Draft Environmental Assessment (EA)

For Proposed Waikō Baseyard Light Industrial (LI) Project

Change In Zoning (CIZ) and Community Plan (CP) Amendment

Prepared for:

Waikō Industrial Investment, LLC

Prepared by:

BAGOYO
DEVELOPMENT
CONSULTING GROUP

1500 Kilinoe Place · Wailuku Maui Hawai'i 96793 · (808) 357-3842 · Fax (808) 242-8985

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3. Maui Department of Public Works
4. State Historic Preservation Division—
   State Department of Land and Natural Resources
5. State Department of Business,
   Economic Development & Tourism
6. State Department of Health
7. State Department of Transportation,
   Highways Division
8. Waikapū Community Association
9. Office of Hawaiian Affairs (OHA)
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Environmental Assessment (EA) Review Application

BEFORE THE MAUI PLANNING COMMISSION

COUNTY OF MAUI

STATE OF HAWAII

In the matter of the Application of

WAIKO INDUSTRIAL INVESTMENT LLC

To Obtain an Environmental Assessment (EA)
for the proposed Light Industrial subdivision
at TMK: (2) 3-8-007:102
at Wailuku, Maui, State of Hawaii

THE APPLICANT

V. Bagoyo Development Consulting Group LLC
1500 Kilinoe Place
Wailuku, Hawaii 96793

THE APPLICATION

This matter arises from an application for an environmental assessment (EA) filed September 30, 2011 pursuant to chapter 200, Environmental Impact Statement Rules of the Department of Health, by V. Bagoyo Development Consulting Group LLC ("Applicant"), on behalf of Waiko Industrial Investment LLC ("Owner"), on approximately 31.222 acres in the Wailuku district, situate at Waiko Road, Wailuku, Maui, Hawaii, identified as Tax map Key No. 92) 3-8-007:102 (hereinafter the "Property").

COUNTY OF MAUI
DEPARTMENT OF PLANNING
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793
TELEPHONE: (808) 270-7735 FAX: (808) 270-7634

APPLICATION TYPE: ENVIRONMENTAL (ASSESSMENT) REVIEW

DATE: _____ VALUATION: $8,000,000

PROJECT NAME: Waiko Industrial Subdivision

PROPOSED DEVELOPMENT: 41-Lots Light Industrial Subdivision

TAX MAP KEY NO.: 3-8-7:102 CPR/HPR NO.: _____ LOT SIZE: 31.222 acs.

PROPERTY ADDRESS: Waiko Road, Wailuku, Hawaii

OWNER: Waiko Industrial Investment, LLC PHONE:(B) (808)874-5263 (H) _____

ADDRESS: P.O. Box 220

CITY: Kihei STATE: Hawaii ZIP CODE: 96753

OWNER SIGNATURE: _____

APPLICANT: V. Bagoyo Development Consulting Group

ADDRESS: 1500 Kilinoe Place

CITY: Wailuku STATE: Hawaii ZIP CODE: 96793

PHONE (B): (808)357-3842 (H): (808)242-8984 FAX: (808)242-8985

APPLICANT SIGNATURE: _____

AGENT NAME: Vince G. Bagoyo

ADDRESS: 1500 Kilinoe Place

CITY: Wailuku STATE: Hawaii ZIP CODE: 96793

PHONE (B): (808)357-3842 (H): (808)242-8984 FAX: (808)242-8985

EXISTING USE OF PROPERTY: Ag and 4-ac. Conditional & SUP Permits Ind.

CURRENT STATE LAND USE DISTRICT BOUNDARY DESIGNATION: Ag

COMMUNITY PLAN DESIGNATION: Ag ZONING DESIGNATION: Ag

OTHER SPECIAL DESIGNATIONS: None

Community Plan Amendment (CP) Application

Community Plan Amendment (CPA) — *APPLICATION FORM*

APPLICANT INFORMATION

Name(s): V. Bagoyo Development Consulting Group

Mailing Address: 1500 Kilinoe Place

City: Wailuku **State:** HI **Zip:** 96793

Phone Number: (bus) (808)357-3842 (hm) (808)242-8984 (fax) (808)242-8985 (cell)

Signature: [signature] **Email:** Vbagoyo-devgroup@hawaii.rr.com

Agent Name: Vince G. Bagoyo

Mailing Address: 1500 Kilinoe Place

City: Wailuku **State:** HI **Zip:** 96793

Phone Number: (bus) (808)357-3842 (hm) (808)242-8984 (fax) (808)242-8985 (cell)

Signature: [signature] **Email:** Vbagoyo-devgroup@hawaii.rr.com

OWNER INFORMATION

Name(s): Waiko Industrial Investment, LLC

Mailing Address: P.O. Box 220

City: Kihei **State:** HI **Zip:** 96753

Phone Number: (bus) (808)874-5263 (hm) _____ (fax) _____ (cell) _____

Signature: [signature] **Email:** _____

PROPERTY INFORMATION

Tax Map Key No: (2) 3-8-007:102 **Total Area:** 31.222 acres **sq.ft./acreage**

Location: Waiko Road, Wailuku, Hawaii
(Street Address, City, and/or Description)

PROPOSED ACTION

Written description of the proposed action shall include, but not be limited to: use, length, width, height, depth, building material(s), and statement of objectives of the proposed action. Attach additional sheets, if needed:

Describe Existing Use: Ag and 4-ac. Conditional & SUP Permits Industrial Use

Describe Proposed Use: 41-Lots Light Industrial Subdivision

Project Name: Waiko Industrial Subdivision **Valuation*:** $8,000,000

* Total cost or fair market value of proposed development associated with the application as estimated by an architect, engineer, or contractor licensed by the Department of Commerce and Consumer Affairs, State of Hawaii; or, by the administrator of Department of Public Works, Development Services Administration.

LAND USE DESIGNATIONS

	Existing	Proposed
State Land Use District Boundary:	Ag	Urban
Community Plan:	Ag	Light Industrial
County Zoning:	Ag	Light Industrial (M-1)
Other (i.e., SMA):		

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SECTION 19.510(D) ASSESSMENT REQUIREMENTS CHECKLIST

Refer to Chapter 19.510, MCC. Compile the items listed below into a *Project Assessment* document, which may include elements of the Chapter 343, HRS environmental assessment or impact statement. In the "**Location**" column list the document and page number where each item is found.

D#	Assessment Content Description	Location
D1	Owner identification and signature or written authorization documents.	Index
D2	Owner's name, address, and phone number.	Page 1
D3	Agent's name, address, and phone number, if applicable.	Page ii
D4	Tax map key and street address, if available.	Page 1
D5	*Locational map* identifying the site, adjacent roadways, and landmarks (The purpose of *locational map* is to give an overview depicting the project site in relation to adjacent landmarks and geographic features. Possible formats include marked-up aerial photographs and the *location map* described on Page 2, among others.).	Appendix C
D6	List of owners and lessees of record within 500 feet and the *parcel notification map* (described on Page 5).	Appendix S
D7	Analysis of ways in which application conforms to policies and objectives of General Plan and applicable Community Plan.	
D8	Detailed land use history of parcel(s) to include former and existing state and county land use designations, violations and uses.	Pages 51-74
D9	Preliminary archaeological and historical data and comments from the Department of Land and Natural Resources (DLNR) and Office of Hawaiian Affairs (OHA). If applicable, a preservation /mitigation plan approved by DLNR and OHA.	Appendices N & O
D10	Analysis of secondary impacts of the proposed use on surrounding uses.	Page 30
D11	Traffic impact analysis and, if applicable, a traffic master plan with comments from the Department of Transportation (DOT) and the Department of Public Works (DPW).	Page 39 & Appendix P
D12	If applicable, an assessment of the impact the proposed use may have on agricultural use of the property with comments from The Department of Agriculture (DOA) and Natural Resources Conservation Service (NRCS).	Page 7

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SECTION 19.510(D) ASSESSMENT REQUIREMENTS CHECKLIST

...continued from previous page.

D#	Assessment Content Description	Location
D13	Water source, supply and distribution analysis, and, if applicable, a water master plan which includes comments from the DLNR, Department of Water Supply (DWS), and DPW.	Page 28 & Appendices J & U
D14	Sewage disposal analysis, and comments, if applicable, from the Department of Health (DOH), DLNR, Department of Environmental Management (DEM), and DWS.	Page 27 & Appendix J
D15	Solid waste disposal analysis and comments, if applicable, from DOH, DLNR, DEM, and DWS.	Page 22
D16	Identification of environmentally sensitive areas, habitat and botanical features, such as wetlands, streams, endangered plants, etc., and comments, if applicable, from DLNR, US Fish and Wildlife Service (USFWS), and US Army Core of Engineers (USACE).	Pages 32 &46 Appendix M
D17	Identification of the existing topographical and drainage patterns and any alterations proposed.	Pages 7, 31 & 46
D18	Identification and summary of all meetings held between Applicant and any community group.	Page 74 &
D19	Dated photographs of site or structure.	Appendix R
D20	Development schedule.	
D21	Schematic site development plans, if applicable, drawn to scale.	Appendix D
D22	Operations and management of proposed use which may include: number of employees, housing plan, hours of operation, provisions for off-site parking.	
D23	Identification of traditional beach and mountain access trails and additional trails which may be required for public access, and, if applicable, a preservation/mitigation plan and comments from DLNR and OHA.	N/A
D24	Identification and assessment of chemicals and fertilizers used, and, if applicable, a mitigation plan and maintenance program and schedule, and comments from DOH, DLNR, USFWS, and US Environmental Protection Agency (USEPA).	Page 34 & Appendix K
D25	Any other information necessary to assess the application.	

PROPOSED PROJECT DATA SUMMARY SHEET

Applicant: Please complete this two (2) sided form. Complete only those items that are appropriate to your application(s). If you have any questions, please contact the ***Long Range Planning Division*** at **270-7214**.

Date:	Project Name (if applicable): Waiko Industrial Subdivision
Applicant's Name: V.Bagoyo Development Consulting	What permits are you applying for? Community Plan Amendment
Property Tax Map Key (TMK) number: (2) 3-8-007:102	Please give us a brief summary of your project, including the existing and proposed uses: Existing use is ag (horse pasture) and 4-ac. Conditional & SUP Permits for industrial use
Contact Phone Number: (808) 357-3842	
E-mail Address: vbagoyo-devgroup@hawaii.rr.com	Developer Name: Waiko Industrial Inv Property Owner Name Waiko Industrial

Residential Projects: Single-Family and Multi-Family

1. How many single family units (i.e., individual detached homes) are you building? _____
   a. Will accessory dwellings (i.e., ohanas) be permitted? If yes, how many? _____
2. How many multi-family units (i.e., condo, apartment, or townhouse) are you building? _____
3. Are you subdividing your property? ☐ Yes ☐ No
   a. If yes, how many buildable lots are you requesting to create? _____
4. How many acres, or square feet, are at the project site? _____
5. If only a portion of the property is going to be used for this project, how many acres or square feet will be used just for the project area? _____
6. Will this project require land use amendments? Please check √ all that apply and indicate the proposed change:
   a. Change in Zoning (CIZ) from: ☐ Yes ☐ No ☐ Not Sure _____ to: _____
   b. Community Plan Amendment from: ☐ Yes ☐ No ☐ Not Sure _____ to: _____
   c. State Land Use District Boundary Amendment (DBA) from: ☐ Yes ☐ No ☐ Not Sure _____ to: _____
7. Will you be selling any of the units as "affordable" as defined under the Housing and Urban Development guidelines? ☐ Yes ☐ No ☐ Not Sure
   a. If yes, how many of the units, or percentage of units, will fall under this category? _____
8. From the date of filing the application with the Planning Department, how long do you estimate the project to reach complete build-out? Please check √ one (1) box. ☐ 0 - 5 years ☐ 6 - 10 years ☐ 11 - 15 years ☐ 16 - 20 years ☐ 21+ years

Industrial/Commercial Projects

1. Will this project be used for (please list all that apply by indicating the amount of square footage proposed):
   a. Retail purposes: 100,000s.f.
   b. Office space/lease: _____
   c. Industrial purposes: 41 Lots

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PROPOSED PROJECT DATA SUMMARY SHEET

Visitor Accommodations

Hotels and Timeshares

1. Will this project have hotel units? ☐ Yes ☐ No
   a. If yes, how many hotel units/rooms are proposed? _____
2. Will this project have timeshare units? ☐ Yes ☐ No
   a. If yes, how many timeshare units/rooms are proposed? _____
3. Will there be "lock-off" units (i.e., a unit which can be partitioned to create two separate units)? ☐ Yes ☐ No
   a. If yes, how many units will have "lock-off units"? _____

Bed and Breakfast (B&B) and Transient Vacation Rentals (TVRs)

1. Will (any of) the unit(s) be owner occupied? ☐ Yes ☐ No
2. How many bedrooms are proposed for rental? ☐ Yes ☐ No
   ☐ one (1) bedroom ☐ two (2) bedrooms ☐ three (3) bedrooms
   ☐ four (4) bedrooms ☐ 5+ bedrooms ☐ entire unit (i.e., condo/house/accessory dwelling)
3. Will this project be newly constructed? ☐ Yes ☐ No

This **Reset Button** completely erases form content. Save your work first!

Change-In-Zoning (CIZ) Application

COUNTY OF MAUI
DEPARTMENT OF PLANNING
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793
TELEPHONE: (808) 270-7735 FAX: (808) 270-7634

APPLICATION TYPE: CHANGE IN ZONING APPLICATION

DATE: _____ VALUATION: $ 8,000,000

PROJECT NAME: Waiko Industrial Subdivision

PROPOSED DEVELOPMENT: 41-Lots Light Industrial Subdivision

TAX MAP KEY NO.: 3-8-007:102 CPR/HPR NO.: _____ LOT SIZE: 31.222 acs.

PROPERTY ADDRESS: Waiko Road, Wailuku, Hawaii

OWNER: Waiko Industrial Investment, LLC PHONE: (B) (808)874-5263 (H) _____

ADDRESS: P.O. Box 220

CITY: Kihei STATE: Hawaii ZIP CODE: 96753

OWNER SIGNATURE: _____

APPLICANT: V. Bagoyo Development Consulting Group

ADDRESS: 1500 Kilinoe Place

CITY: Wailuku STATE: Hawaii ZIP CODE: 96793

PHONE (B): (808)357-3842 (H): (808)242-8984 FAX: (808)242-8985

APPLICANT SIGNATURE: _____

AGENT NAME: Vince G. Bagoyo

ADDRESS: 1500 Kilinoe Place

CITY: Wailuku STATE: Hawaii ZIP CODE: 96793

PHONE (B): (808)357-3842 (H): (808)242-8984 FAX: (808)242-8985

EXISTING USE OF PROPERTY: Ag and 4-ac. Conditional and SUP Permits Ind.

CURRENT STATE LAND USE DISTRICT BOUNDARY DESIGNATION: Ag

COMMUNITY PLAN DESIGNATION: Ag ZONING DESIGNATION: Ag

OTHER SPECIAL DESIGNATIONS: None

Notarized Letter of Authorization

PACIFIC RIM LAND, INC.

August 10, 2011

Mr. William Spence
Director
Planning Department
County of Maui
Kalana Pakui Building, Suite 200
250 South High Street
Wailuku, HI 96793

Subject: Proposed Waiko Baseyard Light Industrial Subdivision
TMK: (2) 3-8-007:102, Waiko Road, Waikapu, Maui, Hawaii

Dear Mr. Spence:

Waiko Industrial Investment, LLC ("Owner") hereby authorizes V. Bagoyo Development Consulting Group, LLC ("Consultant") and its representative to prepare, file and process all land use entitlement approvals for the above subject project.

Should you have any questions or need additional information, please feel free to call me at 874-5263 or send an e-mail to charliej@pacificrimland.com.

Sincerely,

CHARLES JENCKS
Manager

cc: V. Bagoyo Development Consulting Group

Subscribed and sworn to before me
This 10 day of August, 2011

Notary Public, State of Hawaii
DESIREE A. P. LOPES
My commission expires 3/30/2012
Commission expires: _____

DESIREE A. P. LOPES NOTARY PUBLIC COMMISSION No. 88-174 STATE OF HAWAII

Doc. Date: 8·10·11 # Pages: 1
Doc. Description: letter of authorization
Notary Signature Date
DESIREE A. P. LOPES
Notary Public, Second Circuit

DESIREE A. P. LOPES NOTARY PUBLIC COMMISSION No. 88-174 STATE OF HAWAII

Proof of Ownership

MP

R-350 STATE OF HAWAII
BUREAU OF CONVEYANCES
RECORDED
JUL 30, 2010 08:01 AM
Doc No(s) 2010-108418

/s/ NICKI ANN THOMPSON
REGISTRAR
CONVEYANCE TAX: $6800.00

20 1/1 Z14

C

LAND COURT SYSTEM REGULAR SYSTEM

After Recordation Return by Mail ( ) Pickup ( ) To:

MR JOHN ZAPOTOCKY
WAIKO INDUSTRIAL INVESTMENT LLC
P O BOX 598
WENATCHEE WA 98807

TG: 200955124 - S
TGE: A9-204-2172
MARY JO CABRAL

RS

TOTAL NUMBER OF PAGES: 6

9-170TKA64.012/MS
T.M.K. No. (2) 3-8-007-102

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS:

That **RODERICK F. H. FONG**, a single man, whose address is 445 East Waiko Road, Wailuku, Maui, Hawaii 96793, hereafter the "Grantor", for and in consideration of the sum of TEN AND NO/100 DOLLARS ($10.00) and other good and valuable consideration to Grantor paid by **WAIKO INDUSTRIAL INVESTMENT, LLC**, a Washington limited liability company, whose address is P. O. Box 598, Wenatchee, Washington 98807, hereafter the "Grantee", receipt of which is hereby acknowledged, does hereby grant, bargain, sell and convey all of that certain property more fully described in Exhibit "A" hereto attached and incorporated herein by reference, including any fixtures, appliances, furniture and/or items of personal property itemized therein, unto the Grantee, as Tenant in Severalty, its successors and assigns, forever.

AND the reversions, remainders, rents, issues and profits thereof and all of the estate, right, title and interest of the Grantor, both at law and in equity, therein and thereto.

TO HAVE AND TO HOLD the same together with all buildings, improvements, tenements, rights, easements, hereditaments, privileges and appurtenances thereunto belonging or appertaining, or held and enjoyed in connection therewith unto the Grantee according to the tenancy hereinabove set forth, absolutely and in fee simple, forever.

AND the Grantor hereby covenants with the Grantee that the Grantor is lawfully seised in fee simple of the described real and personal property and that the Grantor has good right to convey the same as aforesaid; that the property is free and clear of all encumbrances, except as may be described in Exhibit "A"; and that the Grantor will WARRANT AND DEFEND the same unto the Grantee, forever, against the lawful claims and demands of all persons, except as aforesaid.

It is understood and agreed that the term "property" shall be deemed to mean and include the property specifically described in Exhibit "A", all buildings and improvements thereon (including any personal property described in Exhibit "A") and all rights, easements, privileges and appurtenances in connection therewith, that the terms "Grantor" and "Grantee", as and when used herein, or any pronouns used in place thereof, shall mean and include the masculine and/or feminine, the singular or plural number, individuals, firms or corporations, that the rights and obligations of the Grantor and Grantee shall be binding upon and inure to the benefit of their respective estates, heirs, personal representatives, successors in trust and assigns and that where there is more than one Grantor or Grantee, any covenants of the respective party shall be and for all purposes deemed to be joint and several.

The parties hereto agree that this instrument may be executed in counterparts, each of which shall be deemed an original, and said counterparts shall together constitute one and the same agreement, binding all of the parties hereto, notwithstanding all of the parties are not signatory to the original or the same counterparts. For all purposes, including, without limitation, recordation, filing and delivery of this instrument, duplicate unexecuted and unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document.

IN WITNESS WHEREOF, the undersigned have executed this instrument on DEC 2 4 2009.

APPROVED AS TO FORM:

LAW OFFICES OF ING & JORGENSEN, LLLP

RODERICK F. H. FONG

STATE OF HAWAII)
) SS.
COUNTY OF MAUI)

This 6-page WARRANTY DEED dated DEC 2 4 2009 was subscribed and sworn to before me, Mary Jo K. Cabral, on DEC 2 4 2009 in the Second Circuit of the State of Hawaii, by **RODERICK F. H. FONG,** personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

MARY JO K. CABRAL NOTARY 93-698 PUBLIC STATE OF HAWAII

(notary's signature)
Mary Jo K. Cabral
Expiration Date: December 9, 2013
(print/type name of notary)
Notary Public for said County and State

My commission expires:

EXHIBIT "A"

All of that certain parcel of land (being portion of the land described in and covered by Royal Patent Grant 3152 to Henry Cornwell) situate, lying and being at Waikapu, District of Wailuku, Island and County of Maui, State of Hawaii, being Lot 1-C of the "KOPAA SUBDIVISION NO. 2", being a portion of Lot 1 of the Kopaa Subdivision, and thus bounded and described as per survey dated July 7, 2009, to-wit:

Beginning at a pipe at the southeast corner of this lot, on the northerly side of Waiko Road, said pipe being also the southeasterly corner of Lot 2 of the Kopaa Subdivision, the coordinates of said point of beginning referred to Government Survey Triangulation Station "LUKE" being 11,195.10 feet south and 3,147.97 feet east and running by azimuths measured clockwise from true South:

1.	191°	45'		904.78	feet along Lot 2 of the Kopaa Subdivisiion to a pipe;
2.	101°	45'		1,200.00	feet along same to a pipe;
3.	11°	45'		824.50	feet along same to a pipe;
4.	98°	30'		169.65	feet along the northerly side of Waiko Road to a pipe;
5.	Thence along same on a curve to the left with a radius of 2,780.00 feet, the chord azimuth and distance being:				
	96°	00'		242.52	feet to a pipe;
6.	Thence along same on a curve to the right with a radius of 670.00 feet, the chord azimuth and distance being:				
	105°	45'		284.32	feet to a pipe;
7.	118°	00'		196.34	feet along the northerly side of Waiko Road to a pipe;
8.	208°	00'		346.45	feet along the remainder of Grant 3152 to Henry Cornwell (being along T.M.K. (2) 3-8-07:71) to a pipe;
9.	147°	14'	41"	465.24	feet along same to a pipe;
10.	237°	14'	41"	4.58	feet along Lot 1-B of the Kopaa Subdivision No. 2 to a pipe;

11.	142°	07'		271.76	feet along same to a pipe;
12.	281°	45'		2,615.78	feet along Lot 12-A of the Maui Lani Subdivision to a pipe;
13.	11°	45'		462.02	feet along Lot 3 of the Kopaa Subdivision to a pipe;
14.	287°	45'		722.49	feet along same to a pipe;
15.	27°	48'	30"	466.78	feet along the westerly side of Kuihelani Highway (F.A.S.P. No. S-0380 (4)) to a pipe;
16.	297°	48'	30"	20.00	feet along same to a pipe;
17.	27°	48'	30"	22.02	feet along same to a pipe;
18.	Thence along the northerly side of Waiko Road on a curve to the right with a radius of 30.00 feet, the chord azimuth and distance being:				
	66°	27'	45"	37.48	feet to a pipe;
19.	Thence along same on a curve to the right with a radius of 890.00 feet, the chord azimuth and distance being:				
	106°	26'		40.90	feet to a pipe;
20.	107°	45'		634.67	feet along the northerly side of Waiko Road to the point of beginning and containing an area of 31.222 acres, more or less.

Being the parcel of land acquired by Grantor herein by the following:

1. Limited Warranty Deed with Reservation of Easements, Covenants, Reservations and Restrictions of Alexander & Baldwin, Inc. dated July 16, 2009, recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 2009-111117; and

2. Correction Deed of Alexander & Baldwin, Inc. dated August 7, 2009, recorded in said Bureau of Conveyances as Document No. 2009-126864.

SUBJECT, HOWEVER, to the following:

1. Reservation in favor of the State of Hawaii of all mineral and metallic mines.

2. Designation of Easement "C" for roadway purposes as shown on Subdivision Map prepared by Ichiro Toba, Land Surveyor, dated July 22, 1975.

3. Designation of Easement (25 feet wide) for powerline purposes, as shown on Subdivision Map prepared by Ichiro Toba, Land Surveyor, dated July 22, 1975.

4. Setback (20 feet wide) for building purposes along Waiko Road, as shown on Subdivision Map prepared by Ichiro Toba, Land Surveyor, dated July 22, 1975.

5. Setback (30 feet wide) for building purposes along Kuihelani Highway, as shown on Subdivision Map prepared by Ichiro Toba, Land Surveyor, dated July 22, 1975.

6. Restriction of Vehicle Access Rights along Kuihelani Highway, as shown on Subdivision Map prepared by Ichiro Toba, Land Surveyor, dated July 22, 1975.

7. Grant to County of Maui, a political subdivision of the State of Hawaii, dated April 30, 1991, recorded in said Bureau of Conveyances as Document No. 92-134141, granting a perpetual nonexclusive easement from Waikapu Road, also known as Waiko Road, to property owned by the County of Maui known as the Waikapu Landfill side, over and across "Easement Area" (being Easements "C" and "D"), for ingress and egress purposes, said Easement Areas being more particularly described therein.

8. The terms and provisions contained in (Unrecorded) License Agreement dated October 12, 2000, but effective June 1, 2000, between Alexander & Baldwin, Inc., a Hawaii corporation, and Consolidated Baseyards LLC, a Hawaii limited liability company. A Memorandum of License is dated October 12, 2000, recorded in said Bureau of Conveyances as Document No. 2000-154600.

9. Grant to Maui Electric Company, Limited, a Hawaii corporation, and Hawaiian Telcom, Inc., a Hawaii corporation, dated December 15, 2003, recorded in said Bureau of Conveyances as Document No. 2006-147438, granting a perpetual right and easement for utility purposes, being more particularly described therein.

10. The terms and provisions contained in Limited Warranty Deed with Reservation of Easements, Covenants, Reservations and Restrictions dated July 16, 2009, recorded in said Bureau of Conveyances as Document No. 2009-111117.

The foregoing includes, but is not limited to, matters relating to 80-foot and 100-foot right-of-way access and roadway easements.

11. Encroachments or any other matters which a correct survey would disclose.

12. Any unrecorded leases and matters arising from or affecting the same.

Preface

Preface

Waikō Industrial Investment, LLC ("Owner") is requesting land use entitlements necessary for the development of the subject site as light industrial subdivision located at Waikō Road, Maui, Hawai'i further identified as TMK: (2) 3-8-007:102. The subject property is 31.222 acres and the owner plans to subdivide the property upon receipt of all land use entitlement approvals as Light Industrial (LI) subdivision creating lots ranging from approximately 9,500 square feet to 78,000 square feet along with 8.5-acre parcel totaling 41 lots. The proposed light industrial area is presently located on lands classified as "Agricultural" by the State Land Use Commission. The subject property is designated "Agricultural" within the Wailuku-Kahului Community Plan District, and Maui County zone Agriculture.

Approximately 4 acres of the project site is presently used for equipment base yard and storage of construction materials through an approved State Special Use Permit (SUP) and Maui County Conditional Permit (CP), Ordinance No. 3735, Bill No. 23 (2010).

To implement the proposed LI subdivision as envisioned by the Owner, a State Land Use Commission District Boundary Amendment from the "Agricultural" district to "Urban" district will be required. In addition, a Maui County Community Plan amendment from "Agriculture" to "Light Industrial" will be needed, triggering a preparation of an Environmental Assessment (EA) consistent with the provisions within Chapter 343, HRS. Furthermore, a Change-In-Zoning (CIZ) also will be needed to establish the "M-1, Light Industrial" zoning district.

This environmental assessment is prepared pursuant to Chapter 343, HRS and in compliance with the requirements for the processing of the community plan district amendment with the County of Maui. Accordingly, this report documents the proposed action and addresses potential impacts and mitigation measures anticipated in connection with the implementation of the proposed project. In light of the requirements for the Community Plan Amendment mandating the preparation of an EA, the applicant is asking that the Maui County Planning Commission be the accepting authority for the environmental assessment prepared for this project.

Executive Summary

Executive Summary

Project Name: Waikō Industrial Subdivision

Type of Document: Draft Environmental Assessment

Accepting Authority: Maui County Planning Commission

Applicable Environmental Assessment

Review "trigger": Maui County Community District Plan Amendment

Location: TMK: (2) 3-8-007:102
Waikō Road, Wailuku
Island of Maui, Hawai'i

Applicant: Waikō Industrial Investment, LLC

Consultant: V. Bagoyo Development Consulting Group, LLC.
1500 Kilinoe Place
Wailuku, Hawai'i 96793
Contact: Vince G Bagoyo, Jr.
Phone: (808) 357-3842

Project Summary: The applicant is requesting necessary land use entitlement approvals to develop its proposed light industrial subdivision consisting of approximately 41 lots located at Waikō Road, Wailuku, Maui, Hawai'i further identified as TMK: (2) 3-8-007:102. The total acreage of the subject parcel is approximately 31.222 acres.

Approximately 4 acres of the project site is presently being used as a construction equipment and materials storage area through an approved Maui County Conditional Permit and State Special Use permit. The subject property is adjacent on its west side to an existing industrial base yard complex and East Waikō Road, on its south side by Kūihelani Highway, and

on its north and east sides by undeveloped pasture lands. Related improvements include grading, the construction of drainage system, construction of internal roadway, utilities, and private wastewater system and offsite roadway improvements.

This document has been prepared to serve as the project's CIZ, CP, and DBA applications. It provides a basis for review and analysis of the proposed project.

Project Overview

I. PROJECT OVERVIEW

A. PROPERTY LOCATION, EXISTING USE AND LAND OWNERSHIP

The applicant for this entitlement request is Waikō Industrial Investment, LLC ("Applicant") whose mailing address is P.O. Box 220, Kīhei, Hawai'i, 96753. The applicant owns the subject site in fee simple and is proposing the development of M-1 light industrial subdivision and related improvements on approximately 31.222 acres of land, identified as Tax Map Key (2) 3-8-007:102. The subject parcel for the proposed development is located at Waikō Road, Waikapū, Wailuku Area, Island of Maui, Hawai'i (See Figure C referred to as Project Site Map). The subject property is adjacent to an existing light industrial subdivision known as Consolidated Industrial Baseyard and East Waikō Road, and on its north and east sides by undeveloped pasture lands, and by its south side by Kūihelani Highway.

Approximately 4 acres of the site is presently used as construction equipment and materials storage facility through an approved Maui County Conditional Permit (See attached Appendix W) and Special Use Permit. The remaining acreage are presently vacant and fallow with overgrown buffelgrass and kiawe trees and used for pastureland.

B. PROPOSED ACTION

The applicant (Waikō Industrial Investment, LLC) is requesting necessary land use entitlement approval for the use of the subject property for Light Industrial use. Upon receipt of all land use entitlement approvals, the applicant proposes to develop approximately 41 fee simple lots (See figure D referred to as preliminary conceptual site plan). The lot sizes are proposed to range from 9,500 square feet to approximately 8.5-acre lot(s). Please note that the conceptual plan is very preliminary. Also planned are related infrastructure improvements required for the proposed light industrial subdivision, such as construction of internal roadways, drainage retention systems, utilities, private wastewater system, site grading work, and offsite roadway improvements.

