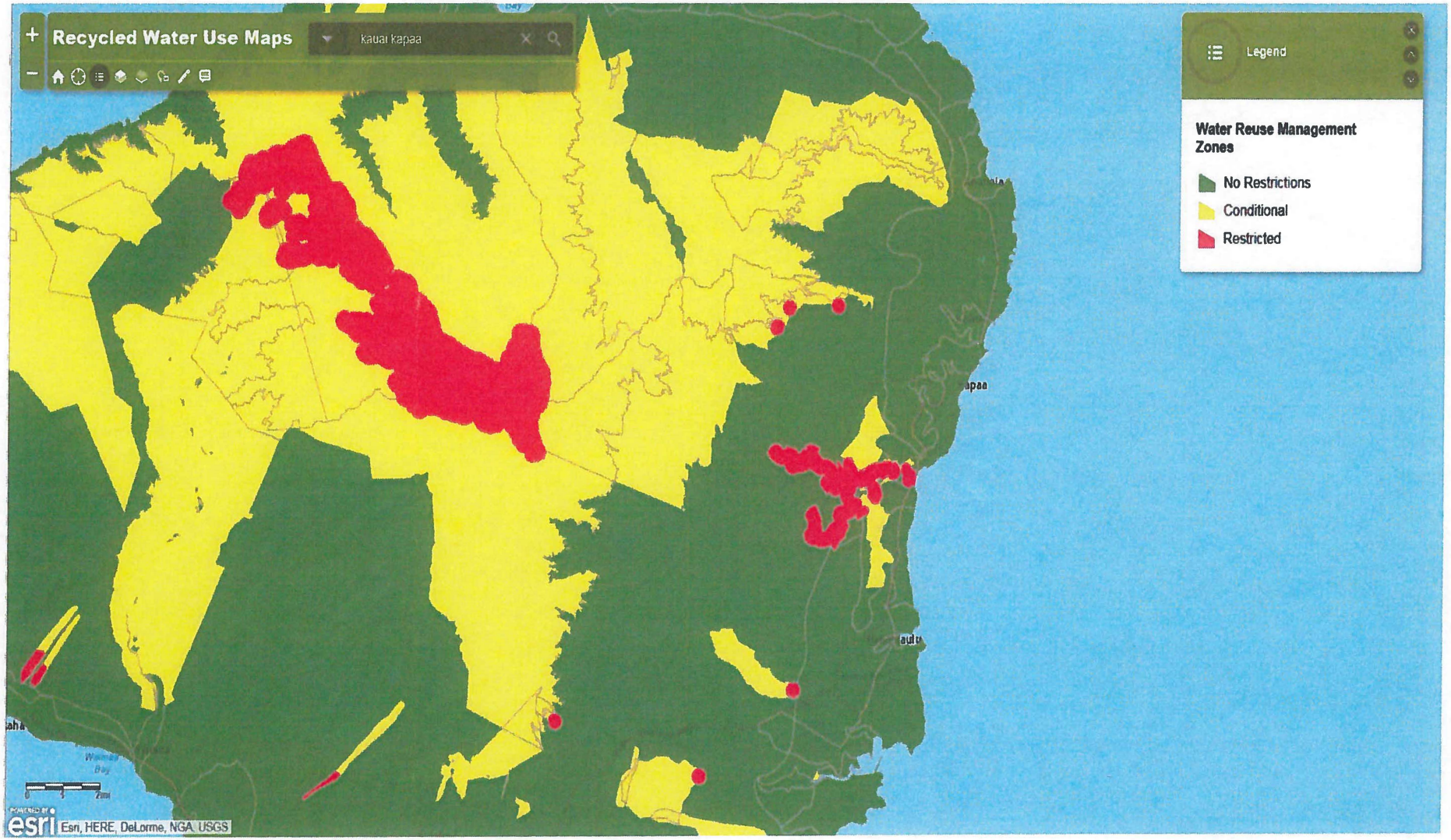
LM:nn

Attachment 1: EPO Draft Environmental Health Management Map
Attachment 2: Recycled Water Use Map
Attachment 3: EPO Historic Sugarcane Map
Attachment 4: OEQC Viewer Map of Project Area
Attachment 5: U.S. EPA EJSCREEN Report for Project Area

