OFFICE OF PLANNING
Leiopapa a Kamehameha, 6th Floor
235 South Beretania Street
Honolulu, Hawaii 96813
Telephone: (808) 587-2846
Facsimile: (808) 587-2824

BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Petition of	DOCKET NO. A92-683
HALEKUA DEVELOPMENT CORPORATION	OFFICE OF PLANNING'S RESPONSE TO HOOHANA SOLAR 1, LLC'S MOTION FOR ORDER AMENDING THE AMENDED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER DATED OCTOBER 1, 1996; EXHIBITS 1-8; AND CERTIFICATE OF SERVICE
To Amend the Agricultural Land Use District Boundary into the Urban Land Use District of Approximately 504.886 Acres of Land at Waikele and Hoaeae, Ewa, Island of Oahu, Hawaii, Tax Map Key Nos: (1) 9-4-002: 001; por. of 052, 070 and 071	

OFFICE OF PLANNING'S RESPONSE TO
HOOHANA SOLAR 1, LLC'S, MOTION FOR ORDER AMENDING THE AMENDED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER DATED OCTOBER 1, 1996

EXHIBITS 1-8 AND CERTIFICATE OF SERVICE

DOCKET NO./PETITIONER: A92-683 HOOHANA SOLAR 1, LLC

PARTY: OFFICE OF PLANNING (OP)

LIST OF WITNESSES

NAME/ORGANIZATION/POSITION (List in Order of Appearance)	TO BE QUALIFIED AS AN EXPERT IN:	SUBJECT MATTER	WRITTEN TESTIMONY (Yes or No)	EXHIBIT NUMBER(S)	LENGTH OF DIRECT
LEO R. ASUNCION or REPRESENTATIVE Acting Director State Office of Planning	Land Use and Environmental Planning	State Position	Yes	1-7	20 min.
SCOTT ENRIGHT or REPRESENTATIVE Chair State Department of Agriculture	Agriculture	Agricultural Facilities and impacts	Yes	4	15 min.
ALAN DOWNER or REPRESENTATIVE State Historic Preservation Division State Department of Land and Natural Resources	Historic Preservation	Archaeological, historic, and cultural resources, cultural impact assessment	Yes	2	15 min.

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BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Petition of HALEKUA DEVELOPMENT CORPORATION A HAWAII CORPORATION To Amend the Agricultural Land Use District Boundary into the Urban Land Use District of Approximately 504.8 Acres of Land at Waikele and Hoaeae, Ewa, Island of Oahu, Hawaii, Tax Map Key Nos: (1) 9-4-002: 001, por. of 052, 070 and 071	DOCKET NO. A92-683 OFFICE OF PLANNING'S RESPONSE TO HOOHANA SOLAR 1, LLC 'S MOTION FOR ORDER AMENDING THE AMENDED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER DATED OCTOBER 1, 1996

OFFICE OF PLANNING'S RESPONSE TO
HOOHANA SOLAR 1, LLC'S
MOTION FOR ORDER AMENDING THE AMENDED FINDINGS OF FACT,
CONCLUSIONS OF LAW, AND DECISION AND ORDER DATED OCTOBER 1, 1996

The Office of Planning ("OP") recommends partial approval, subject to conditions, of successor Petitioner Hoohana Solar 1, LLC's, ("Petitioner") Motion for Order Amending the Amended Findings of Fact, Conclusions of Law, and Decision and Order dated October 1, 1996 ("Motion").

I. INTRODUCTION

The Motion requests that the Land Use Commission ("Commission" or "LUC"): (1) recognize Hoohana Solar 1, LLC as the successor Petitioner with standing to seek and obtain the relief requested; and (2) modify the Commission's Amended Finding of Facts,

Conclusion of Law and Decision and Order dated October 1, 1996 ("Decision and Order"), under Docket No. A92-683 to expressly authorize the use of a portion of Parcel 52 for solar farm development for an interim period not to exceed 30 years, and (3) to delete Condition No. 21 of the 1996 Decision and Order, as amended by the 2013 Order, requiring the Commission's prior approval to change any ownership interest in the Petition area.

OP has no objection to recognizing Petitioner Hoohana as a successor petitioner. OP also has no objection to the proposed change in use, subject to conditions, and has no objection to amending Condition No. 21 to change the current approval requirement to a notice requirement.

OP distributed the Motion to the following agencies for review: Department of Land and Natural Resources; State Historic Preservation Division ("SHPD"); U.S. Fish and Wildlife Services ("USFWS"); Department of Agriculture ("DOA"); Department of Transportation ("DOT"); Department of Health; Commission on Water Resource Management ; Hawaii State Energy Office; and Department of Education. OP's response is based on the representations and documents filed by the Petitioner, including comments received by various State and Federal agencies on potential impacts to their facilities, programs, statutes and regulations applicable to these proceedings.

Subsequent to the filing of the Motion, OP posed questions to the successor Petitioner through an email on September 17, 2014. The successor Petitioner's response to these OP questions is provided in OP Exhibit 8.

II. DISCUSSION OF MOVANT'S REQUESTS

A. Background

Royal Kunia was conceived in the mid-1980s as a master planned residential community in Waipahu, Oahu. In Docket No. A86-600 Waitec Development, Inc., the initial Royal Kunia development consisting of approximately 547.5 acres was reclassified to the Urban District on October 24, 1986 for the development of 2,000 residential units, commercial/industrial areas, park sites and an 18-hole golf course.

On December 9, 1993, the Commission approved the reclassification of 504.8 acres for the development of Royal Kunia Phase II from the State Agricultural District into the Urban

District. Based on a revised master plan, the Commission approved an amended Decision and Order on October 1, 1996. The Phase II development proposed 2,000 residential units, along with light industrial, elementary school, public park and a 150-acre agricultural park. It was anticipated that Phase II would be developed within a 12-year period starting from 1994 (approximate completion date of 2006), although a specific deadline was not included among the conditions.

Royal Kunia Phase II was further divided into three increments. See OP Exhibit 1. Increment 1 was rezoned by the City and County of Honolulu on March 23, 1995 from the AG-1 Restricted Agricultural District into various zoning districts to allow approximately 1,000 single family and low-density apartment units. Increment 2 was rezoned in April 1997 to allow another 1,000 residential units. Increment 3 is zoned by the City as AG-1 but successor Petitioner has indicated that Robinson Kunia Land LLC remains committed to the development of Increment 3 for approximately 850 residential units on Parcel 52. OP notes that the additional units planned for Increment 3 would constitute an overall increase in the total number of units that were initially approved by the LUC.

Condition 19 of the 1996 Decision and Order required the developer to convey an agricultural park to the State and to provide off-site utility infrastructure to the park. In 2004, the developer dedicated 150 acres to the State of Hawaii for an Agricultural Park. The initial Memorandum of Agreement required the submittal of preliminary site plans for these infrastructure improvements by 2008. The deadline was extended three times. (See OP Exhibit 7.) The most recent deadline of December 2013 expired without the submittal of a preliminary infrastructure site plan to the DOA. On October 2, 2014, the Governor announced the release of $300,000 in supplemental design funds for the Kunia Agricultural Park. Plans call for 24 agricultural lots with residential dwellings. To implement the plan, DOA will require the off-site infrastructure committed to be provided by Petitioners.

At the time of the Decision and Order, the Petition Area was either owned or controlled by the original Petitioner Halekua Development Corporation. Halekua subsequently lost control of the Petition Area. Different parts of the Petition Area are now owned by Robinson Kunia Land LLC, Canpartners IV Royal Kunia Property LLC, HRT Realty, LLC, 300 Corporation, Honolulu Limited, and RKES LLC.

Within the Petition Area, Parcel 52 is owned by Robinson Kunia Land LLC which entered into a two year Option Agreement with Forest City to develop Parcel 52 for a solar energy project. Forest City, in turn, joined with Hanwha Q Cells USA to create the current movant Hoohana Solar 1, LLC ("Hoohana Solar" or "Petitioner").

B. Request to Recognize Hoohana Solar as a Successor Petitioner

The Hoohana Solar filing requests that it be recognized as a successor Petitioner with standing to file the Motion to Amend. OP has no objection to the designation of Hoohana Solar as a successor Petitioner. OP notes, however, that there are a number of new landowners that may also be named as successor Petitioners, that all of the new landowners are bound by the conditions of the LUC's Decision and Order, that the obligations are jointly held by all of the new landowners, and that the failure to comply with those conditions by any landowner may constitute a basis by which the LUC could issue an Order to Show Cause against all of the landowners.[1]

C. Request to Amend Condition No. 21

Currently, Condition No. 21 requires, among other things, that any change in ownership of the Petition Area receive prior approval from the LUC. Although the motion asks that Condition No. 21 be deleted, the memorandum in support of the motion asks that Condition No. 21 be modified to allow for notification of a change in ownership rather than prior approval of a change in ownership. OP has no objection to an amendment of Condition No. 21 to allow for notification rather than prior approval of a change in ownership, but would have significant reservations if condition No. 21 was deleted in its entirety without any replacement condition.

D. Request to Allow for a Change in Use

1. Proposed use of the Project.

The successor Petitioner of this Motion is a joint venture between the developer (Forest City) and a renewable energy company (Hanwha Q Cells), to develop a utility scale solar energy facility for an interim period of up to 30 years. The proposed solar farm consists of 12 power stations containing solar panels capable of producing 20 megawatts ("MW") of power on approximately 124 acres of the total 163.2-acre parcel. The solar energy facility includes a substation, operations building, control building, watchman building, transformer, and a booster

[1] Upon inquiry from OP, Hoohana Solar informed us that they would not be asking for a bifurcation of the land and the creation of a new subdocket to sever the joint responsibilities.

pump. Three small water storage tanks will be provided by the Petitioner for the purpose of bi-annual cleaning of the solar panels. The perimeter of the solar farm will be enclosed by an 8-foot high chain link fence and a 12,000-square foot substation will be enclosed by a 9-foot high chain link fence with barbed wires at the northwest portion of the site near the existing Hawaiian Electric Company (HECO) utility line. According to the Petitioner, the solar farm will establish different HECO grid connection points and will not interfere with the utility lines for residential photovoltaic system connections.

The project site is east of Kunia Road and direct access to the solar farm will be from Plantation Road via Kunia Road crossing Parcel 9-4-003: 001. According to the proposal, there will be occasional visitors and students on the premises for educational purposes and community outreach. There is presently a farm operator with vegetable cultivation under a short-term lease on Parcel 52 and there is an agreement with the Petitioner to vacate the site when the proposed solar farm is developed. The Petitioner indicates that the project's preparation and construction phase may take up to 12 months and the solar farm is anticipated to be in operation by June 15, 2016 for tax credit purposes.

2. Future use of the Project.

The Petitioner states that Increments 1 and 2 are not yet completed and the combination of the two may take up to a total of 15 years to develop. The Petitioner argues that the proposed solar farm is a viable use of the property during this period. They further stated that the solar farm will benefit the surrounding community as an energy producer with the capacity to deliver up to 46 million kilowatt hours of electricity to HECO annually. Thus, Petitioner would like to have the solar farm in operation by June 15, 2016 to take advantage of federal tax credits and not leave the lands idle. According to the Petitioner, after the solar farm is no longer in operation, the developer; Royal Kunia, LLC, will remain committed to the 850 residential units, including the affordable housing component in the development of Increment 3.

3. Consistency with urban district standards and State and county plans.

The proposed use for solar farm development is consistent with the Urban District classification and Commission rules for Urban District standards and permissible uses, Hawaii Administrative Rules §§ 15-15-18 and 15-15-24. Unlike other proposals for utility scale solar energy facilities on Agricultural District lands, this use is fully permissible in the Urban District.

Solar energy production is a clean renewable energy resource strongly supported by the State to promote energy self-sufficiency and reduce our reliance on imported fossil fuels.

The proposed solar farm is defined as a "utility installation" in Chapter 21-10.1 of the Revised Ordinances of Honolulu and is permitted within any zoning designation of the County with a Conditional Use Permit-Minor Type A or Type B.

OP also has no objection to the proposed change in use, subject to the imposition of conditions as discussed below.

III. KEY ISSUES OF CONCERN TO THE STATE

The following summarizes the concerns identified by various State agencies, and includes recommendations for proposed conditions to mitigate potential impacts from the proposed solar project.

A. Timely Performance. OP acknowledges that circumstances sometimes change, and that different uses may be appropriate for the Petition Area that were not originally proposed. In such cases, a motion to amend is an appropriate process. Nonetheless, OP also recognizes that after two decades, Increment 1, Increment 2 and Increment 3 are all uncompleted. Furthermore, the proposed interim use will occupy the site until the year 2045, which is 50 years after the initial Royal Kunia Phase II project was approved in 1993. The 1996 Decision and Order does not require the project to be completed by a deadline; however, it states that Phase II is anticipated to be completed in 12 years. Under Condition No. 20, the landowners are required to develop the Petition Area "in substantial compliance with the representations made to the Commission."

To balance the need to adapt to changing circumstances with the importance of timely performance, OP recommends requiring a revised master plan for Phase II (including Increments 1, 2, and 3), with a schedule for the development of the entire Petition Area. OP accepts the change in circumstances justifying the development of Increment 3 as a solar project and the State generally supports the development of clean renewable fuel sources; but an updated master plan and schedule may spur development of Increments 1 and 2 on a timely basis and integrate such development with Increment 3.

B. Historical or Archaeological Assessment. In its letter dated September 19, 2014, the SHPD indicates that a review is pending for an August 1, 2014 Archaeological Inventory Survey

("AIS") submitted by the Petitioner. The AIS identifies a historical road complex at the project site and three historical sites adjacent to the site. At the time of this submittal SHPD has not yet completed its review. SHPD's comments will be provided to the LUC and Petitioners as soon as it is received. Although OP does not object to the granting of the motion in the absence of SHPD's comments, it does recommend that the LUC condition its order upon SHPD's approval of the AIS prior to any ground-disturbing activity. Similar conditions have been imposed in other district boundary amendment cases. (See OP Exhibit 2).

Recommended Mitigation: No ground altering permits shall be obtained prior to the approval of the Archaeological Inventory Survey.

C. Transportation.

The State DOT provided comments relating to State highways and airport facilities as follows: (See OP Exhibit 3)

1. ***State Airports.*** The Property is identified as being subject to overflights from aircraft in the project vicinity. The DOT cautions that the possible glare reflections from the photovoltaic arrays can create hazardous conditions for the visibility of the pilots. The Petitioner is asked to refer to the Sandia National Laboratories' website (www.sandia.gov/glare) that contains tools to help evaluate solar glare and receiver irradiance based on a glint and glare analysis.

Recommended mitigation: The DOT recommends that Petitioner shall immediately mitigate any hazardous condition for pilots caused by the Photovoltaic array upon notification by the Department of Transportation, Airports Division (DOT-A) or the Federal Aviation Administration (FAA).

2. ***State Highways.*** The State DOT stated that their comments for the proposed use will not eliminate nor replace their concerns over the roadway improvements triggered by Increment 1 and 2. The State DOT finds that the proposed solar farm should not adversely impact State highway facilities once the facility is constructed. If, however, the solar panels as constructed negatively affects the safety of motorists, DOT recommends that mitigation measures may need to be taken.

Recommended mitigation: OP recommends that the facility operator shall immediately mitigate any hazardous condition for motorists caused by the photovoltaic array upon notification by the Department of Transportation.

D. Agricultural Resources. In its letter of September 23, 2014, the State DOA has provided substantive comments. (See OP Exhibit 4.)

It is noted that dust and other environmental by-products are frequently generated by the agricultural field operations to the north and west, therefore, the DOA advised that the Petitioner should contact the DOA regarding these areas and also the residential areas. The State DOA recommends additional clarifications to disclose who the current farm lessee is on Parcel 52, what is the total acreage in agricultural production, and any alternative plans they may have upon the commencement of the solar farm operation. The DOA also recommends the Petitioner consider the use of sheep grazing for vegetation control within the area of solar facilities as proposed by other utility scale solar projects on Oahu.

The DOA strongly disagrees that Condition No. 19 has been met to-date by the Petitioner. Condition No. 19 required the Petitioner not only to convey a 150-acre Agricultural Park to the State, but also to provide off-site infrastructure to the park, in accordance with the terms of the March 30, 1993 Memorandum of Understanding entered into agreement by the Petitioner and the DOA. Condition 19 has not been fulfilled, and the latest deadline for submittal of infrastructure plans has expired. DOA recently received an appropriation, allotment, and release of funds for development of the on-site infrastructure within the Agricultural Park. The development of the off-site infrastructure within the Petition Area is now becoming time-sensitive.

Recommended Mitigation: OP and the DOA recommend that preliminary infrastructure site plans be submitted and approved by DOA within six months from the date of the Decision and Order in this case, and that construction of such infrastructure should be commenced before commencement of construction for the solar project. Six months should be ample time for the completion of these preliminary infrastructure site plans. In recognition of Hoohana Solar's need to construct soon, OP is requiring that the off-site infrastructure construction be commenced, before construction of the solar farm is

commenced. OP's recommendation also allows Hoohana Solar to receive its approval from the LUC even though Condition No. 19 is currently being violated.

E. Fish and Wildlife. In its September 24, 2014 letter, (OP Exhibit 5) the USFWS indicated that the federally endangered Hawaii Hoary Bat (Lasiurus Cinereus Semotus) which may forage and roost in the project area was not mentioned in the Petitioner's biological survey. The letter noted that these bats could be at risk as the trees or shrubs suitable for bat roosting are cleared during the breeding season. The USFWS recommends that disturbance to woodsy plants of 15 feet or greater should be avoided during the pup rearing seasons from June 1 through September 15.

The USFWS also indicates that there have been some concerns with photovoltaic systems in the U.S. Mainland where waterfowls and shorebirds' safety have been affected due to a resemblance of water with the solar panels and its proximity to important migratory paths.

Recommended Mitigation: In order to provide protection to the various Hawaiian water birds, the Petitioner should consult with the USFWS for the coordination of training programs and measures to mitigate adverse impacts on endangered and migratory avian species.

IV. CONCLUSION AND RECOMMENDATIONS

With the understanding that the original conditions remain valid, OP recommends that approval of the proposed interim solar farm use be subject to the following additional conditions:

1. Revised Master Plan. Petitioner shall submit a revised master plan and a schedule for the development of the Petition Area within one (1) year from the date of this Decision and Order.
2. Fish and Wildlife Protection. Petitioner shall consult with the US Fish and Wildlife Service to coordinate training programs and measures to mitigate adverse impacts on endangered and migratory avian species.
3. Archaeological and Historic Resources. No ground altering activities shall occur prior to obtaining approval of the Archaeological Inventory Survey from the State Historic Preservation Division.

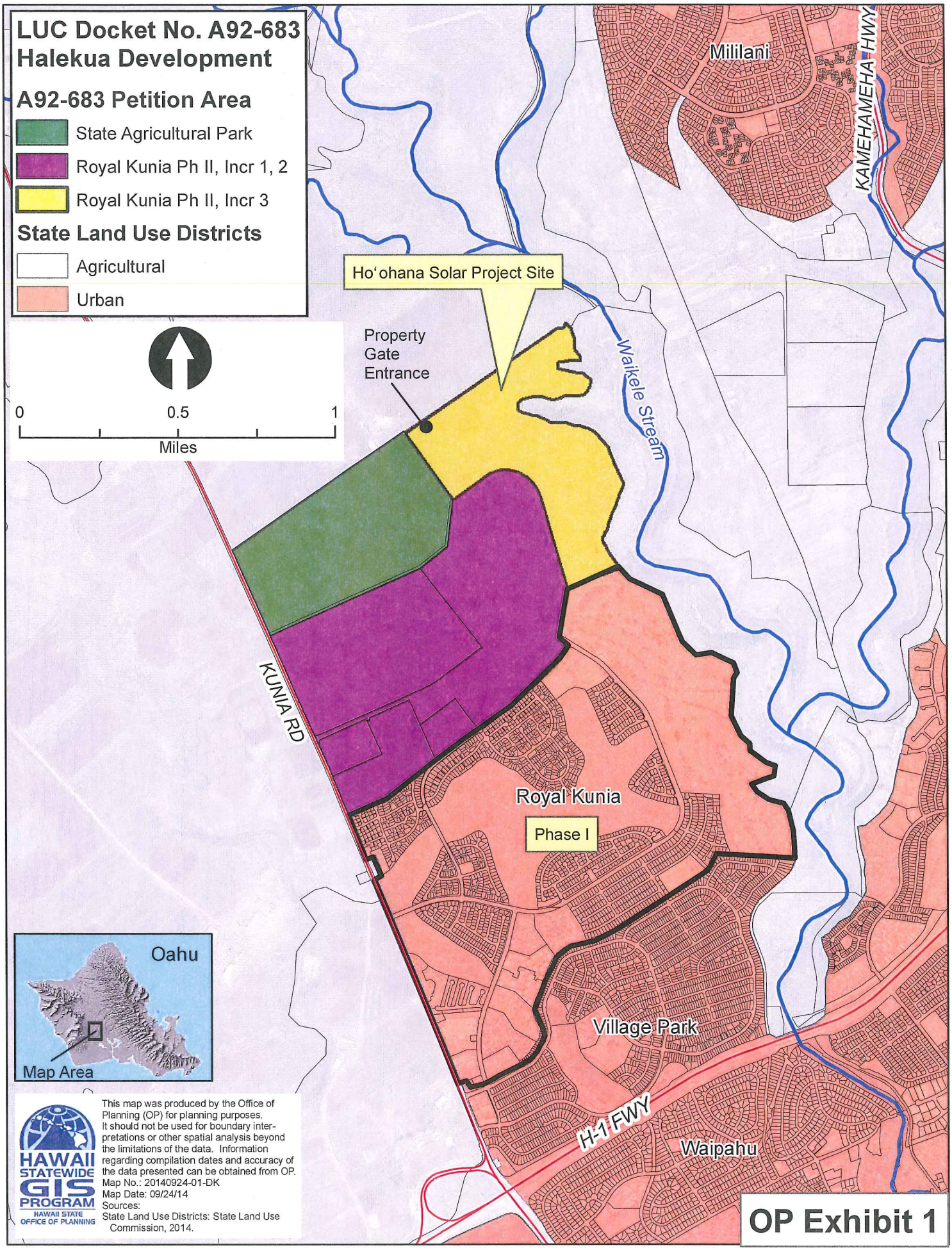
4. Aircraft and Traffic Hazard. If the photovoltaic array creates a hazardous condition for pilots or motorist, the facility operator shall immediately mitigate the hazard upon notification by the Department of Transportation.
5. State Agricultural Park. A preliminary infrastructure site plan acceptable to the State Department of Agriculture shall be completed within six (6) months from the approval date of the amended Decision and Order. Construction of the required infrastructure shall be commenced prior to the start of construction of the solar farm. Construction of the required infrastructure shall be completed to the satisfaction of the Department of Agriculture prior to the commencement of full operation of the solar farm.
6. Development Schedule. The proposed solar farm shall be substantially completed within two (2) years from the approval date of the amended Decision and Order.
7. Compliance with Representations. Petitioner shall develop the solar farm in substantial compliance with its representations reflected in the amended Decision and Order. Failure to so develop the Petition Area may result in reversion of the Petition Area to its former classification, or change to a more appropriate classification.

Based on the foregoing information and analysis, OP recommends approval of the Motion for Order Amending Findings of Fact, Conclusions of Law and Decision and Order dated October 1, 1996, subject to the conditions recommended above.

DATED: Honolulu, Hawaii, this 8th day of October 2014.

OFFICE OF PLANNING
STATE OF HAWAII

LEO R. ASUNCION JR.
Acting Director


LUC Docket No. A92-683
Halekua Development
A92-683 Petition Area
State Agricultural Park
Royal Kunia Ph II, Incr 1, 2
Royal Kunia Ph II, Incr 3
State Land Use Districts
Agricultural
Urban
0
0.5
1
Miles
Ho'ohana Solar Project Site
Property
Gate
Entrance
Waikele Stream
Mililani
KAMEHAMEHA HWY
KUNIA RD
Royal Kunia
Phase I
Village Park
H-1 FWY
Waipahu
Oahu
Map Area
HAWAII STATEWIDE GIS PROGRAM
HAWAII STATE OFFICE OF PLANNING
This map was produced by the Office of Planning (OP) for planning purposes. It should not be used for boundary interpretations or other spatial analysis beyond the limitations of the data. Information regarding compilation dates and accuracy of the data presented can be obtained from OP.
Map No.: 20140924-01-DK
Map Date: 09/24/14
Sources:
State Land Use Districts: State Land Use Commission, 2014.
OP Exhibit 1

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

JESSE K. SOUKI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

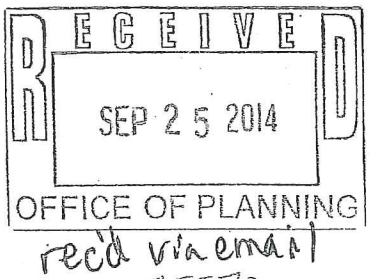
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

September 19, 2014

Russel Y. Tsuji, Land Administrator
Land Division
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

LOG: 2014.03815
DOC: 1408GC10
Archaeology



Leo R. Asuncion, Acting Director
Office of Planning, State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Sirs:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
Motion to Amend Decision and Order – Ref. No. P-14472
Land Use Commission Docket No. A92-683 – Hoʻohana Solar 1 LLC
Waikele and Hoʻaeʻae Ahupuaʻa, ʻEwa District, Island of Oʻahu
TMK: (1) 9-4-002:001, 052 por., 070 and 071

Thank you for the opportunity to respond to your request for comments on the subject Motion to Amend Decision and Order for Land Use Commission Docket No. A92-683 as it relates to the State Historic Preservation Division (SHPD), Department of Land and Natural Resources (DLNR) jurisdiction on this Motion. The fee owner, Robinson Kunia Land LLC (RKL), TMK: (1) 9-4-002:052, seeks to expressly authorize the use of portions of their property for solar farm development for a period not to exceed 30 years. The proposed Motion to Amend Decision Order applies to the *entire 161.203-acre RKL property*, while the proposed solar farm development applies to only 124 acres. We received this submittal on August 21, 2014.

Description of Proposed Solar Farm Project
The motion involves a proposal to establish a solar farm system within 124 acres of the 161.203-acre parcel 052 on the elevated portion of the parcel outside of the floodplain or drainage areas. The project involves installation of a pier-mounted, single axis racking system 20-MW photovoltaic modular systems. Installation of the support piers will involve "pile-driving" of support posts to an anticipated depth of 7 feet. Grading will involve leveling the slope of the property from 2%-15% to 2%-8%, and leveling a three to five feet high, 2,000 feet long berm along the western portion of the property. Drainages and retention basins will also be constructed. The proposed plan also involves construction of 16 concrete equipment or building pads measuring between 24 feet by 14 feet to 30 feet by 30 feet, along with smaller concrete pads for substation equipment.

The Land Use Commission Docket indicates that based on a previous archaeological survey conducted by Kennedy (1988) in support of the proposed Royal Kunia Phase II project, "the prospect of any remaining archaeological site was judged to be remote." In addition, the docket indicates a 1989 letter from DLNR that the proposed project (Royal Kunia Phase II) will have "no effect" on historic properties.

SHPD Review

Our records indicate three archaeological studies have investigated portions of the proposed project area and/or vicinity (Kennedy 1988, Walden et al. 2013). Kennedy (1988) conducted a brief archaeological reconnaissance survey (pedestrian and windshield) of approximately 670 acres within TMK: (1) 9-4-002:001 and 009, in support of the proposed Royal Kunia, Phase II project. Kennedy (1988) notes that the subject property contains no remaining, above ground archaeological features and offers little opportunity for subsurface recovery.

Walden et al.'s (2013) report covered approximately 152 acres within TMK: (1) 9-4-002:050 and 064 in support of a proposed photovoltaic Project in Kunia, Ho'ae'ae and Waikele. The study identified no archaeological sites within the project area which was limited to a systematic pedestrian coverage and pedestrian point inspections.

Our records also indicate that Scientific Consultants Services, Inc. (SCS) (Wong and Spear 2014) submitted a draft archaeological inventory survey for the proposed Ho'ohana Solar I property. SHPD received this draft report on August 1, 2104 and it is currently under review. The results of this investigation included the identification a historic road complex comprised of three features: a road alignment, a wall, and paved segments (50-80-08-7671). Furthermore our records indicate that three historic sites are located adjacent to the proposed Ho'ohana Solar project: the Waikakalaua Gulch Shelter Caves (Site 50-80-09-2920 and 2921); the Waikakalaua Rock Shelter (Site 2919) and the Waikakalaua Rock Quarry (2922).

SHPD Determination

Based on the above information we are **unable to make a determination at this time**, until after our review of the archaeological report submitted by SCS has been completed. In addition, our records indicate that parcel 52 or portions of parcel 52 were not part of the above mentioned studies and previous determinations. Therefore, we request that issuance of any ground altering permits be delayed until after our review of the Archaeological Inventory Survey Report for the Ho'ohana Solar Farm Project in Kunia, Waikele 'Ahupuaa, by Scientific Consultant Services, Inc.

Please contact Susan A. Lebo at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Theresa K. Donham
Archaeology Branch Chief

cc: Jenny S. Lee, Office of Planning (jenny.s.lee@dbedt.hawaii.gov)

NEIL ABERCROMBIE
GOVERNOR

FORD N. FUCHIGAMI
INTERIM DIRECTOR

Deputy Directors
RANDY GRUNE
AUDREY HIDANO
ROSS M. HIGASHI
JADINE URASAKI

IN REPLY REFER TO:

STP 8.1664

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

September 17, 2014

RECEIVED
SEP 24 2014
OFFICE OF PLANNING

ORIGINAL
75552

TO: THE HONORABLE LEO R. ASUNCION, ACTING DIRECTOR
OFFICE OF PLANNING

FROM: FORD N. FUCHIGAMI
INTERIM DIRECTOR OF TRANSPORTATION

SUBJECT: MOTION TO AMEND DECISION AND ORDER
LAND USE COMMISSION DOCKET NO. A92-683,
HOOHANA SOLAR I, LLC

Thank you for the opportunity to comment on the subject Motion for Order. Our Department of Transportation (DOT) comments are provided below:

Airports Division

The proposed project site is located in an area that aircraft regularly fly over as they fly between the north and south portions of Oahu. In addition, the project site's location is an area where aircraft circle when they are in hold patterns for air traffic reasons. Photovoltaic (PV) systems can create a hazardous condition for a pilot due to possible glint and glare reflected from the PV array.

If glint or glare from the PV array creates a hazardous condition for pilots, the company must be prepared to immediately mitigate the hazard upon notification by the Department of Transportation, Airports Division (DOT-A) or the Federal Aviation Administration (FAA). The following website may assist the developer with preparation of a glint and glare analysis in order to minimize any potential hazard: www.sandia.gov/glare

Highways Division

The proposed solar farm is on land that constitutes Increment 3 of Royal Kunia II, and is intended as an interim measure prior to future development of the parcel for residential use. Regarding the development of Royal Kunia II, our comments on the proposed project on Increment 3 do not alleviate, replace, or minimize our concerns over roadway improvements arising from Increment 1 and Increment 2 of Royal Kunia II. It should also be noted that we may have additional concerns over the future development of Increment 3 as a residential development.

OP EXHIBIT 3
Docket No. A92-683

The development of a solar farm on Parcel 052 (Increment 3) is not anticipated to impact our State highways once the facility is constructed. Maintenance traffic is expected to be minimal. However, the issue of reflected glare that might affect motorists should be addressed, and mitigation measures should be taken, as needed, to maintain the safety of the motoring public. After construction, should reflected glare from the solar farm adversely impact the motoring public, the developer should be required to mitigate the adverse impacts.

If there are any questions, please contact Mr. Norren Kato at the DOT Statewide Transportation Planning Office at telephone number (808) 831-7986.

NEIL ABERCROMBIE
Governor

SCOTT E. ENRIGHT
Chairperson, Board of Agriculture

KEN H. KAKESAKO
Deputy to the Chairperson

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512
Phone: (808) 973-9600 FAX: (808) 973-9613

September 23, 2014

Mr. Leo Asuncion, Acting Director
Office of Planning
235 South Beretania Street, 6th Floor
Honolulu, Hawaii 96804

Dear. Mr. Asuncion:

Subject: Motion to Amend Decision and Order
Land Use Commission Docket No. A92-683
Hoohana Solar 1, LLC
Interim Solar Farm Use
TMK: 9-4-02: 52 Wakele and Hoaeae, Ewa, Oahu
Area: 161.023 acres

The Department of Agriculture (DOA) has reviewed the subject petition and offers the following comments and recommendations on, (1) the use of parcel 52 for solar energy facilities, and (2) the design and construction of off-site infrastructure improvements for the DOA's Royal Kunia Agricultural Park by Halekua-Kunia, LLC.

Overview of Petition:

The 161-acre petition area referred to as Parcel 52 is a portion of the 504.865 acre area referred to as Royal Kunia Phase II (RKPII). RKPII is divided into 3 increments. Parcel 52 (161.023 acres) is the third increment and slated for residential development. The motion before the LUC by the petitioner is to modify the LUC's amended findings of fact, conclusions of law, and decision and order by deferring the LUC's condition and to

authorize the use of Parcel 52 for a 124-acre, 20-megawatt solar farm development as an interim use for 30 years. Forty (40) acres will be directly covered by the photovoltaic (PV) modules (Memorandum in Support of Motion, page 14). The petitioner states the deferral of residential development on Parcel 52 is justified because such development "...is not feasible until the infrastructure from Increments 1 and 2 are established..." (Memorandum, page 8)

The properties surrounding Parcel 52 include active and fallow agricultural lands and the 150-acre Royal Kunia Agricultural Park (RKAP) to the north and west, vacant military and federal zoned land to the east, and the proposed RPKII, Increments 1 and 2 to the southwest.

Other than the petitioner's contact with the DOA's Apiculture Specialist regarding the planting of cover crops for pollinators, the petitioner has not directly contacted DOA about this project and its potential impact on the RKAP.

Solar Energy Facilities:

The solar energy facilities will occupy 124 acres of the 161-acre Parcel 52. Approximately 80,000 photovoltaic (PV) modules will be mounted on a rotating single-axis racking system 4 to 9 feet off the ground. A substation will occupy about one-quarter of an acre along or near the northwestern edge of Parcel 52. DOA is unable to ascertain from petitioner's Exhibit 9 (Electrical Site Plan) where the substation and the PV modules will be located with respect to the RKAP. The petitioner should be made aware that agricultural field operations to the north and west will likely produce dust and other environmental byproducts now and into the future. We recommend the petitioner contact DOA regarding the location of the agricultural production area and the residential component of the RKAP.