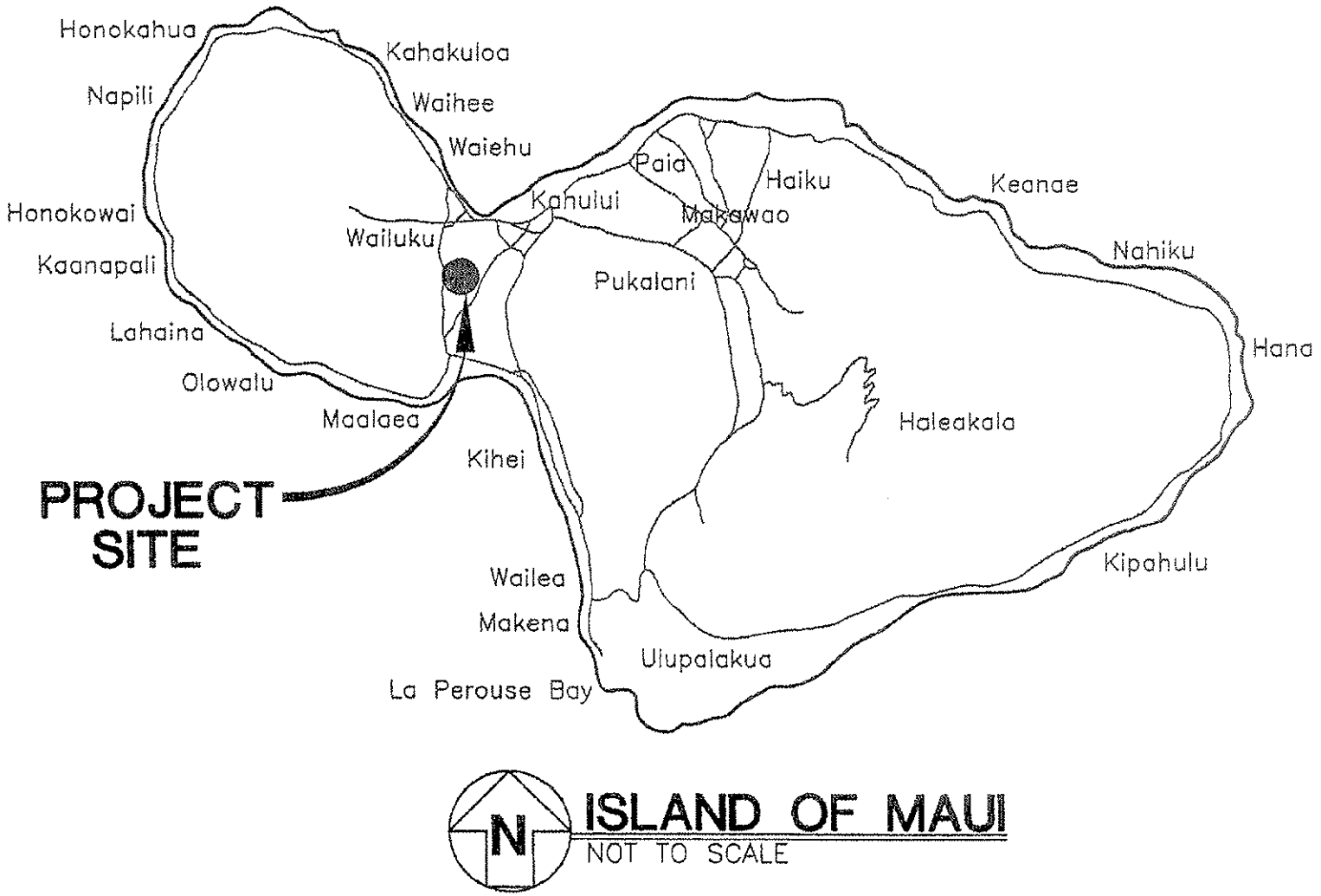


Figure C

Prepared for:
Waikō Industrial Investment, LLC

Waikō Baseyard Light Industrial Subdivision
TMK (2) 3-8-007-102
Location Map

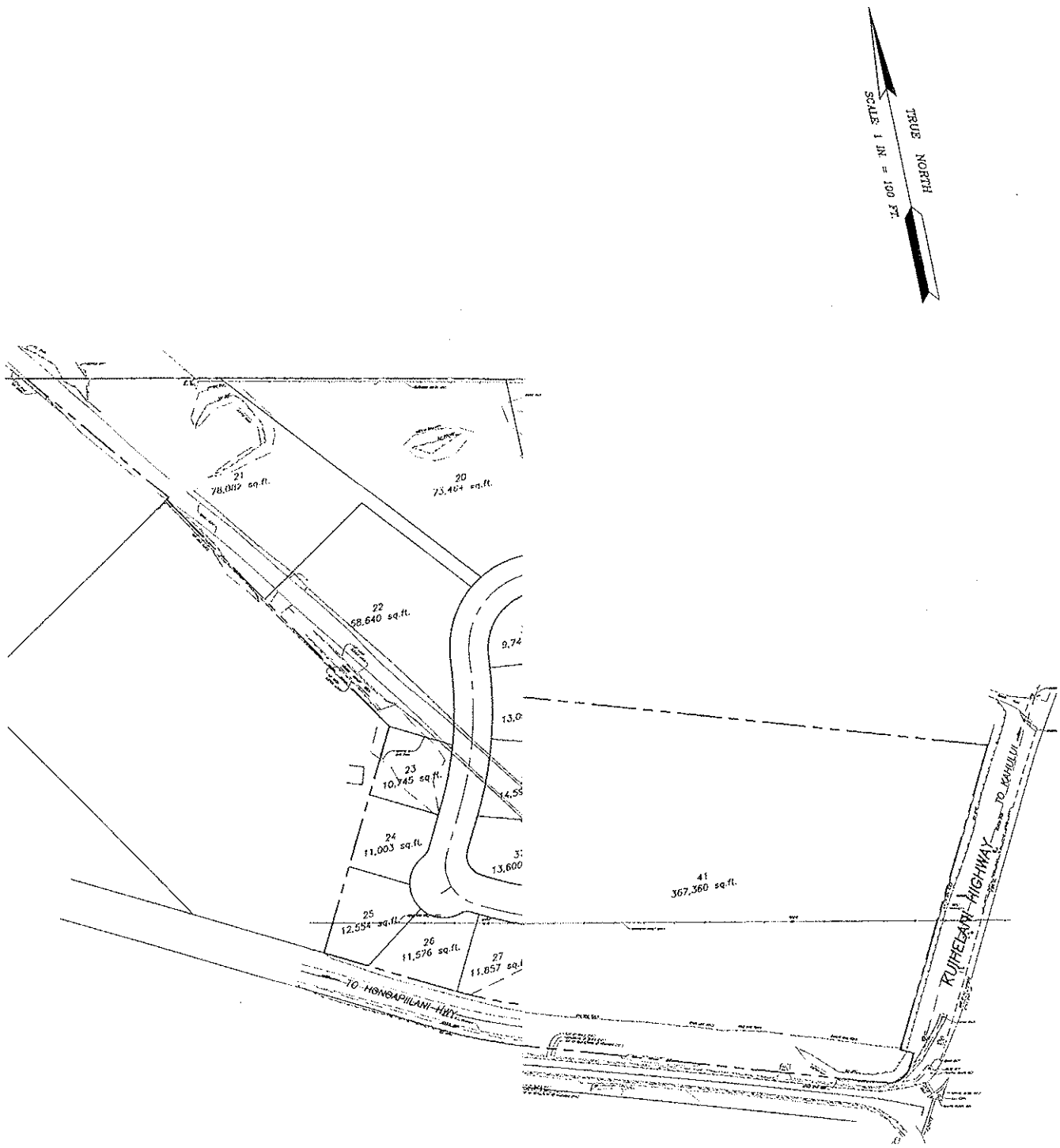
BAGOYO
DEVELOPMENT CONSULTING GROUP

Figure ___

Waikō Baseyard Light Industrial Subdivision
TMK (2) 3-8-007-102
Regional Setting Map

Prepared for:
Waikō Industrial Investment, LLC

BAGOYO
DEVELOPMENT
CONSULTING GROUP



FEBRUARY 25, 2011

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Based on the project's preliminary market demand study prepared by ACM Consultants, Inc. (ACM) (See attached Appendix L referred to as Market Demand Forecast and Analysis), there is a strong market demand for reasonably-priced LI lots subdivision in Central Maui. These proposed subdivided lots will be offered for purchase in fee simple interest.

The applicant's market demand consultant has researched the current prevailing sales prices for similar improved lands in the Central Maui area. The price range is approximately $40 to $50 per square foot. The projected price ranges for the project would be competitively priced at $35 to $40 per square foot. However, final sales prices are contingent upon market conditions at the time the project is completed, as well as conditions and subdivision improvements associated with land use entitlement approvals which may be imposed by Land Use Commission and/or County of Maui.

Depending on market demands for such development and economic conditions, the proposed project may be completed in phases to respond appropriately to market conditions.

As reflected in the attached preliminary site map (refer to figure C), proposed main access to the project is Waikō Road. Improvements proposed in connection with the proposed LI subdivision include grubbing and grading; installation of utility systems to include water, telephone, cable, electric, and private wastewater system; drainage; as well as paved roadways, landscaping and offsite improvements.

The estimated cost of the subdivision improvements is approximately $8 million to $10 million. Construction of the subdivision improvements and related infrastructure improvements is anticipated to begin as soon as all permitting approvals have been received. The applicant anticipates that the completion of subdivision improvements is expected to take approximately 12 months to complete barring no unanticipated delays.

C. Reasons for Justifying the Request

The project site is located east of and away from the residential area of Waikapü, and adjacent to the existing Consolidated Light Industrial Subdivision. The site is designated within the urban growth boundary in the proposed Maui County General Plan. According to the market demand study prepared by ACM Consultant for the project, there is a strong demand for a subdivision that addresses the needs of small local businesses that may be in need of fee simple reasonably-priced properties, that are centrally located. Since large portions of the property is now in use for a construction base yard facility under a Special Use Permit (SUP) and Conditional Permit (CP), the proposed land use changes are consistent with its present use and its proposed urban boundary designation in the draft Maui County General Plan.

To develop the project site as a light industrial subdivision as envisioned by the applicant, the property will require a Maui Community Plan Amendment, Change-In-Zoning from "Agriculture" to "Light Industrial" and a State Land Use District Amendment Designation from "Agriculture" to "Urban" designation. Hence, this environmental assessment (EA) has been prepared to comply with the requirements for community plan and State Land Use urban district amendments. The EA is prepared consistent with Chapter 343, HRS and the accepting agency of said EA is the Maui Planning Commission as part of its review and consideration of the applicant's Community Plan (CP) amendment and Maui County Change-In-Zoning (CIZ) applications.

Because of the project's location and a strong demand for competitively-priced fee simple property that meets the needs of the local small businesses within the Wailuku-Kahului community plan district—the proposed land use changes by the applicant will allow this unmet demand for LI lots to be realized. As noted earlier in this report, the project site is within the proposed urban district growth area in the draft Maui General Plan.

This environmental assessment will evaluate the potential impacts, if any, of the proposed light industrial subdivision on the natural and human environ-

ment. The EA will also provide mitigative measures that will address and respond to all potential impacts on the natural and human environment.

D. Entitlement Approvals Required

The applicant is requesting that the approximately 31.222-acre parcel be zoned light industrial to address the growing demand by local small businesses for such a subdivision that is reasonably and centrally located. The Wailuku-Kahului Community Plan presently designates the subject property as "Agriculture" and is zoned "Agriculture". Also, the State Land Use is currently classified the subject parcel "Agriculture". As such, the applicant is proposing to change the Maui County Community Plan designation from "Agriculture" to Light Industrial use and a Change-in-Zoning from "Agriculture" to "M-1" Light Industrial use. The applicant is simultaneously filing a petition for district boundary amendment with the State Land Use Commission (LUC) to reclassify the subject parcel from "Agriculture" to "Urban" district. Both Community Plan and CIZ amendments will be filed with the Maui Planning Commission and final consideration and approval by the Maui County Council.

Description of the Existing Environment

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL SETTING

1. PROJECT SITE HISTORY

As noted in this report, the subject property has not been used for any agricultural cultivation in recent years. Approximately 4 acres of the subject property is presently used as a permitted construction equipment and material storage facility. The remainder of the property is used as horse pasture and a small portion is used as cattle feedlot under a month-to-month license agreement.

The subject property was formerly owned by Alexander and Baldwin, Inc. and purchased by Waikō Industrial Investment LLC in 2010.

2. SURROUNDING LAND USES

The Waikapū community is located approximately half a mile west of the subject property and 1.2 miles south of Wailuku town. It is an old plantation community originally developed as a sugar plantation village. Today, Waikapū is primarily a residential community with limited lands allocated for commercial use along Honoapi'ilani Highway. There are newer residential subdivisions that have been developed immediately west or mauka of the subject property. Such residential projects are: Waiolani subdivision; Waikapū Gardens (developed as an affordable housing project); north boundary of the property is A&B Properties, Inc.'s proposed 545-acre Wai'ale community master plan project consisting of approximately 2,500 residential units, parks, and 16-acre LI; and Wailuku Heights subdivision located about 1.0 mile west of the subject property. The Maui Tropical Plantation is located at the southern extent of Waikapū, approximately one mile south west of the subject property.

Waikō Road, connecting Honoapi'ilani Highway with Kūihelani Highway, is bordered with commercial subdivisions including Consolidated light industrial subdivision and Rojac Trucking Baseyard. Additionally, there are agricultural uses on the lands to the north, east and south of the project site. Waikō Road borders the subject property to the south. Lands surrounding Waikapū to the south are presently cultivated in sugar cane.

Kūihelani Highway, a State of Hawai'i four-lane divided highway, is located immediately to the east of the subject property. Kūihelani Highway provides transportation access to West Maui by connecting Kahului with Honoapi'ilani Highway. Kūihelani Highway also provides access to Central, East and South Maui communities. Honoapi'ilani Highway located west or mauka of the subject property provides access to Wailuku town, Waiehu and Waihe'e communities.

3. CLIMATE

Like most areas of Hawai'i, Maui's climate is relatively consistent through out the year. The island's climate varies from terrain. Characteristic of most of Maui's climate, the proposed project site experiences mild and uniform temperatures year-round, moderate humidity and consistent northeasterly trade winds.

Average temperatures at the project site (based on temperatures recorded at Kahului Airport) range from low 60 to high 80 degrees Fahrenheit. August is historically the warmest month, while January and February are the coolest. Based on rainfall data from the Maui County Data Book 2010, annual precipitation rainfall average is 20 to 30 inches per year. Winds blow predominantly out of the north-northeasterly direction.

4. Topography and Soils Characteristics

The property is located on the broad flat plain of the central Maui isthmus. Topography is generally flat. The project site is U-shaped with a 60-foot wide strip separating the western and eastern sections of the subject property. The western section of the parcel slopes down in a west to east direction ranging in elevation from approximately 272 feet to 232 feet above mean sea level, with an average slope of approximately 3%. The eastern section of the subject property slopes down in a west to east direction ranging in elevation from approximately 208 feet to 198 feet above mean sea level, with an average slope of approximately 2%. The 60-foot section separating the western and eastern sections of the subject property slopes down in west to east direction ranging in elevation from approximately 232 feet to 208 feet above mean sea level, with an average slope of approximately 2%.

According to the Soil Survey of Islands of Kaua'i, Oahu, Maui, Moloka'i, and Lāna'i, State of Hawai'i (August, 1972), prepared by the United States Department of Agriculture Soil Conservation Service, the soil within the project site is classified entirely as Pu'uone sand (PZUE) series which is Loose Sandy soil over subsurface lithified sand layers. It is characterized as having rapid permeability above the cemented layer, slow runoff and a moderate to severe wind erosion hazard where vegetation has been removed. The project site also consists of Ewa silty clay loam.

The State Department of Agriculture has established three categories of Agricultural Lands of Importance to the State of Hawai'i (ALISH). These are: "Prime" agricultural lands which have soil quality, growing season, and moisture supply needed to produce sustained high yield of crops economically when treated and managed according to farming methods; "Unique" agricultural lands which have the special combination of soil quality, location, growing season, moisture supply, and is used to produce sustained high quality and of high yields of specific crop when treated and managed according to modern farming methods; and, "Other" important

agricultural lands are lands other than Prime or Unique agricultural lands that are also of statewide or local importance for agricultural use.

As indicated by the ALISH map (refer to Figure G), the subject property falls within the "Other" agricultural lands category. As noted in this report, the subject property is undeveloped and not presently used in any agricultural cultivation.

5. Flood and Tsunami Hazard

The proposed project site is located near the eastern base of the West Maui Mountains. According to Panel Numbers 1500030393E and 1500030394E of the Flood Insurance Rate Map (FIRM), dated September 25, 2009, prepared by the United States Federal Emergency Management Agency (FEMA), the project site is situated in Flood Zone X (refer to Figure H). Flood Zone X represents areas outside of the 0.2% annual chance flood plain. The classification of the subject property as Flood Zone X is further confirmed by the Maui County Planning Department's Zoning and Flood Confirmation Form (refer to Appendix H) and no flood development permit is required.

6. Flora and Fauna

As noted in this report, approximately 4 acres are presently used as a construction equipment and material storage facility. The remainder of the parcel is used as cattle feed lot and horse pasture under a month-to-month license agreement.

A biological resources survey was conducted at the property by Robert W. Hobdy (Environmental Consultant) on December 2010 (refer to Appendix M). The primary purpose of the field survey was to determine if there were any federally listed endangered, threatened, proposed, or candidate flora and fauna species within the proposed project site. According to the flora and fauna field survey, the vegetation throughout the proposed project area is totally dominated by just three species: buffel-

grass, guinea grass and kiawe trees. With respect to fauna field survey results at subject site, the consultant reported sightings of non-native such as rats, mice, mongoose, feral cats and dogs, axis deer, domestic cattle confined in a feedlot and domestic horses confined in fenced pasture. There are non-native birds found on the project site namely: common myna, zebra dove, spotted dove, chickens, house sparrow, northern cardinal, peacock, gray francolin, Guinea fowl, red-crested cardinal, cattle egret, and northern mockingbird.

As a result of the flora and fauna inventory field survey the consultant has confirmed that "no officially Threatened or Endangered plants (USFWS 2009) are found on the site, nor do any plants proposed as candidates for such status occur on the property". The field survey further confirmed that as a result of the fauna inventory encountered, "that no endangered, threatened or candidate animal species were found. It has therefore determined that the proposed project will not have a significant negative impact on the fauna resources in this part of Maui" (Refer to Appendix M).

7. Streams and Reservoirs

Waikapū stream is located approximately 0.4 mile to the south of the proposed project site. Waikapū stream is perennial stream which originates in the upper reaches of Waikapū Valley, ultimately discharging into Keālia pond, in the Mā'alaea flats. According to the Hawai'i Stream Assessment, the Waikapū Stream has no listed tributaries and flows to the sea year-round. The said assessment also found that the Waikapū Stream was important for taro cultivation in the past and that Waikapū Valley may contain valuable cultural and historical sites (Hawai'i Cooperative Park Service, 1990). It is important to note that some families at Waikapū Village (located about a mile upstream or mauka of the proposed project

site) began to rehabilitate old taro patches and began cultivating taro at new rehabilitated taro patches.

There is a plantation reservoir located approximately a mile west or mauka of the project site. This reservoir is adjacent to the Waikapū Gardens project developed as affordable housing project by Spencer Homes Limited. This reservoir is maintained by Wailuku Agribusiness and is actively used for agricultural purposes. Another irrigation reservoir is located at the Maui Tropical Plantation (an agricultural visitor destination) located approximately 1.5 miles southwest or mauka of the proposed project site. This reservoir is presently maintained and used by and for the Maui Tropical Plantation agricultural irrigation at its property.

According to the proposed project's biological resources survey, there are no identified wetlands on the project site. Nothing remotely approaching the three essential criteria that define a federally- recognized wetland, namely: hydrophytic vegetation; hydric soils; and, wetland hydrology occur within this dry project site.

8. Air Quality

There are no point sources of airborne emissions within close proximity of the project site. Air quality in the vicinity of the project site may be affected by a variety of sources, including dust from sugar cane cultivation operations to the east, south, and west of the property, as well as smoke from sugar cane harvesting operation in Central Maui. On some occasions, smoke emission from the HC&S' smokestack from its sugar factory located approximately over 2 miles east of the subject property.

However, these sources are intermittent and prevailing winds quickly disperse the particulates generated by these temporary sources.

Overall, air quality in the Waikapū-Wailuku-Kahului regions is considered excellent.

9. Noise

Traffic noise from Kūihelani Highway located east of the subject project and Waikō Road fronting the property are the predominant sources of noise in the vicinity of the project site. Also, on intermittent basis, noise from construction activities at the Consolidated Baseyard subdivision bordering the subject property is a secondary source of background noise. However, this activity is temporary in nature. Other background noise levels attributed to nearby sugar cane operations on an intermittent basis, as well as natural conditions such as wind and rain.

10. Scenic and Open Space Resources

Waikapū Valley and the West Maui Mountains, including Haleakalā Mountain to the east define the scenic resources of the project site. Surrounding the project site to the east, south and west of the project site are sugarcane lands. Immediately to the north of the project site is the site of A&B Properties, Inc.'s 545-acre proposed mixed-use development project. Approximately 2 miles southwest of the project site is Keālia Pond. The subject property has an unobstructed view of the East Maui Mountain and Haleakalā Mountain with the exception of the HC&S sugar factory smoke stack. The project site is not part of a scenic corridor.

11. Hazardous Materials

A Phase I Environmental Site Assessment (ESA) was conducted for the subject property by Mālama Environmental (MEV, LLC) in January 2010 (refer to Appendix K) for more detailed information and findings on the Phase I Environmental Site Assessment report. Both site reconnaissance and records review for the subject property, as well as the surrounding areas, were completed. The ESA was conducted to determine if the site may be contaminated with hazardous or toxic substances or wastes resulting from current or past site activities, unauthorized dumping or disposal, or migration of contaminants from adjacent or nearby properties. The

goal of the ESA is to identify recognized environmental conditions on the property that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products.

Another function of this ESA is to conduct an appropriate environmental inquiry in response to the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, the EPA's final rule (40 CFR Part 312), and similar state and local regulations.

As noted above, Mālama Environmental (MEV, LLC) has performed the Phase I Environmental Site Assessment in conformance with the scope and limitations of the ASTM Standard 1527-05 for the subject property located on East Waikō Road, Waikapū, Maui, Hawai'i. The assessment revealed no evidence of recognized environmental conditions in connection with the property, except for the following:

Database Listing: The subject site is not listed. The listed nearby site (Waikapū Dump) and the unlisted potential risk site (Maui Scrap Metal) were reviewed for environmental concerns relative to the subject site.

Historic Use or Storage of Hazardous and Regulated Substances: According to environmental site assessment survey of the site, there is no evidence of any historic misuse or significant spills of hazardous or regulated substances on the subject property.

Storage Tanks: No indications regarding the current presence of UST's on the subject property were obtained through review of regulatory databases, interviews, or through project environmental consultant's field site reconnaissance. Although the consultant noted the presence of above-ground storage tanks associated with Fong Construction Baseyard Company – said tanks appear to be empty or historically contained water, it is recommended that spill protection measures should be used in order to minimize or avoid any potential spill onto the surface soils at property site.

Stained Soil or Pavement: Numerous areas of petroleum surface and/or concrete staining on the subject property is associated with the Fong Construction Baseyard. The source of petroleum contamination is likely from not practicing best management practices (BMP's) on the handling of petroleum products, waste oil storage or from heavy equipment leakage. It is noted in the site assessment reconnaissance that there is one (1) area with limited surface soil staining associated with a piece of leaking heavy equipment from Nobriga's Feedlot and Ranch located in the north-central area of the western portion of the subject site.

None of these petroleum-based stains were particularly large and are considered to be *de minimis* releases that do not require further action.

Wastewater and Stormwater Management: MEV consultant noted two (2) lagoons on-site associated with Nobriga's Feedlot and Ranch operations. These lagoons are part of the Feedlot's nutrients management program to control runoff from the feedlot. It is recommended that BMP's should always be applied to ensure that no contaminated runoff leaves the subject property.

Solid Waste Management: An undetermined amount of solid waste and dumping has taken place on the subject site, including regulated items such as automobile tires (approximately 200), derelict cars, limited amount of white goods and scrap metal piles. It is recommended that any waste disposal should be in a permitted solid waste landfill or recycled in a manner that complies with all local, state, and federal regulations as applicable to the specific waste type with special attention given to regulated items.

Groundwater Wells: There are two (2) registered groundwater wells listed for the adjacent property at the Consolidated Baseyard subdivision (DLNR Well No. 5129-02 and Well No. 5129-03). These wells are owned by Consolidated Baseyards, LLC and were drilled in 2001 (Well no. 5129-02) and 2005 (Well no. 5129-03) for distributing potable water,

municipal water for the Consolidated Baseyard subdivision. All DLNR permitting requirements are complete for both wells. According to the State Department of Health, Safe Drinking Water Branch, these wells are sampled quarterly fro analyses required by the EPA for drinking water standards. No violations have been cited for these systems and water quality data shows no significant contamination of groundwater exceeding EPA limits.

12. Archaeological Resources

An archaeological assessment survey was conducted on the subject property by Xamanek Researches, LLC ("Consultant"). The assessment survey was conducted by the Consultant in May 2011 through June 2011.

The purpose of the archaeological survey was to determine the presence/absence, nature, and extent and significant of any cultural and archaeological resources in the proposed project area. Archaeological field work consisted of both surface and subsurface investigations throughout the subject parcel. No significant surface or subsurface cultural remains were identified during the archaeological assessment survey by the Consultant. A complete surface inspection occurred and twenty (20) mechanical backhoe test trenches were excavated in order to help assess the surface and subsurface conditions throughout the subject parcel. There were no surface and subsurface historic properties found by the Consultant during the archaeological assessment survey

Further discussions and details on the result of the archaeological site assessment survey can be found in Xamanek Researches' attached report identified as Appendix O.

13. Cultural Assessment

A Cultural Impact Assessment study was conducted on the subject property by Xamanek Researches LLC. ("Consultant"), spearheaded by Erik Fredericksen, experienced in cultural and archaeological history of Maui.

The cultural impact assessment was conducted by the Consultant on September 2011.

The purpose of the cultural impact assessment study is to compile a summary based on various historical, cultural and topographical accounts and facts regarding the proposed project site, and to assess potential impacts of the proposed project on traditional cultural practices in the study area. The assessment contained in the cultural study of the area was acquired by the Consultants through archival research, literature searches, and oral interviews with persons knowledgeable with the immediate project area as well as the Waikapū Village and Wailuku-Kahului regions. The personal experiences of the author of the cultural impact assessment report is also interspersed within the report narrative.

Further discussions and details on the results of the cultural impact assessment report can be found in Xamanek Researches LLC's attached report entitled "Cultural Impact Assessment Report" and identified as Appendix N.

B. Socio-Economic Environment

1. Population

The population of the Island of Maui has increased dramatically over the last two (2) decades. The 2000 population was estimated at 117,644, an increase from 1990 of 91,361 (Maui Island Plan). According to the Maui Island Plan, Maui's resident population is expected to grow from 129,471 in 2005 to 176,687 in 2030. This is a 1.46% annual growth rate which equates to a 36.5% increase in population over the 25 year period. These projections, according to draft Maui Island Plan indicate a population increase of 16% between 2010 and 2020, and an increase of 12% between 2020 and 2030.

According to the *Socio-Economic Forecast* as noted in the Maui Island Plan, the total population is not expected to increase equally

throughout the island, rather, there are specific regions where population growth is more likely to occur. To further illustrate the population growth that will likely occur, there are four community plan regions that are in close proximity of the proposed project site, namely: Kīhei-Mākena, Wailuku-Kahului, Makawao-Pukalani-Kula, and Pā'ia-Ha'ikū regions. The combined population growth within these regions are: population in 2005 is 107,621; in 2010 is 112,716, and in 2020 is expected to grow to 130, 774, and in 2030 the combined population in these regions will reach 146,777 (according to Maui Island Plan).

Because of the proposed project's unique central location between Wailuku-Kahului Community Plan District and Kīhei-Mākena Community Plan District, and its close proximity with Pā'ia and Upcountry Community Plan regions, the proposed project will be a convenient place to serve the expected population growth in these community plan districts. The proposed project site is centrally-located within Wailuku-Kahului Community Plan area—this area remains the economic and population center of the island. In the 1990s, this area saw significant increases in trade, transportation, communications and utilities, and government jobs. Kahului Harbor is the port through which most cruise ship visitors reach Maui. According to the Maui Island Plan, the socio-economic forecast suggests the Wailuku-Kahului area will grow faster than other parts of Maui, as former C. Brewer sugar lands and large acreages of A&B, Inc. lands are expected to be developed into residential subdivisions. Wailuku-Kahului is expected to continue to be home to over one third of Maui's households.

2. Economy

The Wailuku region is the island's center of governmental activities, as well as a focal point for professional and business services. Combined with neighboring Kahului, the region's economic character includes a wide range of commercial, service, and governmental activities. Another important eco-

nomic engine in Kahului region is the harbor and airport transportation systems critical to Maui's economy. Also, within the Kahului region is the University of Hawai'i Maui College and the Maui Arts and Cultural Center that contributes significantly to our economy in the region.

The Kīhei-Mākena Community Plan region is home to one of the island's well-planned visitors resort destination, Wailea Resort, the primary economic engine for the island of Maui. In the same region is the home of the research and technology park which contributes to the island's economy.

In addition, the central valley region is covered by significant agricultural acreages which are currently being cultivated in sugar cane. These vast agricultural lands, managed by Hawaiian Commercial and Sugar Company (HC&S), are considered a key component of the local economy. Supporting the sugar cane operation is the HC&S factory located approximately 4 miles east of the proposed project. Also, another important agricultural activity that contributes to Maui's economy is Monsanto Seed Farm located approximately 6 miles south east of the project area.

Another important economic engine within the region are tourism-related activities such as the popular Maui Ocean Center located at Mā'alaea (located south of the project area) and the Maui Tropical Plantation located at the base of Waikapū Valley at West Maui Mountain. These two tourism-related activities are located 1 to 2 miles south and southwest of the proposed project site.

Another important key economic drivers that fuels our economy within the region and the island of Maui are healthcare-related businesses such as the Maui Medical Group, Kaiser Permanente, and the 200+ bed Maui Medical Center Hospital. There are also elderly long-term residential facilities in the region that substantially contribute to region's economy such as Hale Makua and Roselani residential complexes. These facilities are located within 2 miles north of the subject project site. It is estimated that these health-care related facilities have a combined number of direct employees of approximately 2,000.

3. EMPLOYMENT

In the year's 2004 and 2008, the unemployment rate for Maui County and the Island of Maui was 3.1 percent and 4.5 percent, respectively. (Hawai'i Department of Labor and Industrial Relations and Maui County Data Book, 2010). In May 2005, the unemployment rate for Maui County and the Island of Maui (seasonably adjusted) was 2.3 percent and 2.1 percent, respectively (Hawai'i Department of Labor and Industrial Relations). In her State of the County address on March 9, 2007, former Maui County Mayor, Charmaine Tavares noted that Maui's 2007 unemployment rate is 2.5 percent. Since the recession that hit the island of Maui in 2008 the unemployment rate on Maui County reached a moderate rate of 4.5 percent – still below the state average (Hawai'i Department of Labor and Industrial Relations and Maui County Data Book, 2010). According to the economic forecast for 2010–2011 by Dr. Leroy Laney, Economic Advisor to First Hawaiian Bank and Professor of Economics and Finance, Hawai'i Pacific University—Maui County's economic picture is marked by an impressive tourism industry rebound, which is the major key economic driver for Maui's economy. Maui leads all other counties in this regard. Maui's residential real estate sales are another area of impressive growth, according to Dr. Laney's report. In same report, an economic recovery is now underway or at least imminent for the Maui economy.

According to the Maui County Data Book, in 2004, total wage and salary jobs in Maui County is approximately 67,000 and most of the jobs are in accommodations and food services; trade; government; agriculture; and other service. In the year 2000, there were a total of 32,851 civilian jobs in Wailuku-Kahului region, representing 48 percent of the island-wide civilian jobs. Of those jobs, 25,688 were wage and salary positions while 7,163 were self-employed (SMS, 2002). In the recent report from Maui County Data Book, 2010, the total civilian labor force in Maui County in 2005 was 75,450 and in 2009 was 76,550, respectively. In terms of job employment distribution, the Wailuku-Kahului region generally follows the

county-wide trends for the labor force characteristics as shown in the following table:

Occupational Category	Maui County	Wailuku-Kahului
Agriculture	3%	4%
Manufacturing	2%	5%
Construction	4%	1%
Transportation, Communication, & Utilities	6%	10%
Trade	21%	22%
Banking & Finance	4%	4%
Hotel	14%	1%
Other Services	16%	18%
Government	9%	14%
Self-Employed	21%	22%

(SOURCE: SMS, 2002)

C. PUBLIC SERVICES

1. POLICE AND FIRE PROTECTION

Police protection for the Wailuku-Kahului region is provided by the Maui Police Department (MPD) located at Wailuku Station headquartered at its main station at Ka'ahumanu Avenue in Wailuku located approximately 2 miles north of the project area. In addition, a satellite sub-station is located at Market Street, Wailuku, approximately 2 miles north of the subject property. The Maui Police Department provides investigative services, uniform patrol services, technical support, and traffic services as stated in its mission to protect the residents on Maui County. Both main and sub-stations are located in very close proximity of the project site.