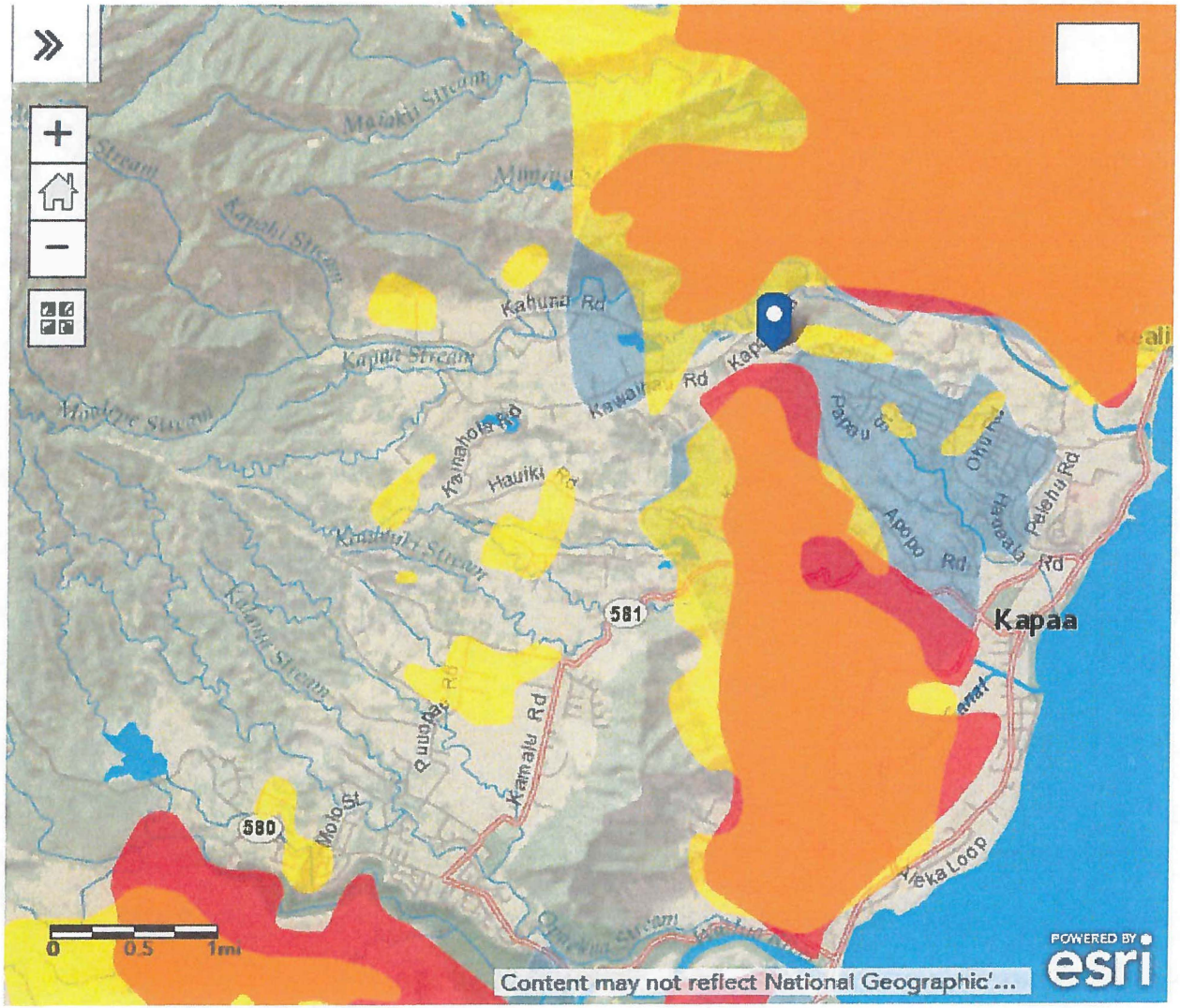
c: Applicant: Dr. Mark Baird, Baird Family Ltd. Partnership

EPO Draft Environmental Health Management Map: http://health.hawaii.gov/epo/egis




Recycled Water Use Maps
kauai kapaa
Legend
Water Reuse Management Zones
No Restrictions
Conditional
Restricted
esri
Esri, HERE, DeLorme, NGA, USGS