Access to Parcel 52 is to be along Plantation Road from Kunia Road along TMK 9-4-03: parcel 1 that abuts the northern boundary of Parcel 52. This road appears to be along the southern boundary of the RKAP. The Memorandum states that "Other existing farm roads and perimeter access points within the site will provide direct access to the Project areas." (Memorandum, page 20) The Memorandum does not state if the "existing farm roads" includes roads within the RKAP. If so, we recommend the petitioner immediately contact the DOA.

The petitioner states that Parcel 52 is "...currently used for agricultural purposes." (Memorandum, page 22) We recommend the petitioner indicate who the farmer is, the acreage in production, and what will become of the farming operation when construction of the solar array facility begins.

The petitioner states that low maintenance grasses will be planted in and around the solar arrays and that they are considering planting cover crops for pollinators on about 10 to 15 acres in portions of Parcel 52 that will not be used for solar panels. (Memo, page 15) DOA supports the proposed planting of cover crops for pollinators. We recommend that petitioner consider making the area under the solar arrays available to sheep farmers on an as-needed basis who may graze their animals. Solar energy companies testifying before the State Legislature this past session asserted that sheep ranching is compatible with solar energy facilities and there is a market for sheep products in Hawaii.

Design and Construction of Off-Site Infrastructure Improvement for the Royal Kunia Agricultural Park by Halekua-Kunia, LLC.:

To date, the State Legislature has appropriated $3.75 million for the planning, design, and construction of the RKAP. The fully-developed Park will offer over 120 acres of irrigated prime farm land and clustered housing to approximately 25 lessees.

Fundamental to the completion of the RKAP is the provision of off-site infrastructure to the RKAP as stated in the amended Decision and Order, dated October 1, 1996 and the Memorandum of Understanding between Halekua Development Corporation, now Halekua Kunia LLC, dated March 30, 1993.

The petitioner states that "Canpartners and Stanford Carr Development ("SCD") estimate that the completion of Royal Kunia Phase II, Increments 1 and 2 will take 15 years *or more* to complete. As envisioned by the Development Plan for Increment 3, *see* **Successor Petitioner's Exhibit 4** Section 2.2.3, at 15, Increment 3 was always planned to be developed after Increments 1 and 2, and plans to utilize the infrastructure built as a part of the completion of Increments 1 and 2." (Memorandum, page 27)

The petitioner goes on to state that "On January 14, 2014, Halekua-Kunia, LLC filed the *Status Report on the Applicant's Compliance with Conditions of Amended Decision and Order (Docket No. A-92-683, October 1, 1996)* ("**2014 Status Report**"), detailing Halekua-Kunia, LLC's status of compliance with the 25 conditions imposed by the 1996 Order. With regards to the applicability of the remaining conditions to proposed solar farm, Hoʻohana asserts that:

. . .

"Condition No. 19, requiring Petitioner to convey lands to the State of Hawai`i to provide for an agricultural park has been met." (Memorandum, page 28)

The DOA strenuously disagrees that Condition No. 19 has been met. Condition No. 19 (Docket No. A92-683, Decision and Order, dated October 1, 1996) states, in its entirety, that:

"Petitioner shall convey the agricultural park to the State of Hawai`i, and provide off-site infrastructure to the agricultural park, pursuant to the terms of the Memorandum of Understanding dated March 30, 1993 entered into by Petitioner and the Department of Agriculture." (emphasis added)

The DOA is awaiting the developer to fully comply with Condition No. 19. The DOA recommends that the petitioner demonstrate that the proposed amendment to the 1996 Decision and Order to allow a solar energy facility will not negatively affect in any way the complete, timely, and satisfactory delivery of off-site infrastructure to the RKAP.

Sincerely,

Scott E. Enright
Chairperson, Board of Agriculture

c: Agricultural Resource Management Division, Department of Agriculture

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai`i 96850

In Reply Refer To:
2014-TA-0406

SEP 23 2014
RECEIVED
SEP 24 2014
OFFICE OF PLANNING

Mr. Leo Asuncion
Office of Planning
State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804

Subject: Technical Assistance for the Motion of Order for the Development of Hoohana Solar Facility, Oahu

ORIGINAL
7554?

Dear Mr. Asuncion:

See A-14472

The U.S. Fish and Wildlife Service received your letter, dated August 18, 2014, in which you requested comments on the Motion of Order to authorize the development of the Hoohana Solar Facility on the State Land Use Commission ("Commission") docket Number A-92-683. If the Commission approves the Motion, Parcel 52 [TMK 9-4-002:052] will be used as a 20 megawatt solar farm for an interim time to not exceed an operational period of 30 years. This parcel is owned by Robinson Kunia Land LLC and was originally planned for residential development as part of the Royal Kunia Phase II Project. However, Robinson Kunia Land LLC is now proposing to lease the parcel to Hoohana Solar. The solar facility will be sited on approximately 124 acres of Parcel 52's 161 acres, on the elevated portion of the site outside any floodplan or drainage areas. The parcel is bordered by active and fallow agricultural uses to the north and west, vacant military lands and Waikele Stream to the east, and proposed residential developments to the southwest. The completed project will include 80,000 solar panels, each 39 by 77 inches, between 4 and 9 feet off the ground. The site will be surrounded by a 7-foot chain link fence topped with 1-foot of barbed wire. This response is in accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*).

We offer the following comments to assist the Commission and Hoohana Solar: We understand a biological survey conducted by AECOS, Inc. indicated no threatened or endangered species found on the proposed project site. However, the federally endangered Hawaii hoary bat (*Lasiurus cinereus semotus*) may forage and roost in the project area. There is no proposed or designated critical habitat located in the area.

TAKE PRIDE® IN AMERICA

OP EXHIBIT 5
Docket No. A92-683

The Hawaiian hoary bat roosts in both exotic and native woody vegetation and, while foraging, will leave young unattended in "nursery" trees and shrubs when they forage. If trees or shrubs suitable for bat roosting are cleared during the breeding season, there is a risk that young bats could inadvertently be harmed or killed. To minimize impacts to the endangered Hawaiian hoary bat, woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15). Site clearing should be timed to avoid disturbance to Hawaiian hoary bats in the project area. Additionally, Hawaiian hoary bats have been snagged on barbed wire fencing while flying. We recommend that the solar facility fence design be modified to avoid the use of barbed wire.

Please note that some photovoltaic systems on the United States mainland are resulting in impacts to migratory waterfowl and shorebirds. This source of mortality has been described previously (McCrary et. al. 1986), and recent impacts are being observed at solar facilities in California, including the Desert Sunlight Solar Farm and Genesis Solar Energy Project. Birds have been inadvertently attracted to these sites due to solar panels' resemblance to water and their proximity to important migratory flyways (Donnelly-Shores 2013 and Clarke 2013). Once attracted, collisions with the solar arrays have resulted in injuries and mortalities; once grounded, birds are also subject to predation (Kagan et. al. 2014). While attraction to solar arrays has not yet been documented in Hawaii, the State harbors a significant diversity of waterbird and shorebird species, including the federally endangered Hawaiian coot (*Fulica alai*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian moorhen (*Gallinula chloropus*), Hawaiian duck (*Anas wyvilliana*), and Hawaiian goose (*Branta sandvicensis*). We recommend that personnel at the solar site be educated about the potential for birds to be attracted and inadvertently harmed. If monitoring indicates that species are occurring at the photovoltaic system, or additional information about the facility's impacts to native Hawaiian species becomes available, please contact us so we may assist you in avoiding and minimizing impacts.

We hope this information assists the Commission with their approval process. If the project is approved, we recommend Hoohana Solar contact us so we may assist them in further refining their project plans and measures to avoid impacts to threated and endangered species. If you have questions about our comments, please contact Aaron Nadig, Assistant Field Supervisor; Oahu, Kauai, American Samoa, NWHI (phone: 808-792-9400, fax: 808-792-9581).

Sincerely,

Vickie Caraway
Acting Assistant Field Supervisor
Oahu, Kauai, Am Samoa, NWHI

References:

Clarke, C. 2013. "*Endangered Bird Found Dead at Desert Solar Power Facility*" (On-line), KCET. Available online at http://www.kcet.org/news/rewire/solar/photovoltaic-pv/endangered-bird-dead-at-desert-solar-facility.html

Donnelly-Shores, P. 2013. "*Big Solar and Avian Mortality*" (On-line), Berkeley Energy & Resources Collaborative. Available online at http://berc.berkeley.edu/big-solar-and-avian-mortality/

Kagan et. al. 2014. National Fish and Wildlife Forensics Laboratory. Avian Mortality at Solar Energy Facilities in Southern California: A Preliminary Analysis.

McCrary et. al.1986. Avian Mortality at a Solar Energy Power Plant. Journal of Field Ornithology 57(2):135-141.

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

September 18, 2014

State of Hawaii
Office of Planning
Attn: Leo R. Asuncion, Acting Director
P.O. Box 2359
Honolulu, Hawaii 96804

via email: jenny.s.lee@dbedt.hawaii.gov

Dear Mr. Asuncion,

SUBJECT: Motion to Amend Decision and Order: Land Use Commission Docket No. A92-683, Hoohana Solar 1, LLC

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from (1) Land Division – Oahu District; and (2) Engineering Division. No other comments were received as of our suspense date. Should you have any questions, please feel free to call Supervising Land Agent Steve Molmen at 587-0439. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)

OP EXHIBIT 6
Docket No. A92-683

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

August 25, 2014

MEMORANDUM

'14 AUG 26 P01:25 ENGINEERING
LAND DIVISION

2014 SEP 16 PM 2:33
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

TO: PR.

DLNR Agencies:
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
___Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

TO:
FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Motion to Amend Decision and Order: Land Use Commission Docket No. A92-683, Hoohana Solar 1, LLC
LOCATION: Waikele and Hoaeae, Ewa, Oahu; Tax Map Key: (1) 9-4-002: 1, 9-4-002: (portions of) 52, 70 and 71
APPLICANT: Ho`ohana Solar 1, LLC

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document which can be found here:

1. Go to: https://sp01.ld.dlnr.hawaii.gov/LD
2. Login: Username: LD\Visitor Password: 0pa$$word0 (first and last characters are zeros)
3. Click on: Requests for Comments. Click on the subject file "Motion to Amend Decision and Order: Land Use Commission Docket No. A92-683, Hoohana Solar 1, LLC", then click on "Files" and "Download a copy". (Any issues accessing the document should be directed to Jonathan Real, Applications/Systems Analyst at 587-0427 or Jonathan.C.Real@hawaii.gov)

Please submit any comments by September 17, 2014. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(✓) Comments are attached.

Signed:
Print Name: Carty S. Chang, Chief Engineer
Date: 9/4/14

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
REF: Motion to Amend Decision and Order by Hoohana Solar 1 of LUC Docket No. A92-683
Oahu 052

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) **Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone D, an area where flood hazards are undetermined.**

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.

( ) Mr. Carolyn Cortez at (808) 270-7253 of the County of Maui, Department of Planning.

( ) Mr. Stanford Iwamoto at (808) 241-4896 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: _____

_____

( ) Other: _____

_____

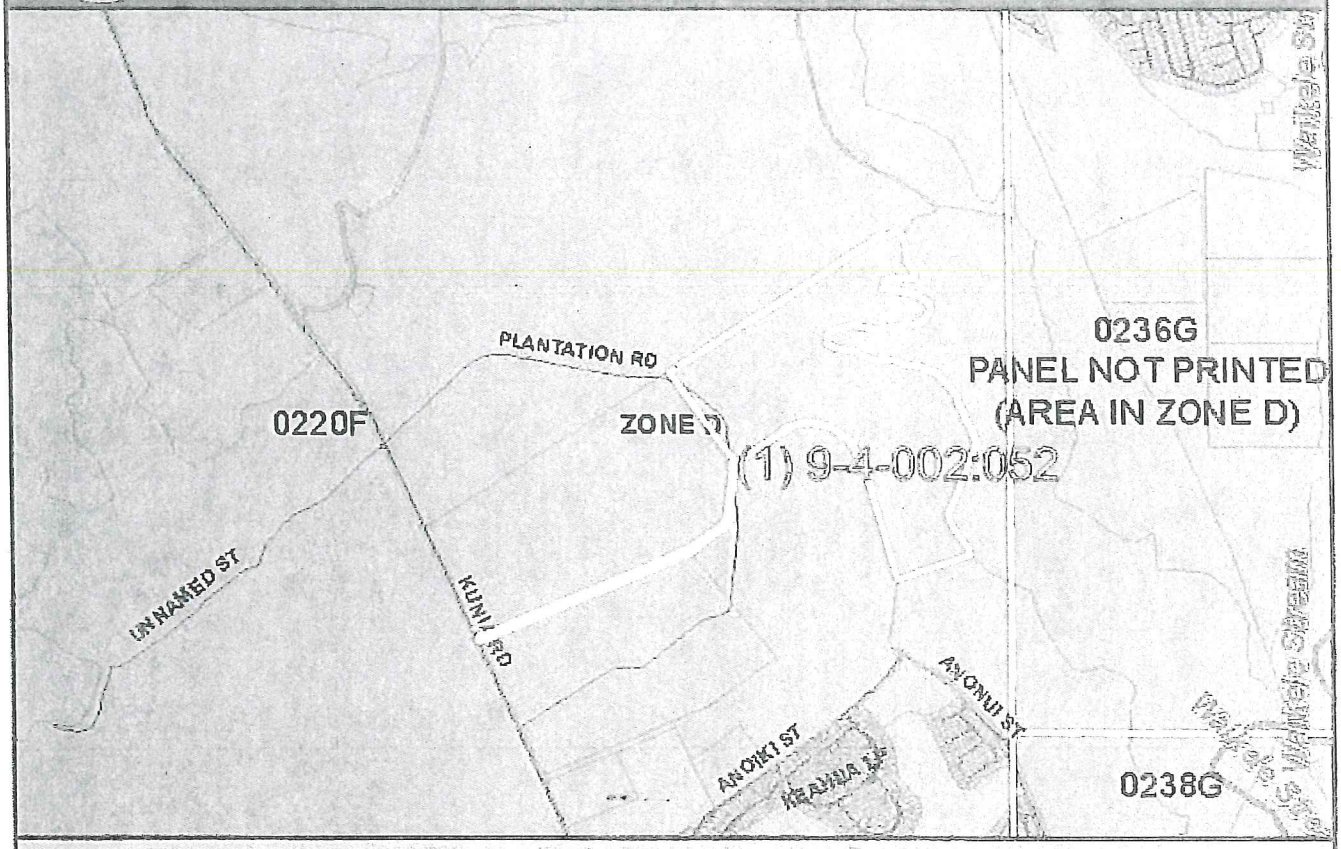
Should you have any questions, please call Mr. Dennis Imada of the Planning Branch at 587-0257.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 9/14/14

State of Hawaii

FLOOD HAZARD ASSESSMENT REPORT



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD ZONE DEFINITIONS

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD – The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water-surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- Zone A: No BFE determined.
- Zone AE: BFE determined.
- Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
- Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
- Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA – An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

PROPERTY INFORMATION

COUNTY:	HONOLULU
TMK NO:	(1) 9-4-002-052
PARCEL ADDRESS:	
FIRM INDEX DATE:	JANUARY 19, 2011
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL(S):	15003C0220F
PANEL EFFECTIVE DATE:	SEPTEMBER 30, 2004

PARCEL DATA FROM:	APRIL 2014
IMAGERY DATA FROM:	MAY 2006

IMPORTANT PHONE NUMBERS

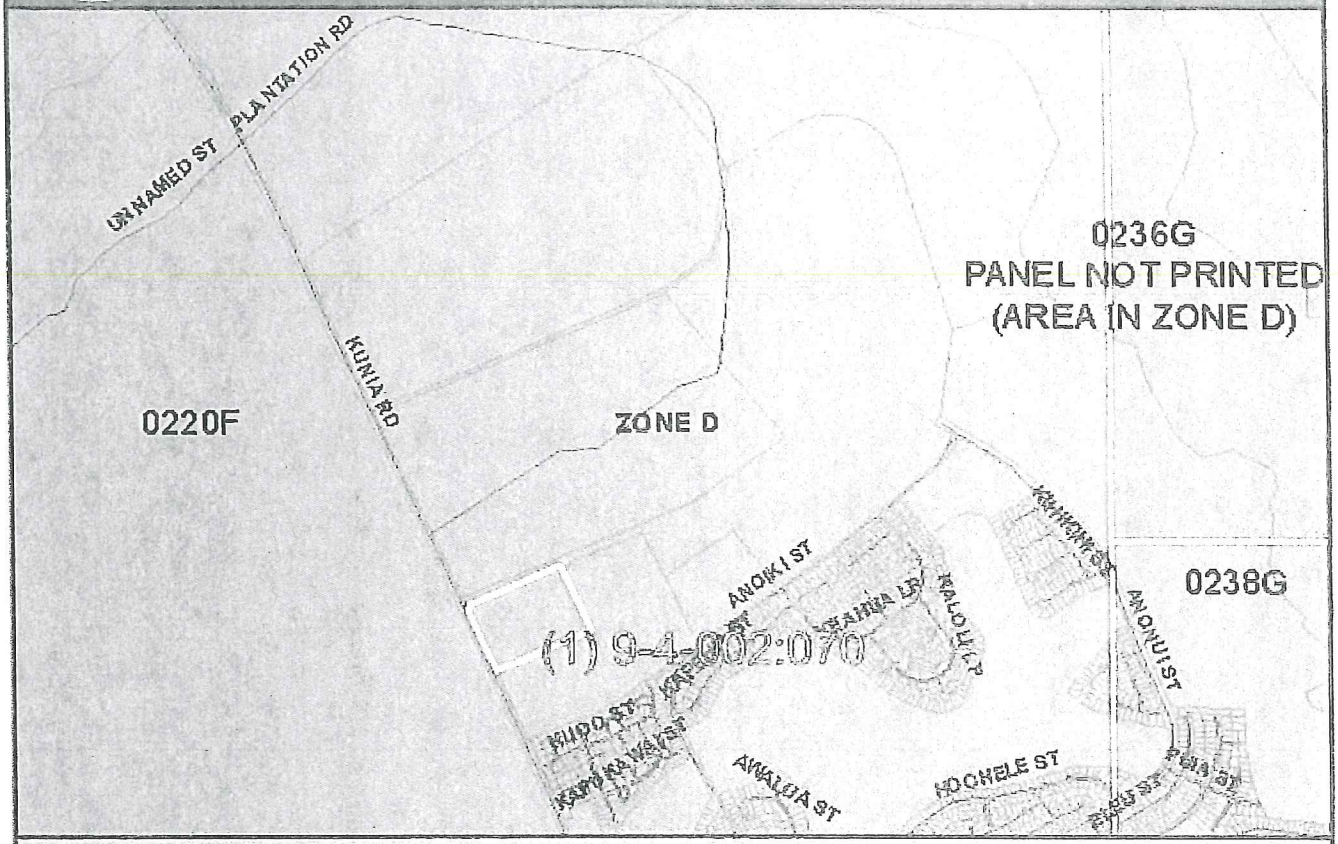
County NFIP Coordinator	
City and County of Honolulu	
Mario Siu-Li, CFM	(808) 768-8098
State NFIP Coordinator	
Carol Tyau-Beam, P.E., CFM	(808) 587-0267

Disclaimer: The Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use of the information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR from any liability, which may arise from its use.

If this map has been identified as "PRELIMINARY" or "UNOFFICIAL", please note that it is being provided for informational purposes and is not to be used for official/legal decisions, regulatory compliance, or flood insurance rating. Contact your county NFIP coordinator for flood zone determinations to be used for compliance with local floodplain management regulations.

State of Hawaii

FLOOD HAZARD ASSESSMENT REPORT



FLOOD ZONE DEFINITIONS

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- **Zone A:** No BFE determined.
- **Zone AE:** BFE determined.
- **Zone AH:** Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- **Zone AO:** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- **Zone V:** Coastal flood zone with velocity hazard (wave action); no BFE determined.
- **Zone VE:** Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF:** Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA – An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded):** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X:** Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D:** Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

PROPERTY INFORMATION

COUNTY:	HONOLULU
TMK NO:	(1) 9-4-002-070
PARCEL ADDRESS:	
FIRM INDEX DATE:	JANUARY 19, 2011
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL(S):	15003C0220F
PANEL EFFECTIVE DATE:	SEPTEMBER 30, 2004

PARCEL DATA FROM:	APRIL 2014
IMAGERY DATA FROM:	MAY 2006

IMPORTANT PHONE NUMBERS

County NFIP Coordinator	
City and County of Honolulu	
Mario Siu-Li, CFM	(808) 768-8098
State NFIP Coordinator	
Carol Tyau-Beam, P.E., CFM	(808) 587-0267

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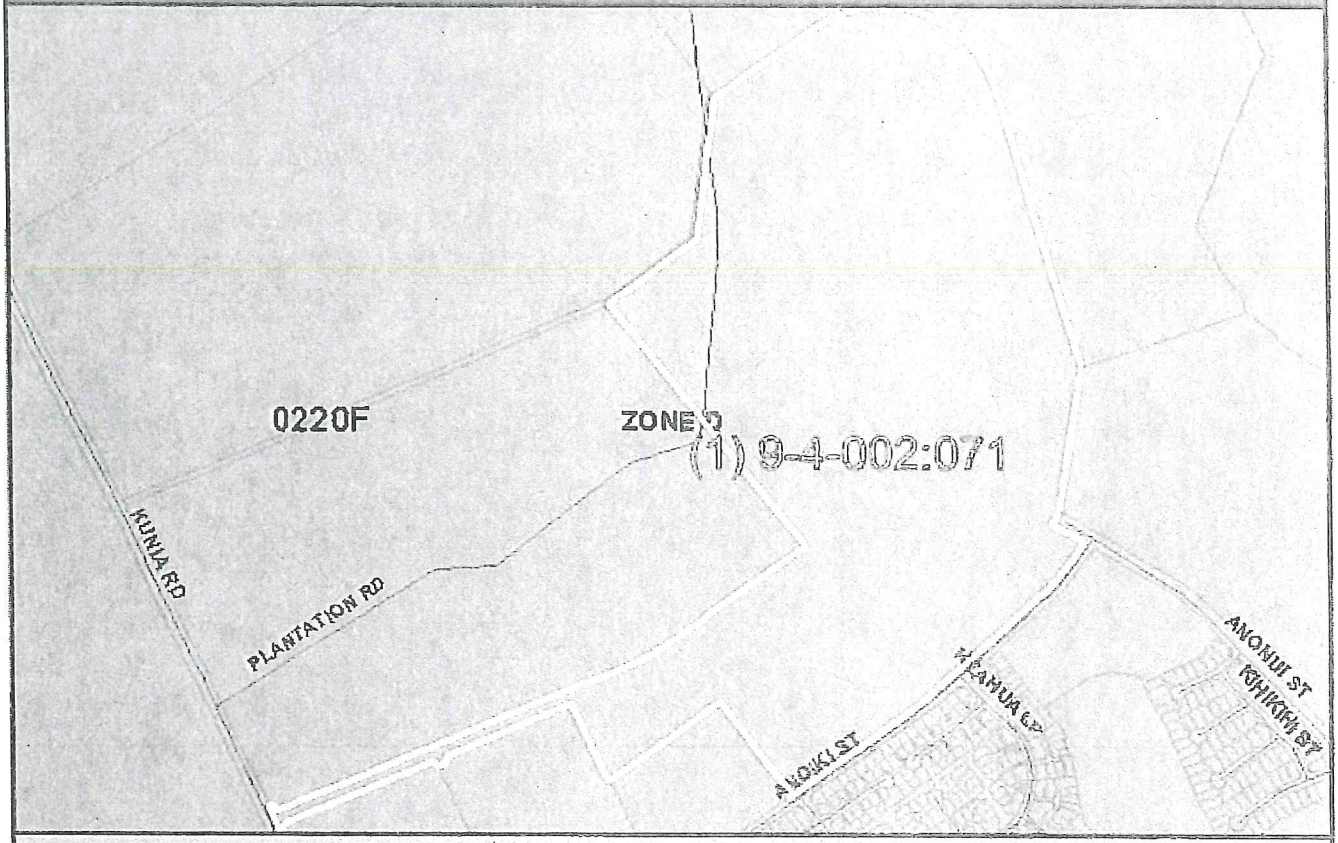
State of Hawaii

FLOOD HAZARD ASSESSMENT REPORT



FLOOD ZONE DEFINITIONS

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- Zone A: No BFE determined.
- Zone AE: BFE determined.
- Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
- Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
- Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA – An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

PROPERTY INFORMATION

COUNTY:	HONOLULU
TMK NO:	(1) 9-4-002-071
PARCEL ADDRESS:	
FIRM INDEX DATE:	JANUARY 19, 2011
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL(S):	15003C0220F
PANEL EFFECTIVE DATE:	SEPTEMBER 30, 2004

PARCEL DATA FROM:	APRIL 2014
IMAGERY DATA FROM:	MAY 2006

IMPORTANT PHONE NUMBERS

County NFIP Coordinator	
City and County of Honolulu	
Mario Siu-Li, CFM	(808) 768-8098
State NFIP Coordinator	
Carol Tyau-Beam, P.E., CFM	(808) 587-0267

Royal Kunia Agricultural Park
Teruya, Randy Y
to:
jenny.s.lee@dbedt.hawaii.gov
10/02/2014 02:51 PM
Hide Details
From: "Teruya, Randy Y" <Randy.Y.Teruya@hawaii.gov>
To: "jenny.s.lee@dbedt.hawaii.gov" <jenny.s.lee@dbedt.hawaii.gov>
History: This message has been forwarded.

3 Attachments

Amend. & Restatement of MOU, 3.2.07.pdf

First Amendment to Amend. & Restatement of MOU.pdf

Second Amendment to Amend. & Restatement of MOU.pdf

Hi Jenny,

Per your request, attached are:

1) Amendment and Restatement of MOU, 3/2/2007
2) First Amendment to Amend. & Restate. Of MOU
3) Second Amendment to Amend. & Restate. Of MOU

Please let me know if we can be of further assistance.

Randy Teruya
Agricultural Asset Manager
Agricultural Resource Management Division
Hawaii Department of Agriculture
1428 S. King Street
Honolulu, HI 96814
Ofc. (808) 973-9478
Fax (808) 973-9467
Email: randy.y.teruya@hawaii.gov

AMENDMENT AND RESTATEMENT
OF
MEMORANDUM OF UNDERSTANDING

THIS AMENDMENT AND RESTATEMENT OF MEMORANDUM OF UNDERSTANDING (the "***Amended and Restated MOU***") is made this 2nd day of March, 2007, by and between HALEKUA DEVELOPMENT CORPORATION, a Hawaii corporation ("***Halekua***") and the DEPARTMENT OF AGRICULTURE, STATE OF HAWAII ("***DOA***").

RECITALS:

1. Halekua and DOA entered into that certain Memorandum of Understanding (the "***Original MOU***") dated as of March 30, 1993, for the purpose of setting forth the agreements and understanding by and between Halekua and DOA with respect to establishment and integration into the master plan for the Royal Kunia Phase II development by Halekua of a state agricultural park.

2. Under the terms of the Original MOU, Halekua was to arrange for the conveyance of approximately 150 acres of land within Royal Kunia Phase II to DOA for its development of a state agricultural park and to accomplish such conveyance by no later than December 31, 1997.

3. Under the Original MOU, Halekua was to also design and construct off-site infrastructure improvements for the state agricultural park, including roadway, potable and irrigation water lines (exclusive of water commitment), and sewer lines and utility connections up to the boundary of the agricultural park at no cost to DOA. These off-site infrastructure improvements were to be initiated within one (1) year of the conveyance of the agricultural park to DOA and were to be completed within thirty (30) months thereafter.

4. Under the Original MOU the DOA was to assume responsibility for the development of and all other costs associated with the state agricultural park. DOA was to initiate development of the on-site improvements within five (5) years of the conveyance date and to achieve utilization of the conveyed lands for its intended purpose as a state agricultural park within ten (10) years of the conveyance date.

5. Pursuant to the Original MOU if the state agricultural park is not developed and utilized for its intended purpose within such 10-year time frame then and in such event ownership of the subject lands for the agricultural park are to revert to Halekua or its successors in interest, subject to any extension in time which may be mutually agreed to by the parties.

6. As a result of a variety of factors (economic and otherwise) the time frames set forth in the Original MOU for transfer of the agricultural park site to DOA, design and construction of the off-site infrastructure were not met.

7. However, by Warranty Deed with Reversion dated February 23, 2004, recorded on February 27, 2004, in the Bureau of Conveyances of the State of Hawaii as Document No.

2004-040601 the 150 acre parcel within Royal Kunia Phase II on which the state agricultural park is to be developed was conveyed by Halekua to the State of Hawaii.

8. Halekua and DOA now desire to amend and restate the Original MOU to (a) acknowledge the conveyance of the 150 acre agricultural park site to the DOA and the acceptance thereof by the DOA in partial satisfaction of the agreements in the MOU notwithstanding the delay in actual conveyance of the subject land, (b) to restate and modify the agreements between Halekua and the DOA with respect to the timing for design and construction of the off-site infrastructure to the state agricultural park, (c) to delete the provisions within the MOU providing for the DOA to initiate and complete its development and commence active use of the state agricultural park within a period of time measured from the date of initial conveyance of the 150 acre parcel comprising the state agricultural park to the DOA, and (d) to delete the right of reverter if the state agricultural park is not developed and utilized for those purposes within 10-years from the date of the initial conveyance of the 150 acre parcel to the DOA, and replace with a restrictive use covenant and reversion if the use covenant is breached.

NOW, THEREFORE, in consideration of the Recitals set forth above and other consideration the receipt and sufficiency of which is hereby acknowledged, Halekua and DOA do hereby amend and restate Paragraphs A through N of the original MOU in their entirety as follows:

A. Confirmation of Conveyance of 150-Acre Parcel. DOA does hereby acknowledge and confirm that by Warranty Deed with Reversion dated February 23, 2004, recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 2004-040601 (the "***State Ag Park Deed***"), the agreed upon 150 acres of land within the Royal Kunia Phase II development was conveyed by Halekua to the State of Hawaii, by and through its Board of Land and Natural Resources, for the DOA's use as and to establish a state agriculture park thereon (herein the "***state agricultural park***"). The DOA further confirms that it has accepted the conveyance of the lands comprising the state agricultural park by the State Ag Park Deed as being in full and complete satisfaction of the land conveyance component of its agreements with Halekua notwithstanding the fact that the actual conveyance occurred beyond the original December 31, 1997 deadline date.

B. Use of State Agricultural Park. The state agricultural park is intended to benefit the small diversified farmer and use of the state agricultural park shall be intended for diversified agricultural production, including, without limitation, floriculture, foliage and orchard production. In addition, the DOA shall have right and option (but is not required) to develop and construct up to a maximum of fifty (50) related agricultural farm dwellings or farm employee housing units with the state agricultural park. If any of these agricultural farm dwellings or farm employee housing units are developed by the DOA on the state agricultural park the same shall not at any time be offered for sale by the DOA.

C. Certain Use Prohibitions within State Agricultural Park. Since the state agricultural park will be located adjacent to an urban residential community, commercial livestock and aquaculture production or other activities associated with or related thereto shall be prohibited within the state agricultural park.

D. Halekua to Include State Agricultural Park in Land Plan. Halekua shall incorporate the state agricultural park into its land plan for the Royal Kunia Phase II subdivision and jointly with the DOA shall prepare a preliminary site plan for the state agricultural park reflecting the locations of the roadway and infrastructure connections to be provided to the boundary of the state agricultural park parcel. Halekua and the DOA will diligently and in good faith work together to conclude the planning work necessary to prepare and reach agreement on a preliminary site plan for the state agricultural park no later than December 31, 2007 (or such later date to which Halekua and the DOA shall mutually agree). The DOA shall determine the final layout of the state agricultural park's interior configuration, subject to review and concurrence by Halekua, and shall arrange for and provide funding for construction of the improvements within the interior of the state agricultural park.

E. Halekua to Design and Construct Certain Off-Site Infrastructure to the State Agricultural Park. Halekua shall design and construct off-site infrastructure improvements for the state agricultural park including roadway, potable and irrigation water lines (exclusive of water commitment), and sewer lines and utility connections, up to the property boundary of the state agricultural park at no cost to the DOA. These off-site infrastructure improvements shall be sufficient to service the agricultural uses contemplated by the DOA for the state agricultural park and shall be sufficient to service the maximum of fifty (50) agricultural farm dwellings or farm employee housing units (if the DOA determines that the same shall be a part of the state agricultural park). In connection therewith Halekua and the DOA agree as follows:

a. Following approval of the preliminary site plan in accordance with Paragraph D above, Halekua shall arrange for and cause the preparation of design plans for the off-site infrastructure necessary to provide the agreed upon roadway access, water, sewer and other appropriate utility connections to the boundary of the state agriculture park to service the contemplated improvements on the state agricultural park in accord with the preliminary site plan and submit the same to the DOA for approval no later than December 31, 2008 (or such later date to which Halekua and the DOA shall mutually agree), which approval by the DOA shall not be unreasonably withheld or delayed. It is understood and accepted that HDC shall be entitled to make such changes and modifications to the approved design plans as may be required to address and satisfy any comments made or issues raised by appropriate governmental agencies of the State of Hawaii and/or City and County of Hawaii, with the further consent or approval of DOA, which consent or approval shall not be unreasonably withheld or delayed.

b. After the DOA approves the offsite infrastructure plans, HDC shall, at its sole cost and expense, (i) obtain all necessary governmental permits and approvals for construction of such off-site infrastructure, and (ii) arrange for and substantially complete the construction and installation of the off-site infrastructure to service the state agricultural park no later than January 1, 2011 (or such later date to which Halekua and the DOA shall mutually agree), subject to extension in such substantial completion date for construction industry recognized force majeure events.

F. DOA Responsible for All Other Costs of State Agricultural Park. The DOA shall assume responsibility for the development of and payment of all costs (other than those set forth

in this Agreement as being assumed by Halekua) associated with the state agricultural park and the agricultural farm dwellings and/or farm employee housing units to be developed thereon.

G. Coordinate Developments. Halekua and the DOA shall use their best efforts to work jointly to coordinate the development of their respective portions of the Royal Kunia Phase II project.

H. Hawaii Farm Bureau Federation. The DOA, to the extent permitted by law or regulation, shall involve the Hawaii Farm Bureau Federation in the utilization, operation and management of the state agricultural park with the intent of maximizing the efficiency and success of the diversified farming efforts at the state agricultural park.