Fire prevention, protection, rescue, and emergency services for the Wailuku-Kahului region are provided by the Maui County Department of Fire and Public Safety. The department has 2 stations to service the

Wailuku-Kahului region that is in close proximity of the project site. The Wailuku station is located in Wailuku town approximately 2 miles north of the project site and the Kahului station is located at Dairy Road, Kahului located approximately 1.5 miles east of the project site.

2. Medical Facilities

The State-owned Maui Memorial Medical Center (MMMC), the only major medical facility on the island, services the Wailuku-Kahului region. Acute, general, and emergency care services are provided by the 200+ beds MMMC facility located in Mahalani Street, Wailuku, about 2 miles north of the subject property. Also, the State-owned Kula Hospital located approximately 20 miles east of the subject property provides emergency and long-term care services.

In addition, Kaiser, Maui Medical Group, Maui Medical Clinic, and Liberty Dialysis Clinic serve health care needs for the Island of Maui, all located in Wailuku and Kahului, about 2 miles north of the subject property. Dental and other medical offices are also located within Wailuku-Kahului region to serve its residents and visitors, and are within 2 miles or less from the proposed project site.

3. Schools

The State Department of Education (DOE) operates 8 schools in the Wailuku-Kahului region, as well as several privately-operated schools serving elementary, intermediate, and high school students. Public school facilities within the Wailuku-Kahului District area include: H. Perrine Baldwin High (grades 9–12), ʻĪao Intermediate (grades 6–8), Wailuku Elementary (K–5), Waihe'e Elementary (K–5), Maui High (9–12), Pōmaikaʻi Elementary (K–5), Kahului Elementary (K–5), Lihikai Elementary (K–5), and Maui Waena Intermediate (6–8).

Privately-operated schools serving Wailuku-Kahului region include St. Anthony School (grades K–12), Kaʻahumanu Hou Christian School

(grades K–12), Emmanuel Lutheran School (K–6), and Maui Adventist School (grades 1–8).

University of Hawai'i Maui College (part of University of Hawai'i system) located in Ka'ahumanu Avenue, Kahului serves the college needs of Maui residents. The college has recently became a four-year university.

According to the Maui County Data Book, 2010, the following public and privately-operated schools 2010 enrollment within the Wailuku-Kahului region is shown in the following table:

Schools	Enrollment	Grades
Baldwin High School	1,592	9–12
Maui High School	1,771	9–12
'Īao Intermediate	884	6–8
Wailuku Elementary	871	K–5
Waihe'e Elementary	746	K–5
Kahului Elementary	965	K–5
Lihikai Elementary	1003	K–5
Maui Waena Intermediate	1068	6–8
Pōmaika'i Elementary	588	K–5
St. Anthony School	354	K–12
Ka'ahumanu Hou Christian	165	K–12
Emmanuel Lutheran	197	K–6
Maui Adventist	38	1–8
Christ the King	131	K–8

(Source: Maui County Data Book, 2010 and Hawai'i State Department of Education Records)

4. Recreational Facilities (Parks)

Within the Wailuku-Kahului Community Plan District, there are many recreational activities opportunities as well, including shoreline and boating activities at the Kahului Harbor and adjoining beach parks, organized recreational activities provided/offered at County Parks. Within close

proximity of the project site is the Waikapū Community Center located about half a mile west of the project area. Other Maui County owned parks within the Wailuku-Kahului region are the Pāpōhaku Park and Wailuku Community Center, War Memorial Athletic complex, Wailuku Little League baseball fields, Sakamoto Swimming Pool and Keōpūolani Regional Park. All these county owned recreational facilities are all located within approximately 2 to 3 miles north of the project site. A nearby park adjacent to the Hale Makana O Wai'ale Affordable Housing complex contains a baseball field, basketball court, and a playground equipment. This park is located about 1 mile north of the project site. Other recreational facilities in the Wailuku area include 'Īao Park, Wells Park, Wailuku Pool, Wailuku Gym, and Wailuku Elementary School Park. In addition, there are several golf courses in the Wailuku-Kahului region located within close proximity of the project site, namely: Kāhili and Kamehameha golf courses, The Dunes at Maui Lani Golf Course, and Maui County-owned Waiehu Golf course. These golf courses are within 1 to 3 miles of the project site.

5. Solid Waste Disposal

Solid waste collection services for residential are provided by Maui County Department of Environmental Management. For commercial, solid waste is collected by private waste disposal companies. Collected solid waste is disposed at the Maui County's 55-acre Central Maui Landfill, located approximately 3 to 4 miles east of the subject property. This county-owned landfill is managed and operated by Maui County Department of Environmental Management.

D. Existing Infrastructure

1. Roadways

Honoapi'ilani Highway is under the jurisdiction of the State of Hawai'i Department of Transportation and is the main artery linking Waikapū to Central, South, and West Maui. Honoapi'ilani Highway is located approximately 4,000 feet west of the project site. It is a two-lane undivided State Highway which runs in the north-south direction into Wailuku town. The speed limit is 35 miles per hour (mph) in the vicinity of Waikō Road. The Waikō Road intersection is signalized with existing left turn pockets into East and West Waikō Road.

Kūihelani Highway is located immediately east of the project site. The highway is under the jurisdiction of the State of Hawai'i Department of Transportation. It is a four-lane divided State arterial highway which also runs in a north-south direction. The posted speed limit on Kūihelani Highway at Waikō road is 55 miles per hour (mph). There is an existing traffic signal at the Kūihelani Highway-Waikō Road intersection. The southern terminus of Kūihelani Highway is its intersection with Honoapi'ilani Highway. The northern terminus is at its intersection with Pu'unēnē Avenue, where it transitions to Dairy Road in Kahului.

Waikō Road is a two-lane County collector roadway that connects Honoapi'ilani Highway and Kūihelani Highway. The posted speed limit on Waikō Road is 20 miles per hour (mph) in the vicinity of the proposed project site. West of Honoapi'ilani Highway, Waikō Road provides access to a residential community. East of Honoapi'ilani highway, Waikō Road provides access to industrial, livestock and residential uses. There is a portion of Waikō Road located between the residential homes on the west and the old cane haul road to the east , that is privately-owned. There is also a heavy vehicle restriction on Waikō Road near its intersection with Honoapi'ilani highway that prohibits vehicles weighing over 10,000 pounds from entering and exiting Waikō Road via its intersection with

Honoapi'ilani Highway.

Wai'ale Road is a two-lane road with its southern terminus at Waikō Road. It turns into Lower Main Street near Ka'ahumanu Avenue. The section of Wai'ale Road from Waikō Road to Ku'ikahi Drive is privately-owned. The segment from Ku'ikahi Drive to Lower Main Street is County-owned and used as a collector road.

Access to the project site will be from Waikō Road.

2. DRAINAGE

A drainage report was prepared by Otomo Engineering, Inc. for the proposed project (refer to attached Appendix J). The subject parcel is U-shaped with a 60-foot wide strip separating the western and eastern sections of the parcel. The western section of the parcel slopes down in a west to east direction, and the eastern section of the parcel slopes down in a west to east direction. The elevations of the subject property ranges from approximately 270 feet to 200 feet above mean sea level. The slopes of the subject property site range from approximately 3% to 2% slope.

According to "Soil Survey of Islands of Kaua'i, Oahu, Maui, Moloka'i and Lāna'i", prepared by the U.S. Department of Agriculture Soil conservation Service, the soil within the project site is classified as Pu'uone sand (PZUE). It is characterized as having permeability above the cemented layer, slow runoff. The on-site surface runoff sheet flows across the western and eastern sections of the parcel in a west to east direction. Runoff from the property site eventually sheet flows onto Kūihelani Highway right-of-way where it is intercepted by the highway drainage facilities into a designated outlet.

According to the Flood Insurance Rate Map (FIRM), dated September 25, 2009, prepared by the U.S. Federal Emergency Management Agency (FEMA), the project site is in Flood Zone "X" which represents areas outside of the 0.2% annual chance flood plain.

It is estimated that the present 50-year, 1-hour runoff from the project site is 15.16cfs (West section) + 1.27 cfs (middle section) + 8.24 cfs (East section) = 24.67 cfs and the corresponding runoff volume is 27,293 cubic feet (West section) + 2,286 cubic feet (Middle section) + 12,355 (East section) = 41,934 cubic feet (refer to Appendix J, "Preliminary Engineering Report").

3. WATER

There is no Maui County Department of Water Supply system currently servicing the project site or adjacent properties. The proposed project will be served by an existing approved potable private water system. There is currently an on-site private water system servicing the Consolidated Baseyard Subdivision, which is located between the western and eastern sections of the subject project site. The private system consists of two groundwater wells, a 350,000 gallon storage tank, pump building, and water appurtenances for the subdivision. The existing on-site private water system that will service the proposed project is an approved State Department of Health potable water system for public use. The use of the privately-owned water system for the proposed project has been agreed upon between the parties by Memorandum of Agreement (refer to Appendix V).

For more detailed information and discussion regarding the exiting private water system, refer to attached Preliminary Engineering Report identified as Appendix J.

4. WASTEWATER

According to Maui County, there is an existing 8-inch sewerline crossing East Waikō Road, approximately 3,000 feet west of the project site. The existing 8-inch sewerline is located east of makai Waikapū Village and connects to the existing sewer system on Wai'ale Road. Wastewater collected from the Waikapū area is transported to the Kahului-Wailuku

Wastewater Treatment Plant located at Kahului or east of the project site. Due to its distance and upstream from the project site makes it unfeasible to connect to the county's existing sewer system.

5. Electric and Telephone

There is an existing electrical transmission system traversing through the project site. Said system is located within an easement granted to Maui Electric Company, Limited. An existing electrical distribution system is located approximately 1,000 feet to the west of the property on land owned by A&B Properties, Inc. Maui Electric Company, Ltd., Verizon Hawai'i, and Time Warner Oceanic Cable provide electrical, telephone, and cable television services, respectively.

E. Proposed Infrastructure Improvements

1. Roadways

Access to the proposed subdivision will be from Waikō Road. From Waikō Road, there will be access to Honoapi'ilani Highway to the west and Kūihelani Highway to the immediate east. The interior subdivision streets will have 56-foot right-of-ways and will be improved to Maui County standards. The two north-south subdivision roadways will terminate at the northern boundary of the subject parcel. These proposed roadways are master-planned to provide future connections to A&B Inc.'s Wai'ale master-planned project. Both roadways will connect to Waikō Road.

Waikō Road, fronting the project site has an existing right-of-way of 60 feet. That portion of the project adjacent to Waikō Road will be improved to County standards.

A Traffic Impact Analysis Report (TIAR) was completed in May 2011 by Phillip Rowell and Associates for the project. For detailed information of the TIAR on the proposed project, please refer to Appendix P. The following key findings in the TIAR concluded as follows:

"The level-of-service (LOS) analysis concluded that the signalized intersections (Honoapi'ilani Highway at Waikō Road and Kūihelani Highway at Waikō Road) will operate at acceptable LOS without additional improvements".

2. DRAINAGE

The project's drainage system will be designed to accommodate the increase runoff generated by the development of the entire project site. Subdivision drainage improvements will include a master drainage system within the roadways, including curb-inlet catch basins, manholes, drainlines and a drain stub out to each lot. The master drainage system will be sized to accommodate runoff from the roadways and developed lots. According to the Preliminary Engineering Report (PER) prepared by Otomo engineering, Inc. (refer to Appendix J for detailed analysis of project's drainage system), there will be no increase in runoff from the project site after completion of the development. The drainage improvements will be in accordance with Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui.

3. WASTEWATER

As previously noted in this report, the nearest county sewer system is located approximately 3,000 feet west of the project site, hence, is not considered viable method of wastewater treatment for the proposed project. A private master sewer system will be installed within the subdivision roadways and a sewer lateral will be provided to each lot. The master plan sewer system will outlet into a community leach field, which will require review and approval from the State Department of Health. Individual wastewater system (IWS) will be used for the treatment of wastewater for each lot. It is estimated that the average daily wastewater contribution from the proposed project is approximately 16,436 gallons per day.

These proposed wastewater improvements will meet the projected wastewater flow for the proposed project and will adhere strictly to the requirements set forth by the State Department of Health. For further discussion and detailed information, please refer to attached Preliminary Engineering Report identified as Appendix J.

4. WATER

The existing privately-owned wells and storage tank which are currently being used as the source for domestic water and fire flow for the Consolidated Baseyard subdivision will be modified and upgraded and use for the proposed project. The applicant will upgrade the existing water facilities as required to meet domestic water and fire flow requirements for the project.

Based on the preliminary site plan for the project, the domestic water demand, as determined by the Domestic Consumption Guidelines set forth by the Department of Water Supply (DWS), the average daily water domestic demand for the project is calculated to be approximately 142,920 gallons per day. However, using the analysis for the Consolidated Baseyard, it is estimated that the average daily domestic water demand is 139,890 gallons. In accordance with the DWS standards, the fire flow demand for a light industrial or commercial development is 2,000 gallons per minute for two-hour duration. The applicant will upgrade the existing water system to meet DWS standards for domestic and fire flow requirements.

A water system analysis of the existing system at Consolidated Baseyard by Tom Nance Water Resource Engineering entitled "Capability of the Two Consolidated Baseyard Wells to Supply the Proposed Waikō Industrial Park," dated March 1, 2011, was prepared and confidently confirmed that the water system will be adequate to supply the domestic water demand for the proposed project with system upgrades. Also, according to the report, the existing water storage tank is adequate to

meet the fire flow requirements for the proposed project. For more detailed information of the water report, refer to Appendix U.

5. Electric and Telephone

The proposed electrical and telephone distribution systems to the subject subdivision will be installed overhead from the existing overhead facilities located approximately 1,000 feet to the west of the project site. Within the project site, the electric and telephone systems will be installed underground in accordance with the utility companies rules and regulations. Street lights will be installed along the subdivision streets in accordance with county standards.

Potential Impacts and Mitigative Measures

III. Potential Impacts and Mitigative Measures

A. Impacts to the Physical Environment

1. Surrounding Land Uses

The project site is located in close proximity of Waikapū Town, Waikapū Gardens affordable residential subdivision and adjacent to the Consolidated Baseyard Subdivision, a light industrial development developed a few years ago. The project also bordered by Waikō Road to the south, Rojac Trucking Baseyard industrial subdivision and Brewer Environmental Warehouse to the west. To the north boundary of the subject property is A&B Properties Hawai'i, Inc's 545-acre parcel proposed Wai'ale Community Master Plan Project—a 2,550 residential units mixed-use project. This project is in its initial stage of planning and land use entitlement review.

Waikapū Town contains primarily single-family residential uses, although there neighborhood commercial uses along Honoapi'ilani Highway.

The proposed project consists of 41-lot light industrial subdivision. The proposed action will result in a light industrial subdivision compatible with surrounding commercial uses. The project site is designated within the urban growth boundary in the proposed Maui General Plan. With the project's consistency with its designation in the proposed draft General Plan and its compatibility with the adjacent light industrial uses and the proposed A&B Properties, Inc.'s 545-acre master plan development—the proposed project will have no anticipated impacts on the surrounding land uses.

2. Topography and Landform

The 31.222-acre project site is a U-shaped with a 60-foot wide strip separating the western and eastern sections of the parcel. The western section of the parcel slopes down in the west to east direction ranging in elevation from approximately 272 feet to 232 feet above mean sea level, with an average slope of approximately 3%. The eastern section of the parcel slopes down in a west to east direction ranging in elevation from approximately 208 feet to 198 feet above mean sea level, with an average slope of approximately 2%. The 60-foot section separating the western and eastern sections of the parcel slopes down in a west to east direction ranging in elevation from approximately 232 feet to 208 feet above mean sea level, with an average slope of approximately 2%.

Minimum grading will be undertaken within the project site. The project's drainage system will be designed to accommodate the increase in runoff generated by the proposed development of the entire project site (refer to Appendix J, "Preliminary Engineering Report", for detailed information of drainage plans). Drainage patterns of proposed improvements will be maintained to ensure impacts to downstream properties are minimized. With the proposed drainage improvements, adverse impacts to topography and landforms resulting from minimum grading activities are not expected. The adjoining and downstream properties will not have any additional increase of runoff due to this proposed development.

3. Wetlands and Streams

There are no wetlands on the subject property or in the immediate vicinity of the property. Waikapū Stream on the south will not be affected by the proposed project. Drainage generated from the subject property will not be discharged into Waikapū Stream. According to the Preliminary Engineering Report prepared by Otomo Engineering, Inc. for the proposed project, the drainage improvements will contain all increase runoff within the subject property.

4. Flood and Tsunami Hazard

As previously stated in this report, the subject site is located in Flood Zone "X" according to Flood Insurance Rate Map (FIRM). Flood Zone "X" represents areas outside of the 0.2% annual chance flood plain. Best Management Practices (BMPs) will be implemented to mitigate any future or potential flooding on the site. Furthermore, the subject site is not located within the tsunami inundation zone.

5. Flora and Fauna

There are no known significant habitats or rare, endangered, or threatened species of flora and fauna located or in the vicinity of the project site. The proposed improvements on the property are not anticipated to impact wetland areas and wildlife habitats. It has been determined through the biological resources survey that removal of vegetation from the project site is not considered an adverse impact on these components of the natural environment. For more detailed information, refer to Appendix M, Biological Resources Survey by Mr. Robert Hobdy, Environmental Consultant dated December 2010.

6. Air Quality

Based on the existing and surrounding light and heavy industrial operations within close proximity of the project site, as well as agricultural sugarcane operations, the following assessment was made with regards to potential impacts, if any, of air quality. Emissions from construction equipment and vehicles used during construction activities may temporarily affect the ambient air quality within the immediate vicinity of the project site. However, these temporary air quality affects can be minimized by instituting Best Management Practices (BMPs) during project construction. In addition, dust control will be instituted such as dust barriers, watering graded areas, and/or sprinklers to control dust during construction of the project.

On a long term basis, upon completion of the proposed light industrial project, it is not anticipated to generate adverse impact on air quality on or in close proximity to the project site.

7. Noise

Ambient noise conditions may be temporarily affected during construction activities at project site. Construction equipment machinery will likely be the dominant noise-generating source during construction period. Best Management Practices (BMPs) will be instituted, including equipment maintenance and vehicle maintenance, are anticipated to reduce noise levels. Construction activities will be limited to daytime working hours. In addition, heavy trucks, dumb trucks, and material transport vehicles will be advised not to use upper Waikō Road and Wai'ale Drive to minimize noise in the residential area of Waikapū.

Construction-period noise will be mitigated in accordance and strict adherence with Title 11, Administrative Rules, Chapter 46, Community Noise Control of the State Department of Health. All construction equipment and on-site vehicles will be equipped with mufflers as required in Section 11-46 (b)(1)(A). Required permit conditions for construction activities may include, where appropriate:

"No permit shall allow construction activities creating excessive noise before 7:00 A.M. and after 6:00 P.M. of the same day"

"No permit shall allow construction activities which emits noise in excess of ninety-five dB(A) except between 9:00 A.M. and 5:30 P.M. of the same day"

Once the project is completed, the proposed project is not anticipated to generate significant long term adverse noise conditions. These conclusions were drawn based on the existing and surrounding light and heavy industrial uses in the area. There are no existing residential uses surrounding or in close vicinity to the project site.

8. Scenic and Open Space Resources

As previously noted in this report, Haleakalā is visible to the east of the project site with the Waikapū Valley and West Maui Mountains to the west define the scenic resources of the project site. The project is not part of a scenic corridor and will not affect views from inland vantage points. As such, the proposed project is not anticipated to have an adverse impact upon the visual character of the surrounding areas.

9. Hazardous Materials

As noted earlier in this report, the subject project site was not listed on any hazardous database listings. There was no evidence of any historic misuse or significant spills of hazardous or regulated substances on the subject property, except for some minor soil staining as a result of vehicle and construction equipment activities. An ESA was conducted on the property by Mālama Environmental, dated January 2010 (refer to Appendix K). Based on its findings as a result of the environmental site investigation, there are no hazardous or regulated substances found on the property site. Some minor soil staining were found and recommended to be removed and based on the recommendation by the environmental consultant, the soil staining were removed in accordance with applicable government standards. In addition, removal of derelict vehicles and equipment as recommended by environmental consultant were also done in accordance with all applicable government standards. All recommended actions by the environmental consultant were completed and no further actions were required. No adverse impacts are anticipated per consultant's findings. For more detailed information on environmental site assessment done on the subject property, refer to Appendix K, report entitled, "Environmental Site Assessment: Phase I Investigation by Mālama Environmental", dated January 2010.

10. Assessment of Cultural Impacts

As reported earlier in this report, a Cultural Impact Assessment (CIA) was conducted by Mr. Erik Fredericksen of Xamanek referred to as Appendix N.

No continuing cultural practices are currently occurring within the project site based upon the findings of investigations conducted for the subject area and its immediate surrounding environs, as well as oral testimonies obtained from various individuals and government agencies interviewed as part of cultural assessment prepared by Mr. Erik Frederickson of Xamanek Researches LLC. None of the individuals who responded had any cultural information pertaining to the project area. Based on consultant's research and interviews, there are no specific traditional Hawaiian cultural uses or practices at the project site. It has been noted that the subject site and its immediate surrounding areas have been used for sugar cane cultivations and the project site is presently being used for cattle feedlot and horse pasture. Also, as noted in this report that approximately 4 acres are used for construction storage baseyard under a State Special Use Permit and County conditional Permit.

Based on the community response, archival research, and historic land alteration as a result of agricultural cultivations, it is reasonable to conclude that pursuant to Act 50, the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or customary activities will not be affected by construction on Parcel 102 of the project site. Because there were no historic cultural activities found on the project site, the cultural impact assessment prepared by Xamanek Researches LLC (refer to Appendix N) concluded that there are no adverse impacts. No further action is being recommended by the CIA consultant.

11. Archaeological Resources

As noted earlier in this report, an archaeological assessment survey was conducted by Xamanek Researches LLC on May and June 2011 for the

project site. Archaeological field work consisted of both surface and subsurface investigations throughout the subject parcel. A complete surface inspection occurred and twenty (20) mechanical backhoe test trenches were excavated in order to help assess the surface and subsurface conditions throughout the subject parcel. No significant surface and subsurface cultural remains or any historic properties found or identified or recovered by the Consultant during the archaeological assessment survey.

For more detailed information of the Consultant's archaeological assessment survey please refer to Appendix O of the report.

Given the results of the Consultant's archaeological assessment survey, no further archaeological work beyond the assessment level is recommended by the consultant for the subject area. Precautionary archaeological monitoring is recommended by the Consultant for any development or future earthmoving activities on the subject parcel.

B. Impacts To The Socio-Economic Environment

1. Population and Local Economy

The proposed project is expected to create immediate short-term benefits as a result of design and construction employment during the development of the project. Initial estimated construction costs for the site work portion during the subdivision of the project (excluding vertical construction) will be approximately $8 to $10 million. As noted above, the proposed project will create construction jobs for local residents during the development of the project. This projected employment will have a multiplier effect on local material suppliers and retail businesses that can be expected to benefit from the proposed project. Other potential direct economic impacts of the project were reviewed and identified in an economic forecasting study for the project prepared by ACM Consultants, Inc. Refer to Appendix L for detailed information of project's economic impact. In addition to the revenues generated for the subdivision improvements, it is

anticipated the vertical construction of buildings for the individual lots would also support the local construction industry, with an estimate of over $75 million of project build out.

In the long-term, the proposed project will support local businesses and provide needed reasonably-priced light industrial areas that are centrally-located for commercial uses. The proposed project is being developed based on the future expanding demand for additional industrial space on Maui, hence, will offer new employment opportunities for local residents.

On both long and short-term basis, the proposed action should not affect population parameters. The proposed project is not considered a population generator since most potential commercial users are expected to come from existing light industrial complexes. This project will not affect/increase population parameters within the Kahului-Wailuku Community Plan District.

No mitigative measures are necessary in response to the anticipated increased short-term as well as long-term employment and no additional mitigative measures are required regarding population since the proposed project is not a population generator.

2. AGRICULTURE

The approximately 31.22-acre project site is situated in a region of existing and ongoing urban development. As noted earlier in this report, the subject property has a soils productivity rating of "E", the lowest rating possible. As indicated by the ALISH map, the project site falls within the "Other" agricultural lands category. Also, as previously noted in this report, the subject property is not presently used in any agricultural cultivation, but portion of the property is used as construction equipment baseyard storage per SUP permit.

Use of the property for light industrial purposes is not anticipated to adversely impact agricultural productivity on the island. Since the pro-

posed action will not affect agricultural production on the island, no mitigative measures are expected to be required.

3. Police, Fire, and Medical Services

The proposed action is not anticipated to impact the service capacity and capability of police, fire, and emergency medical operations. The project will not expand nor extend the existing service area limit for emergency medical services. There are existing police, fire, and medical facilities in very close proximity of the project site. Additionally, internal roadways within the proposed light industrial subdivision will be constructed in accordance with Maui Fire Department standards. No further mitigative measures are expected to be required.

4. Recreational and Educational Resources

As noted earlier in this report, the proposed action is not a population generator that will increase population parameters within the Kahului-Wailuku Community Plan district, hence, the proposed project is not expected to generate the need for recreational facilities or services. In addition, there are no anticipated impacts to existing educational facilities or resources.

No further mitigative measures are expected to be required.

5. Hydrology

There will be no anticipated short-term or long-term impact to groundwater as a result of construction activities on the project site. Therefore, no mitigation measure is expected to be required.

6. Solid Waste Disposal

Private commercial haulers will be used to dispose any construction materials during the subdivision and development of the proposed project. Once construction is completed, it is anticipated that the project solid

waste collection and disposal will be provided by private commercial haulers.

After subdivision is completed, lot owners and tenants will be encouraged to implement waste recycling programs to reduce the amount of waste to the County's Central Maui Landfill site.

No further mitigative measures are expected to be required.

C. Impacts to Infrastructure

1. Roadways

A detailed Traffic Impact Assessment Report (TIAR) was completed for the proposed project by Phillip Rowell and Associates. Refer to Appendix P for detailed traffic assessment for the project. The following methodology by traffic consultant was used for the TIAR:

- A site reconnaissance was performed to identify existing roadway cross-sections, intersection lane configurations, traffic control devices, and surrounding land uses.
- Existing peak-traffic volumes for the study intersections were obtained and summarized.
- Existing level-of-service of the study intersections was determined using the methodology described in the Highway Capacity manual.
- A list of related development projects within and adjacent to the study area that will impact traffic conditions at the study intersections was compiled.
- Future background traffic control volumes at the study intersections without traffic generated by the study project were estimated.

- Peak hour traffic that the proposed project will generate was estimated using the trip generation analysis procedures recommended by the Institute of Transportation Engineers.

- A level-of-service analysis for future traffic conditions with traffic generated by the study project was performed.

- The impacts of traffic generated by the proposed project at the study intersections was quantified and summarized.

- Locations that project generated traffic significantly impacts traffic operating conditions were identified.

Based upon the TIAR, the following summary and recommendations are being provided to mitigate potential traffic concerns as a result of the development of the proposed project:

- *"The level-of-service analysis concluded that the signalized intersections (Honoapi'ilani Highway at Waikō Road and Kūihelani Highway at Waikō road) will operate at acceptable levels-of-service without additional improvements.*

- *The southbound approach of Wai'ale Road at Waikō Road will operate at Level-of-Service C during the morning peak hour and Level-of-Service F during the afternoon peak hour. An assessment of potential improvements concluded that installation of a left turn refuge lane for left turns from southbound Wai'ale Road to eastbound Waikō Road would result in Level-of-Service D and is therefore recommended. However, since the projected traffic volumes that result in the unacceptable level-of-service reflect full build out of the project, it would be prudent to defer the improvements until the left turn refuge lane is required. It is possible that the traffic projections, which are based on Institute of Transportation Engineers' trip generation data, may not be real-*

ized. The intersection should be monitored and re-assessed when the proposed industrial park is approximately 50% occupied.

- *The current site plan for the proposed industrial park indicates two separate parcels. The parcel is located along the north side of Waikō Road between Kūihelani Highway and the east property line of the Consolidated Baseyard. Approximately 100,000 square feet of retail and commercial floor space can be constructed on this parcel. The level-of-service analysis determined that access to and egress from the project should be provided by a major driveway (unsignalized) along Waikō Road along the west boundary of the project. The main driveway, Drive A, should have separate left turn lanes along each approach and a left turn refuge lane along Waikō Road for left turns from the project. It is recommended that this driveway be monitored as the parcel is developed to determine if additional improvements are required. As with the previous intersection, the reassessment should be performed when the retail portion of the project is approximately 50% occupied.*

- *The second parcel is located west of the Consolidated Baseyard and will consist of 19.7 acres of light industrial uses. Access to and egress from this parcel will be provided by one driveway, "Drive B". This driveway will be unsignalized."*

2. WATER

The proposed project will be served by an existing approved potable private water system. There is currently an on-site private water system servicing the Consolidated Baseyard Subdivision, which is located between the western and eastern sections of the project site. The existing Consolidated water system approved for domestic use will be used as the source for domestic water and fire flow for the proposed project.

The domestic water demand, as determined by the Domestic Consumption Guidelines set forth by the Department of Water Supply, for the project is calculated to be approximately 142,920 gallons per day (gpd). However, using the analysis for the Consolidated Baseyard Subdivision, it is estimated that the average daily domestic water demand is 139,890 gallons (see Appendix J, entitled Preliminary Engineering Report). In accordance with DWS standards, the fire flow requirement for a light industrial or commercial development is 2,000 gallons per minute for a 2-hour duration. The existing storage tank at Consolidated Baseyard is adequate to meet the project's fire flow demand. Fire hydrants will be installed within the subdivision with a maximum spacing of 250 feet and meets DWS standards.

To further ensure that the existing water system at Consolidated Baseyard used for the project is adequate to supply the anticipated water demand for the project, Waikō Industrial Investments, LLC (applicant) hired Tom Nance Water Resources Engineering to evaluate the capability of the two Consolidated Baseyard wells (State nos. 5129-02 and 03) to supply the proposed Waikō Baseyard Light Industrial project in addition to their service of the existing 35-lot Consolidated Baseyard Subdivision. A copy of the assessment by Tom Nance Water Resource Engineering entitled, "Capability of the Two Consolidated Baseyard wells to Supply the Proposed Waikō Industrial Park", dated March 1, 2011, is attached as Appendix U of this document. According to the assessment report, with minor modifications of the existing two wells, as outlined in the Conclusions, Recommendations and Other Observations of Nance's report, the system will be adequate to supply the water demand for the proposed project and there are no anticipated impact on the Kahului Aquifer and no further mitigative measures are required (refer to Appendix U for detailed report).

3. WASTEWATER

The nearest County sewer system is located approximately 3,000 feet west of the project site. A master sewer system will be installed within the subdivision roadways and a sewer lateral will be provided for each lot. The master sewer system will outlet into a community leach field, which will require review and approval from the State Department of Health (SDOH).

Individual wastewater system (IWS) will be used for the treatment of wastewater for each lot. Each lot will be required to connect the outlet line of the IWS to the sewer lateral provided. Wastewater will be conveyed from each lot into the community leach field. Each IWS will adhere strictly to the requirements set forth by the SDOH. The IWS to be used for the subdivision will be aerobic units which will allow installation in close proximity to the existing well. See Preliminary Engineering Report by Otomo Engineering, Inc., dated May 2011, identified as Appendix J. There are no anticipated impacts on County's wastewater facilities and no further mitigative measures are required.

4. DRAINAGE

The project's drainage system will be designed to accommodate the increase in runoff generated by the development of the entire project site. Subdivision improvements will include a master drainage system within the roadways, including curb-inlet catch basins, manholes, drain lines, and a drain stub out to each lot. The master drainage system will be sized to accommodate runoff from the roadways and developed lots.

It is estimated that the post development runoff will be 75.23 cfs (West section), 6.3 cfs (Middle section), and 41.96 cfs (East section). Accordingly, the developed runoff volume is 67,705 cubic feet (West section), 5,671 cubic feet (Middle section), and 27,692 cubic feet (East section), resulting in net increase of 59,134 cubic feet.

As each subdivided lot is developed, the building permit applicant will

be required to construct an on-site storm runoff collection system and connect to the drainline stub out that was provided to the lot. There will be no increase runoff sheet flowing from the project site after completion of the development. The subdivision related to drainage improvements will be in strict compliance with Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui. Refer to Preliminary Drainage Report identified as Appendix J.