HISTORIC SUGARCANE LANDS MAP VIEWER



Legend | Details

Sugarcane - Sugarcane_1937

Sugarcane - Sugarcane_1920

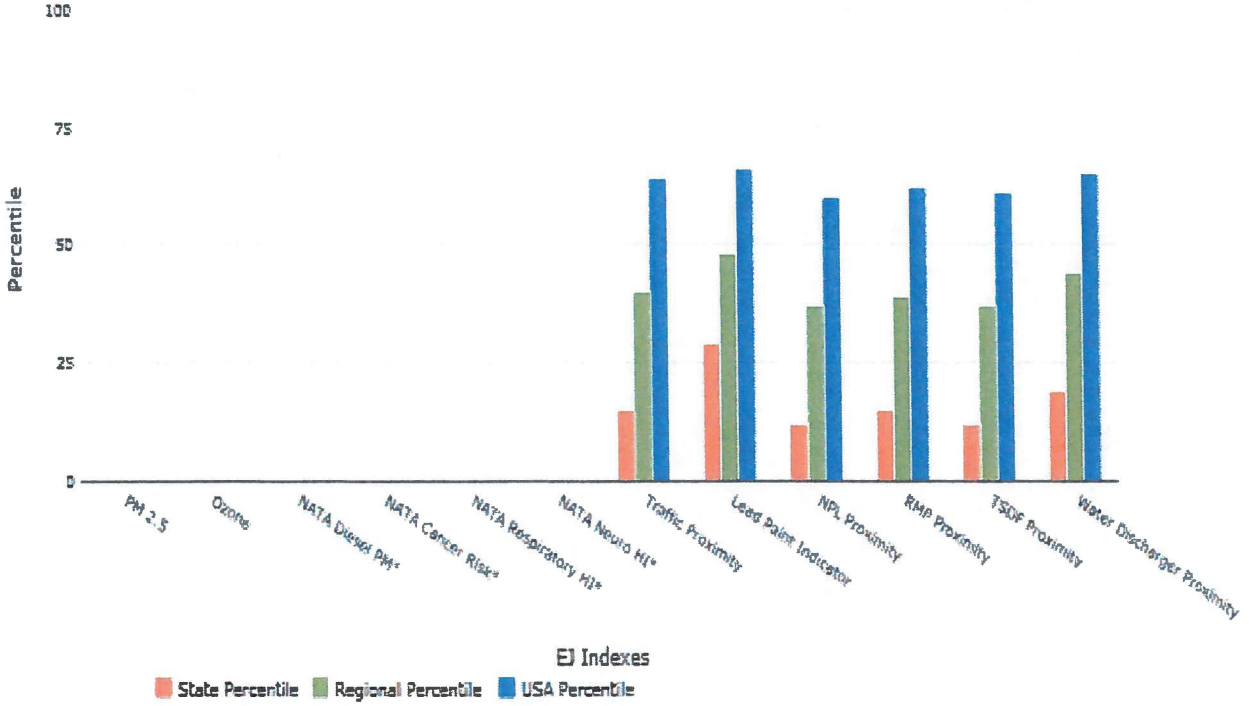
Sugarcane - Sugarcane_1900


hawaii.gov
Stay Connected
OEOC Viewer
kapahi
1 sites found
Results
Filter
Show sites with no location
Upper Kapahi Reservoir Dam Replacement (DEA-AFNSI)
Environmental Assessment (Agency)
Hybrid
Kawaihau Rd
Kamalei Rd
Google

1 mile Ring Centered at 22.094864,-159.367497
HAWAII, EPA Region 9
Approximate Population: 1294

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	15	40	64
EJ Index for Lead Paint Indicator	29	48	66
EJ Index for NPL Proximity	12	37	60
EJ Index for RMP Proximity	15	39	62
EJ Index for TSDF Proximity	12	37	61
EJ Index for Water Discharger Proximity	19	44	65

EJ Index for the Selected Area Compared to All People's Block Groups in the State/Region/US



This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

March 21, 2019

Digitized Point

Selected Variables	Raw data	State Average	%ile in State	EPA Region Average	%ile in EPA Region	USA Average	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	N/A	N/A	9.95	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	49.7	N/A	46.1	N/A
NATA Diesel PM (µg/m³)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Air Toxics Cancer Risk (risk per MM)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	14	280	17	190	16	110	29
Lead Paint Indicator (% pre-1960s housing)	0.074	0.17	41	0.25	40	0.3	30
NPL Proximity (site count/km distance)	0.0061	0.092	25	0.11	6	0.096	2
RMP Proximity (facility count/km distance)	0.071	0.18	29	0.41	13	0.31	22
TSDF Proximity (facility count/km distance)	0.008	0.092	21	0.12	2	0.054	13
Water Discharger Proximity (count/km)	0.15	0.33	33	0.19	62	0.25	57
Demographic Indicators							
Demographic Index	38%	51%	12	46%	41	35%	63
Minority Population	53%	77%	12	57%	45	38%	71
Low Income Population	24%	25%	55	35%	38	34%	38
Linguistically Isolated Population	0%	6%	25	9%	20	5%	45
Population with Less Than High School Education	10%	10%	61	18%	41	14%	47
Population under Age 5	6%	6%	50	7%	45	7%	49
Population over Age 64	18%	14%	80	12%	76	13%	70

*The National-Scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

SHIRAMIZU LOO & NAKAMURA
A LIMITED LIABILITY LAW PARTNERSHIP
4357 RICE STREET, SUITE 102
LIHUE, KAUAI, HAWAII 96766

CURTIS H. SHIRAMIZU
LAUREL K. S. LOO
GALEN T. NAKAMURA

TELEPHONE: (808) 632-2267
FACSIMILE: (808) 440-0399

July 26, 2016

Ms. Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office
State of Hawai'i, Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

Re: **DRAFT Environmental Assessment for Baird Family General Plan Amendment; Kapaa, Kauai, Hawaii (TMK (4) 4-4-013-002)**

Dear Ms. McIntyre,

Thank you for your March 23, 2016 response to the Draft Environmental Assessment for the proposed re-designation of the County of Kaua'i General Plan land use of the subject real property from *Agriculture* to *Residential Community*.