I. DOA Support of Land Use Approvals. The DOA shall assist and support Halekua in its efforts to obtain and maintain the necessary land use approvals for the Royal Kunia Phase II project, as well as in Halekua's efforts to obtain the necessary off-site infrastructure permit approvals. Any assistance and support by the DOA shall be limited to the extent permitted by the applicable statutes and rules.

J. Restrictive Use Covenant on State Agricultural Park. The time periods for initiation of development of on-site improvements for the state agricultural park and for the DOA to achieve active utilization of the state agricultural park set forth in Paragraph K of the Original MOU are hereby deleted in their entirety. Instead the state agricultural park shall be subject to a restrictive use covenant providing that the state agricultural park shall only be used as an agricultural park or for the current or similar agricultural purposes, including diversified agriculture. If at any time in the future the DOA ceases to use or abandons the use of the state agricultural park as an agricultural park or for the current or similar agricultural purposes, including diversified agricultural, then, and in such event, the 150 acre parcel comprising the state agricultural park shall be subject to a reversion in favor of certain "Robinson Owners" as more particularly defined in the State Ag Park Deed. It is understood that the fact that any portion of the state agricultural park may lie vacant or fallow shall not constitute the cessation or abandonment of the agricultural use.

K. No Adverse Impact on Lands Adjoining State Agricultural Park. The DOA agrees to use its best efforts to minimize the impact of the state agricultural park on the adjacent lands being developed for residential, industrial and other urban uses.

L. Assistance with Non-Potable Water System. The DOA shall assist Halekua, to the extent allowable by law and subject to the availability of funds, in obtaining and developing a non-potable water system to service irrigation and other non-potable water needs of the Royal Kunia Phase I and Phase II projects, including the state agricultural park.

M. Purpose of Amended and Restated MOU. The parties hereto agree that this Amended and Restated MOU is being executed to evidence their mutual understandings and agreements regarding the conveyance of the 150-acre parcel comprising the state agricultural park to the DOA, the design and development by Halekua of certain off-site infrastructure to service the state agricultural park, and certain use restrictions and limitations applicable to the

DOA's use of the state agricultural park. This Amended and Restated MOU replaces the Original MOU in its entirety.

N. Amendment. This Amended and Restated MOU may be amended from time to time by an instrument in writing signed by both HDC and the DOA.

IN WITNESS WHEREOF, this Amendment and Restatement of Memorandum of Understanding is made and executed by Halekua and the DOA as of the day and year first above written.

DEPARTMENT OF AGRICULTURE,
STATE OF HAWAII

Approved as to Legality and Form:

Deputy Attorney General
Dated: March 2, 2007

Name: Sandra Lee Kunimoto
Title: Chairperson

HALEKUA DEVELOPMENT CORPORATION

By
Name: Herbert K. Horita
Title: President

FIRST AMENDMENT
TO
AMENDMENT AND RESTATEMENT
OF
MEMORANDUM OF UNDERSTANDING

THIS FIRST AMENDMENT to the AMENDMENT AND RESTATEMENT OF MEMORANDUM OF UNDERSTANDING (the *"First Amendment"*) is made this ___ day of February 19, 2009, by and between HALEKUA-KUNIA, LLC, a Delaware limited liability company, successor in interest to HALEKUA DEVELOPMENT CORPORATION, a Hawaii corporation ("*Halekua*") and the DEPARTMENT OF AGRICULTURE, STATE OF HAWAII ("*DOA*").

RECITALS:

1. Halekua and DOA entered into that certain Amendment and Restatement of Memorandum of Understanding (the "*MOU*") dated as of March 2, 2007, for the purpose of restating the agreements and understanding by and between Halekua and DOA with respect to establishment and integration into the master plan for the Royal Kunia Phase II development by Halekua of a state agricultural park.

2. Paragraph E. a. of the MOU states:

"a. Following approval of the preliminary site plan in accordance with Paragraph D above, Halekua shall arrange for and cause the preparation of design plans for the off-site infrastructure necessary to provide the agreed upon roadway access, water, sewer and other appropriate utility connections to the boundary of the state agricultural park to service the contemplated improvements on the state agricultural park in accordance with the preliminary site plan and submit the same to the DOA for approval no later than December 31, 2008 (or such later date to which Halekua and the DOA shall mutually agree), which approval by the DOA shall not be unreasonably withheld or delayed. It is understood and accepted that HDC shall be entitled to make such changes and modifications to the approved design plans as may be required to address and satisfy any comments made or issues raised by appropriate governmental agencies of the State of Hawaii and/or City and County of Honolulu, without the further consent or approval of DOA, which consent or approval shall not be unreasonably withheld or delayed."

3. Paragraph N. of the MOU states that the Amended and Restated MOU may be amended from time to time by an instrument in writing signed by both Halekua and DOA.

4. Halekua and DOA now desire to amend said Paragraph E. a. of the MOU to extend the deadline for completion and submittal of the preliminary site plan to the DOA from December 31, 2008 to December 31, 2009.

NOW, THEREFORE, in consideration of the Recitals set forth above and other consideration the receipt and sufficiency of which is hereby acknowledged, Halekua and DOA do hereby amend Paragraph E. a. in the MOU as follows:

A. Extension of December 31, 2008 Deadline. The designated deadline for completion and submittal of the preliminary site plan to the DOA in Paragraph E. a. is hereby amended by deleting "December 31, 2008" and substituting therefore, "December 31, 2009."

IN WITNESS WHEREOF, this First Amendment to Amendment and Restatement of Memorandum of Understanding is made and executed by Halekua and the DOA as of the day and year first above written.

DEPARTMENT OF AGRICULTURE,
STATE OF HAWAII

Approved as to Legality and Form:

Deputy Attorney General

Name: Sandra Lee Kunimoto
Title: Chairperson

HALEKUA-KUNIA, LLC,
a Delaware limited liability company

By HALEKUA DEVELOPMENT CORPORATION,
a Hawaii corporation, its sole member

By
Name: Herbert K. Horita
Title: President

SECOND AMENDMENT
TO
AMENDMENT AND RESTATEMENT
OF
MEMORANDUM OF UNDERSTANDING

THIS SECOND AMENDMENT to the AMENDMENT AND RESTATEMENT OF MEMORANDUM OF UNDERSTANDING (the *"Second Amendment"*) is made this 20th day of September, 2012, by and between CANPARTNERS IV ROYAL KUNIA PROPERTY LLC, a Delaware limited liability company, successor in interest to HALEKUA-KUNIA, LLC, a Delaware limited liability company, by virtue of foreclosure of the property pursuant to Hawaii Revised Statutes, Sections 667-5 through 667-10, as amended, dated June 10, 2009 (*"Canpartners"*) and the DEPARTMENT OF AGRICULTURE, STATE OF HAWAII (*"DOA"*).

RECITALS:

1. Canpartners and DOA entered into that certain Amendment and Restatement of Memorandum of Understanding (the *"MOU"*) dated as of March 2, 2007, for the purpose of restating the agreements and understanding by and between Canpartners and DOA with respect to establishment and integration into the master plan for the Royal Kunia Phase II development by Canpartners of a state agricultural park.

2. Paragraph E. a. of the MOU states:

> "a. Following approval of the preliminary site plan in accordance with Paragraph D above, Canpartners shall arrange for and cause the preparation of design plans for the off-site infrastructure necessary to provide the agreed upon roadway access, water, sewer and other appropriate utility connections to the boundary of the state agriculture park to service the contemplated improvements on the state agricultural park in accord with the preliminary site plan and submit the same to the DOA for approval no later than December 31, 2008 (or such later date to which Canpartners and the DOA shall mutually agree), which approval by the DOA shall not be unreasonably withheld or delayed. It is understood and accepted that HDC shall be entitled to make such changes and modifications to the approved design plans as may be required to address and satisfy any comments made or issues raised by appropriate governmental agencies of the State of Hawaii and/or City and County of Hawaii, without the further consent or approval of DOA, which consent or approval shall not be unreasonably withheld or delayed."

3. Paragraph N. of the MOU states that the Amended and Restated MOU may be amended from time to time by an instrument in writing signed by both Canpartners and DOA.

4. Pursuant to Paragraph N. Canpartners and DOA amended said Paragraph E. a. of the MOU to extend the deadline for completion and submittal of the preliminary site plan to the DOA from December 31, 2008 to December 31, 2009 by executing that certain First Amendment to Amendment and Restatement of Memorandum of Understanding dated February 19, 2009.

5. Canpartners and DOA now desire to further amend said Paragraph E.a. of the MOU to extend the deadline for completion and submittal of the preliminary site plan to DOA from December 31, 2009 to December 31, 2013.

NOW, THEREFORE, in consideration of the Recitals set forth above and other consideration the receipt and sufficiency of which is hereby acknowledged, Canpartners and DOA do hereby amend Paragraph E. a. in the MOU as follows:

A. The designated deadline for completion and submittal of the preliminary site plan to the DOA in Paragraph E. a. is hereby amended by deleting "December 31, 2009" and substituting therefor, "December 31, 2013".

IN WITNESS WHEREOF, this Second Amendment to Amendment and Restatement of Memorandum of Understanding is made and executed by Canpartners and the DOA as of the day and year first above written.

DEPARTMENT OF AGRICULTURE,
STATE OF HAWAII

Approved as to Legality and Form:

Name: Russell S. Kokubun
Title: Chairperson

Deputy Attorney General
Dated: _____, 2012

CANPARTNERS IV ROYAL KUNIA PROPERTY LLC,
a Delaware limited liability company

By: Canpartners Realty Holding Company IV LLC,
a Delaware limited liability company,
its sole member

By: Canyon Capital Realty Advisors LLC,
a Delaware limited liability company,
its manager

By: _____
Name: Daniel Millman
Title: Authorized Signatory

Legal	Acq/AM
bcv	wds

DOCKET NO. A92-683

(ADDENDUM FROM PETITIONER IN RESPONSE TO OP'S INQUIRY)

OP EXHIBIT 8

DOCKET NO. A92-683

(ADDENDUM FROM PETITIONER IN RESPONSE TO OP'S INQUIRY)

OP EXHIBIT 8

CARLSMITH BALL LLP

A LIMITED LIABILITY LAW PARTNERSHIP

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OUR REFERENCE NO.:
066869-00001

September 26, 2014

VIA HAND DELIVERY

Bryan C. Yee
Deputy Attorney General
Commerce and Economic Development
Department of the Attorney General
425 Queen Street
Honolulu, Hawaii 96813

Re: Ho'ohana Solar 1, LLC Motion to Amend LUC Docket No. A92-683 (*In re* Halekua Development Corporation)

Dear Mr. Yee:

This letter is in response to your e-mail dated September 17, 2014. Successor Petitioner to Parcel 52, Ho'ohana Solar 1, LLC ("Ho'ohana" or "Movant"), by and through its counsel, Carlsmith Ball LLP, offers the following responses to your questions.

1. Is Movant going to move to create a subdocket to separate Increment 3 from Royal Kunia Phase II, Increments 1 and 2?

Response: No. Ho'ohana does not plan to bifurcate the Docket at this time.

2. What is the status of Increments 1 and 2 and is there any plan or master plan and a schedule for those Increments?

Response: Canpartners IV Royal Kunia Property LLC ("Canpartners") has been filing annual reports with the Commission. Based on representations by Canpartners representatives and by Halekua-Kunia, LLC ("HK") in its *Status Report on the Applicant's Compliance with Conditions of Amended Decision and Order (Docket A92-683, October 1, 1996)* filed with the Commission on January 15, 2014, the master plan for Royal Kunia Phase II, Increments 1 and 2 continue to include the development of 2,000 residential units. The properties that comprise Increments 1 and 2 have already been conditionally rezoned for such development through the Unilateral Agreement and Declaration of Conditional Zoning recorded March 6, 1995 as regular System Doc. No. 95-030454, and the Unilateral Agreement and Declaration for Conditional Zoning recorded April 14, 1997 as Regular System Doc. No. 97-047601.

3. What are the current agricultural uses being referred to on page 28 of the Motion? What are the current uses on Parcel 52? What are the current uses on the remainder of the Petition Area?

Response: Parcel 52 has been on short term lease to Waikele Farms, Inc. since December 2006. Waikele Farms, Inc. is owned by Larry Jefts, who has farmed portions of the site during this period. Mr. Jefts has been aware of the Robinsons' interest in having a solar farm on the site for some time and has agreed to vacate the site at the appropriate time. Hoʻohana has consulted with Mr. Jefts during the planning process for Hoʻohana. Hoʻohana previously communicated to Mr. Jefts that if the proposed Project is approved, construction likely would not commence for approximately one year and that he was welcome to plant crops within that timeframe. Mr. Jefts currently plants various short-term vegetable crops on Parcel 52. The rest of the Petition Area remains vacant at this time.

4. Provide a map showing the access points and routes to Parcel 52, as well as the facilities that will be constructed.

Response: A revised site plan is enclosed. Pursuant to the First Stipulation of the Parties Setting Forth the Filing Schedule, filed with the Commission on September 19, 2014, the revised site plan will be filed with the Commission on October 17, 2014.

5. Is Hoʻohana complying with Condition No. 9, requiring Petitioner to "erect a chain link fence along the eastern boundary of the Property that is common with the Waikele Branch of Naval Magazine, Lualualei"?

Response: Hoʻohana maintains that Condition No. 9 should no longer apply to the Petition Area as the reason for imposing the Condition has been abandoned. This Condition was specifically imposed to provide a safety buffer between the proposed residential development in the Petition Area and the Waikele Branch of the Naval Magazine. *See* Letter from Sanford S.C. Yuen, P.E., Department of the Navy, to Mr. Clarence K. Tanonaka, Assistant to the President ParEn. Inc. dba Park Engineering, dated January 11, 1996, at 1. However, the Naval Magazine station has since been decommissioned. The Navy has removed all ordinance from the area and no longer uses the Waikele Branch for ordinance storage.

Nonetheless, Hoʻohana plans to erect an eight (8) foot tall security fence around the perimeter of the proposed solar array. Therefore, Hoʻohana is complying with Condition No. 9 for its portion of the Petition Area.

6. Please provide updates with respect to discussions with any state agencies. For example, what is the status of the AIS submitted to SHPD on July 30, 2014, and what is the status of your plans or discussions with DOA on cover crops, use of sheep, etc.

Response:

Consultation with the DOA. Hoʻohana has consulted with the State of Hawaiʻi Department of Agriculture ("DOA") and adjacent farm operators regarding ideas for sheep and

for cover crops for pollinators. An animal husbandry program appears difficult to integrate with the solar farm design and was not encouraged by our neighboring users. On the other hand, Ho'ohana is still considering cover crops for pollinators. At this time, however, two of our three neighboring farm owners have expressed concern about a potential pollinator cover crop on the proposed solar farm site attracting bugs, introducing alien species to the area, and/or "distracting" existing pollinators away from the farmers' crops. Our third area farm owner, Mr. Jefts, has asked for more time before formulating an opinion, in order to consult with Director Enright of the DOA. Since Mr. Jefts does not expect to be able to consult with Mr. Enright before October, Ho'ohana is holding off on a final decision regarding potential integration of pollinator crops atop Parcel 52. In any case, Ho'ohana does not want to implement any plan that detracts from the operations of our neighboring farms.

Status of AIS. Ho'ohana, by and through its consultant, Group 70 International, Inc., submitted for review its AIS to the State Historic Preservation Department ("SHPD") on July 30, 2014. A copy of Ho'ohana's file-stamped transmittal is enclosed. To date, the SHPD has not requested any further information from Ho'ohana but Ho'ohana will continue to consult with SHPD as needed.

In addition to the documents noted above, enclosed please find for your review a copy of Ho'ohana's final Natural Resources Survey and Construction Traffic Assessment. If you have any questions, please contact me at (808) 523-2583 or slim@carlsmith.com or Onaona P. Thoene at (808) 523-2596 or pthoene@carlsmith.com.

Sincerely,

By Onaona P. Thoene
For Steven S.C. Lim

SSL/PPT

Enclosures

cc: Don S. Kitaoka, Esq., Office of the Corporation Counsel, City & County of Honolulu

Ann Bouslog, Forest City Hawaii

Laurence Green, Hanwha Q CELLS USA

GROUP 70
INTERNATIONAL

January 14, 2014

Mr. Daniel E. Orodenker, Executive Officer
State of Hawai`i Land Use Commission
Department of Business, Economic Development & Tourism
P.O. Box 2359
Honolulu, Hawai`i 96804-2359

SUBJECT: **Royal Kunia Phase II**
Compliance with Conditions of Amended Decision and Order
(Docket No. A92-683, October 1, 1996)
Status Reports through December 2013

Dear Mr. Orodenker:

On behalf of Halekua-Kunia, LLC, we hereby submit this Status Report on the Applicant's Compliance with Conditions of Amended Decision and Order (Docket No. A92-683, October 1, 1996).

Compliance of the conditions are ongoing and in the process of being fulfilled. Halekua-Kunia, LLC, reaffirms its commitment and obligation to comply with and satisfy each of the outstanding conditions set forth in the Amended Decision and Order (Docket No. A92-683, October 1, 1996).

Thank you for reviewing the enclosed report. If you have questions or require further information, please contact me at 351-4200.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Attachments:
December 2013 Status Report - State of Hawaii Land Use Commission Amended Decision and Order (Docket No. A92-683, October 1, 1996)

cc: Stanford Carr, Stanford Carr Development

Status Report on Royal Kunia Phase II Development Compliance with Conditions
State of Hawaii Land Use Commission Amended Decision and Order (Docket No. A92-683, October 1, 1996)
Submitted by Halekua-Kunia LLC (HK), January 2014

Type of Condition	Description of Requirements	Compliance Status as of January 2014	Action Plan for Achieving Full Compliance
1. Affordable Housing	Halekua Development Corporation (HDC) shall provide affordable housing opportunities for low to moderate income residents of the State of Hawai`i to the satisfaction of the City and County of Honolulu (City). Details as to the location, distribution and other provisions for affordable housing shall be as mutually agreed between HDC and City. [The basic affordable housing program requirement is to provide: (a) 10% of the project housing units affordable to households with incomes not exceeding 80% of the City's median income, and (b) an additional 20% of the project's housing units affordable to families with incomes between 81% and 120% of the City's median income.]	Future compliance. Discussions were initiated, but further action was deferred while the property was in bankruptcy.	HK met with DPP representatives in 2009 prior to submittal to DPP of a PD-H application for the project, to initiate the process of establishing a binding agreement for the provision of the required affordable housing. The framework for this agreement is reflected in the PD-H application which was approved in July 2009 (2009/PDH-1), and the full agreement will be executed prior to applying for any building permits. It will comply with the provisions stipulated in both this UA and the UA attached to Ordinance No. 97-12. The DPP Draft Affordable Housing Agreement was provided as Attachment 1 in the May 2009 UA Project Status submittal. Comments were received from DPP in June 2009 and an updated version of the Agreement was included as Attachment 1 in the June 2010 UA Project Status submittal.
2. Transportation Improvements	HDC shall fund, design, and construct local and regional transportation improvements necessitated by the proposed development on a pro rata basis and as determined and approved by the State Department of Transportation (DOT) and the City and County of Honolulu Department of Transportation Services (DTS), including without limitation the dedication of any rights-of-way to the State or County. HDC shall also be required to provide the following: A. All of the other improvements needed (which will not be provided by the Village Park and Royal Kunia, Phase I projects) to make Kunia Road a 4-lane highway with auxiliary lanes for both left and right turning movements (between Kunia Interchange and the northernmost boundary of Royal Kunia Phase II) and a third northbound lane between Kunia Interchange and the north Kupuna Loop intersection. B. A report that analyzes the impact of the proposed Phase II project's traffic on the Kunia Interchange and evaluate alternatives that will mitigate the impacts. C. Plans for construction work within the State highway	Partial completion and future compliance. Construction of a third northbound lane on Kunia Road between Kunia Interchange and the south Kupuna Loop intersection has been completed. Steps toward meeting other portions of this requirement were deferred while the property was in bankruptcy.	HK has held numerous meetings with DOT and initial meetings with DTS and DPP TRB representatives and will follow up as needed to determine and reach agreement on: a. Right-of-way acquisition, funding and construction of various roadway and traffic improvements to be provided by HK at project access points and at other on-site and off-site locations. b. Preparation of periodic traffic monitoring reports assessing project-generated impacts on Kunia Interchange. c. HK's participation with other Ewa area developments landowners and developers in fair-share funding of regional transportation improvements. Such an agreement will be executed prior to submittal to DPP of any applications for the

Type of Condition	Description of Requirements	Compliance Status as of January 2014	Action Plan for Achieving Full Compliance
	right-of-way must be submitted to the DOT Highways Division for review and approval.		subdivision of building lots. It will comply with the provisions stipulated in both this D&O and the UAs attached to Ordinances No. 95-08 and 97-12. Discussions have been held relating to the Amendment of the D&O Condition 2 at SLUC relating to the third northbound lane between Kunia Interchange and north Kupuna Loop intersection. Attachment 1 provides a chronology of meetings and LUC decision held in 2013. HK has the financial capability and fully intends to fulfill its responsibilities in accordance with the terms of the executed agreement. Meetings continue to be held with DOT-Highways for further coordination on outstanding regional traffic issues for the project. Due to the magnitude of the requested improvement plans, SCD-Kunia is working with the DOT to discuss the timing and approach to cost sharing these improvements. A regional analysis has also been prepared by SCD-Kunia to assist with the analysis of cost sharing responsibilities for the required improvements. Many meeting were held in 2013 to discuss Kunia Road. The most recent meeting with DOT was December 11 2013. Attachment 2 provides a chronology of meetings held in 2013. Updated Traffic Impact Assessment Report (TIAR) (WOA, May 2013) was provided to DPP-TRB and DOT, addressing current and future conditions, and pro-rata fair share of roadway improvement costs. The TIAR is undergoing a final review and comment process.

Status Report on Royal Kunia Phase II Development Compliance with Conditions
State of Hawaii Land Use Commission Amended Decision and Order (Docket No. A92-683, October 1, 1996)
Submitted by Halekua-Kunia LLC (HK), January 2014

Type of Condition	Description of Requirements	Compliance Status as of January 2014	Action Plan for Achieving Full Compliance
3. Regional Transportation Management Program	HDC shall appoint a permanent transportation manager whose function is the formulation, use, and continuation of alternative transportation opportunities that would optimize the use of existing and proposed transportation systems. In the alternative, HDC may participate in a regional program for transportation management with other developers and/or landowners. This program shall address the transportation opportunities that would optimize the use of existing and proposed transportation systems. The program for either option shall be reviewed and approved by DOT prior to implementation, and will continue to be in effect unless otherwise directed by DOT. HDC shall conduct a yearly evaluation of the program's effectiveness and shall make a written report of its evaluation available to DOT for program review and modification, if necessary.	Prior & future compliance. HDC was an active participant in Ewa Region Highway Transportation Master Plan Working Group and an active member of Leeward Oahu Transportation Management Association. (LOTMA), but this activity was suspended while the property was in bankruptcy.	Participation in both programs will be re-established by HK in the near future. Yearly program evaluation reports will be prepared and filed concurrently with this annual Compliance Status Report. Ongoing participation by SCD-Kunia in regional highway and transportation planning, including LOTMA and Ewa Region Highway Transportation Master Plan Working Group.
4. Traffic Monitoring	HDC shall monitor the traffic attributable to the proposed project at on-site and off-site locations and shall undertake subsequent mitigative measures that may required. The mitigative measures shall be coordinated with and approved by DOT and DTS.	Future compliance.	A monitoring program will be drafted and submitted to DOT & DTS for review and approval no later than when home construction is initiated. Approval will be obtained prior to occupancy of any homes in this Project.
5. Integrated Solid Waste Management Act	HDC shall cooperate with the State Department of Health (DOH) and the City and County of Honolulu Department of Public Works [now Department of Environmental Services (DES)] to conform to the program goals and objectives of the Integrated Solid Waste Management Act, Chapter 342G, Hawai`i Revised Statutes, in accordance with a schedule satisfactory to the DOH and DES.	Future compliance.	HK will draft and submit a proposed solid waste management program and schedule to DOH and DES for their review and approval at least 90 days prior to the initiation of any residential construction, and will facilitate the review process as required to obtain approval prior to the start of construction. DES Recycling Branch was consulted on May 12, 2009 regarding solid waste management and recycling. The discussion served as guidance for the development of a recycling program for the project. A recycling program will be established prior to the completion of construction. HK will continue to coordinate with DES and OSWM as the project moves forward.

Type of Condition	Description of Requirements	Compliance Status as of January 2014	Action Plan for Achieving Full Compliance
			The May 2009 Memorandum was provided as Attachment 3 in the May 2009 UA Project Status submittal.
6. School Facilities	HDC shall contribute to the development, funding, and/or construction of school facilities on a pro rata basis as a result of the development on the Property, as determined by and to the satisfaction of the Department of Education (DOE). Agreement by DOE on the level of funding and participation shall be obtained prior to HDC applying for county zoning. HDC and DOE entered into a letter agreement dated September 26, 1996 that outlined the terms of HDC's contribution to the development of school facilities in satisfaction of this condition. This has been replaced with an updated "School Site Agreement" that was executed by HDC and DOE on March 6, 2007. The terms of the March 6, 2007 School Site Agreement provides for the (a) transfer of all of HDC's interest in the 12-acre elementary school site to RKES in satisfaction of the dedication component of DOE's fair share requirement, and (b) the payment to DOE of a total of $500,000 in five installments that are due upon the closing of: (1) the 1,000th unit, (2) the 1,250th unit, (3) the 1,500th unit, (4) the 1,750th unit, and (5) the last unit. The amounts due will be escalated over time based on the Consumer Price Index.	Partial completion and future compliance. Per the March 6, 2007 School Site Agreement, the 12-acre school site has been conveyed to RKES.	HK will file a copy of the March 6, 2007 School Site Agreement with DPP concurrently with the submittal of initial subdivision plans. HK will make the required cash contributions in accordance with the schedule of installments outlined in the March 6, 2007 School Site Agreement.
7. Water Requirements	HDC shall coordinate with the Honolulu Board of Water Supply (BWS) and the State Department of Land and Natural Resources (DLNR) to obtain water required for the project. If water is not available from existing sources due to insufficient supply, HDC shall fund and develop the necessary water source, storage, and transmission systems and facilities.	Prior and future compliance.	HK will maintain ongoing coordination as necessary to obtain the required project water from the existing BWS system and develop additional water resources and/or supply system improvements for dedication to BWS. The initial water master plans are being updated to reflect the new master plan for the community.
8.	HDC shall participate, on a pro rata basis, in the funding for construction and installation of appropriate civil defense	Partial completion and future compliance.	HK will fully fund and install the necessary facilities and equipment in connection with the

Type of Condition	Description of Requirements	Compliance Status as of January 2014	Action Plan for Achieving Full Compliance
Civil Defense Measures	measures as determined by State and City civil defense agencies.	An agreement was reached between HDC and the State and City civil defense agencies prior to the property being placed in bankruptcy on what civil defense measures are needed.	construction of this project.
9. Chain Link Fence 10. Clearance and Maintenance of Land	HDC shall erect a chain link fence along the eastern boundary of the Property that is common with the Waikele Branch of Naval Magazine, Lualualei. HDC shall clear and maintain the land situated within 20 feet of the eastern boundary of the Property, free of trees and vegetation taller than eight inches high.	Future compliance by others.	HDC never acquired the land on which this fence and cleared area would be located, and HK does not plan to add it to this Project. Title is still held by the Robinson Estate, and it is still zoned for agricultural use. Future erection of a fence and maintenance of clear area along this boundary, if still required (it is noted that the high-security Naval Magazine in Waikele Gulch is no longer in operation and ownership is being transferred to a private developer), will be the responsibility of any future developer of these Robinson lands.
11. Pollutants	HDC shall coordinate with the DOT and DES to establish appropriate systems to contain spills and prevent materials, such as petroleum products, chemicals, solvents or other pollutants from leaching into the storm drainage system and adversely affecting the groundwater and coastal waters.	Future compliance.	HK will meet with DOH and DES prior to initiating project construction to agree upon a plan and program for compliance with this requirement, and will establish pollution control systems and implement such other actions as are called for in the approved plan and program.
12. Wastewater Treatment	HDC shall participate on a pro rata basis in the funding and construction of adequate wastewater treatment, transmission and disposal facilities, as determined by the DOH and DES.	Future compliance	HK will meet with DOH and DES prior to initiating project construction to establish an approved program for compliance with this requirement, and will implement this program. The initial wastewater master plans are being updated to reflect the new master plan for the community.

Status Report on Royal Kunia Phase II Development Compliance with Conditions
State of Hawaii Land Use Commission Amended Decision and Order (Docket No. A92-683, October 1, 1996)
Submitted by Halekua-Kunia LLC (HK), January 2014

Type of Condition	Description of Requirements	Compliance Status as of January 2014	Action Plan for Achieving Full Compliance
13. Soil Erosion and Dust Control	HDC shall implement effective soil erosion and dust control measures both during and after construction to the satisfaction of the DOH.	Future compliance.	HK will meet with DOH prior to initiating project construction to establish an approved soil erosion and dust control program, and will implement this program.
14. Air Quality Monitoring	HDC shall participate in an air quality monitoring program as specified by the DOH.	Future compliance.	HK will meet with DOH prior to initiating project construction to establish an agreement defining HK's participation in a DOH-specified air quality monitoring program for the area where the project site is located.
15. Agricultural District Pollution	HDC shall provide notification to all owners and occupants of the Property of the potential odor, noise, and dust pollution resulting from surrounding Agricultural District lands, and that the Hawai`i Right-to-Farm Act, Chapter 165 HRS, limits the circumstances under which pre-existing farming activities may be deemed a nuisance.	Future compliance.	HK will provide such notification along with any sales or leases of residential lots or other portions of the property to other parties. It will be the responsibility of these other parties to notify any new occupants of their properties that result from their resale, sub-lease and/or rental.
16. Drainage Improvements	HDC shall provide drainage improvements for the subject project and shall coordinate off-site improvements with adjoining landowners and developers, and/or other Federal, State, and City agencies.	Partial completion and future compliance.	HDC completed the majority of required off-site drainage improvements for the Royal Kunia Phase II property in connection with the infrastructure construction for Village Park and Royal Kunia Phase I. Prior to the initiation of construction at Royal Kunia Phase II, HK will work with adjoining landowners and developers, and with appropriate Federal, State and City agencies, to coordinate and agree on the type and completion schedule for any future required off-site drainage improvements. The initial drainage master plans are being updated to reflect the new master plan for the community.
17.	Should any archaeological resources such as artifacts, shell, bone or charcoal deposits, human burials, or rock or coral	Partial completion and	Archaeological surveys of the Royal Kunia Phase II property indicate the absence of any

Type of Condition	Description of Requirements	Compliance Status as of January 2014	Action Plan for Achieving Full Compliance
Archaeological Resources	alignments, paving or walls of historic or prehistoric significance be encountered during the development of the Property, HDC shall immediately stop work on the impacted area and contact the DLNR Historic Preservation Division.	future compliance.	above-ground archaeological features and no evidence of past use that would have generated potentially significant archaeological or historic sites. HK will work closely with the Historic Preservation Division and comply with all established procedures to protect any archaeological resources that might be encountered during future development and construction on this property.
18. Development Plan Approvals	HDC shall obtain Development Plan approvals from the City and County of Honolulu within five (5) years from the date of this Order.	Fully met.	All required Development Plan approvals have been obtained, and the Royal Kunia Phase II project is in full compliance with the current Central Oahu Sustainable Communities Plan. No further action is required. In 2009, HK obtained Planned Development-Housing (PD-H) approval from DPP.
19. Agricultural Park	HDC shall convey the agricultural park to the State of Hawai`i and provide off-site infrastructure to the agricultural park, pursuant to the terms of the Memorandum of Understanding (MOU) dated March 30, 1993 entered into by HDC and the Department of Agriculture (DOA). This MOU was replaced on March 2, 2007 with an "Amendment and Restatement of Memorandum of Understanding" (Amended MOU), which includes the following requirements for the provision of off-site infrastructure to the agricultural park: A. HDC shall prepare and reach agreement with DOA no later than December 31, 2007 on a preliminary site plan for the agricultural park that identifies the locations of the roadway and infrastructure connections to be provided to the agricultural park's boundary. B. Following approval of the preliminary site plan, HDC shall design the off-site infrastructure improvements for the agricultural park, including roadway, potable and irrigation	Partial completion and future compliance. Title to the 150 acre agricultural park was transferred to the State of Hawai`i in 2004.	HK met with DOA on May 9, 2007 to begin the process of establishing an agreed-upon plan and program to implement the provisions of the Amended MOU. HK intends to plan, design and construct such infrastructure improvements in full compliance with these provisions. HK and DOA have coordinated on the compliance with MOU conditions, issuing deadline date schedule changes for satisfaction of Condition A, as listed below: - 1st Amendment to Amended MOA 2009 - 2nd Amendment to Amended MOU 2011 Modification to deadlines for submittal of Preliminary Site Plan to December 31, 2013. Compliance with Conditions 19. B-D regarding will follow in sequence, at the time that project development commences.

Type of Condition	Description of Requirements	Compliance Status as of January 2014	Action Plan for Achieving Full Compliance
	water lines, sewer lines, and other utility connections up to the park's boundary at no cost to DOA. These improvements shall be sufficient to service the agricultural uses contemplated by DOA and up to 50 farm employee housing units, if DOA determines that they should be a part of the agricultural park. The design plans shall be submitted to DOA for approval no later than December 31, 2008. C. Following DOA approval of the design plans, HDC shall at its sole cost and expense (1) obtain all necessary government permits and approvals for the off-site infrastructure construction, and (2) substantially complete the construction and installation of this infrastructure no later than January 1, 2011. D. HDC and DOA may mutually agree to extend to a later date any of the above-stated completion dates.		DOA has initiated master planning of the agricultural park site has prepared and recently submitted a draft EIS for the project.
20. Compliance With Representations	HDC shall develop the property in substantial compliance with the representations made to the Land Use Commission (LUC). Petitioner's or its successor's failure to so develop the Property may result in reversion of the property to its former classification, or change to a more appropriate classification.	Partial completion and future compliance.	As described in the above Action Plan statements for Conditions 1 through 19, HK will continue to fulfill the requirement to develop the HDC-owned portion of Royal Kunia Phase II in substantial compliance with its representations to the LUC. HK understands that failure on its part (or on the part of the other owners of property within the reclassification area) to develop the reclassified lands in substantial compliance with such representations could result in a reversion of part or all of the subject land to its former land use classification, or in a change to different land classification. Pursuant to its discussions with the Office of Planning of the State of Hawaii (OSP), HK reported that the project has been delayed due to the bankruptcy of the original ownership group and the assumption of ownership by the principal lender Canyon Capital. However, the new owners continue to move the project forward with the expectation of beginning site work by late 2014 or early 2015.