Based on the proposed master drainage improvements by consultant's civil engineer as shown in the PER (refer to Appendix J), there are no anticipated impacts on downstream properties and no further mitigative measures are required.

5. Electric, Cable and Telephone System

The proposed electrical, cable, and telephone systems to the subject subdivision will be installed overhead from the existing overhead facilities located approximately 1,000 feet to the west of the project site. Within the proposed subdivision, the electric, cable, and telephone systems will be installed underground in accordance with the utility companies' rules and regulations. Street lights will be installed along the subdivision streets at intervals to be determined by the electrical engineer with strict adherence to rules and regulations. There are no anticipated impacts on public utility systems and no further mitigative measures are required.

D. Potential Cumulative Impacts

Cumulative impacts are defined as the potential impact on the environment which results from the incremental impact of action when added to other past, present, and near or long-term foreseeable future actions.

This potential cumulative impact analysis evaluates present and reasonably foreseeable future projects in the area that have the potential to contribute to cumulative effects of such actions. The analysis uses the best available information and data to assess these projects and their potential impacts.

The following criteria were considered in identifying the past, present and reasonable foreseeable future projects that could result in potential cumulative impacts to the region's resources:

- Projects that are of a similar nature could affect similar resources or are located in close proximity to the proposed project.
- Projects that have the potential to generate environmental impacts and when addressed collectively with the proposed project, could result in potential cumulative impacts to the environment.

To fully assess the potential cumulative impacts, the proposed Waikō Baseyard project was grouped with the following projects in the vicinity having similar scope and scale:

- **Consolidated Light Industrial Subdivision:** This existing light industrial project encompasses approximately 23 acres with fully developed 35 lots ranging in size between 10,375 square feet and 85,000+ square feet. This subdivision is located immediately adjacent to the proposed project site.
- **Waikapū Gardens:** This fully developed affordable housing project encompasses approximately 95 acres located on the makai side of Honoapi'ilani Highway in the Waikapū area and mauka or west of the proposed project site. This affordable housing subdivision consists of 440 single-family residences, as well as a park. This housing project is a fee simple project and was completed four to five years ago.
- **Waikō Baseyard Light Industrial Subdivision (Rojac):** This light industrial subdivision encompasses approximately 14.9 acres that contains 19 lots, ranging in lot size from 13,000+ square feet to 2.8 acres. This LI subdivision is completed and fully developed. This subdivision is located approximately .5 mile mauka or west of the proposed project site.

- **ABC Development Light Industrial Subdivision:** This proposed 9.0-acre light industrial subdivision proposed to contain 7 large lot subdivision, averaging in lot size of 1 acre. This proposed LI subdivision is .2 miles mauka or west of the project site and it is in preliminary planning stage.

In considering the potential impacts of the proposed Waikō Baseyard LI subdivision, together with the projects that are listed above, the following parameters were examined: (a) topography; (b) flora and fauna; (c) noise and air quality; (d) visual resources; (e) cultural resources; (f) water quality; (g) public services; and (h) infrastructure. In assessing the potential cumulative impacts of the projects listed above, a qualitative approach was used. It is worth noting that cumulative impact considerations may change as new projects are presented or proposed projects are modified in scope and scale. Accordingly, the assessment presented in this report is intended to identify potential issues, concerns and mitigative measures based upon available information. Potential cumulative impact concerns relating to each of these resource parameters are herein presented below.

a. Topography

With the exception of ABC Development's proposed light industrial subdivision the above noted projects were completed and fully developed. Minimum alterations to topographic features were implemented to existing landforms to ensure that visual impacts are minimized, drainage patterns are maintained and all infrastructure design and construction criteria were met. Because of the projects' sensitivity to the existing landform, the cumulative impacts of these projects were not adverse to the regional topography.

b. Flora and Fauna (Plant and Animal Life)

Prior to the development of the above subject projects with the exception of ABC Development light industrial project (presently in planning stage),

each of the projects prepared and reviewed the flora and fauna resources affected by their respective actions. The above noted lands were formerly used for sugar and pineapple cultivation or ranching activities and there were no adverse impacts on the flora and fauna parameters that were encountered during the development and construction of these projects.

c. Noise and Air Quality

Short term construction related noises were experienced for each during the construction of the above noted projects. All projects complied with Department of Health noise regulations and BMPs were implemented during the construction and resulted in minimum construction-related noises. There were no significant point sources of noise encountered during the construction of the above projects and no adverse impacts to surrounding communities.

As with noise, air quality was temporarily affected during the construction of the above noted projects. BMPs were instituted during the construction of the above projects and were all in compliance with the Department of Health and County of Maui grading requirements. There were no new point sources of air emissions associated with any of the above mentioned projects. From a cumulative stand point, the projects had no adverse impact upon regional conditions.

d. Visual Resources

The visual landscape of Waikapū Town has changed minimally since the above noted projects were completed. The Waikapū Gardens affordable housing project site, formerly used as agricultural land has been replaced by residential use. Consolidated Baseyard Subdivision and Waikō Light Industrial Subdivision, both completed projects, are situated in areas where light and heavy industrial uses have previously operated under special uses and/or conditional permits.

The above completed projects, residential and light industrial projects,

collectively reflect a visual character more urban in scale, that have replaced lands formerly used for agricultural purposes. With the landscaping buffers and architectural designs used in the subdivision of these projects that mirror the character of Waikapū Town have provided visual relief from surrounding properties.

e. Cultural Resources

Based on archaeological studies and cultural impact assessments conducted for each project that are noted above, appropriate mitigative measures were utilized to address potential archaeological concerns/issues. Collectively, these above noted projects have no adverse affect on cultural and archaeological resources and practices in the Waikapū region. According to project's cultural consultant, based on consultant's research and interviews, there are no traditional Hawaiian cultural practices at project site.

f. Water Quality

Surface runoff and other non-point source pollutants can affect water quality if unmitigated. All the above noted projects were subjected to the NPDES permitting process and BMPs to control erosion and sediment loss were implemented during construction activities for each of the project. Additionally, all the projects have complied and will comply with Maui County drainage regulations to provide required mitigation, including drainage storage basins to ensure that runoff velocities are controlled and water quality effects minimized. From a regional water quality standpoint, the projects' compliance with federal, state, and local regulatory requirements helped to mitigate potential adverse impacts to water quality.

g. Public Services

With regard to public services, the Waikapū Gardens affordable housing project was completed a few years ago and has an effect on parks and

recreation and schools due to the residential nature of the project. The impact on public services of this affordable housing project was met by the developer as part of its entitlement process. Due to the nature of the other projects such as Consolidated Baseyard, Waikō Baseyard (Rojac), and the proposed Waikō Light industrial project, in reviewing the cumulative impact on public services, it was concluded that their effects would be minimal since these industrial projects do not generate the need for parks and recreation and schools. Other services, such as police, fire and emergency medical services, are currently servicing the Waikapū region and would not extend the current limits of service.

h. Infrastructure

Infrastructure requirements for the completed projects as noted above were met by respective developers/applicants. Water and wastewater requirements for Waikapū Gardens affordable residential project and Waikō baseyard (Rojac) industrial project are serviced by the County systems. Waterline improvements including storage tank were completed to serve these projects and meet all applicable rules and regulations of the County and state agencies. Wastewater transmission and treatment services for Waikapū Gardens and Waikō baseyard (Rojac) subdivision are provided by the County of Maui Environmental Management. Applicable wastewater assessment fees were required of each applicant.

As previously noted in this report, Consolidated Baseyard Subdivision has developed its owned approved private water system to service the subdivision and has built individual wastewater system (IWS) for each lot and approved by the State Department of Health. Likewise, the proposed Waikō Light Industrial Subdivision will be served by the existing Consolidated Baseyard approved water systems and individual wastewater system will be utilized for each lot within the subdivision. With the proposed project's water and wastewater needs provided by an approved private system, collectively, there will be no adverse impacts to county's systems.

Each project noted above including the proposed light industrial subdivision in this application was and is responsible for addressing and mitigating drainage impacts. Collectively, through these measures, it is anticipated that there will be no adverse impacts to downstream or adjacent properties.

These above noted completed projects were each required to prepare traffic impact analysis reports and made appropriate improvements on roadway systems as recommended in their respective TIAR and the traffic impacts were mitigated by each respective applicants/developer. For the proposed Waikō Baseyard light industrial subdivision, the TIAR prepared for this project reviewed the cumulative conditions for the Waikapū area including the existing completed projects noted above. See Appendix P (Traffic Impact Analysis Report, dated May 2011, prepared by Phillip Rowell and Associates). The traffic analysis made several assumptions and recommendations to mitigate potential impacts on the roadway systems in Waikapū region and the applicant will comply with the recommendations and conditions set forth by approving county and state agencies.

Consistency and Relationship to Land Use Plans, Policies, and Controls

IV. Consistency and Relationship to Land Use Plans, Policies, and Controls

A. State Land Use Districts

Pursuant to Chapter 205, Hawai'i Revised Statutes, all lands in the State of Hawai'i have been placed into one (1) of four (4) land use districts category by the State Land Use Commission. These land use districts have been designated "Urban", "Rural", "Agricultural", and "Conservation". The proposed project site is classified "Agricultural". Refer to Figure T. The proposed action required involves a request for classification from "Agricultural" District to the "urban" District.

B. Land Use Commission Rules, Chapter 15-15, Hawai'i Administrative Rules

The reclassification of the subject property is in conformance with the following standards of the Urban District set forth in Chapter 15-15(18), Hawai'i Administrative Rules:

Chapter 15-15(18)

(1) It shall include lands characterized by "city-like" concentrations of people, structures, streets, urban level services and other related land uses.

Discussion and Response:

The proposed project is located in close proximity of Waikapū Town which contains some commercial, recreational, and single-family residential. The proposed project also located immediately adjacent to the existing Consolidated Baseyard industrial subdivision and in close proximity to Waikō Baseyard (Rojac) industrial subdivision. Approximately .5 miles makai of the proposed project is the Waikapū Gardens affordable housing project.

(2) It shall take into consideration the following specific factors:

(a) Proximity to centers of trading and employment except where development would generate new centers of trading and employment.

(b) Availability of basic services such as schools, parks, wastewater systems, solid waste disposal, drainage, water, transportation systems, public utilities, and police and fire protection.

Discussion and Response:

There are other industrial uses in very close proximity to the proposed project. Furthermore, the subject property is located approximately adjacent to the State of Hawai'i Kūihelani Highway, which serves as a major transportation route. Additionally, there are small "mom and pop" commercial uses in Waikapū Town. Waikapū and the project site is located approximately 1.2 miles from Wailuku Town which is the County seat of government and a center of trading and employment. Also, the project site is located approximately 1.5 miles from Kahului Town which is a major center of commercial activities and employment.

The proposed project will not result in increased demands on schools and parks. The applicant will provide private water service utilizing the existing approved private system owned and operated by Consolidated Baseyard which is located adjacent to the project site. Wastewater and solid waste services will be handled on an individual lot basis. Basic infrastructural services such as transportation systems are available in close proximity to the project site. Drainage improvements will comply with County of Maui standards. Police and fire services also presently serve Waikapū Town and they are located in very close proximity to the project site.

(3) It shall include lands with satisfactory topography, drainage, and reasonably free from the danger of any flood, tsunami, unstable soil condition, and other adverse environmental effects.

Discussion and Response:

The project site is relatively flat and is located in Flood Zone "X" which represents areas outside of the 0.2% annual chance flood plain. The project site is not subject to tsunami inundation or unstable soil conditions.

(4) Land contiguous with existing urban areas shall be given more consideration than non-contiguous land, and particularly when indicated for future urban use on state or county general plans.

Discussion and Response:

Lands pertaining to the subject request are in very close proximity to areas already in the Urban District, as well as other light and heavy industrial uses in the area. The existing Consolidated Baseyard Subdivision and Waikō Baseyard (Rojac) industrial subdivision are all developed and currently in the Urban District. Consolidated Baseyard is located adjacent to the proposed project and Waikō Baseyard (Rojac) is located about 0.2 miles makua of the project site. Also, immediately north of the project site is A&B Properties, Inc.'s 545-acre proposed Wai'ale Community Master Plan project consisting of approximately 2,550 residential mixed-use units as well as commercial and LI projects.

(5) It shall include lands in appropriate locations for new urban concentration to areas of urban growth as shown on the state and county general plans.

Discussion and Response:

The subject property is an appropriate location for an Urban District classification, Wailuku-Kahului Community Plan Designation, and Change-In-Zoning. After due deliberation by the Maui General Plan Advisory Committee (GPAC) consisting of Maui residents, the project site is designated within the Urban growth boundary of the draft Maui Island Plan (MIP) currently before the Maui County Council for consideration and approval. Important note, the draft MIP has been thoroughly reviewed

by the Maui Planning Commission and has recommended approval to the Maui County Council.

(6) It shall not include lands, the urbanization of which will contribute towards scattered spot urban development, necessitating unreasonable investment in the public infrastructure or support services.

Discussion and Response:

The proposed reclassification and land use approval do not contribute to scattered spot urban development. The project site is adjacent to existing fully developed industrial uses, such as the Consolidated Industrial Subdivision and Waikō Baseyard (Rojac) industrial subdivision. As noted above, the subject property is currently permitted for baseyard use of approximately 4 acres through a State Special Use Permit and County conditional Permit. It is further noted that the subject property is designated within the proposed Urban Growth Boundary in the draft Maui County General Plan currently before the County Council for approval.

The proposed development will not necessitate unreasonable public investment in infrastructural facilities or public services. The applicant will comply with all applicable provisions regarding rules and regulations pertaining to infrastructural facilities.

(7) It may include lands with a general slope of twenty percent or more if the commission finds that those lands are desirable and suitable for urban purposes and that the design and construction controls, as adopted by any federal, state or county agency, are adequate to protect the public health, welfare and safety, and the public's interest in the aesthetic quality of the landscape.

Discussion and Response:

The subject property is characterized as lands having slopes ranging from 3 percent to 2 percent average slopes.

C. Hawai'i State Plan, Chapter 226, Hawai'i Revised Statutes

Chapter 226, HRS, also known as the Hawai'i State Plan, is a long-range comprehensive plan which serves as a guide for the future long-range development of the State by identifying goals, objectives, policies, priorities, as well as implementation mechanisms. The proposed project is consistent with the following State goals, objectives, and policies of the Hawai'i State Plan:

Chapter 226-4, HRS, State Goals

(1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i's present and future generations.

(2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.

Chapter 226-5, HRS, Objectives and Policies for Population

(b)(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.

(b)(3) Promote increased opportunities for Hawai'i's people to pursue their socio-economic aspirations throughout the islands.

Chapter 226-6, HRS, Objectives and Policies for the Economy

(a)(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people.

(a)(2) A steadily growing and diversified economic bas that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.

(b)(3) Seek broader outlets for new or expanded Hawai'i business investments.

(b)(5) Assure that the basic economic needs of Hawai'i's people are maintained in the event of disruptions in overseas transportation.

(b)(6) Strive to achieve a level of construction activity responsive to, and consistent with, State growth objectives.

(b)(8) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.

(b)(10) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.

(b)(13) Encourage businesses that have favorable financial multiplier effects with Hawai'i's economy.

Chapter 226-10, HRS, Objectives and Policies for the Economy—Potential Growth Activities

(b)(5) Promote Hawai'i's geographic, environmental, social, and technological advantages to attract new economic activities into the State.

(b)(6) Provide public incentives and encourage private initiatives to attract new industries that best support Hawai'i's social, economic, physical, and environmental objectives.

Discussion and Response:

The proposed project conforms with the objectives and policies of HRS 226-4,5,6 &10 for the economy, potential growth activities, and population. The proposed 31.22-acre Waikō light industrial and commercial

project subdivision will provide a wide-range of economic activities and opportunities for the Waikapū area as well as the Kahului-Wailuku Community Plan regions. The variety of activities envisioned from the proposed project include commercial retail and light industrial development. The proposed light industrial and commercial project will allow for the expansion and possible creation of new companies to employ island residents. It is anticipated that the development of this project will generate significant expenditures by the developer of this subdivision and the secondary owners of the 38 light industrial lots. With the infusion of new capital expenditures on this project, these investments are expected to favorably impact the Maui economy on a broad scale and in a multitude of ways. According to the economic study prepared by ACM Consultants, Inc., with the capital investment during the initial phase of the subdivision development significant direct new job opportunities are expected to be created. Based on State economic multipliers of capital infusion for the initial construction of the subdivision it is expected that the forecasted annual average directly related to the construction of the subdivision is approximately 45 jobs. In addition, construction of the individual buildings on the 38 light industrial lots will add substantial new construction jobs. It is forecasted based on State economic multipliers that the annual jobs directly related to the construction of vertical improvements within the proposed subdivision will be approximately 280 jobs. Furthermore, the increase in construction will also create the need for supplementary companies to strengthen their labor force. These additional jobs may be from building supply companies, hardware stores, equipment rental companies, and shipping and warehousing companies. These are just some of the indirect employment opportunities that are anticipated as a result of this proposed light industrial and commercial project.

The proposed development is intended to reflect the needs and desires of the Waikapū Town village and Kahului-Wailuku regions through the creation of a project that embraces the rural character of the area

appropriate in scale and theme for the regions as stated in the Wailuku-Kahului Community Plan District.

Chapter 226-11, HRS, Objectives and Policies for the Physical Environment—Land-Based, Shoreline, and Marine Resources

(a)(2) Effective protection of Hawai'i's unique and fragile environmental resources.

(b)(3) Take into account the physical attributes of areas when planning and designing activities and facilities.

(b)(8) Pursue compatible relationships among activities, facilities, and natural resources.

Chapter 226-12, HRS, Objectives and Policies for the Physical Environment—Scenic, Natural Beauty, and Historic Resources

(b)(5) Encourage the design of developments and activities that complement the natural beauty of the islands.

Discussion and Response:

The proposed project meets with stated objective and policies of HRS 226-11 & 12 for physical environment, scenic and historic resources. View corridors and topographic features will be maintained and highlighted in the project design. The proposed commercial component of the proposed will reflect a rural sense of Waikapū Village and unique that is envisioned in the Wailuku-Kahului Community Plan District. The historical setting of the regions will be reflected in the proposed project's traditionally-based planning and design of the subdivision. The project's design concept will meet the intent of the objectives of the community plan within the district and stated objectives of HRS 226-11 & 12.

Based on thorough field assessment of the site by the applicant's

consultant, no rare or endangered plant and animal species or habitats are present on site. Native habitats do not exist on the site given its history of agricultural activities of the site and equipment industrial baseyard use.

Chapter 226-13, HRS, Objectives and Policies for the Physical Environment—Land, Air, and Water Quality

(b)(2) Promote the proper management of Hawai'i's land and water resources.

(b)(6) Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.

(b)(7) Encourage urban developments in close proximity of existing services and facilities.

Discussion and Response:

The proposed 31.22-acre light industrial subdivision will be designed to be complimentary with the existing industrial and commercial developments bordering and in close proximity of the project site that will serve residents of the Wailuku-Kahului Community Plan region. The proposed project is located along the main thorough fare to west and central Maui and in very close proximity to Kahului and Wailuku regions as well as Pā'ia and South Maui regions. The project is inland and will not have any impact on our shoreline resources. Also, the project is in close proximity to existing services and facilities critical to the success of the project.

Chapter 226-15, HRS, Objectives and Policies for Facility Systems—Solid and Liquid Wastes

(b)(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.

(b)(3) Promote research to develop more efficient and economical treatment and disposal of solid wastes.

Discussion and Response:

The project will be designed to meet the best management practice with respect to reducing and recycling solid and liquid waste. Privately operated individual wastewater system (IWS) will be constructed to meet the wastewater demand for the project. Individual lot owners will be encouraged to recycle solid waste to the extent possible and drought tolerant plants will be used to minimize the use of landscape irrigation.

Chapter 226-16, HRS, Objectives and Policies for Facility Systems—Water

(b)(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.

Discussion and Response:

As noted earlier in this report and in Preliminary Engineering Report prepared by Otomo Engineering, Inc. for the proposed project (see Appendix J), the domestic water demand and fire flow requirements for the proposed project will be provided by the existing Consolidated Baseyard private water system located adjacent to the subject project site. The private system has two (2) wells and a 350,000 gallon storage tank that are adequate to meet the domestic water and fire flow demand for the proposed project. The applicant is in negotiation with the owner/operator of the private water system (see Appendix V, copy of proposal Letter dated July 5, 2011 to Mr. David Ward of Consolidated Baseyard).

Priority Guidelines of the Hawai'i State Plan

The proposed project is consistent with the following priority guidelines of the Hawai'i State Plan:

Chapter 226-103, HRS, Economic Priority Guidelines

(1) Seek variety of means to increase the availability of investment capital for new and expanding enterprises:

a. Encourage investments which:

(i) Reflect long-term commitments to the State;

(ii) Rely on economic linkages within the local economy;

(iii) Diversify the economy;

(iv) Reinvest in the local economy;

(v) Are sensitive to community needs and priorities; and

(vi) Demonstrate a commitment to provide management opportunities to Hawai'i's residents.

Discussion and Response:

As noted earlier in this report, the proposed Waikō Baseyard light industrial subdivision and commercial complex on the 31.22-acre parcel will provide a variety of economic activities for the Waikapū Town and in the Kahului-Wailuku Community Plan regions. Because of the anticipated large investment capital that will be infused in the development of this project, both short-term and long-term employment opportunities will be created as a result from the development. As shown in the project's market and economic impact analysis prepared by ACM Consultant's, Inc. dated March 2011 (see Appendix L), the anticipated direct new job opportunities during the initial construction phase of the subdivision by using the State economic multipliers is approximately 44 new jobs. In addition, construction of the individual buildings on the 38-lots light industrial subdivision using the state economic multipliers is forecasted to create an annual average of 280 jobs directly related to the construction of vertical improvements within the proposed subdivision. The proposed project is designed to reflect the rural character of the area and it is anticipated to attract residents within the Waikapū Town and the Kahului-Wailuku

Community Plan regions. The project will contribute, because of its infusion of capital investment, to the growth of Maui's economic base.

Chapter 226-104, HRS, Population Growth and Land Resources Priority Guidelines

(a)(1) Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawai'i's people.

(b)(2) Make available marginal lands or non-essential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.

(b)(12) Utilize Hawai'i's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline conservation lands, and other limited resources for future generations.

Discussion and Response:

The proposed project is in keeping with the priority guidelines of the Hawai'i State's Plan's Economic Priority Guidelines, HRS 226-103. With this proposed light industrial subdivision and anticipated infusion of capital investment, it will diversify the economy by providing expansion of light industrial businesses; will provide reinvestment in the local economy through the expansion or development of local businesses. The project will meet the Population, Growth and Land Resources Priority Guidelines pursuant to HRS 22-104, by encouraging urban growth in an existing area of urban area. Also, the proposed project site is designated as an urban growth boundary district within the proposed MIP as recommended by the Maui Planning Commission.

As noted earlier in this report, the subdivision design will be complimentary to existing LI subdivision in the area. It will serve the current residents of the area, and will meet the projected growth as stated in the Kahului-Wailuku Community Plan District and the proposed Maui County General Plan. As previously noted, there are existing other light and heavy industrial uses currently operating in close proximity and immediately adjacent to the proposed project site. The proposed project will not have a significant impact on the population in the regions. The reclassification of the subject property from "Agriculture" to "Urban" will make available marginal lands for light industrial uses.

D. State Functional Plans

The State Functional Plans (SFP) define actions for implementation of the Hawai'i State Plan through the identification of needs, problems and issues, and recommendations on policies and priorities, which address the identified areas of concern. The draft EA addresses the relationship of the proposed project to the various functional plans. The reclassification request is consistent with the following State Functional Plans:

a. State Agricultural Functional Plan

The proposed action is to reclassify approximately 31-22 acres of land from State agricultural district to the State urban district. Currently, a portion of the subject property is used for pasture and cattle feedlot and a construction equipment baseyard under a State Special Use and Maui county Conditional permits. The property is designated within the urban growth district boundary in the proposed MIP pending approval of the Maui County Council. The close proximity of the subject property to existing and planned urban land uses and with the proposed urban growth boundary designation under the draft general Plan provides a reasonable foundation for the proposed action.

b. State Employment Functional Plan

As previously noted in this report, a market analysis and economic impact analysis of the project by ACM Consultant's, Inc. and using the State economic multiplier – in the short term, it is estimated that the project will generate approximately 44 direct jobs during the subdivision development phase of the project. In addition, according to the said economic analysis report, on a long term basis the project is forecasted to generate approximately 280 jobs directly related to the construction of vertical improvements within the proposed subdivision.

c. State Transportation Functional Plan

Based on the project's Traffic Impact Analysis Report (TIAR) prepared by Phillip Rowell and Associates, there are no anticipated significant impact on the State's highway system from the proposed light industrial subdivision. Recommended road improvements fronting the proposed project will be implemented to ensure compliance with State and County requirements.

E. General Plan of the County of Maui

The 1990 update of the Maui County General Plan (GP) establishes broad objectives and policies to guide the long-range development of the County. As indicated by the Maui County Charter, the purpose of the General Plan shall be:

".... Indicate desired population and physical development patterns for each island within the County; shall address the unique problems and needs of each island and region within the County; shall explain the opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, problems, and characteristics of future developments. The General Plan shall identify objectives to be achieved, and priorities, policies and implementing actions to be pursued with

respect to population density, land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development."

The Maui County General Plan advances five (5) major themes that focus on the overall goals of the GP. The proposed project responds to the following General Plan theme:

General Plan Theme Number 4

Maintain a viable economy that offers diverse employment opportunities for residents.

- Amendments to the General Plan recognize the need to maintain a healthy economy and broaden our economic base so that we are not dependent on tourism.

The proposed project is consistent with the following General Plan objectives relating to economic activity.

Economic Activity

General

Objective:

- To provide an economic climate which will encourage controlled expansion and diversification of the County's economic base.

Policies:

- Maintain a diversified economic environment compatible with acceptable and consistent employment.

- Support programs, services and institutions which provide economic diversification.

Objective:

- To provide a balance between visitor industry employment and non-visitor employment for a broader range of employment choices for the County's residents.

Policies:

- Encourage industries that will utilize the human resources available from within Maui County rather than having to import workers.
- Encourage industries that will give incentives to the county's youth to seek higher education to be utilized in jobs within Maui County.

Discussion and Response:

As stated earlier in this report, the proposed project will provide a variety of economic activities for the Kahului-Wailuku Community Plan District and Waikapū Town area including light industrial subdivision and commercial complex and construction jobs. It is anticipated that with infusion of capital investment to develop the proposed project, the project will have a significant contribution to Maui's economic base. The development reflects the needs and desires of the Kahului-Wailuku Community Plan district and residents of Waikapū Town village. The proposed project is in keeping with the stated objectives and policies of land use in Maui County by providing a range of land use districts to meet the economic needs of the community.

F. Kahului-Wailuku Community Plan

The project site is located within the Kahului-Wailuku Community Plan region, one (1) of nine (9) community plan regions established in the County of Maui.

Planning for each region is guided by the respective community plans, which are designed to implement the Maui County General Plan. Each community plan contains recommendations and standards which guide the sequencing, patterns and characteristics of future development in the region.

The Kahului-Wailuku Community Plan was adopted by the County of Maui through Ordinance Number 3061, Bill Number 29, and became effective on June 5, 2002.

The proposed project is consistent with the following goals, objectives, and policies of the Kahului-Wailuku Community Plan:

Economic Activity

Goal

A stable and viable economy that provides opportunities for growth and diversification to meet long-term community and regional needs and in a manner that promotes agricultural activity and preserves agricultural lands and open space resources.

Objectives and Policies

(4) Provide industrial growth opportunities through the expansion of existing industrial centers associated with the airport and harbor, and in Wailuku and Kahului. Encourage the fee simple ownership of lots provided by private developers.

(5) Recognize the importance of small businesses to the region's economy.

Land Use

Goal

An attractive, well-planned community with a mixture of compatible land uses in appropriate areas to accommodate the future needs of residents

and visitors in the manner that provides for the social and economic well-being of residents and the preservation and enhancement of the region's environmental resources and traditional towns and villages.

Objectives and Policies

(6) Establish an adequate supply of urban land use designations to meet the needs of the community over the next 20 years.

Discussion and Response:

The proposed project is in conformance with the goals, objectives and policies of economic activity for the Kahului-Wailuku region as it will provide industrial growth opportunities through the expansion of an existing industrial center which has existing transportation routes to the nearby airport and harbor in Kahului. As noted in this report, the proposed project will provide the opportunity to encourage the creation of new local small businesses for Maui. The proposed project will create needed employment opportunities for the island residents. The project will contribute significantly to Maui's economy with the project's large infusion of capital investments. It will increase the availability and variety of light industrial and commercial services to provide for regional needs because of its unique and strategic location, prominently in close proximity to the core residential areas of Kahului-Wailuku region.

G. County Zoning

The proposed project site is zoned "Agricultural", according to Maui County zoning. Since the current zoning, community plan and State land use designations does not allow the proposed light industrial subdivision, a CIZ, CP, and State Land Use DBA are being filed with the Maui Planning Department for review and action by the Maui Planning Commission and the County Council. The State Land Use DBA application will be filed for review and approval by the State Land Use Commission. The land use change request from

"Agriculture" to "urban" and the CIZ and CP changes are from "Agriculture" to "M-1, Light Industrial", which would allow for the utilization of the subject property for the proposed light industrial subdivision.

H. Coastal Zone Management Objectives and Policies

Pursuant to Chapter 205A, Hawaii Revised Statutes, projects should be evaluated with respect to Coastal Zone Management (CZM) objectives, policies and guidelines.

Discussion and Response:

The subject parcel is not located within the County of Maui's Special Management Area. The proposed project site is not in the coastal area and it is located far inland, miles away from the coastline. As such, there will be no impact on coastal recreational opportunities or adverse affect on existing public access to the shoreline.

Historic Resources

Objective:

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

Policies:

(a) Identify and analyze significant archaeological resources;

(b) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(c) Support state goals for protection, restoration, interpretation, and display of historic resources.

Discussion and Response:

The proposed project does not have an adverse affect on historical or cul-

tural resources. Xamanek Researchers LLC, project's archaeological and cultural consultant conducted an archaeological assessment survey on site to assess any presence and/or absence of any historical and archaeological resources on the proposed project site. Based on the archaeological consultant's survey (refer to Appendix O) there are no surface and subsurface archeological and historical resources on the project site. Given the results of the archaeological survey, no further archaeological work beyond the assessment level is recommended by the Consultant for the subject area.

Cultural impact assessment was also conducted for the project by Xamanek Researchers LLC. The scope of the said cultural assessment study is to compile summary based on various historical, cultural, and topographical accounts and facts regarding the proposed project. Information of the cultural assessment was acquired by consultant through archival research, literature searches and oral interviews with persons knowledgeable with the immediate project area as well as the Waikapü Town village. Discussion and details of the cultural impact assessment report is attached and identified as Appendix N.

Economic Uses

Objective:

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

Policies:

(a) Concentrate coastal dependent development in appropriate areas;

(b) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the

coastal zone management area; and

(c) Direct the location and expansion of coastal dependent developments to areas presently designated and use for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(i) Use of presently designated locations is not feasible;

(ii) Adverse environmental affects are minimized; and

(iii) The development is important to the State's economy.

Discussion and Response:

The proposed project is not a coastal dependent development. The project site is miles inland from the shoreline. The proposed project will stimulate the economy through the generation of good permanent jobs and the creation of construction related job opportunities from the proposed light industrial development. The proposed project is consistent with the objective and policy for economic use.

Coastal Hazards

Objectives:

Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution.

Policies:

(a) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and non-point source pollution hazards;

(b) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, point and non-point pollution hazards;

(c) Ensure that developments comply with requirements of the Federal Flood Insurance Program;

(d) Prevent coastal flooding from inland projects; and

(e) Develop a coastal point and non-point source pollution control program.

Discussion and Response:

As noted earlier in this report, the project site is in Flood Zone "X", which represents areas outside of the 0.2% annual chance flood plain, according to FEMA. In addition, tsunami inundation parameters do not apply to the subject project.

Drainage improvements for the proposed project will be designed in accordance with the Drainage Standards of the County of Maui to ensure that the project will not adversely affect downstream properties from the effects to flooding and erosion.

Beach Protection

Objective:

Protect beaches for public use and recreation.

Policies:

(a) Locate new structures inland from the shoreline setback to conserve open space ad to minimize loss of improvements due to erosion.