The comments and recommendations the Environmental Planning Office ("EPO") made are generally described below in bold italics. Our responses then follow.

1. EPO strongly recommends that you review the standard comments and available strategies to support sustainable and health design provided at http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments.

We have reviewed the standard comments and available strategies in the cited website. Accordingly, the Final Environmental Assessment has been amended to include references to the following programs:

- Clean Air Branch
- Clean Water Branch
- Hazard Evaluation & Emergency Response Office
- Indoor and Radiological Health Branch
- Safe Drinking Water Branch
- Solid and Hazardous Waste Branch
- Wastewater Branch

Our responses to the standard comments and available strategies described in the cited website are summarized below.

Clean Air Branch: The proposed *County General Plan* land use re-designation of the subject property from *Agriculture* to *Residential Community* involves no construction or demolition involving asbestos, or construction in general. Future construction, if any, will comply with Hawaii Administrative Rules ("HAR") §11-60.1-33 concerning *Fugitive Dust*.

Clean Water Branch: The proposed *County General Plan* land use re-designation of the subject property from *Agriculture* to *Residential Community* will not impact the State's water quality standards (HAR chapter 11-54). Future activities on the subject property will comply with State water quality requirements to the extent such requirements may apply to such activities.

Hazard Evaluation and Emergency Response Office: The proposed *County General Plan* land use re-designation of the subject property from *Agriculture* to *Residential Community* does not involve hazardous materials. Because the subject land use re-designation is pending, no development is scheduled to occur on the subject property. If and when development occurs on the subject property because of the subject land use re-designation, all such development will comply with State of Hawai'i Department of Health requirements concerning hazardous materials.

Noise, Radiation, and Indoor Air Quality Branch: Future development of the subject property, if any, resulting from the proposed *General Plan* land use re-designation of the subject property shall comply with requirements of the following Hawaii Administrative Rules, to the extent applicable:

- Chapter 11-39 (Air conditioning and Ventilating);
- Chapter 11-45 (Radiation Control);
- Chapter 11-46 (Community Noise Control);
- Chapter 11-501 (Asbestos Requirements);
- Chapter 11-502 (Asbestos-Containing Materials in Schools);
- Chapter 11-503 (Fees for Asbestos Removal and Certification);
- Chapter 11-504 (Asbestos Abatement Certification Program).

Safe Drinking Water Branch: The proposed *County General Plan* land use re-designation of the subject property from *Agriculture* to *Residential Community* does not create a public water system, dual water system, a potential contaminating activity (as identified in the Hawai'i Source Water Assessment Plan), or propose the use of a non-potable water system. Neither does the proposed re-designation involve underground injection wells or development of a golf course.

Solid and Hazardous Waste Branch: The programs related to this Branch include the management of hazardous waste, regulation of underground storage tanks, and management of solid waste by the counties, as well as programs related to recycling of glass and beverage container deposits. These programs are not related to the

proposed *County General Plan* land use re-designation of the subject property from *Agriculture* to *Residential Community*.

Wastewater Branch: The proposed *County General Plan* land use re-designation of the subject property from *Agriculture* to *Residential Community* does not involve establishment of any new cesspools. If and when development occurs on the subject property because of the subject land use re-designation, all such development will comply with State of Hawai'i Wastewater Branch requirements concerning wastewater.

2. EPO also encourages you to examine and utilize the Hawai'i Environmental Health Portal at: https://eha-cloud.doh.hawaii.gov.

The subject Environmental Assessment concerns a proposed *County General Plan* land use re-designation of the subject property from *Agriculture* to *Residential Community*. The described Portal will provide a wide range of information that will be helpful as the proposed project moves forward.

3. You may wish to review the draft Office of Environmental Quality Control viewer at: http://eha-web.doh.hawaii.gov/oeqc-viewer.

Thank you for providing this link; it is helpful for research purposes as to the island of Kaua'i.

4. In order to better protect public health and the environment, the U.S. Environmental Protection Agency has developed a new environmental justice mapping and screening tool called EJSCREEN, available at: http://www2.epa.gov/ejscreen.

Additional discussion regarding environmental justice has been added to the FEA.

Should you have questions or require additional information, please contact me at (808) 632-2267.

Sincerely,

Galen T. Nakamura

cc: Client