Status Report on Royal Kunia Phase II Development Compliance with Conditions
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Type of Condition	Description of Requirements	Compliance Status as of January 2014	Action Plan for Achieving Full Compliance
21. Transfer of HDC's Interest in the Property	In reliance upon HDC's representation that it will develop the project on his own and in its entirety, HDC shall obtain prior approval from the LUC before it can sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interest in the property or project covered by the approved Petition.	Partial completion and future compliance.	HK has obtained the LUC's approval of recent changes in the ownership interest of the HDC-owned portion of Royal Kunia Phase II, and will continue to comply with all requirements of this condition.
22. Annual Reports	HDC shall promptly provide without any prior notice, annual reports to the LUC, OSP and DPP in connection with the status of the project and HDC's progress in complying with the conditions imposed. The annual reports shall summarize: (1) HDC's progress in complying with the conditions imposed; and (2) changes to the project as represented to the LUC. They shall also include a written statement from each State and City and County agency affected by these conditions that HDC's representations in the annual report related to the respective state or county agency being affected are true and accurate.	Partial completion and future compliance.	Provision of the annual reports was suspended while the property was in bankruptcy. A "2007 Status Report" was prepared and submitted to the LUC on April 27, 2007, in compliance with this condition. This "Compliance Status Report" enumerates the requirements of the LUC conditions, the current compliance status, and the action plan for achieving full compliance. Since 2008, HK has submitted annual "Status Reports" to DPP in the form of the April 27, 2007 report, as updated "Compliance Status Report" in the form of this report. Annual Status Reports will be prepared and submitted to LUC and State Office of Planning (OP).
23. Release of Conditions	The LUC may fully or partially release these conditions as to all or any portions of the property upon timely motion and upon the provision of adequate assurance of satisfaction of these conditions by HDC. Adequate assurance of satisfaction may be evidenced by execution of a certificate of satisfaction in recordable form stating that such condition has been satisfied, in whole or in part. OSP will certify for itself and all state departments and agencies, and DPP will certify for itself and all County departments and agencies. Any other party to the boundary amendment proceeding may be asked to indicate whether they concur in the certification of satisfaction.	Future compliance. No motions for a full or partial release of conditions have been filed to date.	HK intends to apply to the LUC for such releases in the future, as appropriate.

Status Report on Royal Kunia Phase II Development Compliance with Conditions
State of Hawaii Land Use Commission Amended Decision and Order (Docket No. A92-683, October 1, 1996)
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Type of Condition	Description of Requirements	Compliance Status as of January 2014	Action Plan for Achieving Full Compliance
24. Recording of Statement Re Property Subject to Conditions	Within 7 days of the issuance of the LUC's Decision and Order for the subject reclassification, HDC shall (1) record with the Bureau of Conveyances a statement to the effect that the property is subject to conditions imposed by the LUC in the reclassification of the property; and (2) shall file a copy of such recorded statement with the LUC.	Fully met.	No further action is required.
25. Recording of Conditions	HDC shall record the conditions imposed by the LUC with the Bureau of Conveyances pursuant to Section 15-15-92, Hawai`i Administrative Rules.	Fully met.	No further action is required.

LIST OF ACRONYMS

BWS	City and County of Honolulu Board of Water Supply
DES	City and County of Honolulu Department of Environmental Services
DLNR	State of Hawaii Department of Land and Natural Resources
DOA	State of Hawaii Department of Agriculture
DOE	State of Hawaii Department of Education
DOH	State of Hawaii Department of Health
DOT	State of Hawaii Department of Transportation
DPP	City and County of Honolulu Department of Planning and Permitting
DTS	City and County of Honolulu Department of Transportation Services
HDC	Halekua Development Corporation
HK	Halekua-Kunia LLC
LOTMA	Leeward Oahu Transportation Management Association
LUC	State of Hawaii Land Use Commission
MOU	Memorandum of Understanding
OSP	State of Hawaii Office of Planning

Attachment 1 - SLUC Chronology Relating to Condition 2 of D&O

- April 19, 2013 - Meet with DOT (Ashikawa, Wurster, Pascua, Riegels) to discuss wording and issues related to Condition 2 of Docket No. A92-683 Amended D&O (1996) regarding the third northbound lane between Kunia Interchange and north Kupuna Loop intersection.

- June 17, 2013 – Meet with State Land Use Commission to discuss filing a motion to amend Docket No. A92-683 Amended D&O (1996) to amend Condition 2 regarding the third northbound lane between Kunia Interchange and north Kupuna Loop intersection.

- June 18, 2013 – Meet with DOT (Ashikawa, Wurster, Pascua, Carr, Riegels) to discuss filing a motion to amend Docket No. A92-683 Amended D&O (1996) to amend Condition 2 regarding the third northbound lane between Kunia Interchange and north Kupuna Loop intersection.

- June 20, 2013 – Meet with State Office of Planning to discuss filing a motion to amend Docket No. A92-683 Amended D&O (1996) to amend Condition 2 regarding the third northbound lane between Kunia Interchange and north Kupuna Loop intersection.

- June 28, 2013 – Meet with Honolulu Dept. of Planning and Permitting staff to discuss filing a motion to amend Docket No. A92-683 Amended D&O (1996) to amend Condition 2 regarding the third northbound lane between Kunia Interchange and north Kupuna Loop intersection.

- July 15, 2013 – Motion filed with State Land Use Commission to amend Docket No. A92-683 Amended D&O (1996) to amend Condition 2 regarding the third northbound lane between Kunia Interchange and north Kupuna Loop intersection.

- July 22, 2013 – Meeting with DOT and OSP (Ashikawa, Yee, Pascua, Lock, Carr, Riegels) held to discuss amendment of Condition 2.

- July 24, 2013 – OSP letter requesting extension of time to file response to Motion.

- August 6, 2013 – Meeting with DOT (Ashikawa, Wurster, Pascua, Carr, Riegels) to discuss wording of amendment.

- August 9, 2013 - Meeting with DOT (Tatsuguchi, Takeshita, Ashikawa, Wurster, Pascua, Carr, Riegels) to review wording of amendment.

- August 22, 2013 – LUC hearing unanimously accepting motion to amend Condition 2 (Docket No. A92-683 Amended D&O (1996) regarding third northbound lane between Kunia Interchange and north Kupuna Loop intersection).

- October 4, 2013 – LUC Adoption of Order amending Docket No. A92-683 Amended D&O (1996).

Attachment 2 - 2013 Kunia Road chronology

- February 22, 2013 – List of projects to be included in Regional growth analysis is accepted by DOT.
- April 4, 2013 - Ambient growth rate of 2% per year is accepted by DOT based on 2035 Traffic Model Growth Table dated 3/28/2013 and revised ScreenLine analysis.
- April 15, 2013 – KOA Traffic Impact Study (w/ and w/o project) for RK2 Project issued (JB23054).
- June 18, 2013 – DOT meeting to discuss LUC amendment (Tatsuguchi, Ashikawa, Wurster, Carr, Riegels, Pascua).
- July 5, 2013 – Wilson-Okamoto letter regarding 3rd NB lane issued
- July 22, 2013 – DOT meeting (Ashikawa, Wurster, Riegels, Pascua) to discuss 3rd NB lane.
- August 6, 2013 – RM Towill meeting (Riegels, Mendes) to initiate preliminary design work along Kunia Road.
- August 9, 2013 – DOT meeting (Ashikawa, Wurster, Riegels, Mendes) to discuss preliminary geometrics for Kunia Road roadway design.
- September 5, 2013 – W-O transmittal of updated KOA queuing analysis at South Kupuna Loop.
- September 6, 2013 – DOT meeting (Tatsuguchi, Ashikawa, Wurster, Carr, Riegels, Pascua, Mendes) to review current TIAR (all remaining issues outstanding) as well as queuing analysis for interim modifications to 3rd NB lane (revise to right and thru at S. Kupuna Loop and add right turn lane to N. Kupuna Loop.
  - Finalization of the TIAR to include the following:
    - Provide an "Executive Summary" type documents to distill and make clearly understandable the findings to the KOA traffic study. The summary should be written so that a non-technical reader can follow and understand the findings.
    - Provide a written response letter to the 9/12/12 DOT comment letter showing how or if the current version of the TIAR incorporated or responded to these comments.
    - Upon receipt of the summary and response letters, DOT will provide a final review letter.
  - Submit queuing study to determine if interim solution to extension of the 3rd NB lane will have a negative effect on traffic flows leading to and thru South Kupuna Loop.
  - Work with Ken Tatsuguchi, Engineering Planning Manager, DOT – Highways, to develop a clear scope of work and prepare interchange alternatives study for the Kunia Road / H-1 interchange.
- September 18, 2013 – KOA Intersection Queuing Analysis issued.
- October 18, 2013 – KOA response to 9/6/12 DOT comments RE: 2/17/12 TIAR issued.
- October 18, 2013 – Revised KOA Intersection Queuing Analysis issued.
- October 31, 2013 – RM Towill geometric plans issued.
- November 19, 2013 – Revised KOA Intersection Queuing Analysis issued.
- December 3, 2013 – Updated RM Towill roadway sections issued.
- December 10, 2013 – KOA executive summary for TIAR issued.
- December 11, 2013 - DOT meeting (Tatsuguchi, Ashikawa, Wurster, Carr, Riegels, Pascua, Mendes) to finalize queuing analysis and interim modifications to 3rd NB lane and obtain DOT agreement as to configuration of future roadway improvements including laneage and median widths.
  - 3rd NB lane queuing study and geometrics approved. Detailed engineering may proceed.
  - Kunia Road ROW width widened by an additional 6' to accomodate median safety zone.
  - Roadway to be of consistent width and alignment over length of improvement.
  - RM Towill to update ROW and roadway geometrics.

DATE: 7-30-2014

Submittal Sheet for Historic Preservation Review Filing Fees

State Historic Preservation Division
Department Land and Natural Resources

Agency/Firm (Requesting Review): SCIENTIFIC CONSULTANT SERVICES

Contact: BOB SPEAR

Phone: 597-1182 Fax: 597-1193 E-mail: bob@scshawaii.com

Address: 1347 KAPIOLANI BLVD., # 408
HONOLULU, HAWAII 96814

Title of Report/Plan: AIS FOR THE HO'OHANA SOLAR FARM PROJECT IN KUNIA

Island:	O'AHU	District:	EWA	Ahupua`a:	WAI KELE

TMK [(1) 1-1-001:001]: TMK: (1) 9-4-002:052

Acreage inventoried (hectares):	16.1		Number of new sites inventoried:	2
Please characterize survey level: Reconnaissance or intensive				

Submitted Plan/Report Fee & Type: (All reports or plans submitted to the SHPD for review shall be accompanied by the appropriate fee in accordance with HAR §13-275-4 and §284-4).

1544
AIS

____		Check if Report is a Re-Submittal (no fee charged)
____	$50	Archaeological Assessment
____	$150	Archaeological Inventory Survey Plan
X	$450	Archaeological, Architectural or Ethnographic Survey Report
____	$150	Preservation Plan
____	$25	Monitoring Plan
____	$150	Archaeological Data Recovery Plan
____	$250	Burial Treatment Plan
____	$100	Archaeological Monitoring Report, if resources reported
____	$450	Archaeological Data Recovery Report
____	$450	Ethnographic Documentation Report
____	$25	Burial Disinterment Report
____	$50	Osteological Analysis Report

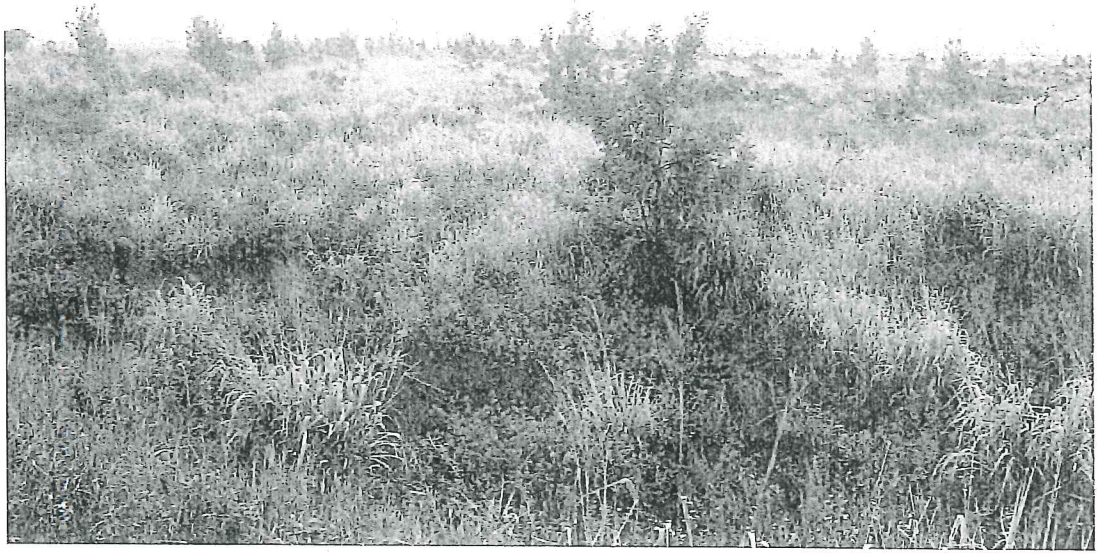
Fee Total: _____ (Make check payable to "Hawaii Historic Preservation Special Fund")

For Office Use Only:

Date Received:	Payment Method:
1 AUG 2014	Cash $ 450.00 Check ✓ Check No.: 7450
Log No.: 2014.03535	Receipt Issued: #07159

AECOS No. 1386B

Natural resources survey for the Ho‘ohana Solar Farm site in Kunia, O‘ahu



Prepared by:

AECOS, Inc.
45-939 Kamehameha Hwy, Suite 104
Kāne‘ohe, Hawai‘i 96744-3221

September 24, 2014

Natural resources survey for the Hoʻohana Solar Farm site in Kunia, Oʻahu

September 24, 2014 *AECOS* No. 1386B

Eric Guinther and Reginald David[1]
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Introduction

Hoʻohana Solar 1 plans to construct a solar panel array (the "Project") on a parcel (TMK: 9-4-002:052) at Kunia in the central valley of Oʻahu (*na ahupuaʻa* o Hōʻaeʻae and Waikele; see Figure 1). The Project parcel is approximately 161 acres (65 ha) in area, all of which was surveyed for biological and other natural resources. The survey area also included the mostly paved, Plantation Road, to serve as the Project access route through active farm lands from Kunia Road (state route 750).

The project area is gently sloping land at around the 600-ft (180-m) elevation and is nearly all in agriculture (cropping), comprising both fallow and recently tilled fields (see Figure 2). The property is adjacent to Waikele Gulch, ending just short of a road along the lip of the gulch. At the northern end, the parcel drops down onto a sloped shelf some 30 to 70 ft lower than the main part of the property. A steep face separates the shelf from the latter. This shelf appears to be an ancient, abandoned gulch floor of either or Poliwai or ʻEkahanui gulches, which now enter Waikele Gulch along the north edge of the shelf. Project plans presently do not include the portion of this parcel on the shelf (or its steep margin) as part of the development.

At the south end of the parcel, the land is not being used for cropping. Reviewing satellite images available on Google Earth back to about 2000 suggests this southern area has not been used for crops since then, but was probably used as pasture at some time during or before this period. Shrub

[1] Rana Biological Consulting, Inc., Kailua-Kona, Hawaiʻi.

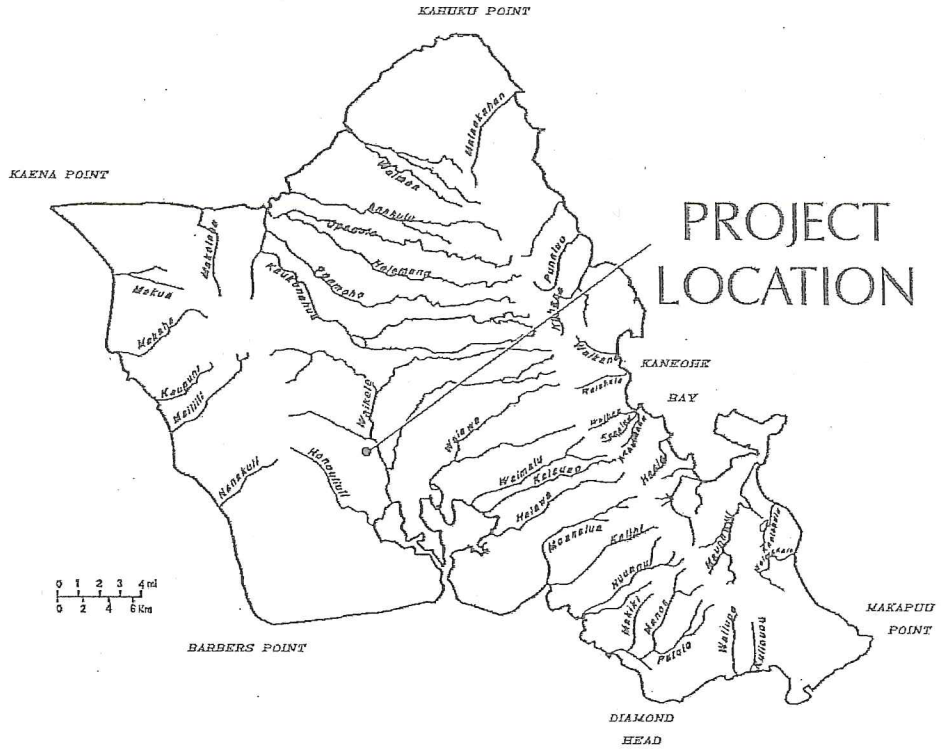

Figure 1. Location of Ho'ohana Solar Farm on O'ahu.

growth starts to appear around 2007, but does not become dominant until 2013. Aerial images from the 1950s (LSB, 1963) show the entire parcel was in pineapple fields at that time, with the exceptions of a small gulch on the eastern edge and the shelf area described above at the north end. Project plans show this southern area will be used for solar arrays and a storm-water runoff detention basin.

Although the parcel could be accessed by constructing a road over the long narrow strip of land (flag pole) running out to Kunia Road from the western edge of the property, preferred access will be along Plantation Road (see Fig. 2) and then follow the graded agriculture road into the northwest corner of the parcel. The narrow flag pole strip extends across land that is under cropping at either end, but mostly crosses a strip of presently unused land that is vegetatively identical to that described above for the south end of the project parcel. Plantation Road is an improved (paved) agricultural access road located

a short-distance further north off of Kunia Road and is bordered by active cropping of agricultural products, including some pineapple.

Figure 2. Site parcel, TMK: 9-4-002:052, outlined on satellite image.

Methods

Plants

Our survey of the flora in the Project area was undertaken on May 20 and August 18, 2014, and entailed a wandering pedestrian transect that traversed primarily those parts of the property that were not tilled and prepared for cropping. The survey area was all of the property as outlined in Fig. 2 (above) and the mostly paved Plantation Road visible in Fig. 2, coming into actively farmed fields from Kunia Road. A GNSS unit (Trimble, Series 6000 GeoXH) was used to record the progress track of the botanist and provide real time feedback on survey coverage. Plant species were identified as they were encountered and notations used to develop a qualitative sense of abundance as the survey progressed. Although the survey was conducted at the start of the dry season (May) and well; into the dry season (August), conditions on central O'ahu in 2014 were exceptionally wet in terms of regularity of rainfall. The vegetation appeared well watered. The August survey was limited to the Poliwai Shelf (see Figure 2).

For a few species not immediately recognized in the field, photographs were taken and/or material collected for identification at the laboratory. Species names follow the nomenclature in *Manual for the Flowering Plants of Hawai'i: Volumes I and II* (Wagner et al., 1990) as updated by various more recently published papers summarized by Imada (2012).

Animals

Twelve avian count stations were sited roughly equidistant from each other within the survey area. A single six-minute avian point count was made at each of the nine count stations. Field observations were made with the aid of Leica 8 X 42 binoculars and by listening for vocalizations. Avian counts were conducted in the early morning hours. Time not spent counting at point count stations was used to search the area for species and habitats not detected during point counts. Weather conditions were ideal, with no rain, unlimited visibility, and winds of between 3 and 7 kilometers per hour. The avian phylogenetic order and nomenclature used in this report follows the *AOU Check-List of North American Birds* (American Ornithologists' Union, 1998), and the 42nd through 54th supplements to the Check-List (American Ornithologists' Union, 2000; Banks et al., 2002, 2003, 2004, 2005, 2006, 2007, 2008; Chesser et al., 2009, 2010, 2011, 2012, 2013, 2014).

Our survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all mammalian species detected within the project area. Mammal scientific names follow Wilson and Reeder (2005).

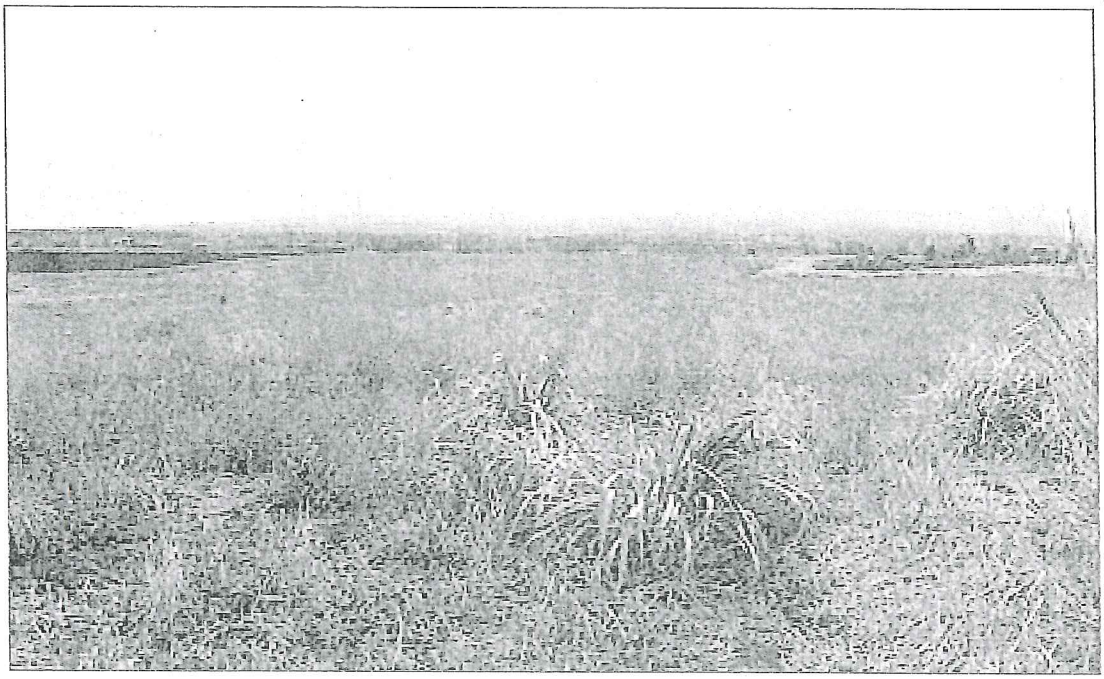

Figure 3. View looking northeast into central part of site across a fallow field.

Results

Vegetation

The vegetation over a majority of the site is controlled by the present and past land uses. Large parts are tilled fields with very little vegetation. Other fields are presently fallow and support a weedy growth of grasses and other herbaceous plants (Figure 3, above). Areas not recently in use for agricultural purposes or perhaps never used for agricultural purposes (two small gulches and the northern shelf area) are covered by grassland with patches of scrub growth and scattered trees. In areas not recently cropped, the vegetation is dominated by Guinea grass (*Urochloa maxima*) and *koa haole* (*Leucaena leucocephala*) scrub, with trees (particularly silk oak or *Grevillea robusta*)

coming in (Figure 4). Density of the scrub growth is greatest in areas closest to Waikele Gulch and on the sloping margin of Poliwai Shelf (see Fig. 2).

Figure 4. Waste grassland with shrubs in the southwest and northeast parts of the Project area.

Flora

The flora of a site is a listing of the plant species found there. Table 1 is the list developed from our plant survey of the Ho'ohana Solar Farm site. A total of 63 taxa are listed. The status (whether native or introduced) of each taxon is given in column 3. Sixty-one of the taxa (97%) are introduced or non-native [Nat or Orn] species. Only two species (3%) are considered native Hawaiian plants [**Ind**]: *'uhaloa* (*Waltheria indica*) and *'a'ali'i* (*Dodonaea viscosa*). *'Uhaloa* is a very common ruderal species on lowland O'ahu. In a few areas (particularly field roads that were essentially abandoned), this plant was locally very abundant. *'A'ali'i* is not so common on O'ahu, but is not regarded as rare in the Islands by any means. Several plants were seen during our survey: a relatively

large individual in the less disturbed area at the south end of the Project site and several individuals across the south facing slope in the Poliwai Shelf area.

Table 1. Species listing (flora) for the Ho'ohana Solar Farm site in Kunia, O'ahu.

Species listed by family	Common name	Status	Abundance in survey	Notes
	FLOWERING PLANTS			
	DICOTYLEDONES			
AMARANTHACEAE				
Alternanthera pungens Kunth	khaki weed	Nat	O1	
Amaranthus spinosus L.	spiny amaranth	Nat	C	
Amaranthus viridus L.	slender amaranth	Nat	AA	
ANACARDIACEAE				
Alternanthera pungens Kunth	Christmas berry	Nat	R	<2>
ASTERACEAE (COMPOSITAE)				
Bidens alba (L.) DC.	---	Nat	AA	
Bidens pilosa L.	*kī*	Nat	O2	
Conyza bonariensis (L.) Cronq.	hairy horseweed	Nat	U	<2>
Crassocephalum crepidioides (Benth.) S. Moore	---	Nat	R1	
Emilia fosbergii Nicolson	*pualele*	Nat	R1	
Lactuca serriola L.	prickly lettuce	Nat	O	
Pluchea carolinensis				
Sonchus oleraceus L.	sow thistle	Nat	C	
Verbesina encelioides (Cav.) Benth. & Hook.	golden crown-beard	Nat	AA	
BIGNONIACEAE				
Spathodea campanulata P. Beauv.	African tulip tree	Nat	O2	<2>
BRASSICACEAE				
Lepidium virginicum L.	---	Nat	R	
CHENOPODIACEAE				
Salsola tragus L.	Russian thistle	Nat	O	
CONVOLVULACEAE				
Ipomoea triloba L.	little bell	Nat	A	
CUCURBITACEAE				
Coccinia grandis (L.) Voigt	scarlet-fruited gourd	Nat	R	
Momordica charantia L.	wild bitter melon	Nat	O	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance in survey	Notes
CARYOPHYLLACEAE				
Drymaria cordata (L.) Willd. ex Roem. & Schult.	*pipili*	Nat	R	
EUPHORBIACEAE				
Euphorbia heterophylla L.	*kaliko*	Nat	U	
Euphorbia hirta L.	garden spurge	Nat	R2	
Euphorbia hypericifolia L.	graceful spurge	Nat	U2	
Macaranga tanarius (L.) Müll. Arg.	---	Nat	R	
Ricinus communis L.	castor bean	Nat	R2	
FABACEAE				
Acacia confuse Merr.	Formosan koa	Nat	R	
Albizia saman F. Muell.	monkeypod	Nat	R	
Chamaecrista nictitans (L.) Moench	partridge pea	Nat	R	<2>
Crotalaria incana L.	fuzzy rattlepod	Nat	U	<2>
Crotalaria pallida Aiton	smooth rattlepod	Nat	R	<2>
Desmanthus pernambucanus (L.) Thellung	virgate mimosa	Nat	U	<2>
Falcataria moluccana (Miq.) Barneby & J. W. Grimes	albizia tree	Nat	R	<2>
Indigofera hendicaphyla Jacq.	creeping indigo	Nat	R	
Indigofera suffruticosa Mill.	indigo	Nat	O	<2>
Leucaena leucocephala (Lam.) deWit	*koa haole*	Nat	AA	<2>
Macroptilium atropurpureum (DC.) Urb.	---	Nat	C	
Macroptilium lathyroides (L.) Urb.	cow pea	Nat	R	<1,2>
LAMIACEAE				
Hyptis pectinata (L.) Poit.	comb hyptis	Nat	O2	<2>
MALVACEAE				
Malva parviflora L.	cheese weed	Nat	U1	
Sida ciliaris L.	---	Nat	U1	
Sida spinosa L.	prickly sida	Nat	R	
Waltheria indica L.	*'uhaloa*	Ind	O3	<2>
MELIACEAE				
Melia azedarach L	Chinaberry	Nat	R	<2>
MORACEAE				
Ficus microcarpa L. f.	Chinese banyan	Nat	R	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance in survey	Notes
MYRTACEAE				
Psidium guajava L.	common guava	Nat	R	<2>
Syzigium cumini L.	Java plum	Nat	U	
NYCTAGINACEAE				
Boerhavia coccinea Mill.	false *alena*	Nat	O	
PASSIFLORACEAE				
Passiflora foetida L.	running pop	Nat	O	
PORTULACEAE				
Portulaca oleracea L.	pigweed	Nat	U1	
PROTEACEAE				
Grevillea robusta A. Cunn. ex R. Br.	silk oak	Nat	U2	<2>
SAPINDACEAE				
Dodonaea viscosa Jacq.	*'a'ali'i*	Ind	U1	<2>
SOLANACEAE				
Nicotiana glauca R.C. Graham	tree tobacco	Nat	R	
Solanum lycopersicum var. *cerasiforme* (Dunal) Spooner, G. Anderson, & Jansen	wild cherry tomato	Nat	R	
VERBENACEAE				
Lantana camara L.	lantana	Nat	U1	<2>
ZYGOPHYLLACEAE				
Tribulus terrestris L.	puncture vine	Nat	O	
	FLOWERING PLANTS			
	MONOCOTYLEDONES			
CYPERACEAE				
Cyperus rotundus L.	nut grass	Nat	U3	
POACEAE				
Avena sativa L.	oat; cult. var.	Orn	A1	
Cenchrus echinatus L.	sand bur	Nat	O	
Chloris barbata (L.) Sw.	swollen fingergrass	Nat	A	
Chloris divaricata R. Br.	stargrass	Nat	R	
Digitaria insularis (L.) Mez ex Ekman	sourgrass	Nat	A	
Eleusine indica (L.) Gaertn.	wiregrass	Nat	A	
Melinus repens (Willd.) Zizka	Natal redtop	Nat	A	
Setaria verticillata (L.) P. Beauv.	bristly foxtail	Nat	O1	
Sorghum cf. *bicolor* (L.) Moench	sorghum; cult. var.	Orn	O	
Sorghum halepense (L.) Pers.	Johnson grass	Nat	O	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance in survey	Notes
POACEAE (continued)				
Urochloa maxima (Jacq.) R. Webster	Guinea grass	Nat	AA	<2>
Urochloa mutica (Forssk.) T.Q. Nguyen	California grass	Nat	R	

Key to Table 1:

STATUS = distributional status for the Hawaiian Islands:
- **Ind** = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.
- Nat = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.
- Orn = A cultivated plant; a species not thought to be naturalized (spreading on its own) in Hawai'i.

ABUNDANCE = occurrence ratings for plant species:
- --- Species not present in area.
- R – Rare — seen in only one or perhaps two locations.
- U - Uncommon — seen at most in several locations
- O - Occasional — seen with some regularity
- C - Common — observed numerous times during the survey
- A - Abundant — found in large numbers; may be locally dominant.
- AA - Very abundant — abundant and dominant; defining vegetation type.

Numbers (1 – 3) following qualitative rating of abundance indicate localized abundance is greater than occurrence rating. For example, R3 would be a plant encountered only once or twice, but very numerous where encountered. An A1 would indicate a plant abundant in a limited portion of the survey area.

NOTES: <1> – A single, dead plant seen.
<2> - Also recorded August 18 on Poliwai Shelf.

Fallow fields provide the greatest diversity of species, dominated by ruderal weeds that have come up after the land has been tilled, planted, and harvested. Unusual in this regard is the fact that most of the species on fallow plots are common or abundant; that is, many species dominate, indicating a seed bank that was allowed to germinate at a specific point in time in the not too distant past. The weeds around the margins of the fields and along farm roads tend to be a bit more diverse, but include many species that are rare or uncommon. Of course, both areas share a mostly similar list of species, so no attempt was made to describe the flora by type of area.

Birds

A total of 722 individual birds of 24 species, representing 17 separate families, was recorded during station counts (Table 2). All 24 avian species recorded during the course of this survey are alien to the Hawaiian Islands. Avian diversity and densities are in keeping with the highly disturbed nature of the environment present in the survey area. Three species—Zebra Dove (*Geopilia striata*), Common Waxbill (*Amandava amandava*), and Red-vented Bulbul (*Pycnonotus cafer*)—accounted for slightly less than 48.5% of all birds recorded during station counts. The most frequently recorded species was Zebra Dove, which accounted for 20% of the total number of individual birds recorded during station point counts.

Table 2. Avian species detected at the Ho'ohana Solar Farm site in 2014.

Common Name	Scientific Name	ST	RA
	PHASIANIDAE - Pheasants & Partridges		
	Phasianinae - Pheasants & Allies		
Gray Francolin	*Francolinus pondicerianus*	A	0.83
0.670.67Black Francolin	*Francolinus francolinus*	A	2.08
Ring-necked Pheasant	*Phasianus colchicus*	A	0.33
	PELECANIFORMES		
	ARDEIDAE - Herons, Bitterns & Allies		
Cattle Egret	*Bubulcus ibis*	A	3.92
	COLUMBIFORMES		
	COLUMBIDAE - Pigeons & Doves		
Spotted Dove	*Streptopelia chinensis*	A	3.75
Zebra Dove	*Geopelia striata*	A	16.67
	PSITTACIFORMES		
	PSITTACIDAE – Lories, Parakeets, Macaws & Parrots		
	Psittacini –Typical Parrots		
Rose-ringed Parakeet	*Psittacula krameri*	A	0.17
	PASSERIFORMES		
	ALAUDIDAE - Larks		
Sky Lark	*Alauda arvensis*	A	1.50
	PYCNONOTIDAE - Bulbuls		
Red-vented Bulbul	*Pycnonotus cafer*	A	5.75
Red-whiskered Bulbul	*Pycnonotus jocosus*	A	0.83

Table 2 (continued).