(b) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

(c) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion and Response:

The proposed project is located miles inland, away from the shoreline and as a result, there is no impact on beaches.

Objective:

Implement the State's ocean resources management plan.

Policies:

(a) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

(b) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

(c) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;

(d) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

(e) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

(f) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion and Response:

As previously stated, the proposed project is located miles inland, away from the ocean and is therefore, no impact on marine or coastal resources. Appropriate Best Management Practices (BMP) will be utilized to ensure that construction runoff is appropriately captured, minimizing any impact on coastal waters.

Public Participation

Objective:

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

Policies:

(a) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management;

(b) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concern with coastal-related issues, developments, and government activities; and

(c) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion and Response:

The project will meet county public awareness, education and participation objectives. Community meeting with the Waikapū Community Association was held on May 16, 2011 to solicit input from the public regarding the proposed project.

I. Maui County Policy Plan

The Maui County Policy Plan was adopted by Ordinance No. 3732 (2010) and took effect on March 24, 2010. The Policy Plan provides broad goals, objectives, policies, and implementing actions that portray the desired direction of the County's future to the year 2030. This includes, but is not limited to: a vision statement and core values for the County; an explanation of the plan-making process; identification of guiding principles; and goals, objectives, policies, and implementing actions related to the following core themes:

- *Protect the natural environment*
- *Preserve local cultures and traditions*
- *Strengthen social and healthcare services*
- *Expand housing opportunities for residents*
- *Strengthen the local economy*
- *Improve parks and public facilities*
- *Diversify transportation options*
- *Improve physical infrastructure*
- *Promote sustainable land use and growth management*
- *Strive for good governance*

Objective

Improve and increase efficiency in land use planning and management.

Policies

- Assess the cumulative impact of developments on natural ecosystems, natural resources, wildlife habitat, and surrounding uses
- Ensure that new development projects requiring discretionary permits demonstrate a community need, show consistency with the General Plan, and provide analysis of impacts
- Coordinate with federal, state, county officials in order to ensure that land use decisions are consistent with County plans and the vision local populations have for their communities

Objective

Design all developments to be in harmony with the environment and to protect each community's sense of place.

Policies

- Protect and enhance the unique architectural and landscape characteristics of each Community Plan Area, small town and neighborhood
- Ensure business districts are distinctive, attractive, and pedestrian-friendly destinations
- Use trees and other forms of landscaping along rights-of-way and within parking lots to provide shade, beauty, urban-heat reduction, and separation of pedestrians from automobile traffic in accordance with community desires

Objective

Improve land use management and implement directed-growth strategy

Policies

- Establish, map, and enforce urban and rural growth limits
- Direct urban and rural growth to designated areas
- Restrict development in areas that are prone to natural hazards, disasters, or sea-level rise
- Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources
- Protect summits, slopes, and ridgelines from inappropriate development

Discussion and Response:

Conformance with the objectives and policies of the Maui County Policy Plan are achieved by the proposed project as it will provide industrial growth opportunities through the expansion of an existing industrial center which has existing transportation routes to the airport and harbor in Kahului. The proposed project meets the objectives and policies of the Policy Plan as it conforms to project's designation within the GPAC's urban district growth area.

The proposed light industrial subdivision will be designed to be in harmony with the environment and consistent with existing light industrial subdivisions adjacent and near the proposed project site.

The proposed project will not adversely impact scenic and open space resources since the project will not involve significant alteration to the existing topographic character of the site and will not affect public views to and along the shoreline. As previously noted earlier in this report, an archaeological assessment survey of the subject property was conducted. The result of the surface and subsurface testing yielded no significant findings of any cultural remains or any historic properties found or identified or recovered during the archaeological assessment survey.

According to the economic study for this project (refer to Appendix L) and with the anticipated infusion of capital investments on this project, these investments are expected to favorably impact the Maui economy on a broad scale and in a multitude of ways. Based on State economic multipliers of capital infusion for the initial construction of the subdivision it is anticipated that the forecasted annual average directly related to the construction of the subdivision is approximately 45 jobs. In addition, construction of the individual buildings within the proposed subdivision will add substantial new construction jobs. It is anticipated that the annual jobs directly related to the construction of vertical improvements will be approximately 280 new jobs. Furthermore, it is anticipated that the proposed project will create indirect employment opportunities as new busi-

nesses expand and strengthen their labor force.

The development of the proposed project will improve the physical infrastructure near and within the project site. According to the project's Traffic Impact Analysis Report (TIAR) (refer to Appendix P), Waikō Road, fronting the project site has an existing right-of-way of 60-feet. That portion of the project adjacent to Waikō Road will be improved to County standards. Drainage improvements for the project will be designed and constructed to accommodate increase runoff generated by the development of the entire project site. The drainage improvements will be in accordance with Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui. Finally, wastewater and water systems will be provided by private systems and will be designed and constructed in accordance with County, State, and Federal rules, regulations and standards. Since the proposed project will be served by private wastewater and water systems, it will not put a burden nor will have an impact on the County's systems.

The proposed project will promote sustainable land use and growth management within the Kahului-Wailuku community plan region as recognized by the GPAC and designated the project site within the urban growth boundary in the draft Maui General Plan. As noted in this report, based on economic analysis prepared for the proposed project there's a strong demand for a reasonably-priced light industrial subdivision in this region and this project site is the most logical expansion for urban growth to meet this demand.

Overall, the proposed project meets all of the objectives and policies of the Maui County Policy Plan as it relates to the proposed light industrial subdivision.

Appendices

Appendix A

Regional Location Map

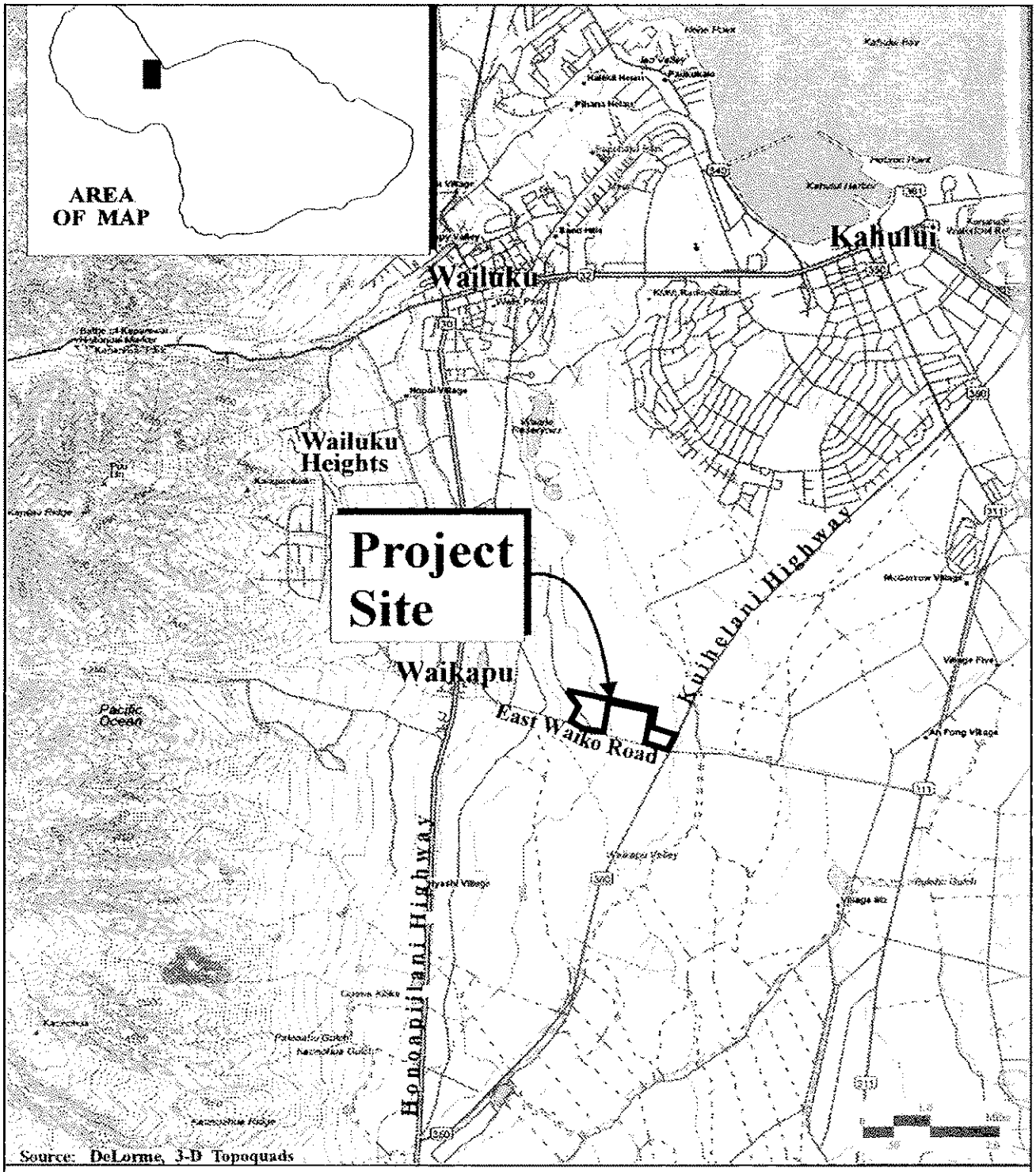

Figure A

Waikō Baseyard Light Industrial Subdivision
TMK (2) 3-8-007-102
Regional Location Map

Prepared for:
Waikō Industrial Investment, LLC

BAGOYO
DEVELOPMENT CONSULTING GROUP

Appendix B

Regional Setting Map

Figure ___

Waikō Baseyard Light Industrial Subdivision
TMK (2) 3-8-007-102
Regional Setting Map

Prepared for:
Waikō Industrial Investment, LLC

BAGOYO
DEVELOPMENT
CONSULTING GROUP

Appendix C

Location Map

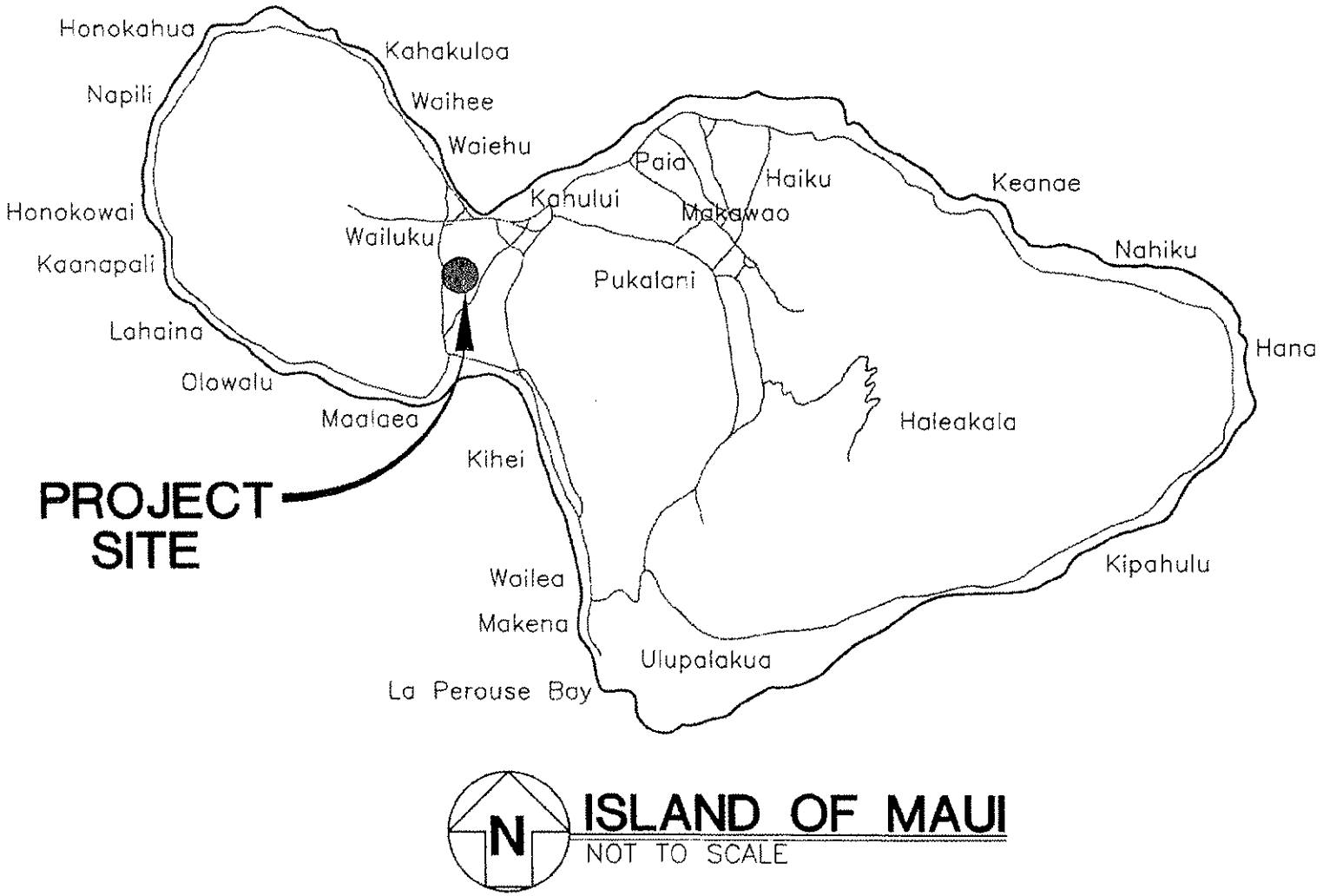

Figure C

Prepared for:
Waikō Industrial Investment, LLC

Waikō Baseyard Light Industrial Subdivision
TMK (2) 3-8-007-102
Location Map

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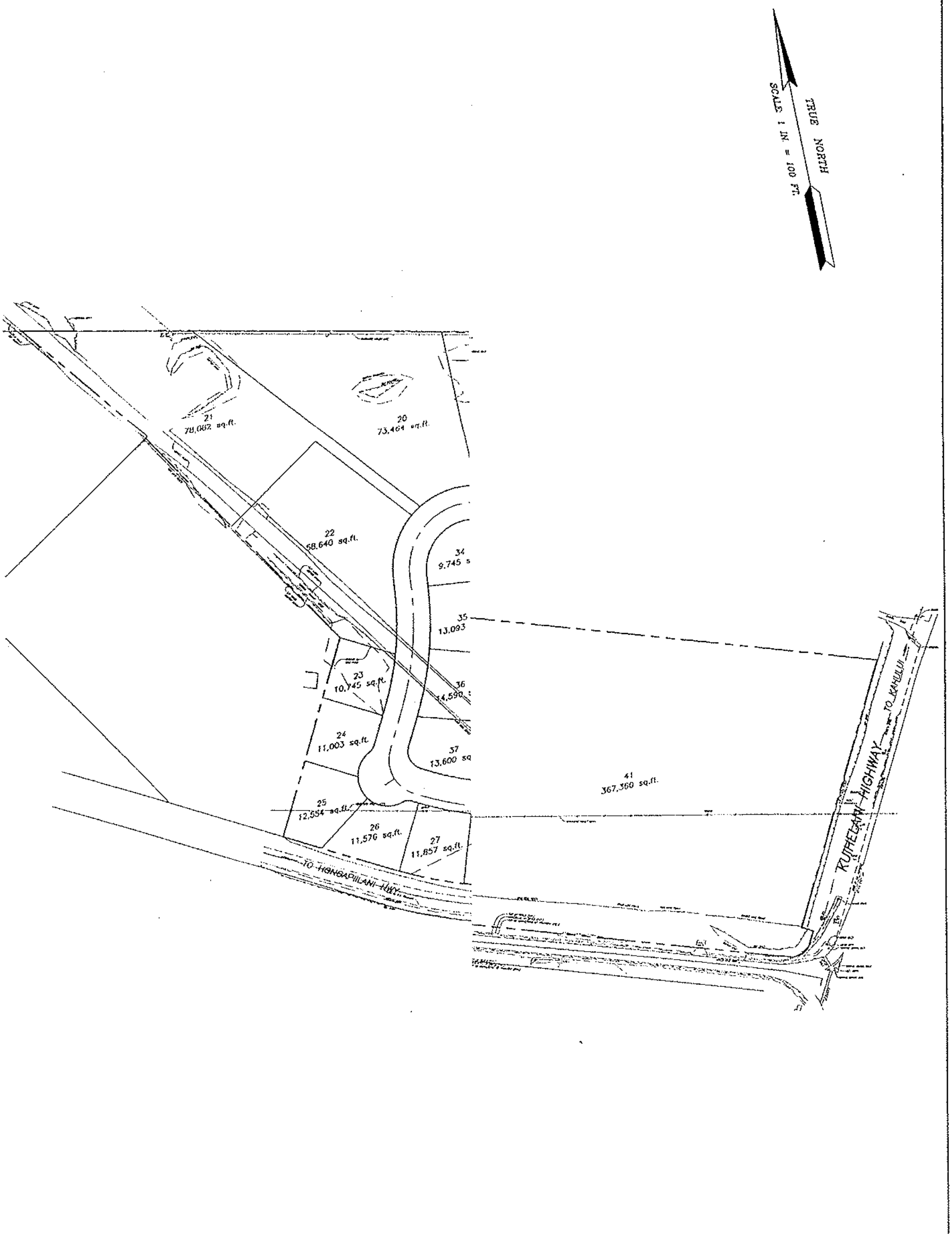
Appendix D

Project Conceptual Subdivision Plan



FEBRUARY 25, 2011

OTOMO
ENGINEERING, INC.
CONSULTING CIVIL ENGINEERS
305 S. HIGH STREET, STE. 102
WAILUKU, MAUI, HAWAII 96793
PHONE: (808) 242-0032
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Appendix E

Tax Map Key

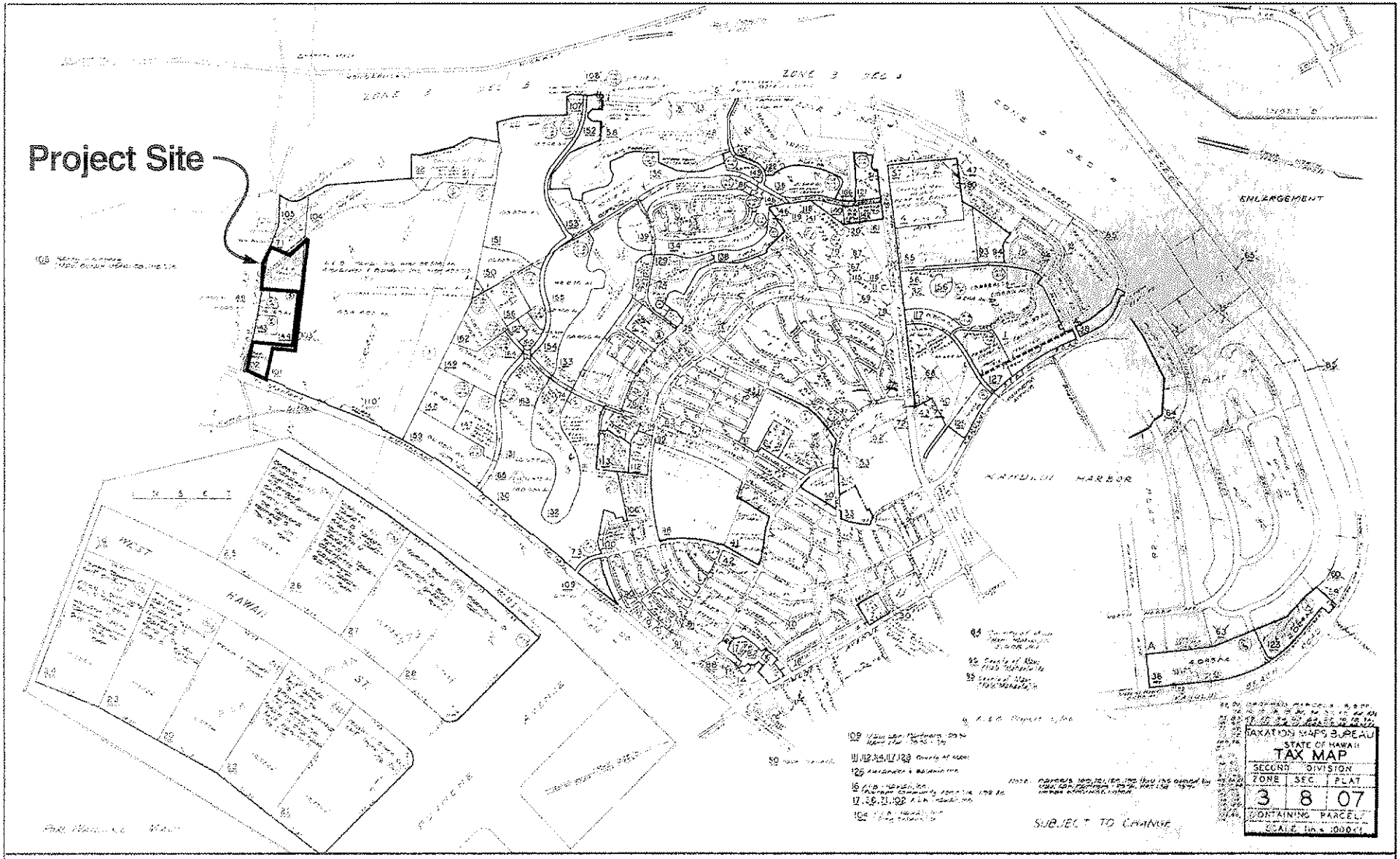

Figure ___

Waikō Baseyard Light Industrial Subdivision

Tax Map Key (2) 3-8-007-102

Prepared for:
Waikō Industrial Investment, LLC

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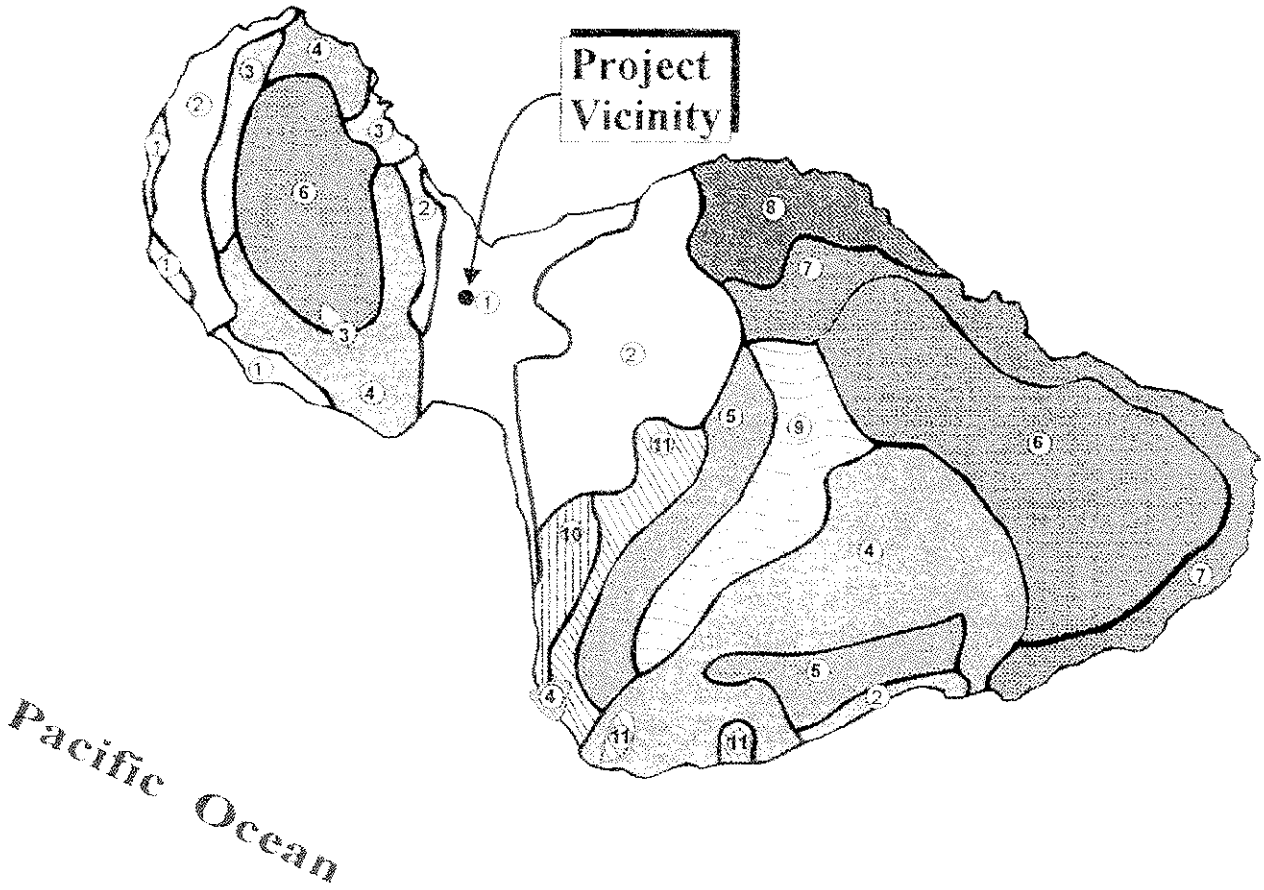
Appendix F

Soil Association Map

LEGEND

- 1 Pulehu-Ewa-Jaucas association
- 2 Waiakoa-Keahua-Molokai association
- 3 Honolua-Olelo association
- 4 Rock land-Rough mountainous land association
- 5 Pau Pa-Kula-Pane association
- 6 Hydrandepts-Tropaquods association
- 7 Hana-Makaalae-Kailua association
- 8 Pauwela-Haiku association
- 9 Laumaia-Kaipoipoi-Olinda association
- 10 Keawakapu-Makena association
- 11 Kamaole-Oanapuka association



Map Source: USDA Soil Conservation Service

Figure ___

Waikō Baseyard Light Industrial Subdivision
TMK (2) 3-8-007-102
Soil Association Map

Prepared for:
Waikō Industrial Investment, LLC

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Appendix G

ALISH Map

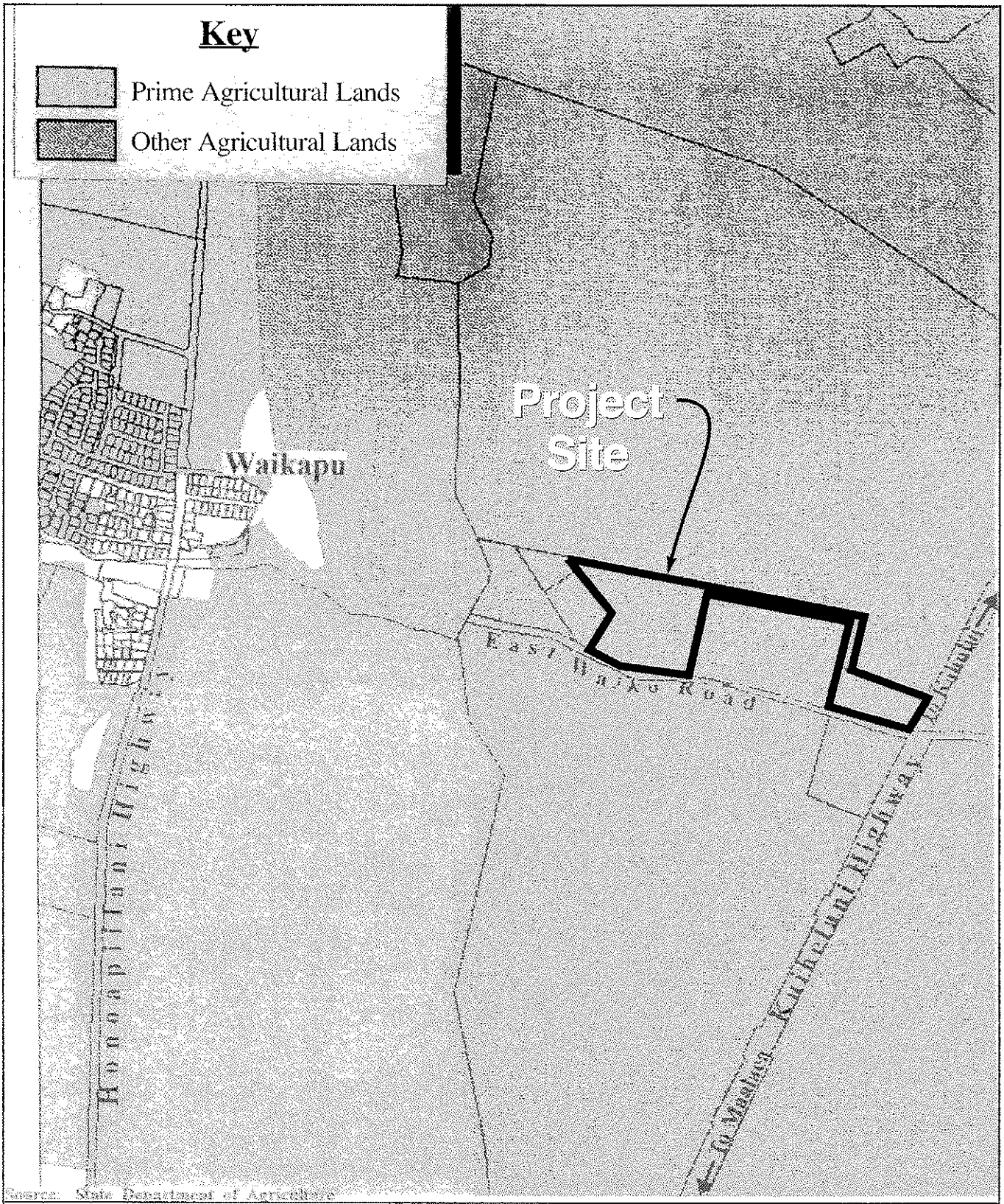

Figure ___ Waikō Baseyard Light Industrial Subdivision

TMK (2) 3-8-007-102

ALISH Map

Prepared for:
Waikō Industrial Investment, LLC

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DEVELOPMENT CONSULTING GROUP

Appendix H

Flood Insurance Rate Map

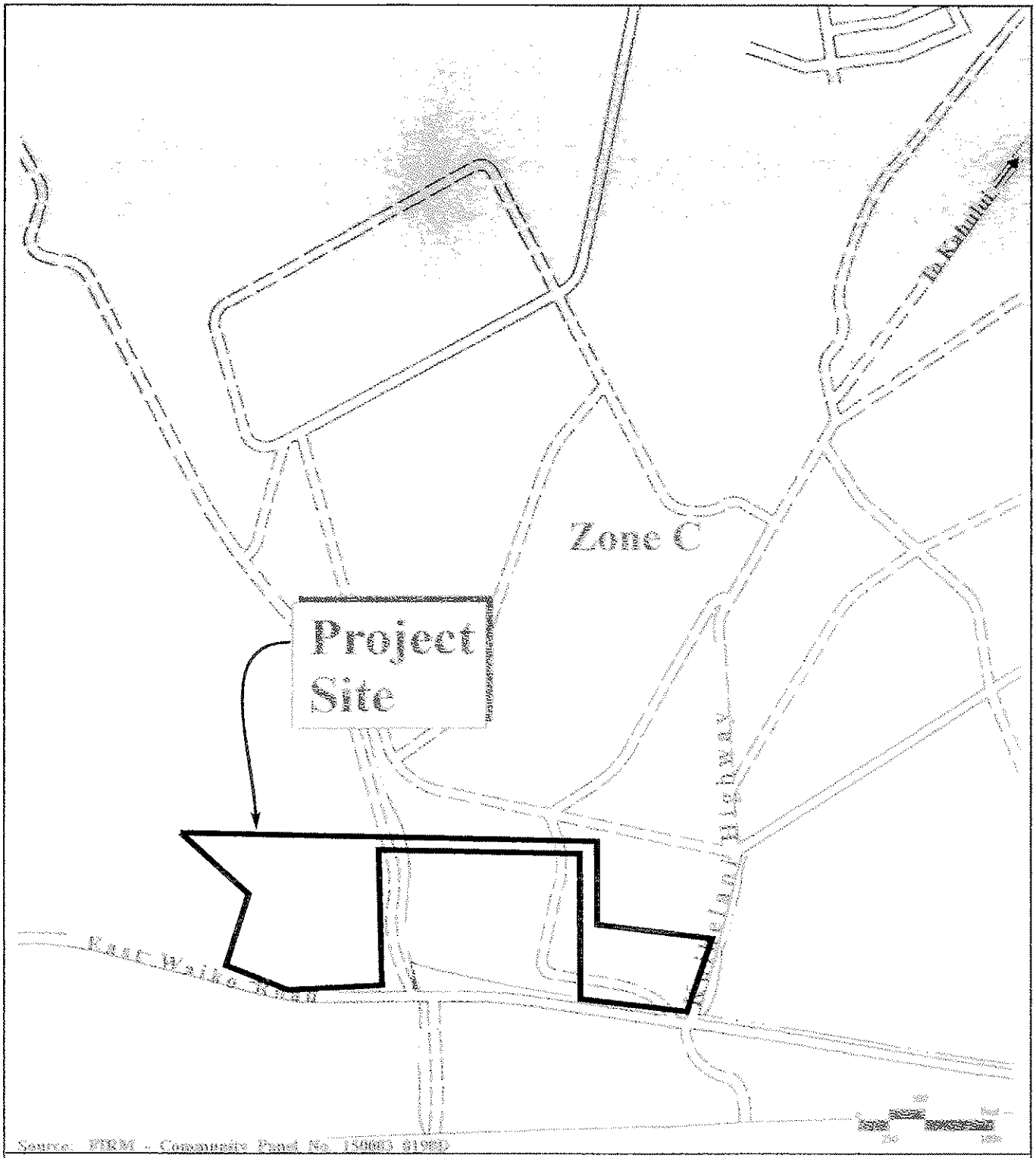

Figure ___

Waikō Baseyard Light Industrial Subdivision
TMK (2) 3-8-007-102
Flood Insurance Rate Map

Prepared for:
Waikō Industrial Investment, LLC

BAGOYO
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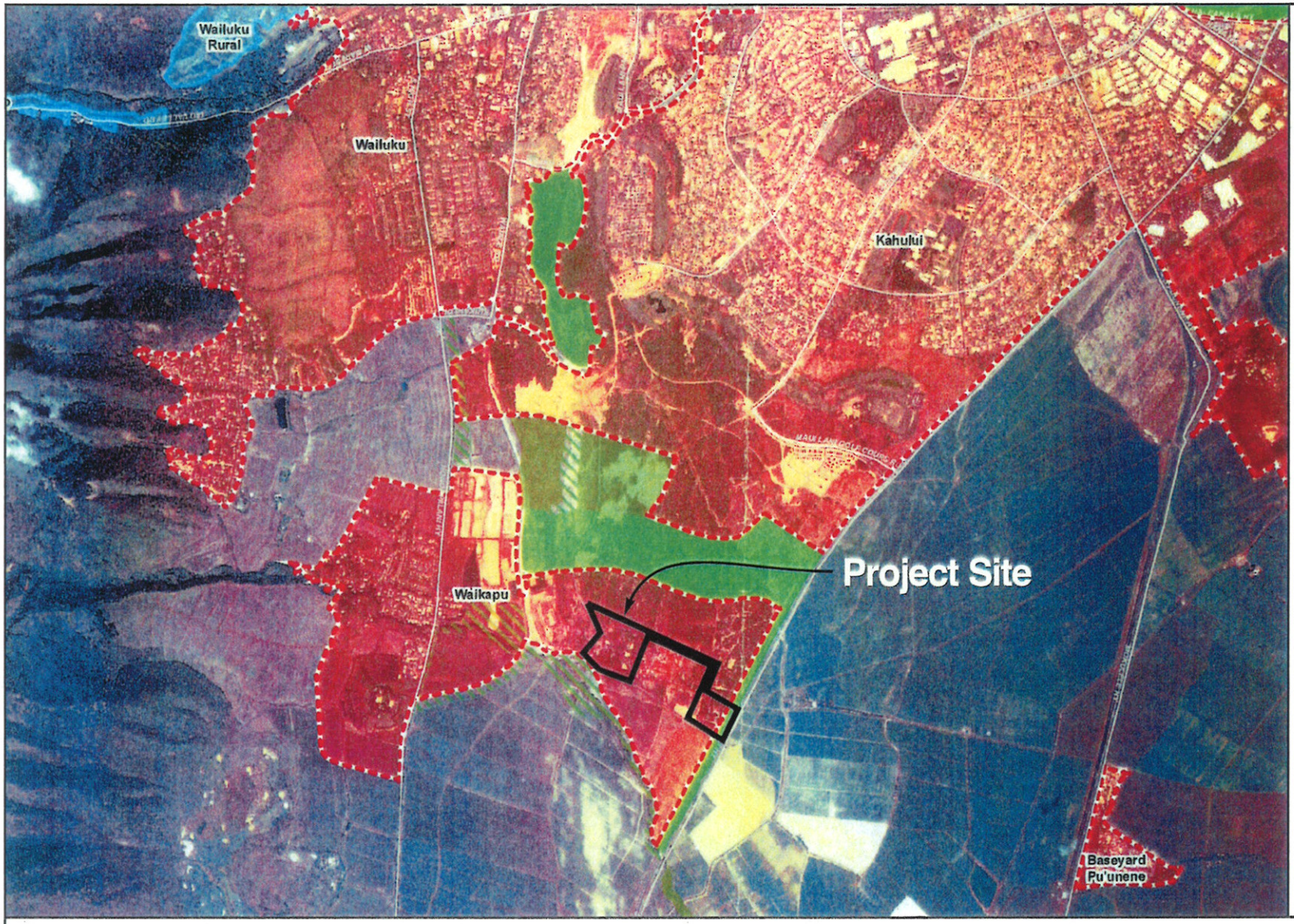
Appendix I

Proposed General Plan Map



Land Use/ Directed Growth IRC Urban/Rural Growth Boundaries Map

Waikapu / Kahului

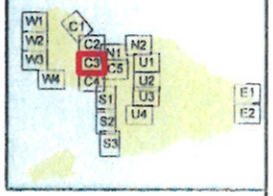
C3

Legend

Primary Road

Growth Boundaries: IRC Version

- Urban Growth Boundary
- Rural Growth Boundary
- Country Town
- Rural Service Center
- Land Use – Preservation
- Land Use – Regional Park
- Urban Form – Greenbelt
- Urban Form – Greenway



Feet

0 425 850 1,700 2,550 3,400

1 inch = 2,000 feet

This is not a zoning map. Please contact the Planning Department for Zoning confirmation.

PREPARED BY:

Long Range Planning Division
Department of Planning
County of Maui
200 South High Street
Wailuku, Hawaii 96793

As Directed By:
Maui General Plan
Advisory Committee

Figure ___

Prepared for:
Waikō Industrial Investment, LLC

Waikō Baseyard Light Industrial Subdivision
TMK (2) 3-8-007-102
Proposed General Plan

BAGOYO
DEVELOPMENT
CONSULTING GROUP

Appendix J

Preliminary Engineering Report

PRELIMINARY ENGINEERING REPORT

FOR

WAIKO INDUSTRIAL BASEYARD

Waikapu, Wailuku, Maui, Hawaii

T.M.K.: (2) 3-8-007: 102

Prepared for:

Waiko Industrial Investment, LLC
c/o 1300 N. Holopono Street, Suite 201
Kihei, Maui, Hawaii 96753

Prepared by:

May 2011

TABLE OF CONTENTS

PRELIMINARY ENGINEERING REPORT
FOR
WAIKO INDUSTRIAL BASEYARD
T.M.K.: (2) 3-8-007: 102

1.0 INTRODUCTION

The purpose of this report is to provide information on the existing infrastructure which will be servicing the proposed project. It will also evaluate the adequacy of the existing infrastructure and anticipated improvements which may be required for the proposed project.

The subject parcel is identified as T.M.K.: (2) 3-8-007: 102, and encompasses an area of approximately 31.22 acres. It is also known as Lot 1-C of the Kopaa Subdivision No. 2. It is bordered by undeveloped land to the north, a cattle feed lot and Kuihelani Highway to the east, Waiko Road to the south, and undeveloped land to the west. The southwesterly end of the parcel is being used to raise cattle. The parcel is U-shaped and surrounds three sides of the Consolidated Baseyard Subdivision. A roadway leading to the Campaign Recycle Maui Composting Center traverses along the western boundary of the project site. Existing overhead utility lines are located within the property and along a portion of the northern boundary. A portion of the western section of the parcel is currently being used to raise cattle and as a construction baseyard for Fong Construction Company.

A & B Hawaii, Inc. is planning their Waiale Project to the north of the project site and to the south of Waiko Road. It will be a village concept with mixed uses. Immediately to the north of the project site, VMX and multi-family uses are being proposed.

The proposed project consists of developing thirty-seven industrial lots, ranging in size from approximately 10,000 square feet to 78,000 square feet and a commercial lot of approximately 8.4 acres. Proposed improvements include paved roadways, concrete curb, gutter and sidewalk; private water system, and landscaping. Underground water, sewer, drainage, electrical, and telephone systems will also be constructed.

2.0 EXISTING INFRASTRUCTURE

2.1 ROADWAYS

Honoapiilani Highway is located approximately 4,000 feet west of the project site. It is a two-lane undivided State Highway which runs in the north-south

direction into Wailuku town. The speed limit is 35 miles per hour (mph) in the vicinity of Waiko Road. The Waiko Road intersection is signalized with existing left turn pockets into East and West Waiko Road.

Kuihelani Highway is located immediately east of the project site. It is a two-way, four-lane divided State arterial highway which also runs in a north-south direction. The posted speed limit on Kuihelani Highway at Waiko Road is 55 mph. There is an existing traffic signal at the Kuihelani Highway-Waiko Road intersection. The southern terminus of Kuihelani Highway is its intersection with Honoapiilani Highway. The northern terminus is at its intersection with Puunene Avenue, where it turns into Dairy Road.

Waiko Road is a two-lane County collector roadway that connects Honoapiilani Highway and Kuihelani Highway. The posted speed limit on Waiko Road is 20 mph. Immediately east of Honoapiilani Highway, Waiko Road provides access to a residential community. Further east, Waiko Road provides access to industrial and livestock land uses. There is a weight limit of 10,000 pounds from vehicles entering and exiting Waiko Road from Honoapiilani Highway.

Waiale Road is a two-lane road with its southern terminus at Waiko Road. It turns into Lower Main Street near Kaahumanu Avenue. The section of Waiale Road from Waiko Road to Kuikahi Drive is privately owned. The segment from Kuikahi Drive to Lower Main Street is County owned and used as a collector road.

Access to the project site will be from Waiko Road.

2.2 DRAINAGE

As previously mentioned, the subject parcel is U-shaped with a 60-foot wide strip separating the western and eastern sections of the parcel. The western section of the parcel slopes down in a west to east direction ranging in elevation from approximately 272 feet to 232 feet above mean sea level, with an average slope of approximately 3.0%. The eastern section of the parcel slopes down in a west to east direction ranging in elevation from approximately 208 feet to 198 feet above mean sea level, with an average slope of approximately 2.2%. The 60-foot section separating the western and eastern sections of the parcel slopes down in a west to east direction ranging in elevation from approximately 232 feet to 208 feet above mean sea level, with an average slope of approximately 2.0%.

According to the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August, 1972)," prepared by the United States Department of Agriculture Soil Conservation Service, the soil within the project site is classified as Puuone sand (PZUE). It is characterized as having rapid permeability above the cemented layer, slow runoff and a moderate to severe wind erosion hazard.

Presently, onsite surface runoff sheet flows across the western section of the parcel in a west to east direction. A portion of the runoff sheet flows into an existing pond located near the northern boundary. The pond is a depression in the ground between 5 and 6 feet deep. The remainder of the runoff eventually sheet flows toward the 60-foot section of the parcel separating the western and eastern sections. Runoff from the 60-foot section of the parcel sheet flows in a west to east direction and eventually into the adjacent undeveloped properties. Runoff from the eastern section of the parcel sheet flows in a west to east direction. Eventually all of the onsite runoff sheet flows into the Kuihelani Highway right-of-way.

There are two existing grated inlet catch basins at the intersection of Waiko Road and Kuihelani Highway. Runoff from the project site either sheet flows into the grated catch basins or into an existing swale within the Kuihelani Highway right-of-way. Runoff along Kuihelani Highway flows in a northerly direction and outlets into the existing Kuihelani Highway drainage facilities.

According to Panel Numbers 1500030393E and 1500030394E of the Flood Insurance Rate Map, dated September 25, 2009, prepared by the United States Federal Emergency Management Agency, the project site is situated in Flood Zone X. Flood Zone X represents areas outside of the 0.2% annual chance flood plain.

It is estimated that the present 50-year, 1-hour runoff from the project site is 15.16 cfs (West Section) + 1.27 cfs (Middle Section) + 8.24 cfs (East Section) = 24.67 cfs and the corresponding runoff volume is 27,293 cubic feet (West Section) + 2,286 cubic feet (Middle Section) + 12,355 (East Section) = 41,934 cubic feet.

2.3 SEWER

There are no County sewer facilities within or adjacent to the project site. There is an existing 8-inch sewerline crossing East Waiko Road, approximately 3,000 feet west of the project site. Said 8-inch sewerline is located east of

Makai Waikapu Village and enlarges to a 12-inch sewerline and connects to the sewer system on Waiale Road and flows by a gravity sewerline to the Wailuku Pump Station. The Wailuku Pump Station is located at the end of Eluene Place and to the northwest of Kahului Harbor. Wastewater collected at the Wailuku Pump Station is pumped to the Kahului Wastewater Reclamation Facility in Naska.

The Kahului Wastewater Reclamation Facility has a capacity of 7.9 million gallons per day (mgd). As of March 2010, the average daily flow into the Kahului Wastewater Reclamation Facility was approximately 4.9 mgd. However, according to the Wastewater Reclamation Division, County of Maui, the total allocation, including projects already permitted, is 6.95 mgd.

2.4 WATER

Domestic water and fire flow for the Waikapu area is serviced from the 300,000 gallon Waikapu Tank, which is at elevation of 764 feet. A series of 8-inch and 12-inch waterlines traverse along Waiko Road from the tank to Honoapiilani Highway. To the east of Honoapiilani Highway, approximately 4,000 feet from the project site, a 12-inch waterline traverses easterly on Waiko Road and terminates at the Waiko Baseyard Subdivision, approximately 1,500 feet to the west of the project site.

The source for this water system is the Mokuhau wells located in Happy Valley. According to the Department of Water Supply, the Waikapu Tank is at or near capacity. It is inadequate to provide storage for fire flow and domestic water for this project.

There is no County water system currently servicing the project site or adjacent properties. However, there is an onsite private water system servicing the Consolidated Baseyard Subdivision, which is located between the western and eastern sections of the subject parcel. The private water system consists of two wells, a 350,000 gallon storage tank, pump building, and water appurtenances for the subdivision. According to the *"Preliminary Engineering Report for New Potable Water Sources at Consolidated Baseyard Subdivision"*, prepared by Austin Tsutsumi & Associates, Inc. in February 2006, the average daily demand for the Consolidated Baseyard Subdivision was 76,400 gallons per day (GPD) and 6,600 GPD for common area irrigation. The total daily demand amounted to 83,000 GPD, with an average daily demand of 3,860 GPD per acre for the lots. This demand is less than the 6,000 GPD per acre listed

in the Department of Water Supply standards. However, the demand is close to the 4,000 GPD per acre standard used by the other municipal water systems in the State.

2.5 ELECTRIC AND TELEPHONE

There is an existing electrical transmission system traversing through the project site. Said system is located within an easement granted to Maui Electric Company, Ltd. An existing electrical distribution system is located approximately 1,000 feet to the west of the property on land owned by A & B Properties, Inc.

3.0 ANTICIPATED INFRASTRUCTURE IMPROVEMENTS

3.1 ROADWAYS

Access to the proposed subdivision will be from Waiko Road. From Waiko Road, there will be access to Honoapiilani Highway to the west and Kuihelani Highway to the east.

The interior subdivision streets will have 56 foot right-of-ways and will be improved to County standards. The cul-de-sacs will have an edge of pavement radius of 40 feet and a right-of-way radius of 50 feet. The larger traffic lanes and cul-de-sac pavement radius are to accommodate the larger fire trucks in the Central Maui district.

The two north-south subdivision roadways will terminate at the northern boundary of the parcel. These roadways are master-planned to provide future connections to A & B's Waiale Project. Both roadways will connect to Waiko Road.

Waiko Road, fronting the project site has an existing right-of-way of 60 feet. It will be improved to accommodate the two new intersections providing access into the subdivision and the recommended turning lanes. The improvements will be designed and constructed to meet County standards.

All of the subdivision roadways will be constructed to County standards. In addition, concrete wheel chair ramps will be constructed at appropriate locations to comply with ADA standards. Appropriate striping and signage will be installed in accordance with the Department of Public Works.

A Traffic Impact Analysis Report was completed for the project on May 17, 2011 by Phillip Rowell and Associates, which provided the following summary:

"1. The level-of-service analysis concluded that the signalized intersections (Honoapiilani Highway at Waiko Road and Kuihelani Highway at Waiko Road) will operate at acceptable levels-of-service without additional improvements.

2. The southbound approach of Waiale Road at Waiko Road will operate at Level-of-Service C during the morning peak hour and Level-of-Service F during the afternoon peak hour. An assessment of potential improvements concluded that installation of a left turn refuge lane for left turns from southbound Waiale Road to eastbound Waiko Road would result in Level-of-Service D and is therefore recommended. However, since the projected traffic volumes that result in the unacceptable level-of-service reflect full build out of the project, it would be prudent to defer the improvements until the left turn refuge lane is required. It is possible that the traffic projections, which are based on Institute of Transportation Engineers trip generation data, may not be realized. The intersection should be monitored and re-assessed when the proposed industrial park is approximately 50% occupied.

3. The current site plan for the proposed industrial park indicates two separate parcels. The parcel is located along the north side of Waiko Road between Kuihelani Highway and the east property line of the Consolidated Baseyard. Approximately 100,000 square feet of retail and commercial floor space can be constructed on this parcel. The level-of-service analysis determined that access to and egress from the project should be provided by a major driveway (unsignalized) along Waiko Road along the west boundary of the project. The main driveway, Drive A, should have separate left turn lanes along each approach and a left turn refuge lane along Waiko Road for left turns from the project. It is recommended that this driveway be monitored as the parcel is developed to determine if additional improvements are required. As with the previous intersection, the reassessment should be performed when the retail portion of the project is approximately 50% occupied.

4. The second parcel is located west of the Consolidated Baseyard and will consist of 19.7 acres of light industrial uses. Access to and egress from

this parcel will be provided by one driveway, Drive B. This driveway will be unsignalized and all approaches in be one lane only."

3.2 DRAINAGE

The project's drainage system will be designed to accommodate the increase in runoff generated by the development of the entire project site. Subdivision improvements will include a master drainage system within the roadways, including curb-inlet catch basins, manholes, drainlines and a drain stubout to each lot. As each lot is developed, it will be required to install an onsite drainage system to collect runoff from the site and provide a drainline connection to the drain stubout to the master drainage system. The master drainage system will be sized to accommodate runoff from the roadways and developed lots. The runoff will be conveyed to a master underground perforated drainage system to accommodate the increase in runoff from the subdivision. It is estimated that the post development runoff = 75.23 cfs (West Section) + 6.30 cfs (Middle Section) + 41.96 cfs (East Section) = 123.49 cfs. Accordingly, the developed runoff volume is 67,705 cubic feet (West Section) + 5,671 cubic feet (Middle Section) + 27,692 cubic feet (East Section) = 101,068 cubic feet, a net increase of 59,134 cubic feet.

As each individual lot is developed, the building permit applicant will be required to construct an onsite storm runoff collection system and connect to the drainline stubout that was provided to the lot.

There will be no increase in runoff sheet flowing from the project site after completion of the development. This is in accordance with Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui.

3.3 SEWER

The nearest County sewer system is located approximately 3,000 feet from the project site. A master sewer system will be installed within the subdivision roadways and a sewer lateral will be provided to each lot. The master sewer system will outlet into a community leach field, which will require review and approval from the State Department of Health (SDOH).

Individual wastewater systems (IWS) will be used for the treatment of wastewater for each lot. Each lot will be required to connect the outlet line of

the IWS to the sewer lateral provided. Wastewater will be conveyed from each lot into the community leach field. Each IWS will adhere strictly to the requirements set forth by the SDOH.

Using a similar analysis for the Consolidated Baseyard Subdivision, it is estimated that the average daily wastewater contribution is 16,436 gallons (see Appendix C).

As the project progresses and building permits are applied for, the building permit applicant will be required to submit the design of an IWS. It is the responsibility of the SDOH to review and approve the IWS. Some of the restrictions of an IWS are that it has to be at least 5 feet away from the wall line of any structure, 9 feet from a property line, 50 feet from a stream, 10 feet from a large tree, and 1,000 feet from a potable drinking water well (if cesspools are used). The IWS to be used for the subdivision will be aerobic units which will allow installation in close proximity to the existing well.

3.4 WATER

The existing wells and storage tank which are currently being used as the source for domestic water and fire flow for the Consolidated Baseyard Subdivision will be modified and used for the project. The Developer will upgrade the existing water facilities as required to meet domestic water and fire flow requirements for the project.

The domestic water demand, as determined by the Domestic Consumption Guidelines set forth by the Department of Water Supply, for the project is calculated to be approximately 142,920 gallons per day. However, using the analysis for the Consolidated Baseyard Subdivision, it is estimated that the average daily domestic water demand is 139,890 gallons (see Appendix B). In accordance with Department of Water Supply standards, the fire flow demand for a light industrial or commercial development is 2,000 gallons per minute for a 2-hour duration. The maximum spacing for fire hydrants is 250 feet. The Developer will upgrade the existing offsite Consolidated Baseyard Subdivision water system to meet the demands.

A memorandum regarding the *"Capability of the Two Consolidated Baseyard Wells to Supply the Proposed Waiko Industrial Park"*, dated March 1, 2011, was prepared by Tom Nance Water Resource Engineering. In the

Conclusions, Recommendations, and Other Observations section of the memorandum, the following was stated:

"1. *The addition of water service to the Waiko Industrial Park from the Consolidated Baseyard system would require both of its well pumps to be replaced with new pumps capable of delivering 235 GPM to the system's 0.35 MG, 250-foot (spillway elevation) tank. Both well pumps would be driven by 25-horsepower motors. The pumps presently in Wells 1 and 2 are driven by 7.5- and 15-horsepower motors, respectively.*

2. *Both wells have adequate hydraulic capacity to deliver 235 GPM to the 250-foot storage tank with only modest drawdowns. The 4-inch pipeline from Well 2 to the tank, of about 500-foot length, could accommodate the higher pumping rate.*

3. *Based on available data, it appears that long-term salinity will be stable at the increased pumping rate. However, neither well has been used to a significant extent or pumped at the required higher rate. As an assurance that both parties need to have, it would be appropriate to install a 235 GPM pump in one of the wells and run a pump test of a minimum of 72 hours duration to monitor the salinity response.*

4. *Consolidated Baseyard has a 0.35 MG storage tank. Two sizing criteria were applied by ATA to determine the tank's size. As indicated below, applying these two criteria with the addition of the Waiko Industrial Park will not require additional storage.*

   Criterion 1. Provide the maximum day demand with no credit for well inflow.

	Max. Day Amount (MG)
Consolidated Baseyard	*0.1245*
Waiko Industrial Park	*0.2083*
Combined Total	*0.3328 (less than 0.35 MG)*

Criterion 2. Provide a 2,000 GPM fir flow for two-hour duration with coincident maximum day demand, the largest well out of service, and the reservoir 3/4 full at the start of the fire.

Consolidated Baseyard: 324,233 Gallons (less than 0.35 MG)

Addition of Waiko Industrial Park: 319,378 Gallons (also less than 0.35 MG)

5. *DOH will not allow individual wastewater disposal systems (cesspools or leach fields) within 1,000 feet of either the Consolidated Baseyard drinking water wells. Many of the Waiko Industrial Park lots are inside these 1,000-foot setback distances (Figure 7). Consolidated Baseyard dealt with this issue by requiring advanced septic systems for each lot and delivery of the effluent from these septic systems to a common leach field in the southeast corner of the subdivision. A similar accommodation will be required of the Waiko Industrial Park."*

3.5 ELECTRIC AND TELEPHONE

The proposed electrical and telephone distribution systems to the subject subdivision will be installed overhead from the existing overhead facilities located approximately 1,000 feet to the west of the project site. Within the project site, the electric and telephone systems will be installed underground in accordance with the utility companies rules and regulations. Street lights will be installed along the subdivision streets at intervals to be determined by the electrical engineer.

APPENDIX A
HYDROLOGIC CALCULATIONS

Hydrologic Calculations

Purpose: Determine the increase in onsite surface runoff from the undeveloped portion of the project site based on a 50-year, 1-hour storm.

A. Determine the Runoff Coefficient (C):

DEVELOPED AREAS:

Infiltration (Negligible)	= 0.20
Relief (Flat)	= 0.00
Vegetal Cover (None)	= 0.07
Development Type (Industrial)	= 0.55
	C= 0.82

EXISTING AREAS:

Infiltration (Medium)	= 0.07
Relief (Flat)	= 0.00
Vegetal Cover (High)	= 0.00
Development Type (Landscape)	= 0.15
	C= 0.22

EXISTING CONDITIONS:

West Section = 19.70 Acres
Middle Section = 1.65 acres
East Section = 9.87 Acres

DEVELOPED CONDITIONS:

West Section = 19.70 Acres
Middle Section = 1.65 Acres
East Section = 9.87 acres

B. Determine the 50-year 1-hour rainfall:

i_{50} = 2.5 inches

Adjust for time of concentration to compute Rainfall Intensity (I):

Existing Condition (Western Section):

T_c = 30 minutes

I = 4.31 inches/hour

Existing Condition (Middle Section):

T_c = 30 minutes

I = 4.31 inches/hour

Existing Condition (Eastern Section):

T_c = 25 minutes

I = 4.31 inches/hour

Developed Condition (Western Section):

T_c = 15 minutes

I = 4.31 inches/hour

Developed Condition (Middle Section):

T_c = 15 minutes

I = 4.31 inches/hour

Developed Condition (Eastern Section):

T_c = 11 minutes

I = 4.31 inches/hour

C. Drainage Area (A) = See previous breakdown

D. Compute the 50-year storm runoff volume (Q):

Q = CIA

Existing Condition (West Section):

Q = (0.22)(3.50)(19.70)

= 15.16 cfs

Existing Condition (Middle Section):

Q = (0.22)(3.50)(1.65)

= 1.27 cfs

Existing Condition (East Section):

$Q = (0.22)(3.79)(9.87)$

$= 8.24$ cfs

Developed Condition (West Section):

$Q = (0.82)(4.66)(19.70)$

$= 75.23$ cfs

Developed Condition (Middle Section):

$Q = (0.82)(4.66)(1.65)$

$= 6.30$ cfs

Developed Condition (East Section):

$Q = (0.82)(5.18)(9.87)$

$= 41.96$ cfs

The total existing runoff from the project site = 15.16 cfs (West Section) + 1.27 cfs (Middle Section) + 8.24 cfs (East Section) = 24.67 cfs. The total developed runoff from the project site = 75.23 cfs (West Section) + 6.30 cfs (Middle Section) + 41.96 cfs (East Section) = 123.49 cfs. Accordingly, the existing runoff volume generated from a 50-year, 1-hour storm is 27,293 cubic feet (West Section) + 2,286 cubic feet (Middle Section) + 12,355 (East Section) = 41,934 cubic feet and the developed runoff volume is 67,705 cubic feet (West Section) + 5,671 cubic feet (Middle Section) + 27,692 cubic feet (East Section) = 101,068 cubic feet, a net increase of 59,134 cubic feet.

APPENDIX B
WATER DEMAND CALCULATIONS

WATER DEMAND CALCULATIONS

Per 2002 Water System Standards:

Average Daily Demand (ADD) = 6,000 gallons per acre per day (Commercial)
= 6,000 gallons per acre per day (Light Industrial)

ADD = (6,000)(8.43) = 50,580 gpd (Commercial)

= (6,000)(15.39) = 92,340 gpd (Light Industrial)

Average Daily Demand = 50,580 gpd + 92,340 gpd = 142,920 gpd

(Note-the land area used in the ADD calculations excluded the proposed roadways from the calculations)

The report prepared by Tom Nance Water Resource Engineering stated that the anticipated daily domestic water demand is 124,890 gallons and an allotment of 15,000 gallons for the common area irrigation. Therefore, the total daily water demand is 139,890 gallons.