Common Name	Scientific Name	ST	RA
	CETTIIDAE - Cettia Warblers & Allies		
Japanese Bush-Warbler	*Cettia diphone*	A	0.92
	ZOSTEROPIDAE - White-eyes		
Japanese White-eye	*Zosterops japonicus*	A	2.00
	TIMALIIDAE - Babblers		
Red-billed Leiothrix	*Leiothrix lutea*	A	0.17
	TURDIDAE - Thrushes		
White-rumped Shama	*Copsychus malabaricus*	A	0.08
	STURNIDAE - Starlings		
Common Myna	*Acridotheres tristis*	A	3.00
	THRAUPIDAE - Tanagers		
Red-crested Cardinal	*Paroaria coronata*	A	1.75
	EMBERIZIDAE - Emberizids		
Saffron Finch	*Sicalis flaveola*	A	0.25
	CARDINALIDAE - Cardinals Saltators & Allies		
Northern Cardinal	*Cardinalis cardinalis*	A	2.25
	FRINGILLIDAE - Fringilline and Carduline Finches & Allies		
	Carduelinae - Carduline Finches & Hawaiian Honeycreepers		
House Finch	*Haemorhous mexicanus*	A	3.58
	ESTRILDIDAE - Estrildid Finches		
Common Waxbill	*Estrilda astrild*	A	7.42
Red Avadavat	*Amandava amandava*	A	0.92
Java Sparrow	*Lonchura oryzivora*		0.67
Scaly-breasted Munia	*Lonchura punctulata*	A	0.89
Chestnut Munia	*Lonchura atricapilla*	A	0.33

Key to Table 2:

ST	Status
A	Alien – Introduced to the Hawaiian Islands by humans
RA	Relative Abundance – Number of birds detected divided by the number of count stations (12)

Mammals

Four terrestrial mammalian species were detected on site during the course of this survey. Scat, tracks and sign of dog (*Canis familiaris*), small Indian mongoose (*Herpestes auropunctatus*), cat (*Felis catus*), and pig (*Sus scrofa*) were recorded in numerous locations within the survey site. All four of the mammalian species recorded are alien to the Hawaiian Islands and all are deleterious to native species.

Discussion

Plant Resources

No botanical resources of interest or concern were noted by our survey of the Ho'ohana Solar Farm site. With but a couple of common native plants as exceptions, the plants growing at this site are all non-native species. No plants listed as threatened or endangered under either state or federal endangered species statutes occur here now or would be anticipated to be growing in this area (DLNR, 1998; USFWS; 2005a, 2005b, 2012a).

Avian Resources

The findings of the avian survey are consistent with the location of the property, and the habitats present on the site. A total of 24 avian species were recorded. As previously discussed, all of the avian species recorded during the course of this survey are alien to the Hawaiian Islands. The study site is an active large mixed agriculture farm. Locations, and densities of avian species will change as different crops are planted and/or fields are plowed or left fallow.

Although no seabirds were detected during this survey, it is possible that the threatened endemic sub-species of the Newell's Shearwater (*Puffinus auricularis newelli*) over-fly the project area between April and the middle of December each year in very small numbers. Newell's Shearwaters are not known to breed on the Island of O'ahu, though seabirds likely to be this species have been recorded on ornithological radar in low numbers flying over parts of the island.

The primary cause of mortality in Newell's Shearwaters is thought to be predation by alien mammalian species at the nesting colonies (USFWS, 1983; Simons and Hodges, 1998; Ainley et al., 2001). Collision with man-made structures is considered to be the second most significant cause of mortality of this seabird species in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the fall, can become disoriented by exterior lighting. When disoriented, seabirds may collide with man-made structures and, if not killed outright, dazed or injured birds become easy targets of opportunity for feral mammals (Hadley, 1961; Telfer, 1979; Sincock, 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1998; Podolsky et al., 1998; Ainley et al., 2001; Hue et al., 2001; Day et al., 2003).

Although no shorebirds were recorded, it is probable that at least one of the migratory shorebirds species commonly encountered in Hawai'i, the Pacific-Golden Plover (*Pluvialis fulva*), uses resources on a seasonal basis within the

project site. The plover is an indigenous migratory shorebird species which nests in the high Arctic during the late spring and summer months, returning to Hawai'i and the tropical Pacific to spend the fall and winter months each year. They usually leave Hawai'i and return to the Arctic in late April or the very early part of May. As this survey was conducted after most of the wintering plover in Hawai'i had left the Islands for their breeding grounds, it is not surprising that none was recorded. Pacific Golden-Plover are commonly encountered throughout the Hawaiian Islands during late summer through mid-spring months.

The principal potential impact that the installation and operation of a PV electrical generating site poses to protected seabirds is the increased threat that birds will be downed after becoming disoriented by lights associated with the project during the birds' nesting season. The two situations with outdoor lighting that might pose a threat to nocturnally flying seabirds are: 1) during construction it is deemed necessary to conduct night-time construction activities; and, 2) following build-out, security lighting is used around the site. If night-time construction activity or equipment maintenance is proposed during construction, all associated lights should be shielded, and where large flood/work lights are used, they should be placed on poles that are high enough to allow the lights to be pointed directly at the ground. If streetlights or exterior facility lighting is installed at the Project, the lights need to be shielded (Reed et al., 1985; Telfer et al., 1987).

Mammalian Resources

The findings of the mammalian survey are consistent with the location of the property and the habitats currently present on the site. Although no rodents were recorded it is likely that some of the four established alien *muridae* found on O'ahu—roof rat (*Rattus rattus*), brown rat (*Rattus norvegicus*), Polynesian rat (*Rattus exulans hawaiiensis*), and European house mouse (*Mus musculus domesticus*)—use various resources found within the general project area on a seasonal basis. There are a number of rodent bait stations scattered about the farm, trucking and storage areas, indicating that rodents are present and are controlled on parts of the property. All of these introduced rodents are deleterious to native ecosystems.

With the exception of the endangered Hawaiian hoary bat or *'ōpe'ape'a* (*Lasiurus cinereus semotus*), all terrestrial mammals currently found on the Island of O'ahu are alien species, and most are ubiquitous. Hawaiian hoary bat was not detected during the course of this survey. Given the habitats present on the site and the lack of suitable roosting trees, any usage of the area by this species would be of an incidental foraging nature.

No mammalian species currently protected or proposed for protection under either the federal or State of Hawai'i endangered species programs were detected during the course of this survey (DLNR, 1998; USFWS; 2005a, 2014).

Critical Habitat

No federally-declared critical habitat occurs in the project area. There is no equivalent statute or rule under State of Hawai'i laws or regulations.

Wetlands and Streams

No wetlands or streams occur at the project site. However, what appears to be an agricultural drainage system running roughly downslope (north to south) off to the west of the parcel is crossed by the flagpole portion of the parcel. This ditch feature, shown in the National Wetland Inventory (NWI; USFWS, 1984), widens out in the area where it is crossed. The ditch feature is coded in the NWI as PEM1C (seasonally flooded palustrine [marsh] wetland with persistent emergent vegetation) and the expanded feature is coded PEM1Ch (same, plus diked or impounded). Thus, the former is likely a farm drainage ditch and latter is likely a detention basin. Features indicated on NWI maps are not necessarily jurisdictional (that is, do not necessarily come under U.S. Army Corps of Engineers authority) and, indeed, do not necessarily exist. Not all areas mapped by USFWS were field validated by the agency The NWI does not determine federal jurisdiction of wetlands; it is only an inventory of aquatic features. Generally, man-made agricultural ditch and pond systems are exempted from requirements under Section 404 of the Clean Water Act (USACE, 2005; USACE & USEPA, 2007). Of relevance are flow characteristics and where the flow eventually ends up. Flow in this feature appears to be clearly ephemeral in nature in the Project vicinity, and its disposal seems to be into a series of normally dry detention ponds upslope of and within Royal Kunia subdivision in Waipahu.

The pond feature is shown on the USGS topographic sheet (Schofield Barracks Quadrangle, USGS, 7.5-minute Series, 1998) as a pond. A weak blue line is shown on the same sheet below a lower detention basin, this line eventually going into Waipahu near the shore of West Loch, Pearl Harbor. This urban ditch is shown on earlier sheets (Waipahu Quadrangle, USGS, 7.5-minute Series, 1983) as ending at the West Loch shore, but does not appear on the more recent Pearl Harbor Quadrangle (USGS, 7.5-minute Series, 1999). Our assessment, without investigating beyond the maps and satellite images, is that this feature is not jurisdictional in the Project vicinity. However, if it is contemplated to construct a road crossing this feature, the matter should be investigated further.

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DEPARTMENT OF THE NAVY
COMMANDER
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860-5020

IN REPLY REFER TO:
11000
Ser N4(203)/ 5819
11 Jan 96

Mr. Clarence K. Tanonaka
Assistant to the President
ParEn. Inc.
dba Park Engineering
Kawaihao Plaza. Suite 300
567 South King Street
Honolulu. HI 96813-3036

Dear Mr. Tanonaka:

Subj: ROYAL KUNIA PHASE II INCREMENT 3: PROPOSED STATE LAND USE CHANGE (HALEKUA DEVELOPMENT CORPORATION)

In response to your letter of August 21. 1995. informing the Navy of the subject petition for zoning and land use change for the Royal Kunia Phase II. increments II and III. we are providing the following comments.

a. The proposed Royal Kunia Phase II. Increment 3 development borders the Waikele Branch of Naval Magazine Lualualei. In the past. the Waikele Branch mission was to receive. renovate. maintain. store. and issue ammunition and explosives for the Navy. Marine Corps. Army. and Air Force. Previous comments provided by the Navy regarding the Royal Kunia project were based on the premise that ordnance would continue to be stored and handled at the Waikele Branch. As the Navy reacts to changing world events. dynamic forces shape and inevitably affect local conditions. Such has been the case with the Waikele Branch of Naval Magazine Lualualei.

All ordnance has been removed from the Waikele Branch and it is no longer used for ordnance storage. Although the explosives safety zones still remain along the station boundary. steps have been taken to obtain higher authority approval to disestablish them. The Navy is neither for. nor against. the proposed development; however. once the explosives safety zones cease to exist. our previous concerns and comments pertaining to civilian urban development adjacent to the Waikele Branch are no longer applicable.

b. As your proposal did not address the effects of drainage on Waikele Stream and Navy lands. we request that you coordinate future off-site drainage improvements with the Navy such that there be no increase in the amount. nor significant change in the nature. of storm runoff onto Navy land due to the development compared with what has been experienced with the subject lands in sugarcane cultivation.

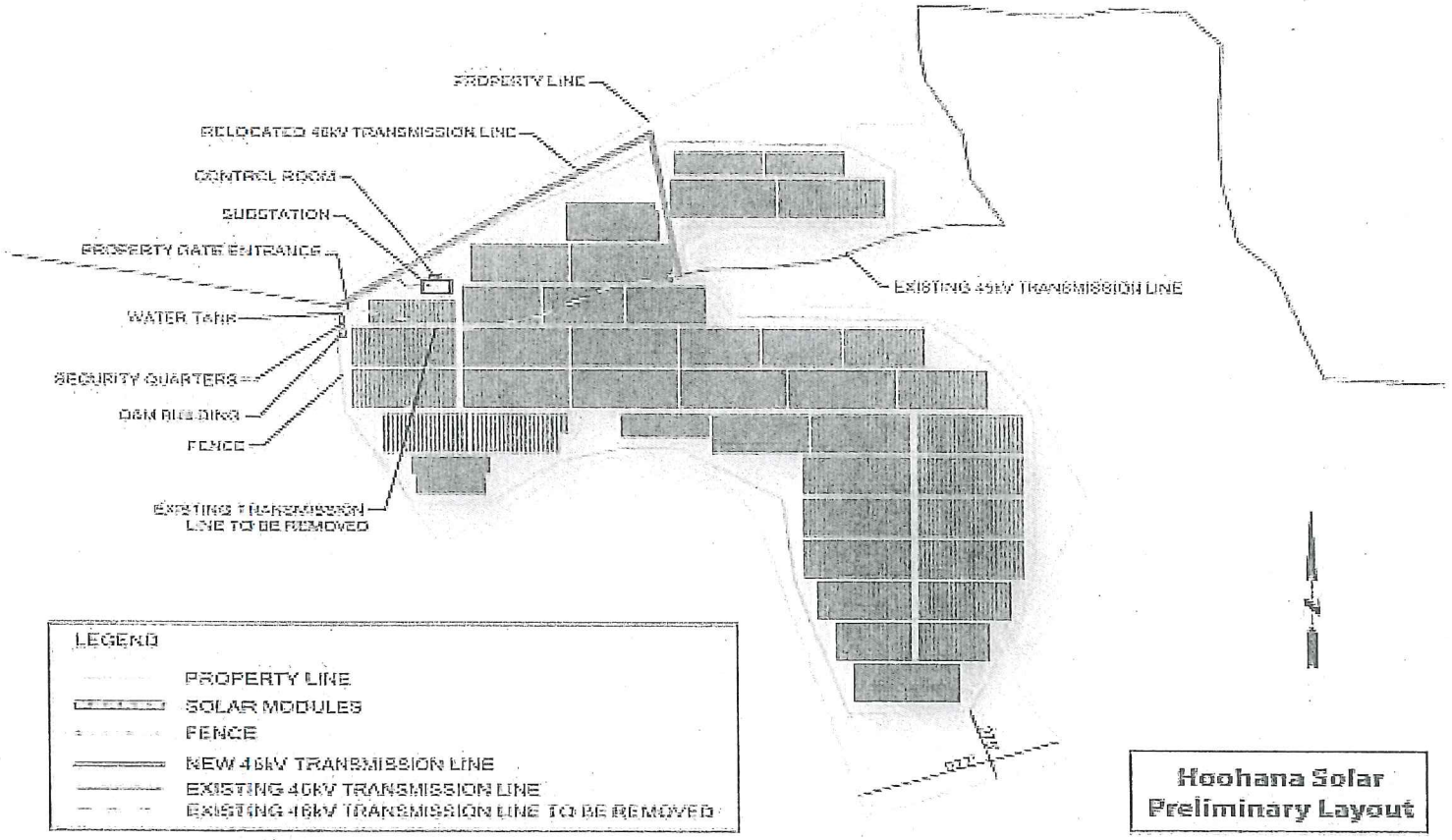
Subj: ROYAL KUNIA PHASE II INCREMENT 3; PROPOSED STATE LAND USE CHANGE
(HALEKUA DEVELOPMENT CORPORATION)

We appreciate the opportunity to review the proposal and provide our comments. Our point of contact is Mr. Stanford Yuen (N42) Facilities Engineer at 474-0439.

Sincerely,

Stanford S.C. Yuen, P.E.
By direction

HO'OHANA SOLAR PROJECT SITE



FEHR & PEERS

September 25, 2014

Ann Bouslog
Development Manager
Forest City Hawaii
5173 Nimitz Road
Honolulu, HI 96815

Subject: ***Construction Traffic Assessment for the Proposed Ho'ohana Solar Farm (Oahu, HI)***

Dear Ms. Bouslog:

Fehr & Peers has prepared a traffic assessment for a proposed solar farm to be constructed by Forest City Sustainable Resources, LLC (FCSR) and Hanwha QCells USA, working together as Ho'ohana Solar 1, LLC (HSO) in the Kunia area on the island of O'ahu. This assessment was prepared in anticipation of potential concerns from the State Land Use Commission (LUC) review of the project application. This letter includes an assessment of the vehicle trip generation anticipated during project construction and during project operations, as well as an evaluation of potential traffic issues within the study area.

PROJECT DESCRIPTION

The proposed project is a new 20 megawatt (MW) solar installation located in Kunia, mauka of Royal Kunia Country Club. According to HSO, the proposed access point for construction traffic is expected to be on Plantation Road, by way of Kunia Road (State Highway 750). Based on the available regional access points/interchanges and the fact that materials will be transported from the Sand Island area to the site, trucks are expected to use H-1 Freeway and Kunia Road to access the site. **Attachment A** displays the project site.

Once operational, the solar farm is anticipated to average five employees on site at any given time. As a result, the number of employee vehicle trips generated by the proposed project during typical operations is considered negligible (i.e., the daily variation in traffic in peak hour volumes on roadways near the site will be greater than the number of project-generated trips and drivers would not be able to perceive the additional traffic). The primary impact to traffic for this solar farm project is associated with potential temporary construction traffic impacts.

Based on the needs of a 20 MW facility, the project construction is anticipated to take place over the course of approximately nine (9) to 12 months and will require up to 100 workers on site at a given time. According to the construction of similar facilities in other locations, the number of employees for roughly the first three months and the last three months of construction will be lower with peak on-site employment occurring for the three months in the middle of the project schedule. The average number of employees during construction is approximately 50. Construction is expected to begin in fall 2015 and continue into 2016.

PROPOSED VEHICLE ACCESS

According to HSO the proposed access point for construction traffic is expected to be on Plantation Road where it intersects Kunia Road approximately 1.5 miles mauka of Anonui Street. The entrance to the solar facility will be located at the end of the Plantation Road extension approximately 0.8 miles east of Kunia Road and approximately 0.2 miles east of Leia St. Kunia Road is under the jurisdiction of the State of Hawaii Department of Transportation - Highways Division (HDOT) and Plantation Road is a private street.

Based on the available regional access points/interchanges and the fact that materials will be transported from the Sand Island area to the site, all heavy trucks are expected to use the H-1 Freeway and turn right onto Kunia Road from the Ewa-bound H-1 Off-Ramp to access the site via Plantation Road and return using the opposite movements. Construction workers approaching the site in the morning will travel in both directions on Kunia Road and turn left or right onto Plantation Road.

The Kunia Road/Plantation Road intersection includes gates on either side of the east leg of Plantation Road (opposite the Monsanto entrance) and Kunia Road is posted with a 45 mile per hour limit. Approximately 175 feet south of Plantation Road, the shoulder on Kunia Road widens to allow right-turning vehicles to move out of the travel lane, which will help to reduce delays for mauka-bound vehicles. This existing deceleration area is used by existing farm equipment and will benefit construction trucks accessing the site as it will allow them to begin making the transition onto Plantation Road earlier and thus reduce conflicts with through vehicles on Kunia Road. It should also be noted that mauka-bound vehicles are precluded from passing other mauka-bound vehicles from approximately 225 feet makai of Plantation Road to 260 feet mauka of the intersection.

ACTIVE MODE AND TRANSIT ACCESS

BICYCLE AND PEDESTRIAN TRAVEL

Given the undeveloped nature of the project site and the low density development of the immediate surrounding area, the potential conflict is low between site-generated traffic and non-automobile modes including walking and biking. While separate bicycle and pedestrian facilities are typically encouraged to reduce vehicle traffic, the rural circulation system and distant land uses in the vicinity of the project site are not conducive to multi-modal travel.

TRANSIT

There is no existing transit access serving the project site or on Kunia Road near the Plantation Road intersection. There are existing bus stops within the residential neighborhoods south of the proposed project, but the closest stop is located on Anonui Street and would still require walking approximately 2.5 miles to reach the project site entrance east of Leia Street.

POTENTIAL IMPACTS TO ACTIVE MODES AND TRANSIT

The City and County of Honolulu and HDOT do not specify impact criteria for pedestrian, bicycle, and transit impacts. However, these impacts are generally evaluated based on whether a proposed project would: 1) conflict with existing or planned pedestrian, bicycle, or transit facilities, or 2) create walking, bicycling, or transit use demand without providing adequate and appropriate facilities for non-motorized mobility. As noted above, the project is not expected to conflict with any existing active transportation modes (i.e., bicycling and walking) or transit, and it would not create demand for these modes given its isolated location. Accordingly, no impacts to non-automobile travel are anticipated.

TRAFFIC VOLUMES

The addition of traffic from the proposed project may impact operations of the Plantation Road / Kunia Road intersection during the anticipated nine to twelve-month construction period. Historic 2012 traffic counts were collected from the Hawaii Department of Transportation (HDOT) at Kunia Road north of Anonui Street to determine the magnitude of existing volumes on Kunia

Road. HDOT data indicated that most vehicles are traveling mauka-bound during the morning peak hour 6:30 AM to 7:30 AM (1,164 mauka-bound vs. 316 makai-bound), and traveling makai-bound during the evening peak hour 4:45 PM to 5:45 PM (350 mauka-bound and 1,025 makai-bound). These HDOT traffic count sheets are included in **Attachment B**.

Project construction is expected to generally occur during late 2015 to late 2016, and most construction-generated traffic will be traveling mauka-bound in the peak direction traffic in order to access the site in the morning; and makai-bound with the peak traffic in order to exit the site in the evening.

ESTIMATED PROJECT TRIP GENERATION

Construction traffic comprises private vehicles driven by construction workers plus trips made by trucks delivering materials, hauling earth and debris, and providing other services (e.g., food trucks). In general, workers are assumed to make one inbound trip and one outbound trip per day for a total of two daily trips. Detailed information on construction activities was provided by HSO and included the number of trucks needed to deliver the photovoltaic panels, steel piles for mounting the panels, gravel for on-site roadways, etc. This information was used to estimate the total number of truck trips during the planned construction period of nine (9) to 12 months and the average number of truck trips per day, which is 40 (i.e., 20 inbound and 20 outbound). The full details of the trip generation analysis and assumptions associated with the proposed project are included in **Attachment C**. It is important to note that this information is preliminary and may be refined once a specific contractor is selected to construct the project.

This traffic assessment conservatively assumes that all 100 construction workers drive their own vehicles to and from the project site during the typical commute peak hours. In reality, it is expected that some carpooling would occur and that roughly half of the worker trips would be made before or after the peak hours of traffic on Kunia Road. The assessment also assumes that approximately 20 percent of heavy vehicle truck trips occur during these same periods. Assuming a construction work day between 7:00am and 4:00pm, this would result in an average of approximately four (4) truck trips or roughly 10 percent of the total per hour. This amount of truck traffic during the peak hours was doubled to provide a more conservative evaluation. The project trip generation under construction conditions is summarized in **Table 1** below and represents a conservative scenario.

Table 1-Project Construction Trip Generation – Conservative							
Trip Type	Daily Trips	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Auto[1]	200	100	100	0	100	0	100
Trucks[2]	40	8	4	4	8	4	4
Total	240	108	104	4	108	4	104

Note:
[1] Assumes 100% of construction employees drive to project site in a single occupant vehicle during peak hours, when, in reality, the number of trips will likely be closer to 50 during each peak hour.
[2] Assumes 20% of truck trips occur during peak hours

SIGHT DISTANCE ASSESSMENT

The Plantation Road / Kunia Road intersection was assessed from a sight distance perspective to determine if drivers of vehicles turning onto Kunia Road would be able to appropriately gauge gaps in approaching traffic. Based on the posted speed limit in the area, 45 MPH, the design speed for this section was assumed to be 50 MPH (or 5mph greater than the posted limit). The minimum stopping sight distance required with this speed limit is 425 feet. A preliminary assessment of the intersection indicates a stopping sight distance of approximately 600 feet for vehicles approaching from mauka of Plantation Road (i.e., from Wahiawa) and greater than 600 feet in the opposite direction (i.e., from Anonui Street). Providing adequate sight distance in both directions at the Plantation Road approach will allow drivers of vehicles exiting Plantation Road to determine appropriate gaps in traffic before turning onto Kunia Road.

POTENTIAL TRAFFIC IMPACTS

The distribution of construction worker traffic is estimated to be 70% from the Ewa and Honolulu areas, while 30% is expected to be from the Wahiawa, North Shore and Koolauloa areas. Assuming the conservative volume of 100 worker trips, project-generated traffic could temporarily add up to roughly seven (7) percent to the existing peak directional volumes on Kunia Road. As noted above, a more likely construction worker volume during the peak hour is 50 vehicle trips, which would add less than four percent to the existing peak directional volumes. Since the addition of this traffic is a temporary condition during project construction only, and because the traffic volumes on roadways can vary from day to day by up to 10 percent, the

addition of this construction traffic is not likely to be noticed by the average driver and is not considered a significant traffic impact.

Based on four inbound truck trips during the peak hour, this equates to one truck every 15 minutes either making the inbound right-turn from Kunia Road onto Plantation Road or turning left out of Plantation road during each peak hour. As a result, construction truck traffic is not anticipated to have a major impact or cause major disruptions to vehicular traffic on Kunia Road. However, the temporary addition of heavy trucks and the increase of vehicles turning on and off Kunia Road will represent a change in conditions for drivers in this area.

In addition, some mauka-bound drivers behind trucks turning right onto Plantation Road may be tempted to pass trucks as they slow approaching the intersection. Because the existing "no passing" zone ends only 225 feet makai of the intersection, passing vehicles may end up in the opposing lane in or near the intersection. This would introduce additional conflicts that could reduce safety. As such, steps should be taken to increase driver awareness and reduce the potential for vehicle conflicts at the Kunia Road/Plantation Road intersection.

Once fully operational, the solar farm is anticipated to have approximately five (5) employees on site at any given time. As a result, the employee trips generated by the proposed project are negligible. **Table 2** below presents the estimated project trip generation once the solar farm is operational.

Table 2-Fully Operational Trip Generation

Trip Type	Daily Trips	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Employees[1]	10	5	5	0	5	0	5

Note:
[1] Assumes five (5) employees on-site once project is operational

RECOMMENDED MODIFICATIONS DURING PROJECT CONSTRUCTION

As noted above, the volume of traffic generated by construction of the project does not warrant the need for typical roadway capacity enhancements (e.g., new turn or through lanes). However, the addition of vehicles, especially large trucks, turning into and out of the east leg of the Kunia Road/Plantation Road intersection does warrant some modification to traffic control devices in the area to raise driver awareness and enhance safety. To minimize the potential for conflicts and to project impacts to traffic operations, the contractor should include the following elements in a construction traffic management plan:

- Install temporary signage on mauka-bound Kunia Road between Anonui Street and Plantation Road that indicates the presence of trucks and that they are entering/exiting the roadway near Plantation Road.
- Install temporary signage on makai-bound Kunia Road between the Hawaii Country Club and Plantation Road that indicates the presence of trucks and that they are entering the roadway from Plantation Road.
- Field verify available sight distance and maintain adequate sight distance for drivers exiting Plantation Road and turning onto Kunia Road. Maintenance may include pruning vegetation and not installing signage or other barriers that would block driver's field of vision at the intersection.
- Extend the painted median solid line delineating the "no passing zone" for mauka-bound vehicles at least an additional 500 feet in the makai direction.

The trips generated by the project once it is fully operational are negligible compared to those generated by construction traffic, and no permanent traffic improvements are required. The extension of the "no passing" zone could be maintained or be eliminated at the discretion of HDOT.

Conclusion

The proposed project will generate a negligible amount of vehicle traffic when the solar farm is fully constructed and operational. During construction, the site is expected to generate a total of 240 daily vehicle trips including trucks, and between 58 and 108 peak hour trips depending on the number of employee trips made during the AM and PM peak hours. The number of truck trips during each peak hour is estimate to be eight (8) or approximately one every eight (8) to 15 minutes depending on inbound and outbound travel. According to the project sponsor HSO,

construction activity is planned to occur over a nine (9) to 12-month period, and the traffic assessment showed that the project would only result in temporary impacts during construction.

Based on the evaluation presented in this report, the proposed point of access is sufficient to serve the anticipated construction traffic volume. However, several measures are recommended to enhance safety for vehicles turning into and out of Plantation Road, as well as for those on Kunia Road. These measures are typically included in construction traffic management plan for the project and include: verification of adequate sight distance at Plantation Road, extension of the mauka-bound no-passing zone on Kunia Road at Plantation Road by at least 500 feet in the makai direction, and installation of temporary signage approaching the intersection from both directions informing drivers on the roadway of construction activities and the presence of heavy vehicle traffic.

We appreciate the opportunity to assist you with this project. Please let us know if you have any questions on the information in this report.

Sincerely,

FEHR & PEERS

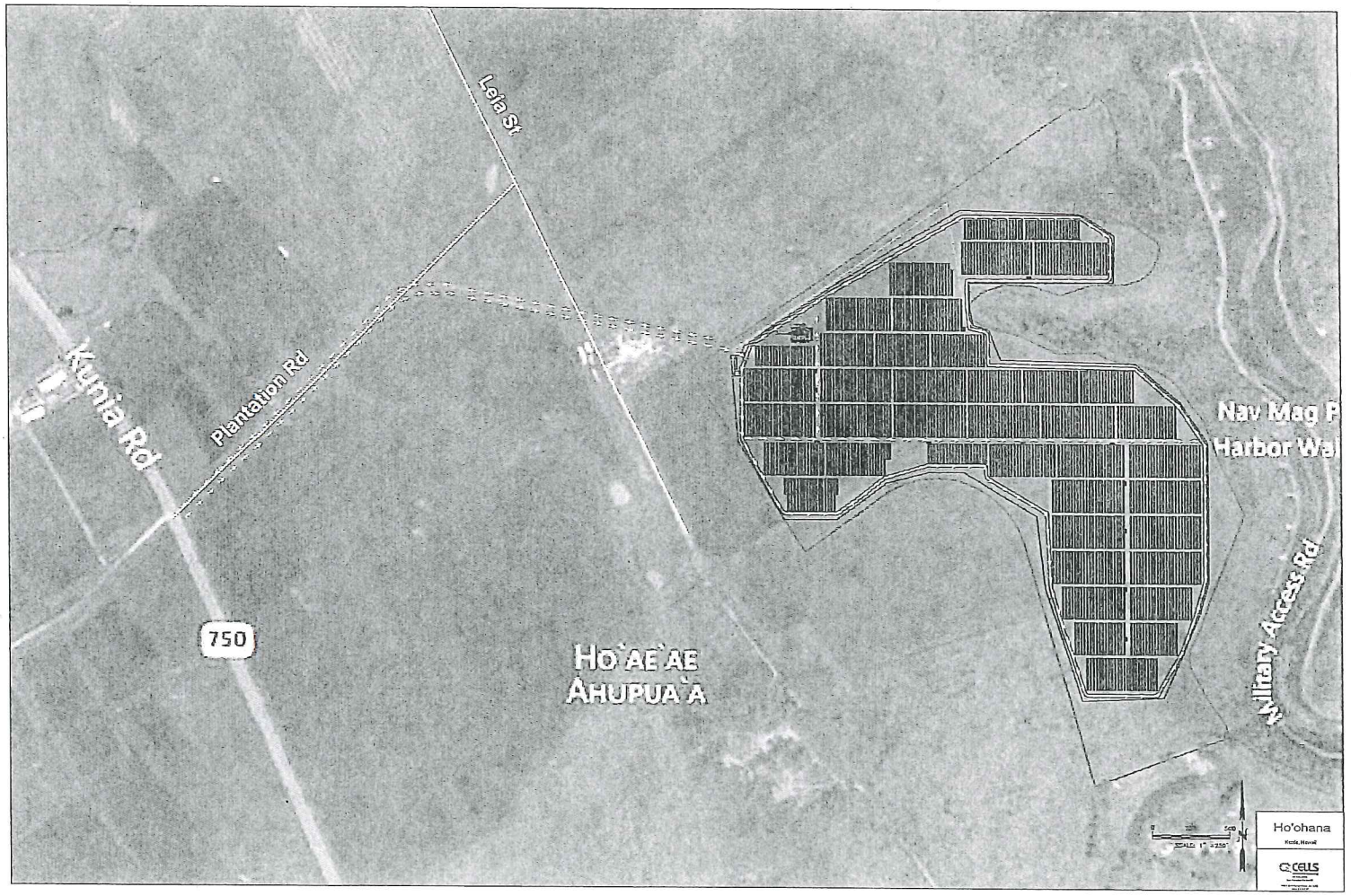
Sohrab Rashid, TE
Principal

Anjuli Bakhru
Transportation Engineer

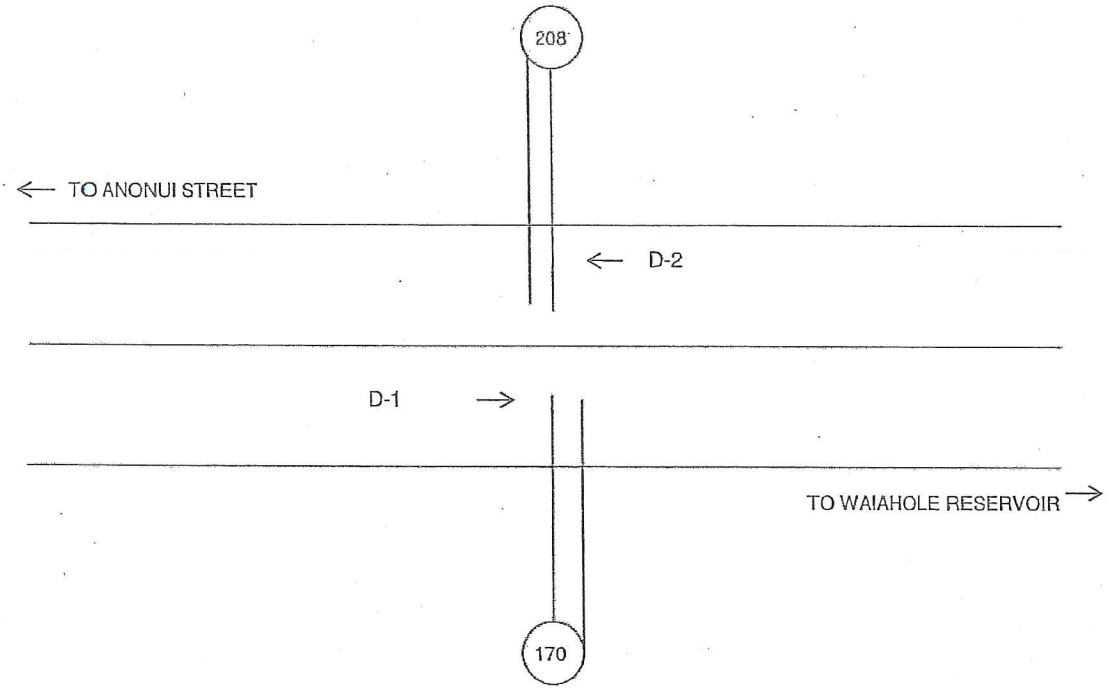
SD14-0138

Attachment:

Attachment A – Proposed Project Site
Attachment B – HDOT Traffic Data
Attachment C – Trip Generation Estimates


Leia St
Kunia Rd
Plantation Rd
750
Hoʻaeʻae
Ahupuaʻa
Nav Mag P
Harbor Wa
Military Access Rd
Ho'ohana

ISLAND: OAHU
AREA: KUNIA



Station No:	B72 0750 00033

Station Location:			
Kunia Road between Anonui Street and Waiahole Reservoir			
Station Mileage:	1.20	GPS Coord (Latitude):	21.40425 N
		GPS Coord (Longitude):	158.04129 W
Begin Survey (Date/Time):	1-25-12 0000	End Survey (Date/Time):	1-27-12 0000
Survey Method: LOOP **HOSE** OTHER		Survey Type: VOL **CLASS** SPEED OTHER	
Survey Crew:	CA, EP, CO, LT, RG	Module No.:	