APPENDIX C
WASTEWATER CALCULATIONS

WASTEWATER CALCULATIONS

The following wastewater calculations are based on the design criteria used for the *"Consolidated Baseyard Subdivision On-Site Leaching Fields"*:

Maximum employees per acre = 435 / 23.163 = 18.78 employees per acre
Wastewater Contribution for Industrial Shop is 25 gallons/employee/day

Total maximum employees = (31.22)(18.78) = 586.31 (use 587 employees)

Wastewater Contribution = (587)(25) = 16,436 gpd

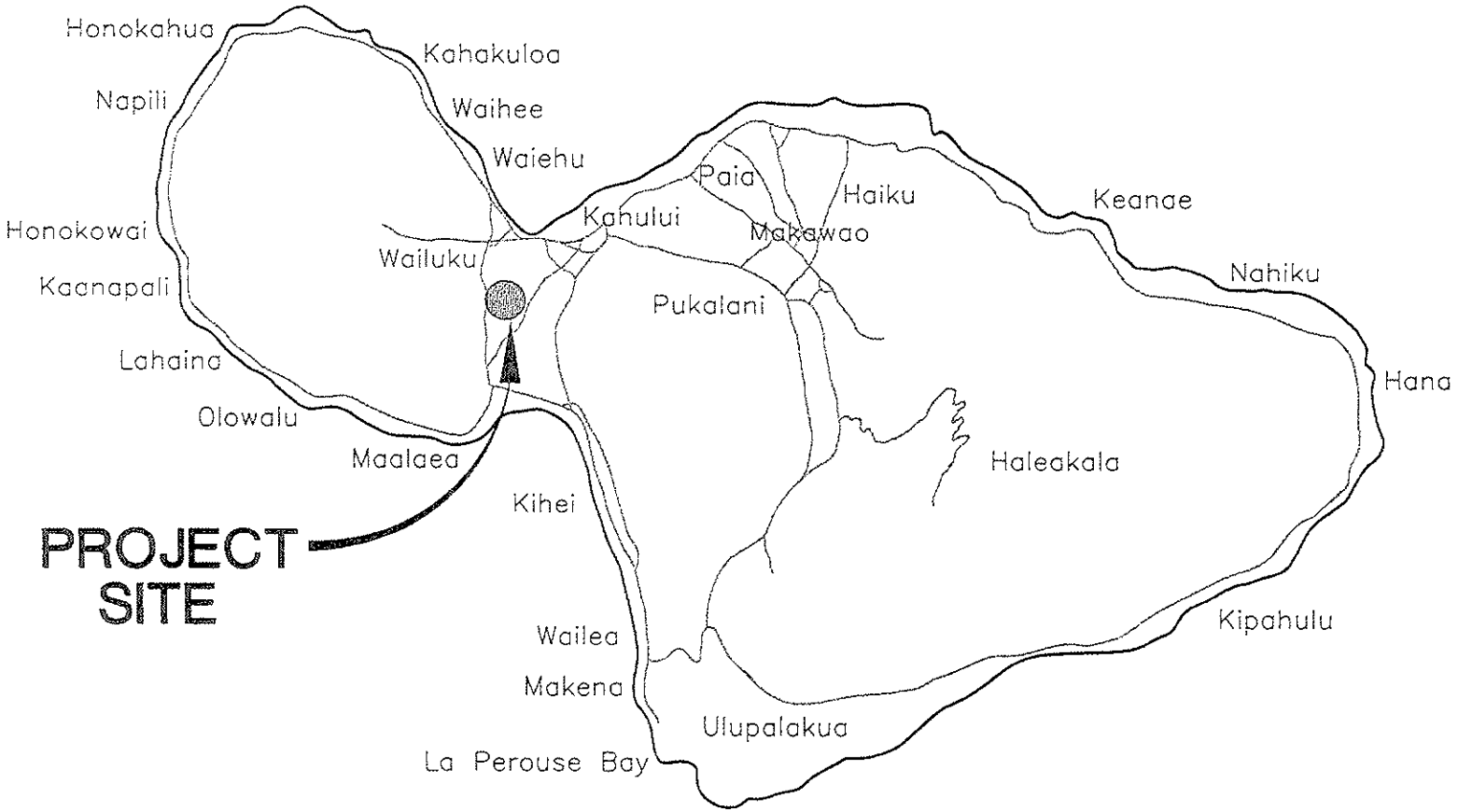
EXHIBITS

1 Location Map

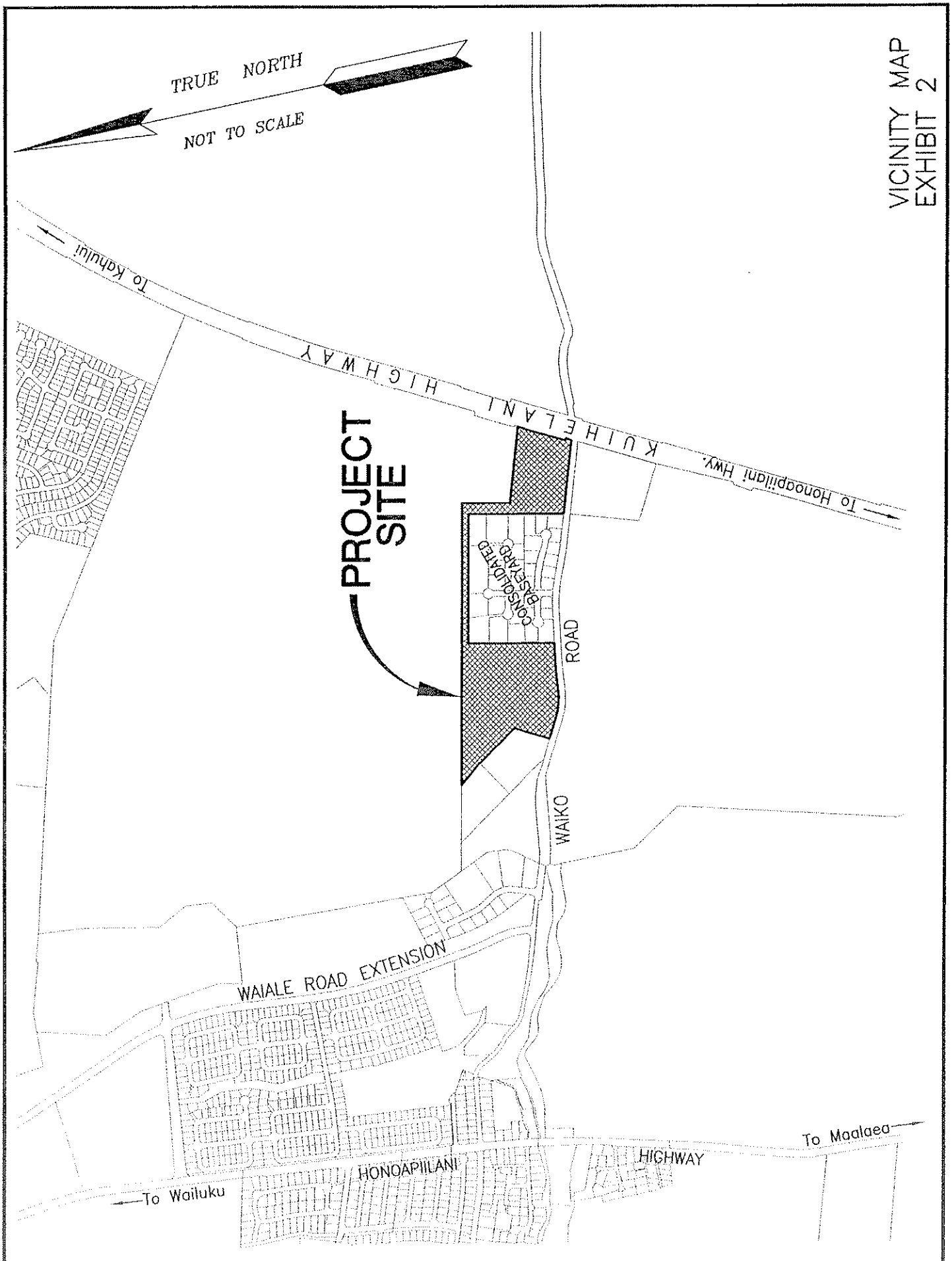
2 Vicinity Map

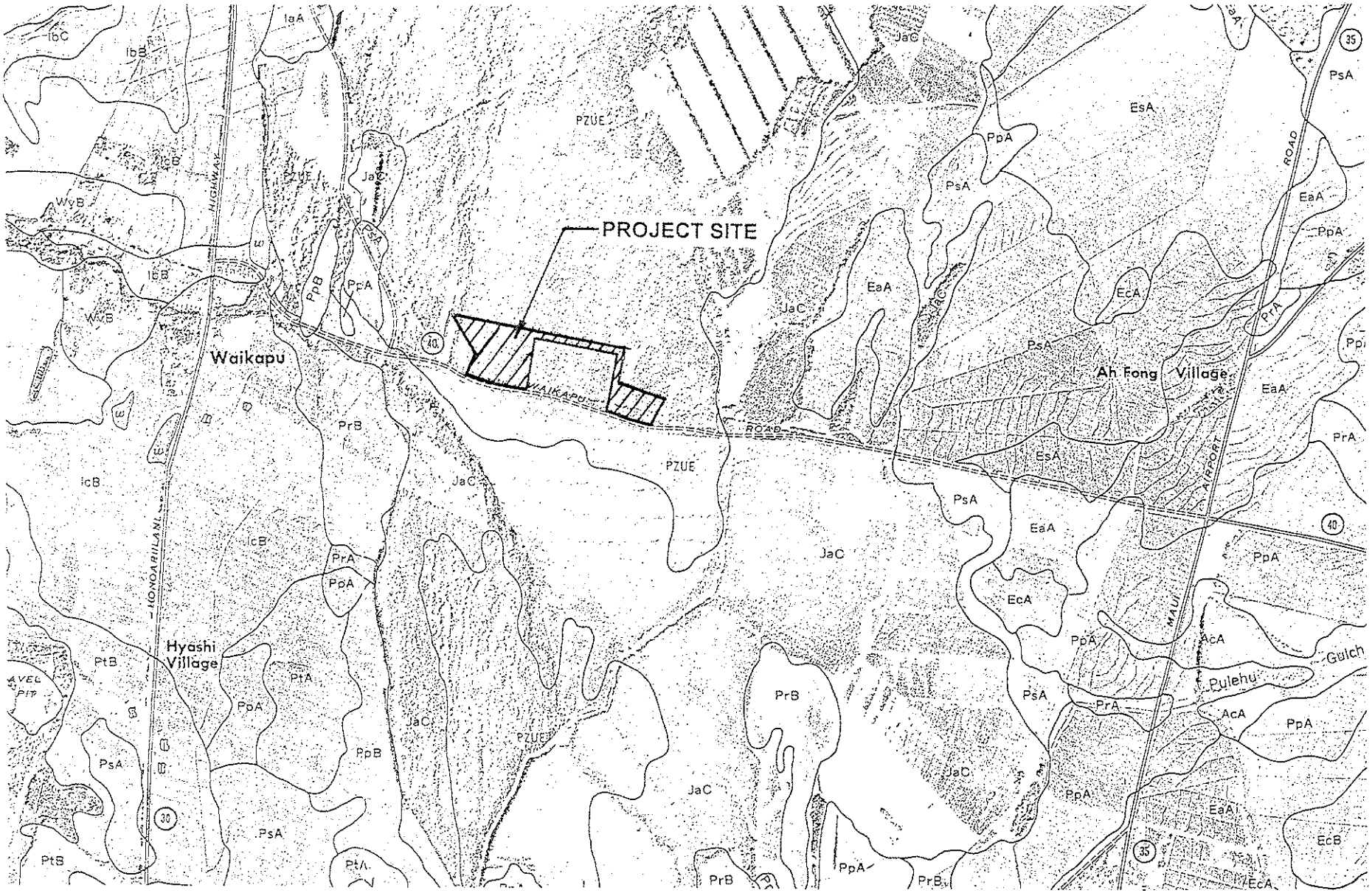
3 Soil Survey Map

4 Flood Insurance Rate Map



LOCATION MAP
EXHIBIT 1

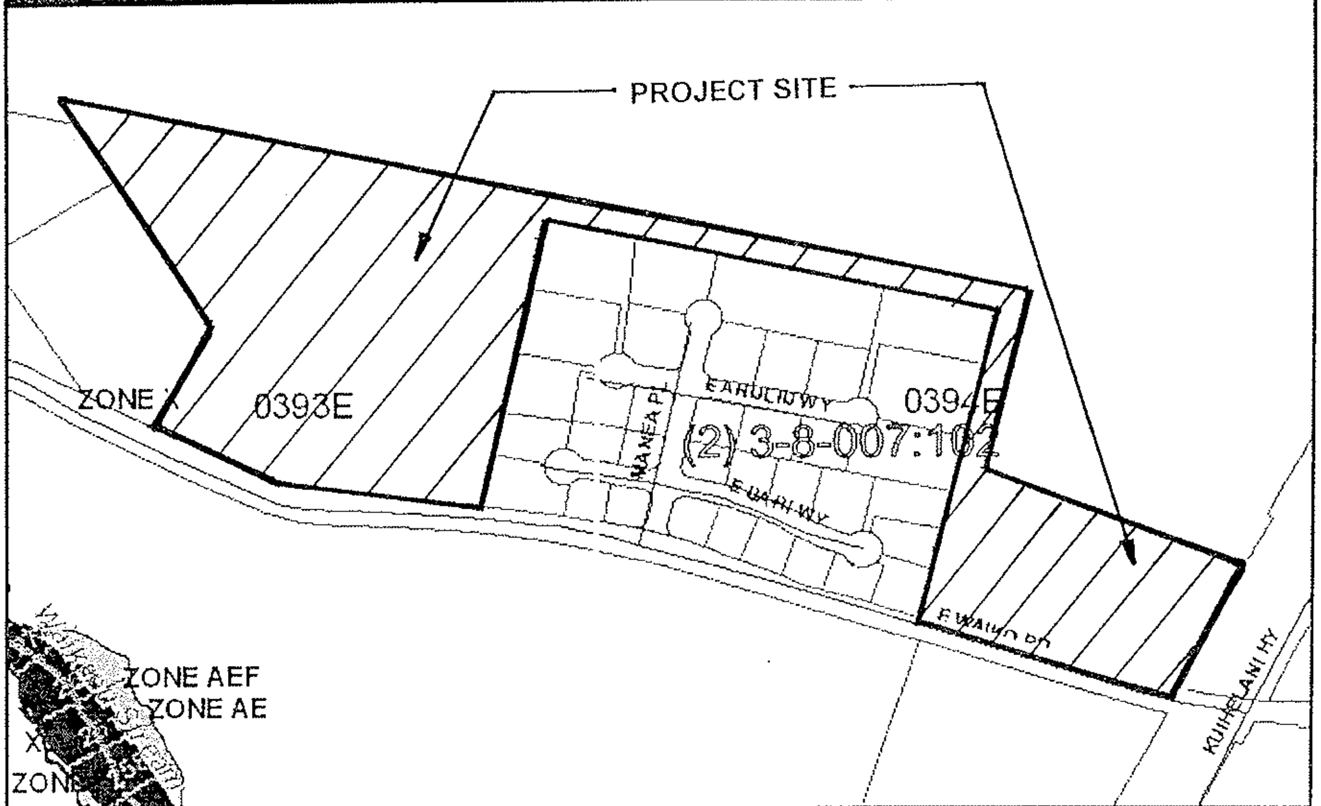

VICINITY MAP
EXHIBIT 2
TRUE NORTH
NOT TO SCALE
To Kahului
KUIHELANI HIGHWAY
To Honoapiilani Hwy.
PROJECT SITE
CONSOLIDATED BASEYARD
ROAD
WAIKO
WAIALE ROAD EXTENSION
HONOAPIILANI
HIGHWAY
To Maalaea
To Wailuku



SOIL SURVEY MAP
EXHIBIT 3

State of Hawaii

FLOOD HAZARD ASSESSMENT REPORT



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:	MAUI
TMK NO:	(2) 3-8-007-102
PARCEL ADDRESS:	445 E WAIKO RD
FIRM INDEX DATE:	SEPTEMBER 25, 2009
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL(S):	1500030393E-SEPTEMBER 25, 2009 1500030394E-SEPTEMBER 25, 2009
PARCEL DATA FROM:	AUGUST 2010
IMAGERY DATA FROM:	MAY 2005

IMPORTANT PHONE NUMBERS

County NFIP Coordinator
County of Maui
Francis Cerizo, CFM (808) 270-7771
State NFIP Coordinator
Carol Tyau-Beam, P.E., CFM (808) 587-0267

FLOOD INSURANCE RATE MAP
EXHIBIT 4

Appendix K

Phase I - Environmental Site Assessment Report

MALAMA
Environmental

Environmental Site Assessment:
Phase I Investigation

Subject Site:

NOBRIGA'S FEEDLOT AND RANCH (PORTION)
FONG CONSTRUCTION BASEYARD CO.
445 EAST WAIKO ROAD
WAIKAPU, MAUI, HAWAII 96793
T.M.K. (2) 3-8-007: 102

Prepared for:

WAIKO INDUSTRIAL INVESTMENTS, LLC
1300 HOLOPONO STREET, SUITE 201
KIHEI, MAUI, HAWAI'I 96753

ATTN: MR. JOHN MALONEY

Conducted and Compiled by:

Malama Environmental (MEV, LLC)
MEV Project Number #0912-0150
January 26, 2010

P.O. Box 880487, Pukalani • Hawaii 96788-0487 • (808)876-0500 Phone • (808)876-1900 Fax
Email: info@malamaenvironmental.com • Web: www.malamaenvironmental.com

MALAMA
Environmental

Environmental Site Assessment:
Phase I Investigation

Property: NOBRIGA'S FEEDLOT AND RANCH (PORTION)
FONG CONSTRUCION BASEYARD CO.
445 EAST WAIKO ROAD
WAIKAPU, MAUI, HAWAII 96793
T.M.K. (2) 3-8-007: 102

Prepared for: WAIKO INDUSTRIAL INVESTMENTS, LLC
1300 HOLOPONO STREET, SUITE 201
KIHEI, MAUI, HAWAII 96753

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental professional* as defined in 312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the *subject property*. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR part 312.

Amy R. Mathis, B.S. Geology,
Project Coordinator

- Environmental Scientist
- AHERA Asbestos Building Inspector HIASB-3044

1/26/10
Date

John S. Vuich, M.S. Geological Engineering,
Project Supervisor

- Registered Environmental Assessor
  Registration No. 1433 (State of California)
- Professional Geologist (California)
- Certified Environmental Manager (Nevada)

01-26-10
Date

Table of Contents

Disclosure

This document contains the results of services performed on this Project by **Malama Environmental (MEV, LLC)** pursuant to Agreement. The results represent the application of a variety of scientific and analytical disciplines that have been rendered using the standard of care, skill, and diligence normally provided by professionals in the performance of similar services under similar circumstances.

MEV assessments are intended to reduce, but not eliminate, uncertainty regarding recognized environmental conditions in connection with the Subject Site, as conducted within reasonable limits of time and cost. A general consensus of EPA's guidance on landowner liability is that *no environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property.*

The use of this document and the results reported are limited to the services performed and areas examined as described in this document and no inferences are intended with respect to anything not described herein.

MEV is not responsible for conditions or consequences arising from relevant data, facts, and information that were concealed, missing, withheld, not fully disclosed, or not reasonably available at the time these services were performed. **MEV** is not responsible for any indirect, incidental, or consequential damages of any nature arising from any cause.

MEV has no beneficial economic interest in the Project other than as an independent professional organization performing the agreed services. **MEV**'s warranties are as described above and there are no other warranties of any kind, expressed or implied, regarding the services.

Executive Summary

Introduction

This Phase I Environmental Site Assessment (ESA) has been prepared for Mr. John Maloney of Waiko Industrial Investments, LLC, and was conducted pursuant to Malama Environmental's (MEV's) written proposal and contract accepted by Mr. Maloney on December18th, 2009. This investigation and report format follows the guidelines of the American Society of Testing and Materials (ASTM) Publication E1527-05, which is recognized by 40 CFR Part 312 as an acceptable guidance document for satisfying the EPA's final "*All Appropriate Inquiries*" rule.

Site Description

The subject site (445 East Waiko Road) is located just north of Waiko Road and west of Kuihelani Highway in the community of Waikapu, Maui, Hawaii. The property consists of one (1) parcel of land measuring approximately 31 acres in total area. The site is further described on the Tax Maps of the State of Hawaii as Division 2, Zone 3, Section 8, Plat 7, Parcel 102. The subject property includes the Fong Construction Baseyard Co. (approximately 4 acres) and a portion of Nobriga's Feedlot and Ranch (approximately 27 acres).

Surrounding land use consists of the Consolidated Baseyard lots (off-site) which are located between Fong's Baseyard and the eastern section of Nobriga's Ranch. These lots consist of commercial and light industrial businesses. Land use located in other surrounding areas consist of undeveloped vegetated land, pasture/ranch land and sugar cane production.

The community of Waikapu is situated on the southeastern slopes of the West Maui Mountains. See Regional Setting Map, Figure 1, Appendix A.

Records Review

The purpose of a records review is to obtain and review records that will help identify ***recognized environmental conditions*** in connection with the subject property. The services of Environmental Data Resources, Inc. were utilized to compile the database listings.

Our records review did not discover any current investigation of the subject site under any programs conducted by a federal, state, or local environmental agency.

Note: Fong Construction Baseyard is listed in the EDR Orphan Summary as a State Hazardous Waste Site (SHWS). MEV and the property owner confirmed by an EDR Site Report and from the State Department of Health that this site refers to the former Fong Baseyard located on 237 Dairy Road in Kahului and not the current baseyard on the subject site.

One (1) potential risk site (Waikapu Dump) was identified within a 1-mile radius of the subject site. This site is listed as a SHWS but has received a No Further Action (NFA) indicating cleanup has been completed to the State's acceptance.

One (1) news media reported potential risk site (Maui Scrap Metal) was identified within a ½-mile radius of the subject property.

The adjacent Consolidated Baseyard Lots are listed by the DLNR as having two (2) groundwater well permits.

Site Reconnaissance

A site investigation focuses on obtaining information indicating the likelihood of identifying physical ***recognized environmental conditions*** in connection with the property and assessing the subject property in relation to surrounding land uses and natural surface features. It includes a physical inspection of the real property and any on-site facilities.

On December 21, 22 and 23, 2009, MEV personnel, Ms. Amy Mathis and Mr. Brian Carey, conducted an overall site inspection of the subject property. Accessible areas of the property were visually and physically inspected.

A limited amount of the subject site's total surface soils were not observable due to dense vegetation, the cattle feedlots and the numerous baseyard materials of the Fong Construction Baseyard.

The following are significant observations of field conditions: (See Site Plans, Figures 2A - 2D, Appendix A)

The subject parcel consists of Nobriga's Feedlot, located in the western portion, Nobriga's Ranch, located in the eastern portion and the 4-acre Fong Construction Baseyard located to the east of the feedlot. Waiko Consolidated Baseyard Lots (off-site) are located between Fong's Baseyard and Nobriga's Ranch.

Fong Construction Baseyard Co.

- Four-acre rectangular area dedicated to the storage of construction materials, scrap metal, above-ground storage tanks, heavy equipment and vehicular maintenance;
- Two (2) building structures exist on-site for the purpose of workshop activities, storage and vehicular maintenance;
- Limited vehicle dismantling and repair work is conducted on-site. These operations generate moderate quantities of regulated waste items (waste oil, solvent, batteries and coolant);
- Significant derelict vehicle storage (approximately 80) and derelict boats (approximately 6) were noted on-site;
- Numerous above-ground storage tanks (AST) (water and former fuel tanks) were noted on-site. The majority of these ASTs were empty, but some may contain residual fuel and sludge. No associated soil staining or petroleum odors were noted with these tanks. One (1) 1000-gallon diesel tank is currently in use;
- An undetermined amount of solid waste storage and dumping has taken place on the subject site, including regulated items such as automobile tires (approximately 200), vehicle batteries (approximately 70) and white goods (approximately 2);
- A large scrap metal stockpile is located near the northeastern corner of the baseyard. The majority of this consists of crushed derelict vehicles;
- Bulk storage of petroleum products was evident on-site. Approximately seventy-five (75) 55-gallon drums and approximately twenty-five (25) 5-gallon containers are currently being stored on the premises. Most of these drums/containers contained moderate amounts of used oil or other petroleum-based products. The majority of these drums/containers were improperly stored, lacked secondary containment and were not labeled appropriately. Soil staining was noted in the area of some of these drums/containers;
- Numerous pieces of heavy equipment (approximately 70) including trucks, tanker trucks, construction vehicles, and derelict construction machinery were noted on-site. The vast majority of this equipment is leaking petroleum-based fluids causing limited to moderate surface staining;
- Surface staining is located in many areas throughout the baseyard associated with ineffective storage of waste oil and petroleum products, leaking heavy equipment and maintenance activities;
- Eight (8) 40-foot storage containers and seven (7) 20-foot storage containers are located on-site. Most were inaccessible to MEV, but two of these contain 55-gallon drums (full) and vehicle batteries;
- Two (2) soil piles of unknown origin were noted along the eastern boundary of the Fong Baseyard.

Nobriga's Feedlot (western portion of the subject property)

- Three (3) cattle feedlot enclosures with associated sheds exist on-site and one (1) large cattle feedlot enclosure is located just west of the western boundary;
- One (1) manure composting area is located in the southern portion of the site;
- Two (2) catchment lagoons are located on-site associated with the feedlot activities and are used to contain any livestock bio-waste stormwater runoff;
- Seven (7) pieces of heavy machinery (one of these is leaking) and one (1) derelict bulldozer exist on-site;
- Eight (8) vehicle tires are located on the premises;
- One (1) 20-foot cargo trailer (inaccessible) is located along the lower western boundary;
  Construction debris including fencing material, corrugated metal and wood exist on-site;

- The current bulk storage/use of hazardous/regulated substances was not noted on the premises. The maintenance area, feed shed and fuel truck location are located west of the access road and off-site;
- Strong cattle and manure odors associated with the feedlot were noted on-site.

Nobriga's Ranch (eastern portion of the subject property)

Numerous fenced livestock corrals and sheds exist on the premises;

- Associated with the ranch are several 300-gallon poly totes (one is marked Praestol Flocculant and the others likely contained water), horse trailers, heavy equipment, and numerous 55-gallon drums full of horse feed;
- An electrical power line easement traverses east/west through the southern area of the site. This is the main access of the ranch in the area;
- Regulated items of note associated with the ranch include eleven (11) vehicle tires, one (1) vehicle battery, one (1) 5-gallon canister containing a substance with odors resembling gasoline, one (1) 5-gallon container half full of petroleum-based product and several containers consisting of wood finish, primer, sealer and paint;
- A miscellaneous debris and storage area lies immediately north of the subject site. This area consists of vehicle tires, a white-good appliance, various construction debris, two (2) pieces of derelict machinery, two (2) 55-gallon drums containing an unknown liquid product, three (3) 5-gallon containers with trace petroleum product, one (1) 300-gallon poly tote (empty) and two (2) 1000-gallon AST (labeled potable water) both of which had loose and flakey paint.

Conclusions

Recognized environmental conditions, as defined by ASTM Standard E1527-05, are the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property, or into the ground, ground water, or surface water of the property. ***Recognized environmental conditions*** are described with regard to (1) the nature and extent of the vironmental condition, (2) potential or actual environmental threat, (3) potential for transport (migration) of any environmental conditions, and (4) consideration for further investigation. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

MEV has performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of the ASTM Practice E 1527-05 for the subject property located at 445 East Waiko Road in the community of Waikapu, Maui, defined as the subject property. Any exceptions to or deletions from this practice are described in Section 1.4, Limitations and Exceptions, of this report.

This assessment has revealed the following evidence of *recognized environmental conditions* in connection with the property:

- ***Database Listings***

  The subject site is not listed.

  The listed nearby site (Waikapu Dump) and the unlisted potential risk site (Maui Scrap Metal) were reviewed for environmental concerns relative to the subject site. It is possible that these sites, which are in close proximity to the subject site, have had or could have an environmental impact to underlying groundwater. Groundwater and surface soil quality on the subject site, may have been degraded over time due to the migration of pollutants from these sites; however, it is unlikely that contaminant levels derived from these sources would be above regulated levels due to the distance from the subject site (approximately 0.5 miles) and the type of porous and permeable geological surface materials providing good vertical movement conditions. Currently, no groundwater contamination has been detected in the groundwater underlying the subject property.

- ***Current and Historic Use or Storage of Hazardous and Regulated Substances*** *(See Section 5.2.2, 5.3.1 & 5.3.2).*

  Currently, the generation and/or use of hazardous or regulated substances and wastes occur on the subject site. Ineffective storage of waste oil and other petroleum products occurs on the premises. The improved storage and disposal management of petroleum products on-site would reduce the potential for impacting the subject site's surface soils.

  MEV has outlined some management procedures in Section 5.3.1 that should be followed for the proper storage and management of drums/containers containing hazardous and regulated substances currently taking place on-site.

  Sugar cane agriculture has been actively occurring on the southern adjacent property for several decades. While the use of pesticides and herbicides on an adjacent property does not necessarily result in an adverse impact to the environmental condition of the subject site, it is possible (yet unlikely) for residual amounts of these substances to accumulate to concentrations that present a potential threat to human health or the environment. Soil and laboratory testing would provide additional information to evaluate potential environmental effects from these agricultural activities. There is, however, no regulatory requirement to conduct this sampling. According to data collected on the wells from the adjacent Consolidated Baseyard, no groundwater contamination has been detected in the groundwater underlying the subject property.

The concerns listed below may not be considered ***recognized environmental conditions*** *by ASTM definition, however, they may be considered regulated under other environmental laws and ordinances and may present a potential liability to the property owner.*

- ***Surface Soil Staining*** *(See Section 5.3.1 & 5.5.2)*

  Numerous areas of surface soil staining were noted by MEV associated with Fong Construction Baseyard Co. during the site inspection. The source of petroleum contamination is likely from not practicing best management practices on the handling of petroleum products, waste oil storage or from heavy equipment leakage. The areas of petroleum-impacted soil should be excavated and properly managed on-site or disposed of off-site. Clearance soil testing could be conducted to ensure all contamination has been removed. More effective product and waste oil management and the implementation of spill protection should be undertaken to eliminate the ability for contaminants to impact the subject site in the future.

- ***Solid Waste Management:*** *(See Section 5.5.4)*

  A significant amount of historical dumping and storage activity (construction materials, scrap metal, above-ground storage tanks, derelict vehicle and derelict construction equipment) occurs on Fong Construction Baseyard. Some of these materials are regulated items (derelict automobiles and parts, derelict boats and parts; automobile batteries and tires;) that require proper management and disposal procedures. Any waste disposal should be in a permitted solid waste landfill or recycled in a manner that complies with all local, state, and federal regulations as applicable to the specific waste type.

  Due to some heavily vegetated areas on the subject property, the entire subject site was not visibly inspected. Therefore, it is important to note that if additional clearing of the property commences and large amounts of construction debris or unidentifiable substances (containers) are discovered, proper waste identification, testing and applicable waste handling/disposal procedures are followed.

- ***Wastewater Management*** *(See Section 5.5.5)*

  Two (2) on-site lagoons are associated with catchment of wastewater from the Nobriga's Feedlot and Ranch activities. These lagoons are part of the Feedlot's nutrient management program to control runoff from the Feedlot.

  In order to minimize the potential for regulatory profiling of the subject site, property management may consider implementing conservative, proactive environmental policies. These policies might include written environmental protection contracts with any industrial or special-use commercial tenants and posted notices

regarding any use, storage and handling of hazardous substances and/or petroleum product. Special attention should be addressed to wastewater (possibly containing contaminants) that could impact the surface soils or enter nearby drainage systems.

All wastewater created on-site should be connected to the County's wastewater system or contained on-site in lined, catchment basins and allowed to evaporate. Wastewater should not be allowed to migrate off-site or negatively impact the subject site's surface soils.

- ***Soil Piles of Unknown Origin***

Two (2) soil piles were noted near the eastern boundary of the Fong Construction Baseyard. These piles are of unknown origin. No petroleum-based odors were associated with these soil piles.

- ***Groundwater Wells***

Two (2) groundwater wells are located on the Consolidated Baseyard Lots located on the adjacent property. The DLNR permitting requirements of these off-site systems, well No. 5129-03 and well, No. 5129-02 are complete. According to the Safe Drinking Water Branch, these wells are sampled quarterly for analytes required by the US EPA for drinking water standards. No violations have been cited for these systems and water quality data shows no significant pollutant products in the groundwater exceeding EPA maximum levels. However, the Fong Baseyard activities and any future development westerly should consider activity management to avoid the potential for contributing to changes in groundwater quality.

- ***Surface Waters and Area Aquifer Protection***

Fong Construction Baseyard Co. Currently, a four-acre portion of the subject property is operating as a construction baseyard dedicating this area to the storage of construction materials, derelict vehicles, scrap metal, above-ground storage tanks, heavy equipment and vehicular maintenance. The property and business owner should be aware of the potential for contaminants to run off-site and into nearby storm drains. Products of concern would be oils, antifreezes and other fluids from automobile servicing or on-site machinery, or leaks from on-site stocked items.

Nobriga's Feedlot and Ranch The remaining 27 acres consist of Nobriga's Feedlot and Ranch. The large number of cattle associated with Concentrated Animal Feeding Operations (CAFO) produces significant amounts of manure and other animal waste products. Environmental problems associated with animal manure and wastewater includes degradation of surface water, groundwater quality, soil quality and air quality. CAFOs produce large amounts of animal manure that emits odors, methane, nitrous oxide, carbon dioxide, antibiotics and ammonia. Manure can also produce water pollution from uncontrolled runoff of phosphorus and nitrates. The bulk storage of manure exists on-site at Nobriga Feedlot and Ranch. Two (2) catchment lagoons are located on-site implemented as best management practices to control any potential contaminated runoff. A small stormwater channel traverses from the off-site and upgradient ranch maintenance and feed shed area to the catchment lagoon located on the subject site adjacent to the access road.

National Stormwater Pollution Discharge Permit (NPDES)

The EPA has finalized (November 20, 2008) revisions to the NPDES permitting requirements and Effluent Limitations Guidelines for CAFOs. According to the EPA, as authorized by the Clean Water Act (CWA), the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Under this final rule, any CAFO that discharges or proposes to discharge is required to seek permit coverage. The permit coverage provides certainty to CAFO operators regarding activities and actions that are necessary to comply with the CWA. Under the CWA, operators that do not apply for permits operate at their own risk because any discharge from an unpermitted CAFO (other than agricultural stormwater) is a violation of the CWA. The CAFO must implement site-specific nutrient management practices (NMP) that ensure appropriate agricultural utilization of the nutrients produced by the operation. A CAFO may be authorized to acquire a NPDES

permit based on an on-site inspection by a NPDES permitting authority if the authority finds that the facility is a significant contributor of pollutants to waters of the United States.

MEV reviewed the groundwater well data from both wells located on the adjacent Consolidated Baseyard Lots. Although a small amount of nitrate has been found (2.1 parts per million), this is below the recommended EPA limit (10 ppm) and is not an issue at this time.

In order to minimize the regulatory profiling of the subject site as a potential responsible party for any newly discovered groundwater or surface water contamination, the property owner should consider implementing conservative, proactive environmental policies for the current tenants.

Future land clearing of greater than one (1) acre will likely require both a County of Maui grading/grubbing permit and a National Pollution Discharge Elimination System (NPDES) General Permit (State of Hawaii, Department of Health).

The conclusions stated above should not be construed to mean that any regulatory agency would have the same opinion as this author, nor is any implication proposed therefrom.

The results of this environmental assessment are intended for general reference purposes only and are not intended as legal advice. The advice of legal counsel should be sought in regard to individual facts, circumstances and interpretation of environmental liability.

Environmental Site Assessment

Phase 1 Investigation

1.0 INTRODUCTION

A Phase I Environmental Site Assessment (ESA) is conducted to determine if a site may be contaminated with hazardous or toxic substances or wastes resulting from current or past site activities, unauthorized dumping or disposal, or migration of contaminants from adjacent or nearby properties. Its goal is to identify ***recognized environmental conditions*** on a property that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products. These release conditions apply to structures on the property as well as the soil, groundwater, or surface water of the property. The American Society of Testing and Materials (ASTM) Standard 1527-05, Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process, is used to "...define good commercial and customary practices for conducting an environmental site assessment of a parcel of commercial real estate".