HPMS DATA

Segment Description:

KUNIA ROAD - KUPUNA LOO[P (N) TO SCHOFIELD BARRACKS BDRY

Segment Begin LRS	0.33	Segment End LRS	6.92	Length	6.59

Facility Name	Juris	Func Class	Area Type	Route No.	Route Mile	D-1 = Direction to End of Route / D-2 = Direction to Beginning of Route	
KUNIA ROAD	S	14	4	750	1.20	D-1	TO WILIKINA DRIVE
						D-2	TO H-1 OVERPASS

Sketch By: EPJ Date: 1/12/2012 SLD: 2009

Run Date: 2013/03/12

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2012 Program Count - Summary

Site ID: B72075000033
Town: Oahu — DIR 1: +MP — DIR 2: -MP — Final AADT: 14500
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER — Count Type: CLASS — Counter Type: Tube — Route No: 750
Location: KUNIA ROAD - KUPUNA LOOP TO beginNING OF

TIME-AM	NB DIR 1	SB DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/25/2012															
12:00-12:15	5	12	17	06:00-06:15	210	58	268	12:00-12:15	83	109	192	06:00-06:15	83	154	237
12:15-12:30	6	4	10	06:15-06:30	205	88	293	12:15-12:30	65	89	154	06:15-06:30	61	164	225
12:30-12:45	8	7	15	06:30-06:45	292	83	375	12:30-12:45	91	94	185	06:30-06:45	47	121	168
12:45-01:00	5	8	13	06:45-07:00	298	105	403	12:45-01:00	119	83	202	06:45-07:00	48	92	140
01:00-01:15	1	5	6	07:00-07:15	276	66	342	01:00-01:15	84	84	168	07:00-07:15	43	79	122
01:15-01:30	6	5	11	07:15-07:30	298	62	360	01:15-01:30	102	86	188	07:15-07:30	33	76	109
01:30-01:45	3	2	5	07:30-07:45	257	82	339	01:30-01:45	83	96	179	07:30-07:45	56	66	122
01:45-02:00	3	2	5	07:45-08:00	225	86	311	01:45-02:00	78	100	178	07:45-08:00	35	49	84
02:00-02:15	4	2	6	08:00-08:15	179	110	289	02:00-02:15	68	115	183	08:00-08:15	42	62	104
02:15-02:30	5	5	10	08:15-08:30	143	74	217	02:15-02:30	76	127	203	08:15-08:30	34	56	90
02:30-02:45	5	8	13	08:30-08:45	205	66	271	02:30-02:45	80	111	191	08:30-08:45	22	44	66
02:45-03:00	6	5	11	08:45-09:00	137	59	196	02:45-03:00	82	130	212	08:45-09:00	28	51	79
03:00-03:15	7	3	10	09:00-09:15	122	52	174	03:00-03:15	76	167	243	09:00-09:15	23	48	71
03:15-03:30	9	5	14	09:15-09:30	111	80	191	03:15-03:30	87	170	257	09:15-09:30	25	28	53
03:30-03:45	14	11	25	09:30-09:45	92	65	157	03:30-03:45	141	223	364	09:30-09:45	29	34	63
03:45-04:00	23	6	29	09:45-10:00	80	68	148	03:45-04:00	122	204	326	09:45-10:00	28	47	75
04:00-04:15	27	11	38	10:00-10:15	72	52	124	04:00-04:15	128	201	329	10:00-10:15	21	30	51
04:15-04:30	37	14	51	10:15-10:30	79	67	146	04:15-04:30	103	248	351	10:15-10:30	26	25	51
04:30-04:45	67	9	76	10:30-10:45	66	77	143	04:30-04:45	100	197	297	10:30-10:45	15	28	43
04:45-05:00	102	22	124	10:45-11:00	72	74	146	04:45-05:00	107	262	369	10:45-11:00	12	19	31
05:00-05:15	165	37	202	11:00-11:15	79	85	164	05:00-05:15	90	242	332	11:00-11:15	10	15	25
05:15-05:30	244	47	291	11:15-11:30	81	89	170	05:15-05:30	77	269	346	11:15-11:30	18	15	33
05:30-05:45	301	48	349	11:30-11:45	77	105	182	05:30-05:45	76	252	328	11:30-11:45	6	17	23
05:45-06:00	294	54	348	11:45-12:00	77	114	191	05:45-06:00	75	213	288	11:45-12:00	4	14	18

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:30 AM to 07:30 AM		
AM - PEAK HR VOLUME	1164	316	1480
AM - K FACTOR (%)			9.59
AM - D (%)	78.65	21.35	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:30 AM to 07:30 AM	07:30 AM to 08:30 AM	
AM - PEAK HR VOLUME	1164	352	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	350	1025	1375
PM - K FACTOR (%)			8.91
PM - D (%)	25.45	74.55	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	494	1025	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:30 AM to 07:30 AM		
AM - PEAK HR VOLUME	1164	316	1480
AM - K FACTOR (%)			9.59
AM - D (%)	78.65	21.35	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	350	1025	1375
PM - K FACTOR (%)			8.91
PM - D (%)	25.45	74.55	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	306	483	789
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	405	483	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,733	1,867	5,600
AM 12-HR PERIOD (00:00-12:00)	5,080	2,199	7,279
PM 6-HR PERIOD (12:00-18:00)	2,193	3,872	6,065
PM 12-HR PERIOD (12:00-24:00)	2,942	5,206	8,148
24 HOUR PERIOD	8,022	7,405	15,427
D (%)	52.00	48.00	100.00

Run Date: 2013/03/12

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2012 Program Count - Summary

Site ID: B72075000033
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location: KUNIA ROAD - KUPUNA LOOP TO beginNING OF

Town: Oahu
Count Type: CLASS

DIR 1: +MP DIR 2: -MP
Counter Type: Tube

Final AADT: 14500
Route No: 750

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/26/2012															
12:00-12:15	5	9	14	06:00-06:15	213	72	285	12:00-12:15	80	97	177	06:00-06:15	66	111	177
12:15-12:30	9	10	19	06:15-06:30	236	104	340	12:15-12:30	125	89	214	06:15-06:30	50	90	140
12:30-12:45	5	7	12	06:30-06:45	317	83	400	12:30-12:45	83	86	169	06:30-06:45	43	88	131
12:45-01:00	3	3	6	06:45-07:00	170	84	254	12:45-01:00	102	69	171	06:45-07:00	49	63	112
01:00-01:15	4	7	11	07:00-07:15	246	62	308	01:00-01:15	87	99	186	07:00-07:15	49	60	109
01:15-01:30	3	8	11	07:15-07:30	287	56	343	01:15-01:30	78	96	174	07:15-07:30	48	60	108
01:30-01:45	2	7	9	07:30-07:45	262	65	327	01:30-01:45	80	104	184	07:30-07:45	38	50	88
01:45-02:00	2	4	6	07:45-08:00	234	81	315	01:45-02:00	69	86	155	07:45-08:00	43	56	99
02:00-02:15	3	2	5	08:00-08:15	189	74	263	02:00-02:15	101	108	209	08:00-08:15	40	52	92
02:15-02:30	4	6	10	08:15-08:30	143	81	224	02:15-02:30	83	132	215	08:15-08:30	36	57	93
02:30-02:45	6	8	14	08:30-08:45	200	80	280	02:30-02:45	80	137	217	08:30-08:45	34	48	82
02:45-03:00	1	7	8	08:45-09:00	140	57	197	02:45-03:00	79	173	252	08:45-09:00	20	47	67
03:00-03:15	4	6	10	09:00-09:15	117	69	186	03:00-03:15	84	226	310	09:00-09:15	30	49	79
03:15-03:30	9	4	13	09:15-09:30	116	68	184	03:15-03:30	91	263	354	09:15-09:30	32	29	61
03:30-03:45	22	7	29	09:30-09:45	97	81	178	03:30-03:45	150	288	438	09:30-09:45	33	48	81
03:45-04:00	18	5	23	09:45-10:00	88	76	164	03:45-04:00	127	260	387	09:45-10:00	23	29	52
04:00-04:15	17	13	30	10:00-10:15	81	65	146	04:00-04:15	103	281	384	10:00-10:15	14	40	54
04:15-04:30	27	12	39	10:15-10:30	78	82	160	04:15-04:30	86	268	354	10:15-10:30	19	35	54
04:30-04:45	57	11	68	10:30-10:45	73	64	137	04:30-04:45	101	258	359	10:30-10:45	20	24	44
04:45-05:00	102	23	125	10:45-11:00	75	55	130	04:45-05:00	103	212	315	10:45-11:00	12	23	35
05:00-05:15	156	31	187	11:00-11:15	81	57	138	05:00-05:15	78	210	288	11:00-11:15	14	19	33
05:15-05:30	222	34	256	11:15-11:30	94	79	173	05:15-05:30	70	192	262	11:15-11:30	8	24	32
05:30-05:45	273	37	310	11:30-11:45	88	97	185	05:30-05:45	80	159	239	11:30-11:45	5	16	21
05:45-06:00	243	55	298	11:45-12:00	95	108	203	05:45-06:00	88	134	222	11:45-12:00	11	16	27

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:45 AM to 06:45 AM		
AM - PEAK HR VOLUME	1009	314	1323
AM - K FACTOR (%)			8.74
AM - D (%)	76.27	23.73	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	06:00 AM to 07:00 AM	
AM - PEAK HR VOLUME	1029	343	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM		
PM - PEAK HR VOLUME	471	1092	1563
PM - K FACTOR (%)			10.32
PM - D (%)	30.13	69.87	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	471	1097	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:45 AM to 06:45 AM		
AM - PEAK HR VOLUME	1009	314	1323
AM - K FACTOR (%)			8.74
AM - D (%)	76.27	23.73	100.00

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM		
PM - PEAK HR VOLUME	471	1092	1563
PM - K FACTOR (%)			10.32
PM - D (%)	30.13	69.87	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	343	550	893
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	418	550	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,720	1,800	5,520
AM 12-HR PERIOD (00:00-12:00)	4,917	2,116	7,033
PM 6-HR PERIOD (12:00-18:00)	2,208	4,027	6,235
PM 12-HR PERIOD (12:00-24:00)	2,945	5,161	8,106
24 HOUR PERIOD	7,862	7,277	15,139
D (%)	51.93	48.07	100.00

Run Date: 2013/03/12

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2012

Site ID: B72075000033 Route No: 750 Date From: 2012/01/25 0:00

Town: Oahu Direction: +MP Date To: 2012/01/26 23:45

Location: KUNIA ROAD - KUPUNA LOOP TO beginNING OF

Functional Classification: 14 URBAN:PRINCIPAL ARTERIAL - OTHER

REPORT TOTALS - 48 HOURS RECORDED

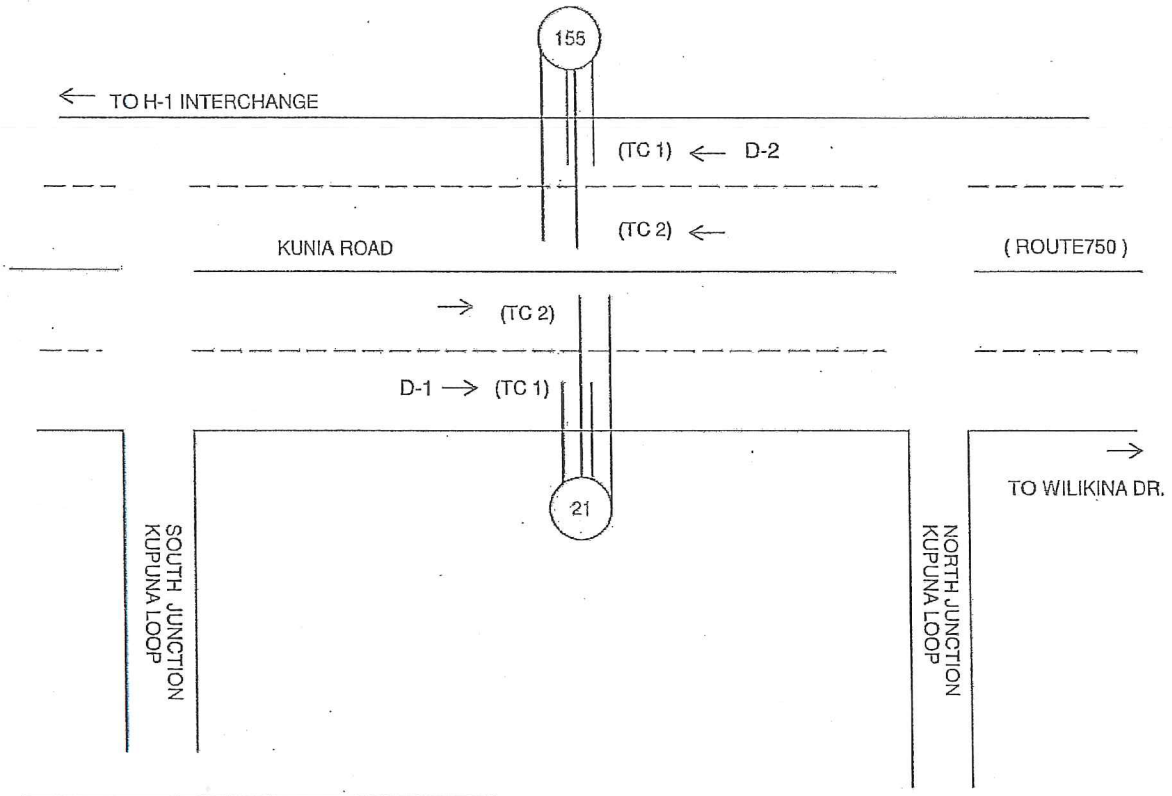
	VOLUME	%	NUMBER OF AXLES
Cycles	196	0.64%	391
PC	23639	77.34%	47278
2A-4T	5775	18.89%	11549
LIGHT VEHICLE TOTALS	29609	96.87%	59219
	HEAVY VEHICLES		
Bus	103	0.34%	259
SINGLE UNIT TRUCK			
2A-6T	424	1.39%	848
3A-SU	158	0.52%	474
4A-SU	0	0.00%	0
SINGLE-TRAILER TRUCKS			
4A-ST	45	0.15%	180
5A-ST	217	0.71%	1085
6A-ST	7	0.02%	42
MULTI-TRAILER TRUCKS			
5A-MT	0	0.00%	0
6A-MT	0	0.00%	0
7A-MT	2	0.01%	14
HEAVY VEHICLE TOTALS	956	3.13%	2902
CLASSIFIED VEHICLES TOTALS	30566 (A)	100.00%	62120 (B)
UNCLASSIFIED VEHICLES TOTALS	0	0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.984

ROADTUBE EQUIVALENT(B/2) = 31060 (C)

PEAK HOUR VOLUME : 1489 2012/01/26 15:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	25	(65A-1) 1.69%	341	14500	(65A-2) 2.35%	10.27%
COMBINATION (TYPE 8-13)	12	(65B-1) 0.81%	135		(65B-2) 0.93%	10.27%

ISLAND: OAHU
AREA: KUNIA



Station No:	B72 0750 00000

Station Location:			
Kunia Road between South and North junction of Kupuna Loop			
Station Mileage:	0.27	GPS Coord (Latitude):	21.38734 N
		GPS Coord (Longitude):	158.03402 W
Begin Survey (Date/Time):	1/25/12 0000	End Survey (Date/Time):	1/27/12 0000
Survey Method: LOOP **HOSE** OTHER		Survey Type: VOL **CLASS** SPEED OTHER	
Survey Crew:	CA EP CO LT RG	Module No.:	

HPMS DATA

Segment Description:

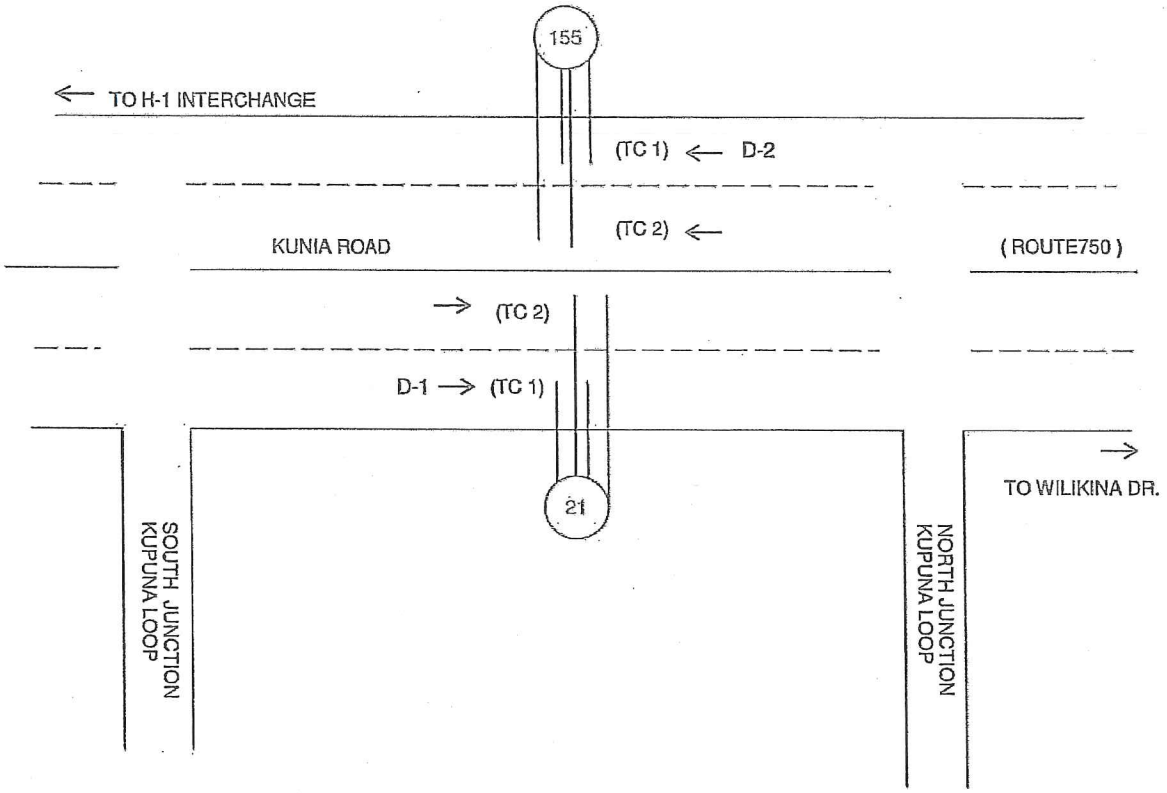
KUNIA ROAD - H-1 FREEWAY TO KUPUNA LOOP (N)

Segment Begin LRS	0.00	Segment End LRS	0.33	Length	0.33

Facility Name	Juris	Func Class	Area Type	Route No.	Route Mile	D-1 = Direction to End of Route D-2 = Direction to Beginning of Route	
KUNIA ROAD	S	14	4	750	0.27	D-1	TO WILIKINA DRIVE
						D-2	TO H-1 OVERPASS

Sketch By: EPJ Date: 1/12/2012 SLD: 2009

ISLAND: OAHU
AREA: KUNIA



Station No:	DTE [illegible]

Kunia Road between South and North junction of Kupuna Loop
Station Mileage:
Begin Survey (Date/Time):
Survey Method: LOOP ROUTE OTHER Survey Type: VOL CLASS SPEED OTHER
Survey Crew:

HPMS DATA

Segment Description:

KUNIA ROAD - H-1 FREEWAY TO KUPUNA LOOP (N)

0.33

D-1 – Direction to End of Route

D-2 – Direction to Beginning of Route

Facility Name	Juris	Class	Type	No.	Mile		
KUNIA ROAD	S	14	4	750	0.27	D-1	TO WILIKINA DRIVE
						D-2	TO H-1 OVERPASS

Sketch By: LPG Date: 1/12/2012 SLD: 2009

Run Date: 2013/03/12

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2012 Program Count - Summary

Site ID: B72075000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 19100
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 750
Location: KUNIA ROAD - H-1 Freeway TO END OF DIVID

TIME-AM	DIR 1 (NB)	DIR 2 (SB)	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/25/2012															
12:00-12:15	18	15	33	06:00-06:15	230	104	334	12:00-12:15	124	140	264	06:00-06:15	191	201	392
12:15-12:30	16	7	23	06:15-06:30	221	123	344	12:15-12:30	95	115	210	06:15-06:30	132	199	331
12:30-12:45	12	9	21	06:30-06:45	202	144	346	12:30-12:45	129	139	268	06:30-06:45	139	159	298
12:45-01:00	13	18	31	06:45-07:00	208	149	357	12:45-01:00	141	124	265	06:45-07:00	135	117	252
01:00-01:15	6	4	10	07:00-07:15	223	171	394	01:00-01:15	146	124	270	07:00-07:15	97	105	202
01:15-01:30	9	5	14	07:15-07:30	220	123	343	01:15-01:30	114	124	238	07:15-07:30	93	79	172
01:30-01:45	8	6	14	07:30-07:45	228	154	382	01:30-01:45	114	129	243	07:30-07:45	102	89	191
01:45-02:00	8	3	11	07:45-08:00	190	154	344	01:45-02:00	128	129	257	07:45-08:00	99	66	165
02:00-02:15	5	4	9	08:00-08:15	198	108	306	02:00-02:15	119	150	269	08:00-08:15	93	63	156
02:15-02:30	5	7	12	08:15-08:30	181	130	311	02:15-02:30	115	162	277	08:15-08:30	90	88	178
02:30-02:45	6	5	11	08:30-08:45	184	132	316	02:30-02:45	124	128	252	08:30-08:45	76	51	127
02:45-03:00	9	10	19	08:45-09:00	153	93	246	02:45-03:00	117	146	263	08:45-09:00	68	65	133
03:00-03:15	10	5	15	09:00-09:15	109	93	202	03:00-03:15	133	199	332	09:00-09:15	86	55	141
03:15-03:30	13	12	25	09:15-09:30	104	107	211	03:15-03:30	164	193	357	09:15-09:30	71	60	131
03:30-03:45	18	19	37	09:30-09:45	115	106	221	03:30-03:45	180	267	447	09:30-09:45	60	40	100
03:45-04:00	21	21	42	09:45-10:00	94	91	185	03:45-04:00	175	261	436	09:45-10:00	62	56	118
04:00-04:15	23	30	53	10:00-10:15	92	98	190	04:00-04:15	177	222	399	10:00-10:15	49	45	94
04:15-04:30	35	34	69	10:15-10:30	119	99	218	04:15-04:30	162	285	447	10:15-10:30	54	31	85
04:30-04:45	76	39	115	10:30-10:45	78	106	184	04:30-04:45	162	209	371	10:30-10:45	33	37	70
04:45-05:00	100	70	170	10:45-11:00	102	112	214	04:45-05:00	177	291	468	10:45-11:00	42	26	68
05:00-05:15	170	82	252	11:00-11:15	99	106	205	05:00-05:15	172	257	429	11:00-11:15	22	24	46
05:15-05:30	207	123	330	11:15-11:30	110	137	247	05:15-05:30	161	293	454	11:15-11:30	32	19	51
05:30-05:45	212	122	334	11:30-11:45	86	132	218	05:30-05:45	146	268	414	11:30-11:45	24	19	43
05:45-06:00	238	129	367	11:45-12:00	107	125	232	05:45-06:00	134	263	397	11:45-12:00	19	16	35

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:45 AM to 07:45 AM		
AM - PEAK HR VOLUME	879	597	1476
AM - K FACTOR (%)			7.32
AM - D (%)	59.55	40.45	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:30 AM to 06:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	901	602	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	656	1109	1765
PM - K FACTOR (%)			8.75
PM - D (%)	37.17	62.83	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	696	1109	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:45 AM to 07:45 AM		
AM - PEAK HR VOLUME	879	597	1476
AM - K FACTOR (%)			7.32
AM - D (%)	59.55	40.45	100.00

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	656	1109	1765
PM - K FACTOR (%)			8.75
PM - D (%)	37.17	62.83	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	475	586	1061
DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	530	586	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,653	2,897	6,550
AM 12-HR PERIOD (00:00-12:00)	4,891	3,676	8,567
PM 6-HR PERIOD (12:00-18:00)	3,409	4,618	8,027
PM 12-HR PERIOD (12:00-24:00)	5,278	6,328	11,606
24 HOUR PERIOD	10,169	10,004	20,173
D (%)	50.41	49.59	100.00

Run Date: 2013/03/12

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2012 Program Count - Summary

Site ID: B72075000000
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location: KUNIA ROAD - H-1 Freeway TO END OF DIVID

Town: Oahu | DIR 1: +MP | DIR 2: -MP | Final AADT: 19100
Count Type: CLASS | Counter Type: Tube | Route No: 750

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/26/2012															
12:00-12:15	17	17	34	06:00-06:15	236	130	366	12:00-12:15	122	138	260	06:00-06:15	135	145	280
12:15-12:30	13	14	27	06:15-06:30	232	118	350	12:15-12:30	121	104	225	06:15-06:30	143	134	277
12:30-12:45	10	15	25	06:30-06:45	223	137	360	12:30-12:45	128	122	250	06:30-06:45	140	119	259
12:45-01:00	10	7	17	06:45-07:00	228	155	383	12:45-01:00	117	119	236	06:45-07:00	114	102	216
01:00-01:15	10	11	21	07:00-07:15	222	160	382	01:00-01:15	106	118	224	07:00-07:15	106	72	178
01:15-01:30	8	7	15	07:15-07:30	236	128	364	01:15-01:30	102	120	222	07:15-07:30	124	75	199
01:30-01:45	4	10	14	07:30-07:45	259	126	385	01:30-01:45	118	140	258	07:30-07:45	75	66	141
01:45-02:00	9	7	16	07:45-08:00	206	124	330	01:45-02:00	120	136	256	07:45-08:00	71	67	138
02:00-02:15	5	7	12	08:00-08:15	165	124	289	02:00-02:15	101	136	237	08:00-08:15	88	71	159
02:15-02:30	8	4	12	08:15-08:30	171	130	301	02:15-02:30	114	174	288	08:15-08:30	112	67	179
02:30-02:45	4	11	15	08:30-08:45	134	111	245	02:30-02:45	143	162	305	08:30-08:45	86	60	146
02:45-03:00	3	12	15	08:45-09:00	143	106	249	02:45-03:00	143	173	316	08:45-09:00	73	56	129
03:00-03:15	5	10	15	09:00-09:15	125	106	231	03:00-03:15	134	246	380	09:00-09:15	66	65	131
03:15-03:30	12	16	28	09:15-09:30	105	114	219	03:15-03:30	149	277	426	09:15-09:30	83	43	126
03:30-03:45	23	14	37	09:30-09:45	102	103	205	03:30-03:45	156	311	467	09:30-09:45	80	57	137
03:45-04:00	18	13	31	09:45-10:00	106	103	209	03:45-04:00	153	329	482	09:45-10:00	44	44	88
04:00-04:15	16	27	43	10:00-10:15	83	98	181	04:00-04:15	180	315	495	10:00-10:15	56	39	95
04:15-04:30	26	26	52	10:15-10:30	108	117	225	04:15-04:30	180	305	485	10:15-10:30	36	50	86
04:30-04:45	73	47	120	10:30-10:45	88	101	189	04:30-04:45	183	273	456	10:30-10:45	41	29	70
04:45-05:00	100	67	167	10:45-11:00	93	91	184	04:45-05:00	176	242	418	10:45-11:00	29	30	59
05:00-05:15	155	80	235	11:00-11:15	99	79	178	05:00-05:15	165	235	400	11:00-11:15	29	20	49
05:15-05:30	215	103	318	11:15-11:30	109	98	207	05:15-05:30	185	248	433	11:15-11:30	35	27	62
05:30-05:45	269	118	387	11:30-11:45	122	123	245	05:30-05:45	171	206	377	11:30-11:45	18	15	33
05:45-06:00	242	119	361	11:45-12:00	105	125	230	05:45-06:00	144	163	307	11:45-12:00	22	18	40

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:45 AM to 07:45 AM		
AM - PEAK HR VOLUME	945	569	1514
AM - K FACTOR (%)			7.57
AM - D (%)	62.42	37.58	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:30 AM to 06:30 AM	06:30 AM to 07:30 AM	
AM - PEAK HR VOLUME	979	580	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	669	1260	1929
PM - K FACTOR (%)			9.64
PM - D (%)	34.68	65.32	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	719	1260	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:45 AM to 07:45 AM		
AM - PEAK HR VOLUME	945	569	1514
AM - K FACTOR (%)			7.57
AM - D (%)	62.42	37.58	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	669	1260	1929
PM - K FACTOR (%)			9.64
PM - D (%)	34.68	65.32	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	501	645	1146
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	501	645	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,700	2,807	6,507
AM 12-HR PERIOD (00:00-12:00)	4,955	3,569	8,524
PM 6-HR PERIOD (12:00-18:00)	3,411	4,792	8,203
PM 12-HR PERIOD (12:00-24:00)	5,217	6,263	11,480
24 HOUR PERIOD	10,172	9,832	20,004
D (%)	50.85	49.15	100.00

Run Date: 2013/03/12

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2012

Site ID: B72075000000 Route No: 750 Date From: 2012/01/25 0:00

Town: Oahu Direction: +MP Date To: 2012/01/26 23:45

Location: KUNIA ROAD - H-1 Freeway TO END OF DIVID

Functional Classification: 14 URBAN:PRINCIPAL ARTERIAL - OTHER

REPORT TOTALS - 48 HOURS RECORDED

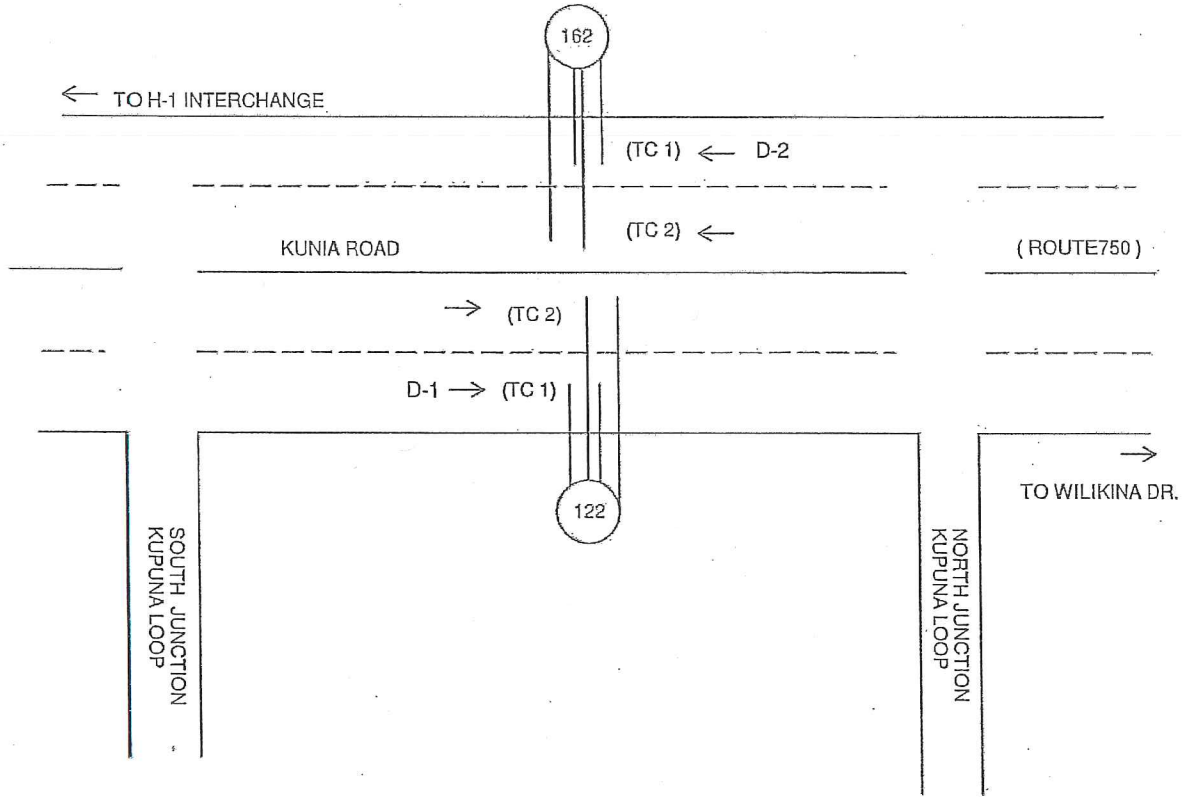
	VOLUME	%	NUMBER OF AXLES
Cycles	1101	2.74%	2202
PC	32072	79.83%	64145
2A-4T	6079	15.13%	12159
LIGHT VEHICLE TOTALS	39252	97.70%	78505
	HEAVY VEHICLES		
Bus	88	0.22%	219
SINGLE UNIT TRUCK			
2A-6T	334	0.83%	668
3A-SU	151	0.37%	453
4A-SU	53	0.13%	212
SINGLE-TRAILER TRUCKS			
4A-ST	53	0.13%	212
5A-ST	124	0.31%	620
6A-ST	55	0.14%	330
MULTI-TRAILER TRUCKS			
5A-MT	0	0.00%	0
6A-MT	0	0.00%	0
7A-MT	67	0.17%	469
HEAVY VEHICLE TOTALS	923	2.30%	3183
CLASSIFIED VEHICLES TOTALS	40176 (A)	100.00%	81688 (B)
UNCLASSIFIED VEHICLES TOTALS	1	0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.984

ROADTUBE EQUIVALENT(B/2) = 40844 (C)

PEAK HOUR VOLUME : 1854 2012/01/26 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	22	(65A-1) 1.23%	303	19100	(65A-2) 1.59%	9.71%
COMBINATION (TYPE 8-13)	5	(65B-1) 0.28%	144		(65B-2) 0.75%	9.71%

ISLAND: OAHU
AREA: KUNIA



Station No:	B72 0750 00017

Station Location:			
Kunia Road between South and North junction of Kupuna Loop			
Station Mileage:	0.27	GPS Coord (Latitude):	21.38734 N
		GPS Coord (Longitude):	158.03402 W
Begin Survey (Date/Time):	8-3-11 0000	End Survey (Date/Time):	8-5-11 0000
Survey Method: LOOP **HOSE** OTHER		Survey Type: VOL **CLASS** SPEED OTHER	
Survey Crew:	CA, EP, CO, LT, RG	Module No.:	

HPMS DATA

Segment Description:

KUNIA ROAD - END OF 5 LANES TO KUPUNA LOOP

Segment Begin LRS	0.17	Segment End LRS	0.33	Length	0.16

Facility Name	Juris	Func Class	Area Type	Route No.	Route Mile	D-1 = Direction to End of Route D-2 = Direction to Beginning of Route	
KUNIA ROAD	S	14	4	750	0.27	D-1	TO WILIKINA DRIVE
						D-2	TO H-1 OVERPASS

Sketch By: EPJ Date: 5/18/2011 SLD: 2009

Run Date: 2011/09/08

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2011 Program Count - Summary

Site ID: B72075000017 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 0
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 750
Location: Kunia Road : end of 5 lane section > Kup

TIME-AM	NB DIR 1	SB DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 08/03/2011															
12:00-12:15	36	32	68	06:00-06:15	272	167	439	12:00-12:15	198	183	381	06:00-06:15	235	235	470
12:15-12:30	24	23	47	06:15-06:30	277	195	472	12:15-12:30	202	209	411	06:15-06:30	229	238	467
12:30-12:45	27	29	56	06:30-06:45	278	180	458	12:30-12:45	204	200	404	06:30-06:45	217	182	399
12:45-01:00	21	23	44	06:45-07:00	292	193	485	12:45-01:00	190	186	376	06:45-07:00	240	215	455
01:00-01:15	24	13	37	07:00-07:15	237	195	432	01:00-01:15	168	214	382	07:00-07:15	190	188	378
01:15-01:30	23	29	52	07:15-07:30	258	172	430	01:15-01:30	213	210	423	07:15-07:30	197	174	371
01:30-01:45	20	19	39	07:30-07:45	230	170	400	01:30-01:45	211	188	399	07:30-07:45	202	186	388
01:45-02:00	21	23	44	07:45-08:00	201	170	371	01:45-02:00	208	199	407	07:45-08:00	175	165	340
02:00-02:15	13	8	21	08:00-08:15	191	136	327	02:00-02:15	207	190	397	08:00-08:15	173	131	304
02:15-02:30	14	15	29	08:15-08:30	192	146	338	02:15-02:30	185	207	392	08:15-08:30	155	146	301
02:30-02:45	18	14	32	08:30-08:45	182	158	340	02:30-02:45	194	196	390	08:30-08:45	153	146	299
02:45-03:00	8	14	22	08:45-09:00	209	142	351	02:45-03:00	249	188	437	08:45-09:00	172	152	324
03:00-03:15	5	10	15	09:00-09:15	156	134	290	03:00-03:15	240	233	473	09:00-09:15	129	120	249
03:15-03:30	17	20	37	09:15-09:30	162	136	298	03:15-03:30	259	243	502	09:15-09:30	169	122	291
03:30-03:45	17	21	38	09:30-09:45	173	152	325	03:30-03:45	284	291	575	09:30-09:45	150	117	267
03:45-04:00	25	23	48	09:45-10:00	164	166	330	03:45-04:00	257	322	579	09:45-10:00	137	121	258
04:00-04:15	30	31	61	10:00-10:15	190	153	343	04:00-04:15	267	249	516	10:00-10:15	102	130	232
04:15-04:30	45	49	94	10:15-10:30	166	189	355	04:15-04:30	249	323	572	10:15-10:30	93	91	184
04:30-04:45	75	61	136	10:30-10:45	199	137	336	04:30-04:45	252	280	532	10:30-10:45	78	84	162
04:45-05:00	88	97	185	10:45-11:00	197	147	344	04:45-05:00	250	298	548	10:45-11:00	79	61	140
05:00-05:15	143	140	283	11:00-11:15	203	178	381	05:00-05:15	250	266	516	11:00-11:15	63	68	131
05:15-05:30	180	155	335	11:15-11:30	197	144	341	05:15-05:30	252	257	509	11:15-11:30	72	67	139
05:30-05:45	242	146	388	11:30-11:45	174	196	370	05:30-05:45	250	290	540	11:30-11:45	51	58	109
05:45-06:00	245	151	396	11:45-12:00	166	208	374	05:45-06:00	248	282	530	11:45-12:00	52	60	112

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM		
AM - PEAK HR VOLUME	1119	735	1854
AM - K FACTOR (%)			6.31
AM - D (%)	60.36	39.64	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM	06:15 AM to 07:15 AM	
AM - PEAK HR VOLUME	1119	763	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	1057	1185	2242
PM - K FACTOR (%)			7.63
PM - D (%)	47.15	52.85	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	1067	1185	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM		
AM - PEAK HR VOLUME	1119	735	1854
AM - K FACTOR (%)			6.31
AM - D (%)	60.36	39.64	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	1057	1185	2242
PM - K FACTOR (%)			7.63
PM - D (%)	47.15	52.85	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM		
PEAK HR VOLUME	839	787	1626
DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM	01:00 PM to 02:00 PM	
PEAK HR VOLUME	839	811	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	4,966	3,964	8,930
AM 12-HR PERIOD (00:00-12:00)	6,327	5,110	11,437
PM 6-HR PERIOD (12:00-18:00)	5,487	5,704	11,191
PM 12-HR PERIOD (12:00-24:00)	9,000	8,961	17,961
24 HOUR PERIOD	15,327	14,071	29,398
D (%)	52.14	47.86	100.00

Run Date: 2011/09/08

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2011 Program Count - Summary

Site ID: B72075000017 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 0
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 750
Location: Kunia Road : end of 5 lane section > Kup

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 08/04/2011															
12:00-12:15	42	36	78	06:00-06:15	298	181	479	12:00-12:15	214	189	403	06:00-06:15	212	217	429
12:15-12:30	37	37	74	06:15-06:30	309	177	486	12:15-12:30	199	163	362	06:15-06:30	223	196	419
12:30-12:45	40	43	83	06:30-06:45	306	153	459	12:30-12:45	198	198	396	06:30-06:45	201	207	408
12:45-01:00	31	28	59	06:45-07:00	259	209	468	12:45-01:00	182	177	359	06:45-07:00	206	187	393
01:00-01:15	24	21	45	07:00-07:15	257	206	463	01:00-01:15	166	185	351	07:00-07:15	227	165	392
01:15-01:30	27	28	55	07:15-07:30	245	199	444	01:15-01:30	200	171	371	07:15-07:30	196	167	363
01:30-01:45	22	28	50	07:30-07:45	197	164	361	01:30-01:45	184	192	376	07:30-07:45	207	167	374
01:45-02:00	18	16	34	07:45-08:00	221	146	367	01:45-02:00	196	209	405	07:45-08:00	186	150	336
02:00-02:15	13	21	34	08:00-08:15	217	164	381	02:00-02:15	174	184	358	08:00-08:15	166	153	319
02:15-02:30	20	14	34	08:15-08:30	187	165	352	02:15-02:30	216	196	412	08:15-08:30	177	125	302
02:30-02:45	19	12	31	08:30-08:45	161	146	307	02:30-02:45	229	206	435	08:30-08:45	163	142	305
02:45-03:00	14	14	28	08:45-09:00	164	154	318	02:45-03:00	234	238	472	08:45-09:00	182	139	321
03:00-03:15	10	12	22	09:00-09:15	165	146	311	03:00-03:15	240	257	497	09:00-09:15	150	138	288
03:15-03:30	15	18	33	09:15-09:30	166	176	342	03:15-03:30	237	301	538	09:15-09:30	165	130	295
03:30-03:45	19	27	46	09:30-09:45	194	152	346	03:30-03:45	220	273	493	09:30-09:45	128	113	241
03:45-04:00	22	21	43	09:45-10:00	154	168	322	03:45-04:00	229	321	550	09:45-10:00	145	119	264
04:00-04:15	33	39	72	10:00-10:15	196	151	347	04:00-04:15	208	310	518	10:00-10:15	134	108	242
04:15-04:30	45	32	77	10:15-10:30	167	153	320	04:15-04:30	251	321	572	10:15-10:30	97	114	211
04:30-04:45	75	86	161	10:30-10:45	170	175	345	04:30-04:45	264	281	545	10:30-10:45	90	81	171
04:45-05:00	76	92	168	10:45-11:00	191	138	329	04:45-05:00	239	273	512	10:45-11:00	77	75	152
05:00-05:15	120	130	250	11:00-11:15	197	156	353	05:00-05:15	228	290	518	11:00-11:15	62	59	121
05:15-05:30	168	161	329	11:15-11:30	176	175	351	05:15-05:30	244	271	515	11:15-11:30	72	65	137
05:30-05:45	219	154	373	11:30-11:45	192	175	367	05:30-05:45	235	221	456	11:30-11:45	59	53	112
05:45-06:00	249	154	403	11:45-12:00	181	192	373	05:45-06:00	228	219	447	11:45-12:00	48	39	87

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM		
AM - PEAK HR VOLUME	1172	720	1892
AM - K FACTOR (%)			6.50
AM - D (%)	61.95	38.05	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM	06:45 AM to 07:45 AM	
AM - PEAK HR VOLUME	1172	778	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	952	1233	2185
PM - K FACTOR (%)			7.50
PM - D (%)	43.57	56.43	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	982	1233	

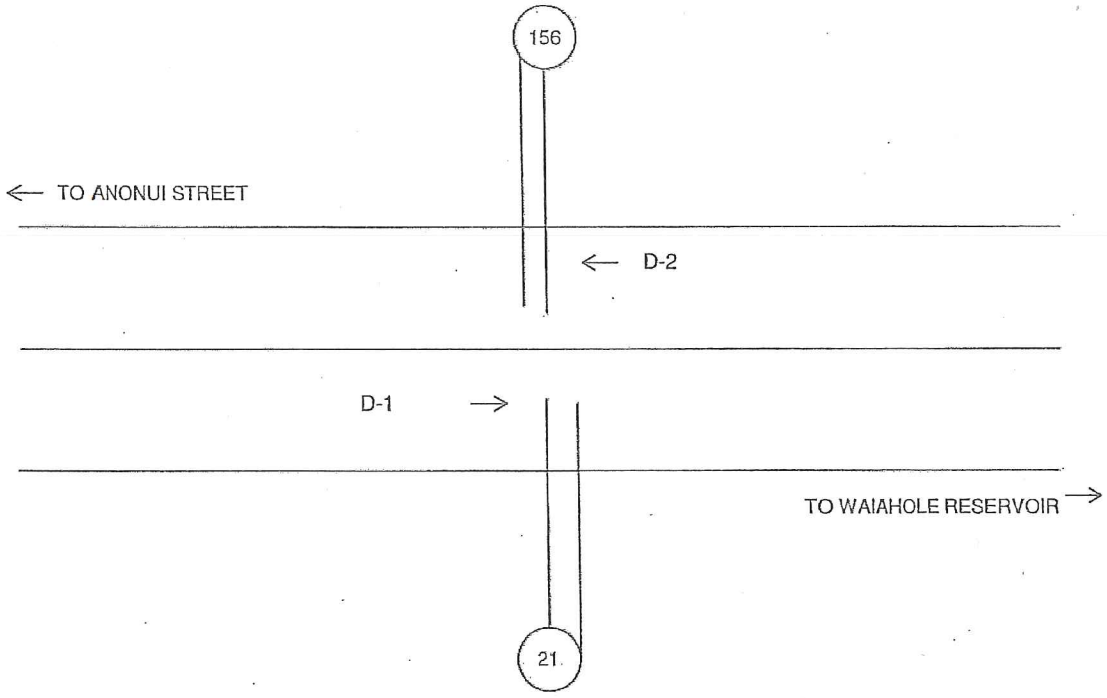
AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM		
AM - PEAK HR VOLUME	1172	720	1892
AM - K FACTOR (%)			6.50
AM - D (%)	61.95	38.05	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	952	1233	2185
PM - K FACTOR (%)			7.50
PM - D (%)	43.57	56.43	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	853	824	1677
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	853	824	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	4,970	4,021	8,991
AM 12-HR PERIOD (00:00-12:00)	6,328	5,245	11,573
PM 6-HR PERIOD (12:00-18:00)	5,215	5,646	10,861
PM 12-HR PERIOD (12:00-24:00)	8,788	8,755	17,543
24 HOUR PERIOD	15,116	14,000	29,116
D (%)	51.92	48.08	100.00

ISLAND: OAHU
AREA: KUNIA



Station No:	B72 0750 00094

Station Location:			
Kunia Road between Anonui Street and Waiahole Reservoir			
Station Mileage:	1.20	GPS Coord (Latitude):	21.40425 N
		GPS Coord (Longitude):	158.04129 W
Begin Survey (Date/Time):	8-3-11 000	End Survey (Date/Time):	8-5-11 0000
Survey Method: LOOP **HOSE** OTHER		Survey Type: VOL **CLASS** SPEED OTHER	
Survey Crew:	CA, EP, CO, LT, RG	Module No.:	

HPMS DATA

Segment Description:

KUNIA ROAD - ANONUI STREET TO END OF URBANIZE BOUNDARY

Segment Begin LRS	0.94	Segment End LRS	2.00	Length	1.06

Facility Name	Juris	Func Class	Area Type	Route No.	Route Mile	D-1 = Direction to End of Route / D-2 = Direction to Beginning of Route	
KUNIA ROAD	S	14	4	750	1.20	D-1	TO WILIKINA DRIVE
						D-2	TO H-1 OVERPASS

Sketch By: EPJ Date: 5/18/2011 SLD: 2009

Run Date: 2011/09/08

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2011 Program Count - Summary

Site ID: B72075000094 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 0
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 750
Location: KUNIA ROAD - begin 2 LANES TO URB

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 08/03/2011															
12:00-12:15	8	14	22	06:00-06:15	229	90	319	12:00-12:15	103	94	197	06:00-06:15	69	159	228
12:15-12:30	7	8	15	06:15-06:30	235	85	320	12:15-12:30	99	87	186	06:15-06:30	44	113	157
12:30-12:45	5	8	13	06:30-06:45	235	71	306	12:30-12:45	98	86	184	06:30-06:45	56	84	140
12:45-01:00	6	9	15	06:45-07:00	256	77	333	12:45-01:00	102	85	187	06:45-07:00	49	113	162
01:00-01:15	2	4	6	07:00-07:15	246	50	296	01:00-01:15	87	100	187	07:00-07:15	59	71	130
01:15-01:30	4	4	8	07:15-07:30	204	66	270	01:15-01:30	84	91	175	07:15-07:30	50	77	127
01:30-01:45	5	5	10	07:30-07:45	189	82	271	01:30-01:45	94	95	189	07:30-07:45	49	82	131
01:45-02:00	6	5	11	07:45-08:00	147	82	229	01:45-02:00	96	79	175	07:45-08:00	50	54	104
02:00-02:15	0	5	5	08:00-08:15	148	74	222	02:00-02:15	79	113	192	08:00-08:15	39	58	97
02:15-02:30	1	4	5	08:15-08:30	166	80	246	02:15-02:30	72	102	174	08:15-08:30	39	63	102
02:30-02:45	5	5	10	08:30-08:45	141	68	209	02:30-02:45	88	115	203	08:30-08:45	23	44	67
02:45-03:00	2	3	5	08:45-09:00	113	56	169	02:45-03:00	81	115	196	08:45-09:00	34	42	76
03:00-03:15	3	2	5	09:00-09:15	102	54	156	03:00-03:15	93	164	257	09:00-09:15	26	42	68
03:15-03:30	4	2	6	09:15-09:30	65	51	116	03:15-03:30	97	201	298	09:15-09:30	36	50	86
03:30-03:45	7	6	13	09:30-09:45	100	84	184	03:30-03:45	129	213	342	09:30-09:45	19	34	53
03:45-04:00	13	8	21	09:45-10:00	98	72	170	03:45-04:00	105	209	314	09:45-10:00	18	37	55
04:00-04:15	18	9	27	10:00-10:15	75	67	142	04:00-04:15	110	254	364	10:00-10:15	25	45	70
04:15-04:30	25	21	46	10:15-10:30	76	59	135	04:15-04:30	106	271	377	10:15-10:30	27	30	57
04:30-04:45	80	15	95	10:30-10:45	93	57	150	04:30-04:45	84	214	298	10:30-10:45	20	31	51
04:45-05:00	79	13	92	10:45-11:00	75	59	134	04:45-05:00	71	203	274	10:45-11:00	14	17	31
05:00-05:15	112	31	143	11:00-11:15	92	93	185	05:00-05:15	75	216	291	11:00-11:15	20	22	42
05:15-05:30	231	37	268	11:15-11:30	102	81	183	05:15-05:30	77	230	307	11:15-11:30	10	12	22
05:30-05:45	250	46	296	11:30-11:45	76	102	178	05:30-05:45	74	189	263	11:30-11:45	6	8	14
05:45-06:00	226	60	286	11:45-12:00	88	109	197	05:45-06:00	81	159	240	11:45-12:00	11	18	29

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM		
AM - PEAK HR VOLUME	955	323	1278
AM - K FACTOR (%)			8.81
AM - D (%)	74.73	25.27	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM	06:00 AM to 07:00 AM	
AM - PEAK HR VOLUME	972	323	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	450	947	1397
PM - K FACTOR (%)			9.63
PM - D (%)	32.21	67.79	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	450	948	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM		
AM - PEAK HR VOLUME	955	323	1278
AM - K FACTOR (%)			8.81
AM - D (%)	74.73	25.27	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	450	947	1397
PM - K FACTOR (%)			9.63
PM - D (%)	32.21	67.79	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	320	445	765
DIRECTIONAL PEAK			
PEAK HR TIME	12:00 PM to 01:00 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	402	445	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,351	1,769	5,120
AM 12-HR PERIOD (00:00-12:00)	4,450	2,093	6,543
PM 6-HR PERIOD (12:00-18:00)	2,185	3,685	5,870
PM 12-HR PERIOD (12:00-24:00)	2,978	4,991	7,969
24 HOUR PERIOD	7,428	7,084	14,512
D (%)	51.19	48.81	100.00

Run Date: 2011/09/08

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2011 Program Count - Summary

Site ID: B72075000094
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location: KUNIA ROAD - begin 2 LANES TO URB

Town: Oahu **Count Type:** CLASS **DIR 1:** +MP **DIR 2:** -MP **Counter Type:** Tube **Final AADT:** 0 **Route No:** 750

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 08/04/2011															
12:00-12:15	8	14	22	06:00-06:15	226	80	306	12:00-12:15	86	83	169	06:00-06:15	67	119	186
12:15-12:30	7	10	17	06:15-06:30	227	85	312	12:15-12:30	98	92	190	06:15-06:30	64	98	162
12:30-12:45	7	10	17	06:30-06:45	211	82	293	12:30-12:45	100	96	196	06:30-06:45	51	97	148
12:45-01:00	5	10	15	06:45-07:00	271	75	346	12:45-01:00	97	65	162	06:45-07:00	56	60	116
01:00-01:15	2	12	14	07:00-07:15	231	74	305	01:00-01:15	92	75	167	07:00-07:15	50	72	122
01:15-01:30	5	4	9	07:15-07:30	217	58	275	01:15-01:30	78	75	153	07:15-07:30	62	60	122
01:30-01:45	4	3	7	07:30-07:45	194	54	248	01:30-01:45	91	95	186	07:30-07:45	48	58	106
01:45-02:00	4	2	6	07:45-08:00	158	64	222	01:45-02:00	97	100	197	07:45-08:00	46	60	106
02:00-02:15	2	3	5	08:00-08:15	122	90	212	02:00-02:15	78	99	177	08:00-08:15	48	47	95
02:15-02:30	1	2	3	08:15-08:30	160	63	223	02:15-02:30	71	117	188	08:15-08:30	27	49	76
02:30-02:45	3	3	6	08:30-08:45	160	72	232	02:30-02:45	86	125	211	08:30-08:45	36	50	86
02:45-03:00	3	4	7	08:45-09:00	104	50	154	02:45-03:00	75	159	234	08:45-09:00	29	48	77
03:00-03:15	3	6	9	09:00-09:15	110	69	179	03:00-03:15	86	209	295	09:00-09:15	27	54	81
03:15-03:30	4	4	8	09:15-09:30	108	75	183	03:15-03:30	96	252	348	09:15-09:30	37	39	76
03:30-03:45	3	5	8	09:30-09:45	92	68	160	03:30-03:45	110	232	342	09:30-09:45	22	50	72
03:45-04:00	14	5	19	09:45-10:00	101	59	160	03:45-04:00	115	260	375	09:45-10:00	18	42	60
04:00-04:15	12	8	20	10:00-10:15	74	58	132	04:00-04:15	98	278	376	10:00-10:15	27	35	62
04:15-04:30	28	12	40	10:15-10:30	69	68	137	04:15-04:30	100	248	348	10:15-10:30	26	25	51
04:30-04:45	53	19	72	10:30-10:45	77	69	146	04:30-04:45	85	219	304	10:30-10:45	22	16	38
04:45-05:00	79	25	104	10:45-11:00	84	62	146	04:45-05:00	78	233	311	10:45-11:00	15	16	31
05:00-05:15	99	25	124	11:00-11:15	80	81	161	05:00-05:15	70	187	257	11:00-11:15	18	26	44
05:15-05:30	181	28	209	11:15-11:30	105	91	196	05:15-05:30	76	163	239	11:15-11:30	14	13	27
05:30-05:45	236	40	276	11:30-11:45	81	98	179	05:30-05:45	79	127	206	11:30-11:45	5	16	21
05:45-06:00	243	48	291	11:45-12:00	80	105	185	05:45-06:00	61	131	192	11:45-12:00	11	12	23

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM		
AM - PEAK HR VOLUME	935	322	1257
AM - K FACTOR (%)			8.85
AM - D (%)	74.38	25.62	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM	06:00 AM to 07:00 AM	
AM - PEAK HR VOLUME	940	322	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	423	1018	1441
PM - K FACTOR (%)			10.14
PM - D (%)	29.35	70.65	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM	03:15 PM to 04:15 PM	
PM - PEAK HR VOLUME	423	1022	

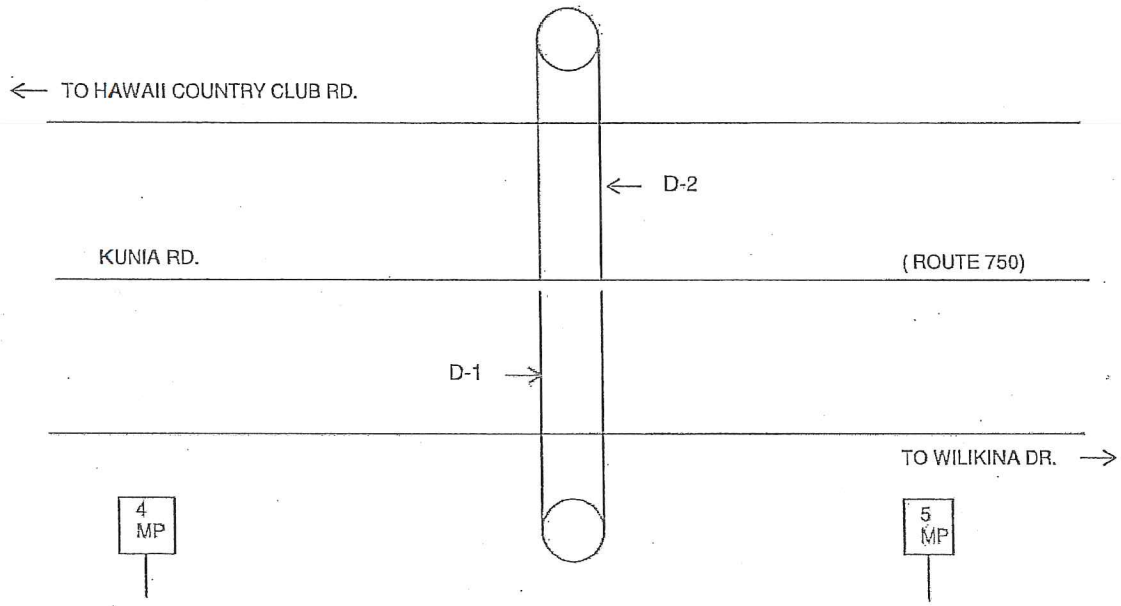
AM PERIOD (00:00-12:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM		
AM - PEAK HR VOLUME	935	322	1257
AM - K FACTOR (%)			8.85
AM - D (%)	74.38	25.62	100.00

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	423	1018	1441
PM - K FACTOR (%)			10.14
PM - D (%)	29.35	70.65	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	310	500	810
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	411	500	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,342	1,750	5,092
AM 12-HR PERIOD (00:00-12:00)	4,348	2,052	6,400
PM 6-HR PERIOD (12:00-18:00)	2,103	3,720	5,823
PM 12-HR PERIOD (12:00-24:00)	2,929	4,882	7,811
24 HOUR PERIOD	7,277	6,934	14,211
D (%)	51.21	48.79	100.00

ISLAND: OAHU
AREA: KUNIA



Station No:	B72 0750 00378

Station Location:			
Kunia Road between 4 milepost and 5 milepost			
Station Mileage:	4.86	GPS Coord (Latitude):	
		GPS Coord (Longitude):	
Begin Survey (Date/Time):		End Survey (Date/Time):	
Survey Method: LOOP **HOSE** OTHER		Survey Type: VOL **CLASS** SPEED OTHER	
Survey Crew:		Module No.:	

HPMS DATA

Segment Description:

KUNIA ROAD - HAWAII COUNTRY CLUB ROAD TO BEGINNING OF 35 MPH POSTED SIGN

Segment Begin LRS	3.78	Segment End LRS	4.88	Length	1.10

Facility Name	Juris	Func Class	Area Type	Route No.	Route Mile	D-1 = Direction to End of Route / D-2 = Direction to Beginning of Route	
KUNIA ROAD	S	6	1	750	4.86	D-1	TO WILIKINA DRIVE
						D-2	TO H-1 OVERPASS

Sketch By: C.A. Date: 3/17/2005 SLD: 2003

Run Date: 2010/12/09

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2010 Program Count - Summary

Site ID: B72075000378
Functional Class: RURAL:MINOR ARTERIAL
Location: KUNIA ROAD - HAWAII COUNTRY CLUB ROAD TO

Town: Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 0
Count Type: CLASS **Counter Type:** Tube **Route No:** 750

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/13/2010															
12:00-12:15	0	10	10	06:00-06:15	177	59	236	12:00-12:15	83	74	157	06:00-06:15	80	185	265
12:15-12:30	5	7	12	06:15-06:30	207	50	257	12:15-12:30	84	76	160	06:15-06:30	74	179	253
12:30-12:45	3	5	8	06:30-06:45	239	49	288	12:30-12:45	90	67	157	06:30-06:45	62	132	194
12:45-01:00	5	6	11	06:45-07:00	162	40	202	12:45-01:00	117	79	196	06:45-07:00	47	134	181
01:00-01:15	1	4	5	07:00-07:15	171	54	225	01:00-01:15	80	81	161	07:00-07:15	36	73	109
01:15-01:30	4	2	6	07:15-07:30	193	91	284	01:15-01:30	61	92	153	07:15-07:30	43	73	116
01:30-01:45	0	0	0	07:30-07:45	276	74	350	01:30-01:45	70	111	181	07:30-07:45	37	67	104
01:45-02:00	6	0	6	07:45-08:00	203	98	301	01:45-02:00	74	75	149	07:45-08:00	33	67	100
02:00-02:15	1	6	7	08:00-08:15	141	85	226	02:00-02:15	61	115	176	08:00-08:15	24	73	97
02:15-02:30	4	5	9	08:15-08:30	121	71	192	02:15-02:30	96	92	188	08:15-08:30	33	68	101
02:30-02:45	5	4	9	08:30-08:45	135	55	190	02:30-02:45	61	121	182	08:30-08:45	20	44	64
02:45-03:00	12	4	16	08:45-09:00	149	48	197	02:45-03:00	94	141	235	08:45-09:00	34	61	95
03:00-03:15	6	5	11	09:00-09:15	121	81	202	03:00-03:15	67	149	216	09:00-09:15	25	31	56
03:15-03:30	2	6	8	09:15-09:30	93	71	164	03:15-03:30	83	181	264	09:15-09:30	30	48	78
03:30-03:45	9	5	14	09:30-09:45	98	60	158	03:30-03:45	74	196	270	09:30-09:45	29	59	88
03:45-04:00	9	9	18	09:45-10:00	78	71	149	03:45-04:00	148	225	373	09:45-10:00	21	50	71
04:00-04:15	16	18	34	10:00-10:15	56	53	109	04:00-04:15	96	241	337	10:00-10:15	18	42	60
04:15-04:30	24	13	37	10:15-10:30	77	50	127	04:15-04:30	96	252	348	10:15-10:30	24	31	55
04:30-04:45	54	11	65	10:30-10:45	66	49	115	04:30-04:45	102	252	354	10:30-10:45	20	25	45
04:45-05:00	102	21	123	10:45-11:00	64	81	145	04:45-05:00	97	247	344	10:45-11:00	8	27	35
05:00-05:15	127	28	155	11:00-11:15	59	64	123	05:00-05:15	111	230	341	11:00-11:15	7	26	33
05:15-05:30	182	29	211	11:15-11:30	83	107	190	05:15-05:30	89	237	326	11:15-11:30	13	20	33
05:30-05:45	320	42	362	11:30-11:45	70	107	177	05:30-05:45	94	261	355	11:30-11:45	7	9	16
05:45-06:00	223	33	256	11:45-12:00	79	94	173	05:45-06:00	75	178	253	11:45-12:00	12	9	21

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	813	348	1161
AM - K FACTOR (%)			8.11
AM - D (%)	70.03	29.97	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:30 AM to 06:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	927	348	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	442	970	1412
PM - K FACTOR (%)			9.86
PM - D (%)	31.30	68.70	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	442	992	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	813	348	1161
AM - K FACTOR (%)			8.11
AM - D (%)	70.03	29.97	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	442	970	1412
PM - K FACTOR (%)			9.86
PM - D (%)	31.30	68.70	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	312	469	781
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	390	469	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,118	1,662	4,780
AM 12-HR PERIOD (00:00-12:00)	4,238	1,935	6,173
PM 6-HR PERIOD (12:00-18:00)	2,103	3,773	5,876
PM 12-HR PERIOD (12:00-24:00)	2,840	5,306	8,146
24 HOUR PERIOD	7,078	7,241	14,319
D (%)	49.43	50.57	100.00

Run Date: 2010/12/09

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2010 Program Count - Summary

Site ID: B72075000378
Functional Class: RURAL:MINOR ARTERIAL
Location: KUNIA ROAD - HAWAII COUNTRY CLUB ROAD TO

Town: Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 0
Count Type: CLASS **Counter Type:** Tube **Route No:** 750

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/14/2010															
12:00-12:15	12	5	17	06:00-06:15	264	59	323	12:00-12:15	90	78	168	06:00-06:15	53	129	182
12:15-12:30	8	7	15	06:15-06:30	238	85	323	12:15-12:30	88	104	192	06:15-06:30	62	134	196
12:30-12:45	10	12	22	06:30-06:45	244	56	300	12:30-12:45	94	89	183	06:30-06:45	60	103	163
12:45-01:00	4	10	14	06:45-07:00	260	44	304	12:45-01:00	91	76	167	06:45-07:00	57	106	163
01:00-01:15	3	8	11	07:00-07:15	230	61	291	01:00-01:15	77	94	171	07:00-07:15	47	96	143
01:15-01:30	2	1	3	07:15-07:30	223	66	289	01:15-01:30	77	66	143	07:15-07:30	42	63	105
01:30-01:45	7	7	14	07:30-07:45	189	81	270	01:30-01:45	103	108	211	07:30-07:45	38	51	89
01:45-02:00	2	3	5	07:45-08:00	185	93	278	01:45-02:00	63	84	147	07:45-08:00	39	56	95
02:00-02:15	2	6	8	08:00-08:15	118	90	208	02:00-02:15	67	96	163	08:00-08:15	32	59	91
02:15-02:30	2	5	7	08:15-08:30	138	88	226	02:15-02:30	66	124	190	08:15-08:30	31	65	96
02:30-02:45	3	1	4	08:30-08:45	169	77	246	02:30-02:45	77	141	218	08:30-08:45	33	55	88
02:45-03:00	8	5	13	08:45-09:00	141	57	198	02:45-03:00	83	169	252	08:45-09:00	36	47	83
03:00-03:15	15	7	22	09:00-09:15	115	71	186	03:00-03:15	72	213	285	09:00-09:15	26	40	66
03:15-03:30	7	6	13	09:15-09:30	131	60	191	03:15-03:30	84	280	364	09:15-09:30	23	43	66
03:30-03:45	8	6	14	09:30-09:45	108	83	191	03:30-03:45	99	263	362	09:30-09:45	24	55	79
03:45-04:00	10	8	18	09:45-10:00	78	70	148	03:45-04:00	108	270	378	09:45-10:00	18	26	44
04:00-04:15	19	8	27	10:00-10:15	56	64	120	04:00-04:15	97	255	352	10:00-10:15	19	39	58
04:15-04:30	33	13	46	10:15-10:30	84	71	155	04:15-04:30	86	279	365	10:15-10:30	15	26	41
04:30-04:45	69	19	88	10:30-10:45	80	80	160	04:30-04:45	96	289	385	10:30-10:45	17	26	43
04:45-05:00	95	23	118	10:45-11:00	72	96	168	04:45-05:00	70	250	320	10:45-11:00	14	19	33
05:00-05:15	152	23	175	11:00-11:15	68	70	138	05:00-05:15	79	216	295	11:00-11:15	12	26	38
05:15-05:30	196	28	224	11:15-11:30	94	104	198	05:15-05:30	72	180	252	11:15-11:30	14	14	28
05:30-05:45	316	45	361	11:30-11:45	75	95	170	05:30-05:45	75	161	236	11:30-11:45	8	14	22
05:45-06:00	305	42	347	11:45-12:00	80	91	171	05:45-06:00	97	129	226	11:45-12:00	14	9	23

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:30 AM to 06:30 AM		
AM - PEAK HR VOLUME	1123	231	1354
AM - K FACTOR (%)			9.09
AM - D (%)	82.94	17.06	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:30 AM to 06:30 AM	07:30 AM to 08:30 AM	
AM - PEAK HR VOLUME	1123	352	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	387	1093	1480
PM - K FACTOR (%)			9.93
PM - D (%)	26.15	73.85	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	390	1093	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:30 AM to 06:30 AM		
AM - PEAK HR VOLUME	1123	231	1354
AM - K FACTOR (%)			9.09
AM - D (%)	82.94	17.06	100.00

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	387	1093	1480
PM - K FACTOR (%)			9.93
PM - D (%)	26.15	73.85	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	293	530	823
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	432	530	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,440	1,812	5,252
AM 12-HR PERIOD (00:00-12:00)	4,728	2,110	6,838
PM 6-HR PERIOD (12:00-18:00)	2,011	4,014	6,025
PM 12-HR PERIOD (12:00-24:00)	2,745	5,315	8,060
24 HOUR PERIOD	7,473	7,425	14,898
D (%)	50.16	49.84	100.00

Run Date: 2010/12/09

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2010 Program Count - Summary

Site ID: B72075000088
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location: KUNIA ROAD - begin 3 LANES TO BEG

Town: Oahu | Count Type:CLASS | DIR 1: +MP | DIR 2:-MP | Counter Type: Tube | Final AADT: 0 | Route No: 750

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/13/2010															
12:00-12:15	19	8	27	06:00-06:15	229	144	373	12:00-12:15	112	130	242	06:00-06:15	131	195	326
12:15-12:30	19	11	30	06:15-06:30	254	165	419	12:15-12:30	107	96	203	06:15-06:30	145	215	360
12:30-12:45	14	8	22	06:30-06:45	248	184	432	12:30-12:45	137	99	236	06:30-06:45	140	179	319
12:45-01:00	10	10	20	06:45-07:00	227	130	357	12:45-01:00	108	100	208	06:45-07:00	141	154	295
01:00-01:15	7	7	14	07:00-07:15	209	159	368	01:00-01:15	113	132	245	07:00-07:15	124	126	250
01:15-01:30	6	2	8	07:15-07:30	215	168	383	01:15-01:30	115	133	248	07:15-07:30	134	98	232
01:30-01:45	9	0	9	07:30-07:45	195	119	314	01:30-01:45	111	156	267	07:30-07:45	106	93	199
01:45-02:00	7	2	9	07:45-08:00	172	125	297	01:45-02:00	94	105	199	07:45-08:00	80	90	170
02:00-02:15	3	4	7	08:00-08:15	150	133	283	02:00-02:15	106	145	251	08:00-08:15	86	82	168
02:15-02:30	7	9	16	08:15-08:30	146	122	268	02:15-02:30	127	150	277	08:15-08:30	65	83	148
02:30-02:45	7	6	13	08:30-08:45	157	120	277	02:30-02:45	117	141	258	08:30-08:45	80	66	146
02:45-03:00	13	7	20	08:45-09:00	161	97	258	02:45-03:00	131	163	294	08:45-09:00	78	67	145
03:00-03:15	2	8	10	09:00-09:15	112	119	231	03:00-03:15	124	200	324	09:00-09:15	64	48	112
03:15-03:30	9	13	22	09:15-09:30	106	124	230	03:15-03:30	167	190	357	09:15-09:30	56	42	98
03:30-03:45	8	16	24	09:30-09:45	88	103	191	03:30-03:45	155	283	438	09:30-09:45	48	82	130
03:45-04:00	10	12	22	09:45-10:00	95	88	183	03:45-04:00	176	258	434	09:45-10:00	46	45	91
04:00-04:15	16	27	43	10:00-10:15	122	102	224	04:00-04:15	161	249	410	10:00-10:15	47	57	104
04:15-04:30	33	38	71	10:15-10:30	108	88	196	04:15-04:30	167	265	432	10:15-10:30	48	33	81
04:30-04:45	77	49	126	10:30-10:45	91	81	172	04:30-04:45	177	292	469	10:30-10:45	29	40	69
04:45-05:00	75	61	136	10:45-11:00	105	111	216	04:45-05:00	162	266	428	10:45-11:00	41	36	77
05:00-05:15	134	86	220	11:00-11:15	92	84	176	05:00-05:15	154	297	451	11:00-11:15	28	39	67
05:15-05:30	201	128	329	11:15-11:30	116	123	239	05:15-05:30	157	241	398	11:15-11:30	28	22	50
05:30-05:45	272	111	383	11:30-11:45	113	144	257	05:30-05:45	168	277	445	11:30-11:45	16	17	33
05:45-06:00	245	118	363	11:45-12:00	130	107	237	05:45-06:00	145	253	398	11:45-12:00	13	8	21

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:45 AM to 06:45 AM		
AM - PEAK HR VOLUME	976	611	1587
AM - K FACTOR (%)			7.88
AM - D (%)	61.50	38.50	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:30 AM to 06:30 AM	06:30 AM to 07:30 AM	
AM - PEAK HR VOLUME	1000	641	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	660	1120	1780
PM - K FACTOR (%)			8.84
PM - D (%)	37.08	62.92	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	681	1120	

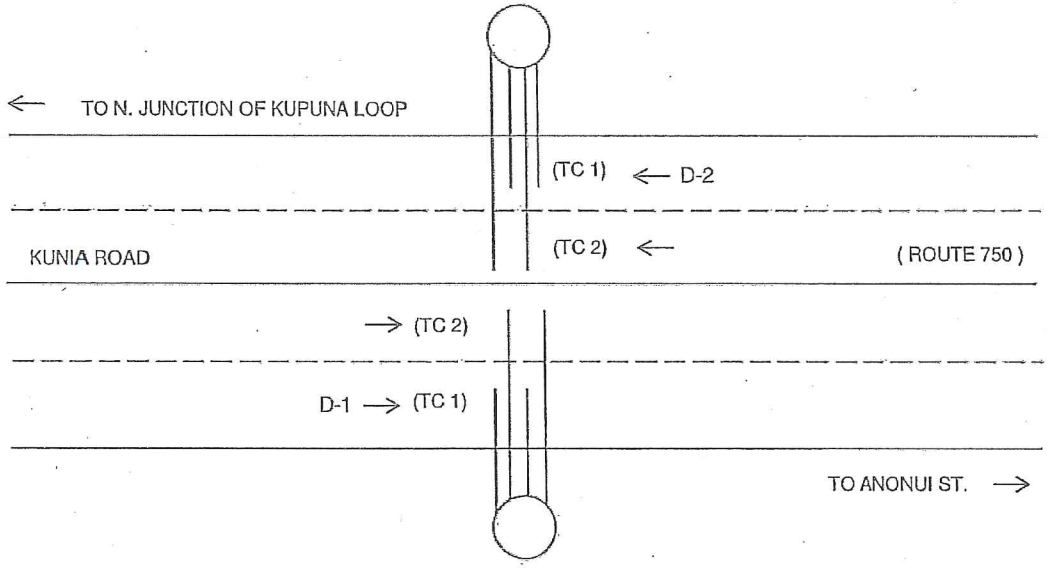
AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:45 AM to 06:45 AM		
AM - PEAK HR VOLUME	976	611	1587
AM - K FACTOR (%)			7.88
AM - D (%)	61.50	38.50	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	660	1120	1780
PM - K FACTOR (%)			8.84
PM - D (%)	37.08	62.92	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	481	599	1080
DIRECTIONAL PEAK			
PEAK HR TIME	11:45 AM to 12:45 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	486	599	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,641	2,940	6,581
AM 12-HR PERIOD (00:00-12:00)	4,844	3,681	8,525
PM 6-HR PERIOD (12:00-18:00)	3,291	4,621	7,912
PM 12-HR PERIOD (12:00-24:00)	5,065	6,538	11,603
24 HOUR PERIOD	9,909	10,219	20,128
D (%)	49.23	50.77	100.00

ISLAND: OAHU
AREA: KUNIA



Station No:	B72 0750 00088

Station Location:			
Kunia Road between North Kupuna Loop and Anonui Street			
Station Mileage:	0.88	GPS Coord (Latitude):	
		GPS Coord (Longitude):	
Begin Survey (Date/Time):		End Survey (Date/Time):	
Survey Method: LOOP **HOSE** OTHER		Survey Type: VOL **CLASS** SPEED OTHER	
Survey Crew:		Module No.:	

HPMS DATA

Segment Description:

KUNIA ROAD - BEGINNING OF 3 LANES TO BEGINNING OF 2 LANES

Segment Begin LRS	0.88	Segment End LRS	0.94	Length	0.06

Facility Name	Juris	Func Class	Area Type	Route No.	Route Mile	D-1 = Direction to End of Route D-2 = Direction to Beginning of Route	
KUNIA ROAD	S	14	4	750	0.88	D-1	TO WILIKINA DRIVE
						D-2	TO H-1 OVERPASS

Sketch By: HK Date: 3/15/2005 SLD: 2003

Run Date: 2010/12/09

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2010 Program Count - Summary

Site ID: B72075000088
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location: KUNIA ROAD - begin 3 LANES TO BEG

Town: Oahu — DIR 1: +MP — DIR 2:-MP — Final AADT: 0
Count Type:CLASS — Counter Type: Tube — Route No: 750

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/14/2010															
12:00-12:15	196	15	211	06:00-06:15	11	148	159	12:00-12:15	140	91	231	06:00-06:15	112	172	284
12:15-12:30	168	3	171	06:15-06:30	8	140	148	12:15-12:30	180	128	308	06:15-06:30	112	171	283
12:30-12:45	138	12	150	06:30-06:45	10	180	190	12:30-12:45	139	149	288	06:30-06:45	108	162	270
12:45-01:00	126	12	138	06:45-07:00	7	139	146	12:45-01:00	158	124	282	06:45-07:00	118	135	253
01:00-01:15	121	6	127	07:00-07:15	2	158	160	01:00-01:15	130	117	247	07:00-07:15	115	129	244
01:15-01:30	76	6	82	07:15-07:30	0	130	130	01:15-01:30	122	110	232	07:15-07:30	129	96	225
01:30-01:45	69	6	75	07:30-07:45	2	122	124	01:30-01:45	126	125	251	07:30-07:45	122	86	208
01:45-02:00	98	5	103	07:45-08:00	4	126	130	01:45-02:00	130	144	274	07:45-08:00	131	66	197
02:00-02:15	75	9	84	08:00-08:15	9	130	139	02:00-02:15	120	160	280	08:00-08:15	151	75	226
02:15-02:30	63	5	68	08:15-08:30	6	120	126	02:15-02:30	136	163	299	08:15-08:30	142	68	210
02:30-02:45	53	4	57	08:30-08:45	7	136	143	02:30-02:45	111	173	284	08:30-08:45	175	78	253
02:45-03:00	64	8	72	08:45-09:00	8	111	119	02:45-03:00	94	185	279	08:45-09:00	182	49	231
03:00-03:15	39	8	47	09:00-09:15	13	94	107	03:00-03:15	111	254	365	09:00-09:15	193	55	248
03:15-03:30	54	13	67	09:15-09:30	16	111	127	03:15-03:30	141	260	401	09:15-09:30	270	47	317
03:30-03:45	42	17	59	09:30-09:45	12	141	153	03:30-03:45	106	331	437	09:30-09:45	238	63	301
03:45-04:00	37	8	45	09:45-10:00	27	106	133	03:45-04:00	111	324	435	09:45-10:00	254	50	304
04:00-04:15	41	30	71	10:00-10:15	79	108	187	04:00-04:15	95	313	408	10:00-10:15	259	53	312
04:15-04:30	26	33	59	10:15-10:30	92	103	195	04:15-04:30	105	290	395	10:15-10:30	243	33	276
04:30-04:45	18	46	64	10:30-10:45	94	105	199	04:30-04:45	103	278	381	10:30-10:45	263	34	297
04:45-05:00	32	67	99	10:45-11:00	83	126	209	04:45-05:00	126	317	443	10:45-11:00	262	32	294
05:00-05:15	16	83	99	11:00-11:15	114	115	229	05:00-05:15	102	243	345	11:00-11:15	278	19	297
05:15-05:30	17	114	131	11:15-11:30	124	126	250	05:15-05:30	111	227	338	11:15-11:30	266	28	294
05:30-05:45	16	124	140	11:30-11:45	117	132	249	05:30-05:45	115	213	328	11:30-11:45	242	16	258
05:45-06:00	8	117	125	11:45-12:00	148	130	278	05:45-06:00	114	192	306	11:45-12:00	205	8	213

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM		
AM - PEAK HR VOLUME	27	617	644
AM - K FACTOR (%)			3.14
AM - D (%)	4.19	95.81	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:00 AM to 06:00 AM	06:15 AM to 07:15 AM	
AM - PEAK HR VOLUME	57	617	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM		
PM - PEAK HR VOLUME	453	1228	1681
PM - K FACTOR (%)			8.20
PM - D (%)	26.95	73.05	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	469	1258	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM		
AM - PEAK HR VOLUME	503	503	1006
AM - K FACTOR (%)			4.91
AM - D (%)	50.00	50.00	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM		
PM - PEAK HR VOLUME	453	1228	1681
PM - K FACTOR (%)			8.20
PM - D (%)	26.95	73.05	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	461	681	1142
DIRECTIONAL PEAK			
PEAK HR TIME	12:00 PM to 01:00 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	617	681	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	993	3,037	4,030
AM 12-HR PERIOD (00:00-12:00)	2,586	3,788	6,374
PM 6-HR PERIOD (12:00-18:00)	2,926	4,911	7,837
PM 12-HR PERIOD (12:00-24:00)	7,496	6,636	14,132
24 HOUR PERIOD	10,082	10,424	20,506
D (%)	49.17	50.83	100.00

Run Date: 2010/07/08

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2009 Program Count - Summary

Site ID: B72075000088
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location: KUNIA ROAD - BEGINNING OF 3 LANES TO BEG

Town: Oahu
Count Type: CLASS
Counter Type: Tube

Final AADT: 18500
Route No: 750
DIR 1: +MP **DIR 2:** -MP

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/22/2009															
12:00-12:15	22	20	42	06:00-06:15	185	140	325	12:00-12:15	93	98	191	06:00-06:15	137	162	299
12:15-12:30	16	13	29	06:15-06:30	237	189	426	12:15-12:30	134	90	224	06:15-06:30	135	175	310
12:30-12:45	15	11	26	06:30-06:45	229	164	393	12:30-12:45	122	99	221	06:30-06:45	118	135	253
12:45-01:00	14	6	20	06:45-07:00	228	170	398	12:45-01:00	109	96	205	06:45-07:00	110	107	217
01:00-01:15	10	16	26	07:00-07:15	216	172	388	01:00-01:15	124	123	247	07:00-07:15	124	109	233
01:15-01:30	13	8	21	07:15-07:30	215	151	366	01:15-01:30	89	124	213	07:15-07:30	123	93	216
01:30-01:45	16	9	25	07:30-07:45	174	149	323	01:30-01:45	87	122	209	07:30-07:45	87	83	170
01:45-02:00	6	6	12	07:45-08:00	147	135	282	01:45-02:00	85	141	226	07:45-08:00	86	60	146
02:00-02:15	6	3	9	08:00-08:15	143	136	279	02:00-02:15	109	128	237	08:00-08:15	61	63	124
02:15-02:30	7	2	9	08:15-08:30	137	114	251	02:15-02:30	112	135	247	08:15-08:30	90	86	176
02:30-02:45	6	7	13	08:30-08:45	135	125	260	02:30-02:45	142	145	287	08:30-08:45	65	55	120
02:45-03:00	9	5	14	08:45-09:00	114	118	232	02:45-03:00	125	157	282	08:45-09:00	59	53	112
03:00-03:15	8	6	14	09:00-09:15	109	107	216	03:00-03:15	171	192	363	09:00-09:15	58	57	115
03:15-03:30	16	14	30	09:15-09:30	107	108	215	03:15-03:30	152	191	343	09:15-09:30	60	53	113
03:30-03:45	5	14	19	09:30-09:45	78	110	188	03:30-03:45	169	253	422	09:30-09:45	47	52	99
03:45-04:00	12	16	28	09:45-10:00	115	107	222	03:45-04:00	179	238	417	09:45-10:00	54	42	96
04:00-04:15	36	21	57	10:00-10:15	98	90	188	04:00-04:15	170	199	369	10:00-10:15	51	58	109
04:15-04:30	42	37	79	10:15-10:30	105	110	215	04:15-04:30	180	240	420	10:15-10:30	42	33	75
04:30-04:45	55	37	92	10:30-10:45	88	92	180	04:30-04:45	156	208	364	10:30-10:45	33	23	56
04:45-05:00	81	59	140	10:45-11:00	102	105	207	04:45-05:00	166	256	422	10:45-11:00	36	34	70
05:00-05:15	99	60	159	11:00-11:15	82	106	188	05:00-05:15	162	221	383	11:00-11:15	25	20	45
05:15-05:30	175	98	273	11:15-11:30	115	123	238	05:15-05:30	156	242	398	11:15-11:30	33	22	55
05:30-05:45	224	121	345	11:30-11:45	94	116	210	05:30-05:45	157	209	366	11:30-11:45	24	21	45
05:45-06:00	238	130	368	11:45-12:00	95	100	195	05:45-06:00	126	225	351	11:45-12:00	18	11	29

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM		
AM - PEAK HR VOLUME	910	695	1605
AM - K FACTOR (%)			8.48
AM - D (%)	56.70	43.30	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM	06:15 AM to 07:15 AM	
AM - PEAK HR VOLUME	910	695	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	698	930	1628
PM - K FACTOR (%)			8.60
PM - D (%)	42.87	57.13	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	698	930	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM		
AM - PEAK HR VOLUME	910	695	1605
AM - K FACTOR (%)			8.48
AM - D (%)	56.70	43.30	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	698	930	1628
PM - K FACTOR (%)			8.60
PM - D (%)	42.87	57.13	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	488	565	1053
DIRECTIONAL PEAK			
PEAK HR TIME	12:15 PM to 01:15 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	489	565	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,348	3,037	6,385
AM 12-HR PERIOD (00:00-12:00)	4,479	3,756	8,235
PM 6-HR PERIOD (12:00-18:00)	3,275	4,132	7,407
PM 12-HR PERIOD (12:00-24:00)	4,951	5,739	10,690
24 HOUR PERIOD	9,430	9,495	18,925
D (%)	49.83	50.17	100.00

Run Date: 2010/07/08

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2009 Program Count - Summary

Site ID: B72075000088
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location: KUNIA ROAD - BEGINNING OF 3 LANES TO BEG

Town: Oahu
Count Type: CLASS
Counter Type: Tube

Final AADT: 18500
Route No: 750
DIR 1: +MP DIR 2: -MP

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/23/2009															
12:00-12:15	14	13	27	06:00-06:15	228	141	369	12:00-12:15	97	120	217	06:00-06:15	130	177	307
12:15-12:30	15	17	32	06:15-06:30	223	175	398	12:15-12:30	138	123	261	06:15-06:30	171	194	365
12:30-12:45	19	8	27	06:30-06:45	213	195	408	12:30-12:45	111	125	236	06:30-06:45	116	115	231
12:45-01:00	7	12	19	06:45-07:00	230	181	411	12:45-01:00	111	119	230	06:45-07:00	110	123	233
01:00-01:15	9	8	17	07:00-07:15	202	183	385	01:00-01:15	119	119	238	07:00-07:15	122	114	236
01:15-01:30	14	4	18	07:15-07:30	234	155	389	01:15-01:30	95	120	215	07:15-07:30	81	111	192
01:30-01:45	13	7	20	07:30-07:45	195	138	333	01:30-01:45	105	104	209	07:30-07:45	96	82	178
01:45-02:00	11	3	14	07:45-08:00	160	140	300	01:45-02:00	106	124	230	07:45-08:00	101	83	184
02:00-02:15	3	7	10	08:00-08:15	166	137	303	02:00-02:15	111	118	229	08:00-08:15	82	76	158
02:15-02:30	8	4	12	08:15-08:30	154	141	295	02:15-02:30	111	133	244	08:15-08:30	79	72	151
02:30-02:45	7	3	10	08:30-08:45	134	120	254	02:30-02:45	119	138	257	08:30-08:45	71	69	140
02:45-03:00	11	7	18	08:45-09:00	128	110	238	02:45-03:00	127	164	291	08:45-09:00	74	65	139
03:00-03:15	5	8	13	09:00-09:15	94	108	202	03:00-03:15	124	166	290	09:00-09:15	77	62	139
03:15-03:30	11	13	24	09:15-09:30	112	87	199	03:15-03:30	192	207	399	09:15-09:30	69	51	120
03:30-03:45	11	19	30	09:30-09:45	86	88	174	03:30-03:45	172	256	428	09:30-09:45	57	44	101
03:45-04:00	13	17	30	09:45-10:00	81	97	178	03:45-04:00	172	238	410	09:45-10:00	45	42	87
04:00-04:15	24	23	47	10:00-10:15	79	89	168	04:00-04:15	161	193	354	10:00-10:15	40	51	91
04:15-04:30	41	40	81	10:15-10:30	113	92	205	04:15-04:30	159	248	407	10:15-10:30	49	33	82
04:30-04:45	58	30	88	10:30-10:45	102	111	213	04:30-04:45	148	257	405	10:30-10:45	34	30	64
04:45-05:00	66	53	119	10:45-11:00	101	100	201	04:45-05:00	140	243	383	10:45-11:00	38	28	66
05:00-05:15	119	65	184	11:00-11:15	94	108	202	05:00-05:15	156	211	367	11:00-11:15	31	25	56
05:15-05:30	164	108	272	11:15-11:30	94	108	202	05:15-05:30	175	231	406	11:15-11:30	33	26	59
05:30-05:45	206	107	313	11:30-11:45	109	100	209	05:30-05:45	151	224	375	11:30-11:45	27	22	49
05:45-06:00	226	111	337	11:45-12:00	95	99	194	05:45-06:00	154	231	385	11:45-12:00	17	17	34

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM		
AM - PEAK HR VOLUME	868	734	1602
AM - K FACTOR (%)			8.38
AM - D (%)	54.18	45.82	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM	06:15 AM to 07:15 AM	
AM - PEAK HR VOLUME	894	734	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	664	935	1599
PM - K FACTOR (%)			8.36
PM - D (%)	41.53	58.47	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	697	959	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM		
AM - PEAK HR VOLUME	868	734	1602
AM - K FACTOR (%)			8.38
AM - D (%)	54.18	45.82	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	664	935	1599
PM - K FACTOR (%)			8.36
PM - D (%)	41.53	58.47	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	468	553	1021
DIRECTIONAL PEAK			
PEAK HR TIME	12:15 PM to 01:15 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	479	553	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,427	3,003	6,430
AM 12-HR PERIOD (00:00-12:00)	4,502	3,690	8,192
PM 6-HR PERIOD (12:00-18:00)	3,254	4,212	7,466
PM 12-HR PERIOD (12:00-24:00)	5,004	5,924	10,928
24 HOUR PERIOD	9,506	9,614	19,120
D (%)	49.72	50.28	100.00

Run Date: 2010/07/09

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2009 Program Count - Summary

Site ID: B72075000200
Functional Class: RURAL:MINOR ARTERIAL
Location: KUNIA ROAD, 2.8 MILE N.W. OF H-1 FRWY /

Town: Oahu
Count Type: CLASS
Counter Type: Tube

Final AADT: 14500
Route No: 750
DIR 1: +MP **DIR 2:** -MP

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/13/2009															
12:00-12:15	11	6	17	06:00-06:15	240	59	299	12:00-12:15	67	111	178	06:00-06:15	65	154	219
12:15-12:30	3	8	11	06:15-06:30	230	100	330	12:15-12:30	80	97	177	06:15-06:30	63	152	215
12:30-12:45	8	16	24	06:30-06:45	248	108	356	12:30-12:45	107	88	195	06:30-06:45	62	125	187
12:45-01:00	8	4	12	06:45-07:00	235	88	323	12:45-01:00	106	91	197	06:45-07:00	40	100	140
01:00-01:15	11	5	16	07:00-07:15	281	100	381	01:00-01:15	76	79	155	07:00-07:15	58	102	160
01:15-01:30	9	7	16	07:15-07:30	248	86	334	01:15-01:30	89	88	177	07:15-07:30	57	84	141
01:30-01:45	6	13	19	07:30-07:45	216	85	301	01:30-01:45	72	111	183	07:30-07:45	55	55	110
01:45-02:00	2	3	5	07:45-08:00	145	86	231	01:45-02:00	88	104	192	07:45-08:00	40	54	94
02:00-02:15	0	8	8	08:00-08:15	136	92	228	02:00-02:15	84	108	192	08:00-08:15	30	67	97
02:15-02:30	3	3	6	08:15-08:30	132	79	211	02:15-02:30	81	106	187	08:15-08:30	25	58	83
02:30-02:45	4	6	10	08:30-08:45	131	71	202	02:30-02:45	94	106	200	08:30-08:45	25	55	80
02:45-03:00	9	5	14	08:45-09:00	116	71	187	02:45-03:00	82	137	219	08:45-09:00	18	45	63
03:00-03:15	2	5	7	09:00-09:15	93	76	169	03:00-03:15	93	138	231	09:00-09:15	24	41	65
03:15-03:30	5	5	10	09:15-09:30	113	86	199	03:15-03:30	93	156	249	09:15-09:30	32	37	69
03:30-03:45	2	4	6	09:30-09:45	82	75	157	03:30-03:45	135	189	324	09:30-09:45	33	38	71
03:45-04:00	11	7	18	09:45-10:00	88	74	162	03:45-04:00	136	200	336	09:45-10:00	30	31	61
04:00-04:15	16	4	20	10:00-10:15	67	92	159	04:00-04:15	94	189	283	10:00-10:15	21	32	53
04:15-04:30	36	14	50	10:15-10:30	78	81	159	04:15-04:30	100	252	352	10:15-10:30	24	27	51
04:30-04:45	56	19	75	10:30-10:45	87	82	169	04:30-04:45	97	249	346	10:30-10:45	18	14	32
04:45-05:00	91	24	115	10:45-11:00	80	78	158	04:45-05:00	103	213	316	10:45-11:00	12	27	39
05:00-05:15	88	33	121	11:00-11:15	79	96	175	05:00-05:15	98	191	289	11:00-11:15	23	24	47
05:15-05:30	186	39	225	11:15-11:30	99	85	184	05:15-05:30	104	220	324	11:15-11:30	17	14	31
05:30-05:45	300	39	339	11:30-11:45	75	100	175	05:30-05:45	68	208	276	11:30-11:45	17	9	26
05:45-06:00	271	54	325	11:45-12:00	101	125	226	05:45-06:00	93	178	271	11:45-12:00	8	17	25

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:30 AM to 07:30 AM		
AM - PEAK HR VOLUME	1012	382	1394
AM - K FACTOR (%)			9.32
AM - D (%)	72.60	27.40	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:30 AM to 06:30 AM	06:15 AM to 07:15 AM	
AM - PEAK HR VOLUME	1041	396	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	427	890	1317
PM - K FACTOR (%)			8.81
PM - D (%)	32.42	67.58	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	465	905	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:30 AM to 07:30 AM		
AM - PEAK HR VOLUME	1012	382	1394
AM - K FACTOR (%)			9.32
AM - D (%)	72.60	27.40	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	427	890	1317
PM - K FACTOR (%)			8.81
PM - D (%)	32.42	67.58	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	341	457	798
DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	378	457	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,400	2,075	5,475
AM 12-HR PERIOD (00:00-12:00)	4,538	2,406	6,944
PM 6-HR PERIOD (12:00-18:00)	2,240	3,609	5,849
PM 12-HR PERIOD (12:00-24:00)	3,037	4,971	8,008
24 HOUR PERIOD	7,575	7,377	14,952
D (%)	50.66	49.34	100.00

Run Date: 2010/07/09

Hawaii Department of Transportation
Highways Division — Highways Planning Survey Section
2009 Program Count - Summary

Site ID: B72075000200
Functional Class: RURAL:MINOR ARTERIAL
Location: KUNIA ROAD, 2.8 MILE N.W. OF H-1 FRWY /

Town: Oahu
Count Type: CLASS
Counter Type: Tube

Final AADT: 14500
Route No: 750
DIR 1: +MP **DIR 2:** -MP

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/14/2009															
12:00-12:15	10	23	33	06:00-06:15	217	73	290	12:00-12:15	93	111	204	06:00-06:15	76	134	210
12:15-12:30	3	9	12	06:15-06:30	211	97	308	12:15-12:30	92	73	165	06:15-06:30	73	187	260
12:30-12:45	5	10	15	06:30-06:45	235	109	344	12:30-12:45	116	113	229	06:30-06:45	75	124	199
12:45-01:00	4	9	13	06:45-07:00	247	109	356	12:45-01:00	98	83	181	06:45-07:00	65	122	187
01:00-01:15	8	8	16	07:00-07:15	264	89	353	01:00-01:15	75	107	182	07:00-07:15	61	110	171
01:15-01:30	8	5	13	07:15-07:30	267	67	334	01:15-01:30	77	114	191	07:15-07:30	65	85	150
01:30-01:45	3	1	4	07:30-07:45	215	93	308	01:30-01:45	97	95	192	07:30-07:45	45	57	102
01:45-02:00	2	4	6	07:45-08:00	192	85	277	01:45-02:00	94	100	194	07:45-08:00	38	66	104
02:00-02:15	3	7	10	08:00-08:15	130	97	227	02:00-02:15	70	92	162	08:00-08:15	33	72	105
02:15-02:30	4	0	4	08:15-08:30	141	73	214	02:15-02:30	93	103	196	08:15-08:30	48	66	114
02:30-02:45	1	7	8	08:30-08:45	146	83	229	02:30-02:45	87	106	193	08:30-08:45	46	58	104
02:45-03:00	6	2	8	08:45-09:00	134	61	195	02:45-03:00	88	143	231	08:45-09:00	29	78	107
03:00-03:15	1	2	3	09:00-09:15	95	67	162	03:00-03:15	106	141	247	09:00-09:15	33	94	127
03:15-03:30	3	4	7	09:15-09:30	104	81	185	03:15-03:30	111	184	295	09:15-09:30	24	67	91
03:30-03:45	10	3	13	09:30-09:45	89	100	189	03:30-03:45	146	213	359	09:30-09:45	33	55	88
03:45-04:00	7	7	14	09:45-10:00	79	90	169	03:45-04:00	141	248	389	09:45-10:00	26	44	70
04:00-04:15	20	10	30	10:00-10:15	68	76	144	04:00-04:15	112	195	307	10:00-10:15	22	43	65
04:15-04:30	37	18	55	10:15-10:30	75	67	142	04:15-04:30	102	241	343	10:15-10:30	19	50	69
04:30-04:45	72	18	90	10:30-10:45	76	82	158	04:30-04:45	94	208	302	10:30-10:45	19	25	44
04:45-05:00	83	29	112	10:45-11:00	77	76	153	04:45-05:00	104	214	318	10:45-11:00	21	25	46
05:00-05:15	113	21	134	11:00-11:15	60	102	162	05:00-05:15	98	193	291	11:00-11:15	15	24	39
05:15-05:30	175	29	204	11:15-11:30	76	84	160	05:15-05:30	97	233	330	11:15-11:30	13	17	30
05:30-05:45	274	42	316	11:30-11:45	96	103	199	05:30-05:45	73	202	275	11:30-11:45	16	7	23
05:45-06:00	335	37	372	11:45-12:00	84	119	203	05:45-06:00	87	216	303	11:45-12:00	12	9	21

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:30 AM to 07:30 AM		
AM - PEAK HR VOLUME	1013	374	1387
AM - K FACTOR (%)			8.92
AM - D (%)	73.04	26.96	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	05:30 AM to 06:30 AM	06:15 AM to 07:15 AM	
AM - PEAK HR VOLUME	1037	404	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	501	897	1398
PM - K FACTOR (%)			8.99
PM - D (%)	35.84	64.16	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	510	897	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:30 AM to 07:30 AM		
AM - PEAK HR VOLUME	1013	374	1387
AM - K FACTOR (%)			8.92
AM - D (%)	73.04	26.96	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	501	897	1398
PM - K FACTOR (%)			8.99
PM - D (%)	35.84	64.16	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:45 AM to 12:45 PM		
PEAK HR VOLUME	385	416	801
DIRECTIONAL PEAK			
PEAK HR TIME	12:00 PM to 01:00 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	399	444	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	3,378	2,083	5,461
AM 12-HR PERIOD (00:00-12:00)	4,565	2,388	6,953
PM 6-HR PERIOD (12:00-18:00)	2,351	3,728	6,079
PM 12-HR PERIOD (12:00-24:00)	3,258	5,347	8,605
24 HOUR PERIOD	7,823	7,735	15,558
D (%)	50.28	49.72	100.00

Ho'ohana Solar Farm Project Trip Generation Calculations

Project Trip Type	Weekday Trip Generation													Notes
		Peak Hours						Off-peak Hours						
	Daily Trips	A.M. Peak Hour Trips (7:30 AM - 8:30 AM)			P.M. Peak Hour Trips (4:15 PM - 5:15 PM)			Daytime Off-peak Trips (8:30 AM - 4:15 PM)			Nighttime Trips (5:15 PM - 7:30 AM)			
	Total	Total	IN	OUT	Total	IN	OUT	Total	IN	OUT	Total	IN	OUT	
Project Construction Phase*														
Automobile Trips:														
Personal Vehicles	200	100	100	0	100	0	100	0	0	0	0	0	0	100% of all construction employees will travel by personal vehicle to the project site.
Total Automobile Trips	*200*	*100*	*100*	*0*	*100*	*0*	*100*	*0*	*0*	*0*	*0*	*0*	*0*	
Heavy Vehicle Trips:														
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0	0	
Equipment Deliveries	20	5	5	0	5	0	5	0	0	0	0	0	0	Includes delivery of solar panel and electrical equipment. Assumes 20% of deliveries occur during peak hours
Employee Food Deliveries	4	0	0	0	0	0	0	4	2	2	0	0	0	Food deliveries to arrive during daytime off-peak hours
Excavation, Debris and Material Hauling, Misc Deliveries.	16	3	3	0	3	0	3	0	0	0	0	0	0	Includes miscellaneous deliveries, excavation, debris, and materials hauling.
Total Heavy Vehicle Trips	*40*	*8*	*8*	*0*	*8*	*0*	*8*	*4*	*2*	*2*	*0*	*0*	*0*	
Total Construction Phase Trips	240	108	108	0	108	0	108	4	2	2	0	0	0	
Project Operational Phase														
Employee Trips (Individual Auto Trips)	*10*	*5*	*5*	*0*	*5*	*0*	*5*	*0*	*0*	*0*	*0*	*0*	*0*	Employee Trips Based Upon Peak Staffing Levels of 5 Full Time Employees
Total Operational Phase Trips	10	5	5	0	5	0	5	0	0	0	0	0	0	

*Construction Phase Trip Generation Assumptions:

[1] Based upon peak construction phase of a 50 Megawatt Facility over a 9-month construction period. If the project construction period lasts for longer than 9 months, the number of peak hour trips would be slightly

[2] Project Construction Phase trip generation is based upon a total workforce of 100 employees.

[3] Automobiles are FHWA Class 1 - 3 vehicles. Heavy vehicles are FHWA Class 4 and above vehicles.

Docket No. A92-683

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing was served upon the following by either hand delivery or depositing the same in the U.S. Postal Service by regular mail.

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DATED: Honolulu, Hawaii, this 8th day of October 2014.

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