1.1 Purpose

The study objectives are to characterize the environmental setting of the subject property, to identify any obvious activity of environmental concern that may have occurred at or near the site, and to evaluate potential migration pathways for any identified contaminants. It may also address any activities that affect future considerations for potential environmental impairment to the property.

Another function of this Phase I ESA is to conduct an *all appropriate environmental inquiry* in response to the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, the EPA's final rule (40 CFR Part 312), and similar state and local regulations. An ESA "all appropriate inquiry" may provide the buyer, receiver, or lender making a loan secured by the subject real property with a basis to qualify for the *innocent landowner, contiguous property owner, or bona fide prospective purchaser defense* should any legal action be initiated for environmental impairment to the property.

ASTM Publication E1527-05 is recognized by 40 CFR Part 312 as an acceptable guidance document for satisfying the EPA's final "*All Appropriate Inquiries*" rule.

1.2 Detailed Scope of Services

This Phase ESA has been prepared for Mr. John Maloney of Waiko Industrial Investments, LLC, and was conducted pursuant to Malama Environmental's (MEV's) written proposal and contract accepted by Mr. Maloney on December 18th, 2009.

There were no other additional services requested of MEV by the Client.

1.3 Significant Assumptions

The assessment of ***recognized environmental conditions*** relies on: 1) sources of actual knowledge, 2) thorough appropriate inquiry, 3) reviewing reasonably ascertainable documents and records, and 4) conducting a visual and olfactory reconnaissance. In conducting this ESA, MEV has relied on the truthfulness of its inquiry sources and the validity of reviewed records. If obvious indications or MEV actual knowledge contradicted the reported/reviewed information sources, it has been so stated in the appropriate sections of this report.

1.4 Limitations and Exceptions

The investigation performed for this report includes the components of an *all appropriate inquiry* regarding the potential for contamination to exist or have occurred at this site. This investigation is also the basis of an *all appropriate inquiry* into the presence or likely presence, release or threatened release, of hazardous substances and petroleum products at this real property. This Phase I Environmental Site Assessment was prepared according to guidelines presented in the American Society of Testing and Materials Document entitled *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E-1527-05).

Since no ESA can eliminate uncertainty regarding the potential for ***recognized environmental conditions*** in connection with a property, the limiting intent of this investigation is to reduce the uncertainty to an appropriate level. Minimal requirements for the Phase I ESA include a review of historical records, a review of files and databases compiled by regulatory agencies, interviews with current owners and/or occupants of the property, and a field reconnaissance of the subject site and adjacent areas.

This ESA also takes into consideration the evaluation of other substances and products that are or may be interpreted as excluded under CERCLA. Commonly, these substances are of concern in commercial real estate transactions under current custom and usage and may include, but are not limited to, Radon, Lead-in-Drinking Water, and Special Environmental Resources. Where appropriate, MEV has considered environmental concerns of other federal, state, and local regulations.

Some database resources developed for Maui County are not readily attainable in a useful form or are not cross-referenced in a manner as to be readily discernible. The Maui County Fire Department maintains an electronic database that dates back to January 2000. Information and records prior to 2000 exist on file, as hardcopies, at the Department of Fire and Public Safety Office.

Databases and records utilized for this investigation were limited to those that are reasonably ascertainable; that is, they had to be publicly available, obtainable from its source within reasonable time and cost constraints, and practically reviewable with regard to volume, sorting, and organization. Additionally, the services of *Environmental Data Resources, Inc.* (EDR) were utilized to compile the environmental database listings. See Appendix B.

MEV was unable to inspect the interior of all of the 40-foot and 20-foot metal storage containers located on-site.

1.5 Data Gaps

MEV did not encounter any significant *data gaps* during the course of this Phase I ESA Investigation that would affect the ability of the *Environmental Professional* to identify *recognized environmental conditions* pertaining to the subject property.

1.6 Special Terms and Conditions

As a standard practice, a confidential client privilege was initiated by MEV for the work performed and contents of this report. MEV shall ensure that its officers, employees, agents, and independent contractors do not disclose this report or any information contained therein to any person without the proper knowledge and written consent from the Client (or as otherwise required by law). MEV shall ensure that each of its officers, employees, agents, and independent contractors understand and obey these requirements.

The information and opinions provided herein are intended as background data and planning guidance to interested parties. This should not be construed to mean that any regulatory agency would have the same opinion as MEV, nor is any implication proposed.

MEV has performed this study in a competent and professional manner. Since there may be hidden or unknown conditions that may be missed during this inspection, MEV cannot warrant the actual site conditions described in this report.

MEV, LLC

2.0 SITE AND REGIONAL DESCRIPTION

Refer to the Regional Setting Map (Figure 1), in Appendix A, for a depiction of the general setting of the subject site in relation to topographic features. Also depicted are the projected groundwater flows, regional surface water flows, and locations of other significant physical features or structures. Site Plans (Figures 2A-2D) and Tax Map Key (Figure 3), are also located in Appendix A.

2.1 Location and Legal Description

The subject site is located at 445 East Waiko Road, immediately north of Waiko Road and west of Kuihelani Highway in the community of Waikapu, Maui, Hawaii. The subject site is located approximately 1.25 miles east of Waikapu town center. The property consists of one (1) parcel of land, irregular in shape, measuring approximately 31 acres in total area. The site is further described on the Tax Maps of the State of Hawaii as Division 2, Zone 3, Section 8, Plat 07, Parcel 102. The subject property consists of the four-acre Fong Construction Baseyard and the 27-acre Nobriga's Feedlot and Ranch. See Figure 3, Tax Map, Appendix A.

2.2 Site and Vicinity General Characteristics

The property consists of one (1) parcel of land, irregular in shape, measuring approximately 31 acres in total area. The ranch portion of the subject property predominantly consists of undulating sandy scrub land and kiawe trees with fenced livestock in-holdings and associated sheds. Three (3) large cattle feedlots and one (1) manure composting stockpile exist on site.

The construction baseyard area of the subject site consists of a rectangular four-acre land portion dedicated to the bulk storage of construction materials, scrap metal, derelict vehicles, derelict construction equipment, heavy machinery, and above-ground storage tanks.

Surrounding land use consists of commercial and light industrial (Consolidated Baseyard Lots), undeveloped vegetated land, feedlot and ranch land and agricultural production (sugar cane).

The community of Waikapu is situated on the western center edge of the Kahului Isthmus and is located approximately 2.5 miles south of the town of Wailuku. Waikapu Stream is located approximately 2,000 feet southwest of the subject property's southern boundary. See Figure 1, Appendix A.

Access to the subject property is from a gravel access road that traverses southeast to northwest located just north of Waiko Road.

2.3 Description of Structures, Roads, Other Improvements

One (1) main graded and compacted access road enters onto the lower western area of the property from the southern boundary (E. Waiko Road) and traverses northwest until it joins the upper western boundary.

Post and wire fencing is located in many areas on the subject site associated with the cattle feedlot and livestock corrals. Several sheds supporting ranch equipment and livestock feed are located next to these fenced in holdings.

An electrical power line easement exists in the lower eastern portion of the property and provides a centralized location for the eastern area of the ranch.

The Fong Construction Baseyard appears to have been historically grubbed and graded. Two (2) temporary building structures are associated with the baseyard and are used for storage and maintenance activities. The water source for the baseyard comes from the groundwater wells located on the eastern adjoining property at Consolidated Baseyards.

Electrical transmission lines traverse through the lower eastern portion of the property, along the northern and southern boundaries and east of Fong Construction Baseyard.

See Figures 2A-2D, Appendix A.

2.4 Current Use of the Property

Two (2) commercial/industrial business operations occupy the subject site and are as follows:

- *Fong Construction Baseyard Co.* – Storage of construction materials, scrap metal, derelict vehicles, derelict construction equipment, heavy machinery, above-ground storage tanks and equipment maintenance;
- *Nobriga's Feedlot and Ranch*; - Livestock housing, cattle feedlot and manure composting.

2.5 Current Uses of the Adjoining Properties

The current uses of the adjoining properties as observed by the investigators during the site reconnaissance are as follows (see also Site Plans, Figures 2A – 2D, Appendix A):

• *Northern Adjoining Property:*	Undeveloped, vegetated land likely used for ranch land, beyond which lies extended undeveloped land.
• *Eastern Adjoining Property:*	East of Fong Construction Baseyard – Consolidated Baseyard Lots (light commercial and industrial businesses). East of the eastern-most portion of Nobriga's Ranch – Kuihelani Highway and agricultural production (sugar cane).
• *Southern Adjoining Property:*	Agricultural land (sugar cane).
• *Western Adjoining Property:*	Continued operation of Nobriga's Feedlot and Ranch.

3.0 USER PROVIDED INFORMATION

As a standard of practice, the following information was requested from the Client during the preliminary phases of this investigation:

- Title records and knowledge of environmental liens or activity and land use limitations (AULs);
- Personal, specialized knowledge or experience in regard to ***recognized environmental conditions*** concerning the property; and
- If applicable, actual knowledge of a significant, low purchase price for the property, and explanation for the lower price.

The purpose of this information is to help identify the possibility of ***recognized environmental conditions*** in connection with the property. These tasks do not require the technical expertise of an environmental professional and are generally not performed by environmental professionals performing the Phase I ESA. MEV submits a Preliminary Environmental Investigation questionnaire to the Client for this information. As of the completion of this report, MEV has not received this document.

According to information provided for this investigation, the Client is not aware of any environmental liens, proceedings against the subject property as of the date of this ESA.

4.0 RECORDS REVIEW

The purpose of a record review is to obtain and review records that will help identify ***recognized environmental conditions*** in connection with the subject property. The service of Environmental Data Resources, Inc. (EDR) as utilized to compile the database listings.

4.1 Standard Environmental Record Sources

The subject property and properties within the minimum search distances were reviewed from the following record sources (see below). Risk sites, if any, that may be located on or adjacent to the subject property, or are within close proximity to the subject site are described. Refer to Appendix B, EDR Radius Map Report with Geockeck for a complete listing and description of all sites located within the designated search distances, details, and government agency database release dates.

The EDR Report bases the location of the listed risk sites on longitude/latitude information provided by the respective government agency. MEV confirms the locations of risk sites within close proximity to the subject site during the site visit. When the MEV site visit contradicts the EDR Report, it has been so stated.

THE SUBJECT SITE IS NOT LISTED ON SOME OF THE FOLLOWING FEDERAL OR STATE DATABASE LISTINGS OF THE EDR REPORT.

Federal Database Listings

- **National Priorities List (NPL or Superfund) and Proposed NPL, EPA.** The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program.
  - *The subject site is not listed.*
  - *The EDR database report indicates no listings within the one-mile search radius of the subject site.*
- **Comprehensive Environmental Response, Compensation and Liability Information System List (CERCLIS), EPA.** The CERCLIS list contains data on potentially hazardous waste sites that have been reported to EPA by states, municipalities, private companies and private persons, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites that are either proposed to or on the NPL and sites, which are in the screening and assessment phase for possible inclusion on the NPL.
  - *The subject site is not listed.*
  - *The EDR Report indicates no listings within the 1/2-mile search radius of the subject site.*
- **CERCLIS – No Further Remedial Action Planned (NFRAP), EPA.** NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.
  - *The subject site is not listed.*
  - *The EDR Report indicates no listings within the ¼-mile search radius of the subject site.*
- **Corrective Action Report (CORRACTS), EPA.** The CORRACTS report lists hazardous waste handlers with RCRA corrective action activity.
  - *The EDR Report indicates no listings within the one-mile search radius of the subject site.*
- **Resource Conservation and Recovery Information System (RCRIS), EPA/NTIS.** RCRIS includes selective information on sites that generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

- *The EDR Report indicates no listings within the ½-mile search radius of the subject site, which treat, store, and/or dispose of hazardous waste (TSD).*
- *The EDR Report indicates no listings within the ¼-mile search radius of the subject site, which generate at least 1,000 kg/month of non-acutely hazardous waste or 1.0 kg/month of acutely hazardous waste (Lg. Quan. Gen. - LQG).*
- *The EDR Report indicates no listings within the ¼-mile search radius of the subject site, which generates less than 1,000 kg/month of non-acutely hazardous waste (Sm. Quan. Gen. - SQG).*

▼ **Emergency Response Notification System (ERNS), EPA/NTIS.** Records and stores information on reported releases of oil and hazardous substances.

- *The subject site is not listed.*

State of Hawaii Database Listings

▼ **Sites List (SHWS), DOH.** A list of facilities, sites, or areas in which the Office of Hazard Evaluation and Emergency Response (HEER) has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

- *The subject site is not listed.*

  Note: Fong Construction is listed in the EDR Orphan Summary as a SHWS. MEV and the property owner confirmed by an EDR Site Report and from the State Department of Health that this site refers to the former Fong Baseyard located on 237 Dairy Road in Kahului and not the current baseyard on the subject site. The Kahului site was of on-going environmental interest due to petroleum hydrocarbon contamination associated with a LUST. The site received an NFA in 1993.

- *The EDR Report indicates one listing within the ½-mile search radius of the subject site.*
  - Waikapu Dump- Maui County Dump (Registry ID# 110013774870), is listed as "site clean-up completed," and classified as "NFA" (no further action). The facility status date is reported as "10/1/07."
  - It is possible that former Maui Scrap Metal operation, located at 109 E. Waiko Road and approximately ½-mile west of the subject site, could be placed on this list in the future. Contamination is suspected at this site. According to MEV's search of the HEER Release look-up spreadsheet (4/4/08) and the HEER Sites of Interest spreadsheet (12/4/09) this site is not noted in the database listings.

▼ **Permitted Landfills in the State of Hawaii (SWF/LF), DOH.** An inventory of solid waste disposal facilities or landfills in the State of Hawaii. These may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

- *The EDR Report indicates no listings within the ½-mile search radius of the subject site.*

▼ **Leaking Underground Storage Tank (LUST) database, DOH.** An inventory of reported leaking underground storage tank incidents.

- *The EDR Report indicates no listings for the subject property.*
- *The EDR Report indicates no listings within the ½-mile search radius of the subject site.*

▼ **Underground Storage Tank (UST) database, DOH.** USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with DOH.

- *The subject site is not listed.*
- *The EDR Report indicates no listings within a 1/4-mile radius of the subject site.*

4.2 Additional Environmental Record Sources

The subject property and properties within the minimum search distances were reviewed from the following record sources. Refer to Appendix B, EDR Radius Map Report, for a complete listing and description of all sites located within the designated search distances, details, and database release dates.

Federal Database Listings

- **Superfund (CERCLA) Consent Decrees (CONSENT), EPA Regional Offices.** Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites.
  - *The subject site is not listed.*
  - *The EDR Report indicates no listings within the one-mile search radius of the subject site.*
- **Records of Decisions (ROD), EPA.** ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.
  - *The subject site is not listed.*
  - *The EDR Report indicates no listings within the one-mile search radius of the subject site.*
- **National Priority List Deletions (De-listed NPL), EPA.** A list of sites that have been deleted from the NPL where no further response is appropriate.
  - *The subject site is not listed.*
  - *The EDR Report indicates no listings within the one-mile search radius of the subject site.*
- **Facility Index System/Facility Identification Initiative Program Summary Report (FINDS), EPA.** Contains both facility information and 'pointers' to other sources that contain more detail.
  - *The subject site is not listed.*
- **Hazardous Materials Information Reporting System (HMIRS) DOT.** A list of hazardous material spill incidents reported to DOT.
  - *The subject site is not listed.*
- **Material Licensing Tracking System (MLTS), Nuclear Regulatory Commission (NRC).** A list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements.
  - *The subject site is not listed.*
- **Mines Master Index File (MINES), Department of Labor, Mine Safety and Health Administration.** Contains both facility information and 'pointers' to other sources that contain more detail.
  - *The subject site is not listed.*
  - *The EDR Report indicates no listings within the ¼-mile search radius of the subject site.*
- **Federal Superfund Liens (NPL Liens), EPA.** A list of properties whereby the EPA has filed liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability.
  - *The subject site is not listed.*
- **PCB Activity Database System (PADS).** Identifies generators, transporters, commercial storers and/or brokers and disposers of PCBs who are required to notify EPA of such activities.
  - *The subject site is not listed.*
- **RCRA Administrative Action Tracking System (RAATS), EPA.** A historical archived database containing records on enforcement actions issued under RCRA pertaining to major violators and

includes administrative and civil actions brought by EPA. The database was discontinued on September 30, 1995.

- *The subject site is not listed.*

▼ **Toxic Chemical Release Inventory System (TRIS), EPA.** A list of facilities which release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III, Section 313.

- *The subject site is not listed.*

▼ **Toxic Substances Control Act (TSCA), EPA.** Identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list.

- *The subject site is not listed.*

▼ **Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA)/TSCA Tracking System (FTTS INSP and FTTS), EPA – Office of Prevention, Pesticides and Toxic Substances.** FTTS tracks administrative cases, pesticide enforcement actions, and compliance activities related to FIFRA, TSCA, and Emergency Planning and Community Right-to-Know Act (EPCRA).

- *The subject site is not listed.*

State of Hawaii Database Listings

▼ **Release Notifications (SPILLS), DOH.** Releases of hazardous substances to the environment reported to the HEER Office. The following databases are included in the HEER Spill List:

Release Notification Report: a compilation of releases reported to HEER.

Hawaii Emergency Planning and Community Right-to-Know Act (HEPCRA): a list of facilities that have submitted Tier II and Form Rs as a reporting requirement.

- *The subject site is not listed.*

▼ **Registered Wells and Dry Wells, DLNR.** (See Section 5.5.6) There are two (2) registered groundwater wells listed for the adjacent property at the Consolidated Baseyard Lots (DLNR Well # 5129-02 and Well # 5129-03). These wells are owned by Consolidated Baseyards, LLC and were drilled in 2001 (#5129-02) and 2005 (#5129-03) for distributing potable, municipal water for the Consolidated Baseyard lots. The well depth is 300 feet and the pump depth is 253 feet for Well # 5129-03. Well depth for Well # 5129-02 is 255 feet and the pump depth is 240 feet. All DLNR permitting requirements are complete for both wells. According to the State Department of Health, Safe Drinking Water Branch, no violations have been cited for these systems and water quality data shows no significant contamination of groundwater exceeding EPA limits.

▼ **Air Quality Permit, DOH.** Current activities conducted on-site do not require an air quality permit.

▼ **Storm Water Discharge (NPDES) Permit, DOH.** Current activities conducted on-site (Nobriga's Feedlot and Ranch) may require a NPDES permit. See Section 5.5.5.

County and Other Database Listings

Other local records of environmental interest that were reviewed or considered for review by MEV included:

▼ **Fire Department, County of Maui.** The Maui County Fire Department (MCFD) maintains file material that is not on a database. MCFD was contacted for an inquiry on the subject property. No incidents were reported to MEV on the subject site.

▼ **Former Manufactured Gas (Coal Gas) Sites.** EDR provides exclusive information regarding the existence and location of Coal Gas sites.

- *The EDR Report indicates no listings within the one-mile search radius.*

- **Grading/Grubbing Permit, County of Maui.** According to the County of Maui, a grubbing permit was issued for the subject property in 2000 and expired in 2001. The current activities do not require a grubbing/grading permit, however, any future land clearing of greater than one (1) acre will likely require a County of Maui grading/grubbing permit.
- **Hazardous Waste Disposal Documents.** MEV is in the process of obtaining waste disposal documentation from Fong Construction Baseyard Co. Upon receipt, MEV will forward this information to the Client.
- **Maui Electric Company.** Maintains records on county power transformers regarding PCB-containing equipment and equipment maintenance. Three (3) pole-mounted electrical transformers were noted along the property boundary adjacent to Fong Construction Baseyard. Upon inspection, these transformers appeared to be non-leaking and non-PCB-containing by registration number codes.
- **Other Environmental Reports.** MEV conducted an Environmental Site Assessment; Phase I Investigation for the Consolidated Baseyards, Lot 12. This report is dated December 28, 2009. MEV reviewed an Environmental Site Assessment; Phase I Investigation conducted by Vuich, Environmental Consultants, Inc. for the Consolidated Baseyards. This report is dated July 25, 2006.
- **Planning & Zoning, County of Maui.** According to the Maui County Department of Planning, the subject site's zoning is State Agricultural District and **is not** within the boundaries of the Special Management Area (SMA).
- **Property Tax Office, County of Maui.** The Maui County Property Tax Office maintains records of past ownership, maps, sketches and other information as it pertains to the subject property. According to the Maui County Real Property Tax Records as of 12/21/09, the property owner is currently listed as Mr. Roderick Fong.
- **Wastewater Discharge Permit, County of Maui.** According to the County of Maui, Special Use Permit was issued 4/6/09 for the four (4) acres of the Fong Construction Baseyard. This is a conditional permit authorized for the baseyard to continue to operate an established equipment baseyard on land within the County Agricultural District. The permit expires on March 1, 2014.

  Nobriga's Feedlot and Ranch may be required to acquire a NPDES permit.

4.3 Physical Setting Source(s)

The following sources were reviewed for physical setting information (refer to Section 8.0 for a complete listing):

- Atlas of Hawaii;
- Civil Defense Tsunami Evacuation Map;
- Geologic and Topographic Map (Hawaii Atlas & Gazetteer);
- Groundwater Map and Water Quality Plan for State of Hawaii;
- U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, HI;
- U.S. Geological Survey, 7.5 Minute Topographic Map, Wailuku, Hawaii, 1983 and 1997.

These data sources were used to provide information regarding physical characteristics of the subject site and surrounding area. This information is typically used in analysis of potential geological trends, which might impact environmental conditions of the subject site. Note that this investigation is not intended to identify geologic hazards associated with the subject property.

4.4 Historical Use Information Regarding the Property and Adjoining Properties

The following historical data sources were reviewed for this report (refer to Section 8.0 for a complete listing):

- Aerial Photographs;

- Department of Planning and Zoning, County of Maui;
- State Department of Health Offices;
- Maui County Fire Department (Fire Prevention Bureau / Hazardous Materials Division);
- Maui County Real Property Tax Records;
- Sanborn Fire Insurance Maps (no coverage for this location);
- Environmental Data Resources (EDR);
- Personal Interviews;
- Environmental Site Assessment: Phase I Investigation Consolidated Baseyards July 25, 2006 by Vuich Environmental Consulting, Inc.
- Environmental Site Assessment: Phase I Investigation Consolidated Baseyards Lot 12 December 28, 2009 by Malama Environmental.

Historical Aerial Photographs

A series of aerial photographs, which covered the subject property and surrounding area, were examined. See Figures 2A-2D, Site Plans, Appendix A, for clarification of specific locations.

MEV did not observe any features on aerial photographs examined that would suggest the presence of significant vegetation stress, soil staining, or bulk storage of chemicals such as drums or tanks on the subject property.

Table 1.0 Historical Aerial Photograph Analysis

Date	Aerial Photo Analysis	
12/20/1950	SS:	Only a portion of the subject property is visible in the photo. Appears to be undeveloped vegetated land.
	N:	Undeveloped, vegetated land.
	E:	Only a portion of the property is visible in this photo. Appears to be undeveloped vegetated land.
	S:	Not visible on this photo.
	W:	Only a portion of property is visible in this photo. Appears to be undeveloped vegetated land.
	RG:	Mostly undeveloped land. East Waiko Road is visible and agricultural activity (sugar cane) is mainly situated to the west and northwest. Cleared area noted in the Maui Scrap Metal locale.
6/02/1964	SS:	Undeveloped, vegetated land with unpaved access road traversing southeast to northwest in the western portion.
	N:	No significant changes.
	E:	No significant changes.
	S:	East Waiko Road, undeveloped vegetated land, beyond which lies a limited unpaved road network and grubbed/graded land for agriculture use.
	W:	Undeveloped, vegetated land, unpaved access road traversing southeast to northwest, beyond which lies sugar cane cultivation.
	RG:	Mostly undeveloped, vegetated land with significant agricultural activity (sugar cane) located further to the east, west and south. Possible storage of material on the Maui Scrap Metal location.
1/30/1977	SS:	Property appears to be partially cleared of heavy vegetation. Road networks are visible. Type of activity unknown.
	N:	No significant changes except for additional small road networks and power line easement.
	E:	Kuihelani Highway is paved and established, beyond this lies undeveloped vegetated land and sugar cane.
	S:	East Waiko Road, beyond which lies partially cleared land and new agriculture.
	W:	No significant change.
	RG:	Increased agricultural activity to the east, south and west. Maui County Landfill (former dump) appears to be operational which is located northwest of the subject property. Kuihelani Highway is also visible to the east of the subject property.
9/11/1985	SS:	Property remains vegetated with limited road network and bare sandy areas.
	N:	No significant changes.
	E:	No significant changes other than the presence of an exit road off of Kuihelani Highway for sugar cane field access.
	S:	Partially cleared land with limited road network. Possible material storage and/or dumping noted to the sides of the road network.
	W:	Several structures noted and possible livestock corrals.
	RG:	No significant changes. Maui Scrap Metal is still active.

10/08/1990	SS:	Eastern portion still remains undeveloped vegetated land. Large rectangular area in the western portion has been cleared of all vegetation for Fong Baseyard. Possible pond or reservoir noted northwest of Fong Baseyard. Livestock operation is established in the western half. Several corrals and sheds noted.
	N, E:	No significant changes.
	S:	No significant changes. Possible plantation camp located farther to the southeast.
	W:	Livestock operation, beyond which lies a baseyard.
	RG:	Significant increase in residential development to the west in Wailuku Heights.
Date Unknown (Likely 2000s)	SS:	Eastern portion remains vegetated land with unpaved access roads. Western portion consists of Fong Construction Baseyard, undeveloped vegetated land and livestock ranch/feedlot.
	N:	No significant changes.
	E:	No significant changes.
	S:	Consolidated Baseyards is established as a separate land parcel. Several paved access roads have been implemented to serve this subdivision. Beyond this lies fallow sugar cane fields. No significant changes.
	W:	Significant residential development noted to the west and north. Agricultural activity (sugar cane) continues farther to the south and east.
	RG:	

Notes:

SS	Subject Site	S	Southern Adjoining Property
N	Northern Adjoining Property	W	Western Adjoining Property
E	Eastern Adjoining Property	RG	Regional Area

MEV did not observe any features on aerial photographs examined that would suggest the presence of significant vegetation stress, soil staining, or bulk storage of chemicals such as drums or tanks on the subject property.

5.0 SITE RECONNAISSANCE

Information regarding the storm water flow, property layout, physical characteristics, and adjoining property conditions are presented in Figures 2A – 2D, Site Plans, and site photographs located in Appendix A.

5.1 Methodology and Limiting Conditions

A site investigation focuses on obtaining information indicating the likelihood of identifying ***recognized environmental conditions*** in connection with the property and assessing the subject property in relation to surrounding land uses and natural surface features. It includes a physical inspection of the real property and any on-site building structures.

On December 21, 22 and 23, 2009, MEV personnel, Ms. Amy Mathis and Mr. Brian Carey, conducted an overall site inspection of the subject site. The method used to observe the subject property included:

(1) Walking and photographing the perimeter of the subject property, (2) thoroughly inspecting the interior area of the property and (3) thoroughly inspecting the on-site construction baseyard area including all areas of regulated/hazardous materials storage, machine maintenance areas, temporary structures and construction equipment storage. The property boundaries were clearly defined by perimeter chain link fencing and surveyor flags and pins.

Certain physical obstructions limited the investigators from total property observations of native surface soils. The majority of native surface soils were removed during grubbing and grading activities that took place on the Fong Construction Baseyard during the late 1990s. Soils that were observed within the baseyard area did show the potential for limited to moderate surface contamination associated with on-site machinery, leakage and improper storage of hazardous materials. Native surface soils could not be observed in the locations of the cattle feedlots and manure composting area. Soils that were observable did not exhibit any evidence of gross surface contamination associated with the Nobriga Feedlot and Ranch.

Any environmental conditions reported here are not intended to include minimal conditions that 1) generally do not present a material risk of harm to public health or the environment and 2) generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

5.2 General Site Setting

5.2.1 Current and Past Use(s) of the Property

Current Uses

According to the Maui County Tax Office, the current owner is listed as Mr. Roderick Fong. The property consists of one (1) parcel of land, (2) 3-8-07: 102.

- *Fong Construction Baseyard Co.*
  This area refers to a four-acre rectangular section consisting of grubbed and graded land dedicated to bulk storage of construction materials, scrap metal, derelict vehicles, derelict construction equipment, heavy machinery and above-ground storage tanks. Limited quantities of regulated petroleum-based items are stored and used on-site. Leakage of petroleum products from heavy equipment and improper storage of materials was noted.
- *Nobriga's Feedlot and Ranch*
  The remaining twenty-seven (27) acres of the subject site consists of Nobriga's Feedlot and Ranch, a commercial business operation for ranching (horses and other livestock), cattle feeding areas to prepare cattle for slaughter and cattle manure composting. Machine maintenance, cattle food production, and above-ground storage tanks (diesel) are all located west of the subject site.

Information presented here represents those items visually or physically observed or identified in the interviews or records review.

Past Uses

Historically, the land was owned by Alexander and Baldwin Properties and was undeveloped vegetated land. Mr. Roderick Fong leased the property for approximately two (2) decades prior to purchasing it in the 2000s. The four-acre rectangular area was graded and cleared in the late 1990s to provide for baseyard and storage space for Fong Construction Baseyard Co. Post grubbing and grading, Mr. Fong moved his Kahului-based baseyard to the subject site in Waikapu. Fong Construction Baseyard Co. utilized the four-acre portion for construction equipment storage, heavy machinery, derelict vehicle storage, machine maintenance and waste container storage. These activities still continue through the present and are associated with generating limited quantities of waste oil and other regulated items.

The remaining twenty-seven (27) acres have been leased by Dave Nobriga since 1968. Mr. Nobriga established Nobriga's Feedlot and Ranch on the subject site and by 1990, the cattle feedlots located on the western portion were already established. These activities continue through the present.

The knowledge of past uses of the property was primarily obtained from aerial photographs, county tax records, and interviews. Topographic maps and the Hawaii Atlas provided limited regional information.

5.2.2 Current and Past Uses(s) of the Adjoining Properties and Surrounding Area

MEV has researched current uses of adjoining properties and at its discretion, past uses of the adjoining properties and the surrounding areas. Information presented here represents those items visually or physically observed or identified in the interviews or records review. The information is described herein as items that may indicate ***recognized environmental conditions*** with adjoining properties and those conditions that may indicate a high probability of migration of hazardous substances or petroleum products to the subject property.

Table 2.0 Land Use, Adjacent Properties

Adjoining Property	Period	Land Use	Concerns	Comments
North of Subject Site	Past	Undeveloped vegetated land.	None.	None.
	Present	Undeveloped vegetated land and ranch land.	None.	None.

East of subject site	Past	*East of eastern portion:* Undeveloped vegetated land and sugar cane.	Pesticide application leading to possible soil and groundwater contamination. Soil contamination is more likely in areas of chemical misuse or spillage.	Sugarcane cultivation had been active east of the eastern-most portion of the subject site for several decades up to the present. During this time, there may have been the use of agricultural pest control chemicals and fertilizers, which has been long recognized by the U.S. Environmental Protection Agency (EPA) for contributing to the potential contamination of surface soils and groundwater systems. However, it is unlikely that the chemicals underlying the subject property would be above regulated levels. Furthermore, this area is slightly downgradient to the subject site and separated by a highway (road). The groundwater data taken at the two wells on the adjacent Consolidated Baseyard Lots showed no contamination of groundwater.
		East of Fong Baseyard: Undeveloped vegetated land.	None.	None.
	Present	*East of eastern portion:* Kuihelani Highway and undeveloped vegetated land and sugar cane.	See "Concerns" listed above for past use.	See "Comments" listed above for past use.
		East of Fong Baseyard: Consolidated Baseyard Lots.	Storage of regulated materials and above-ground diesel fuel tanks.	No significant releases have been reported regarding this site.
South of subject site	Past	*South of subject site:* Undeveloped vegetated land and sugar cane.	See "Concerns" listed above for past use east of subject site.	See "Comments" listed above for past use east of subject site.
		South of the powerline eastment on the subject site: Undeveloped vegetated land.	None.	None.
	Present	*South of subject site:* Waiko Road and sugar cane cultivation.	See "Concerns" listed above for past use.	See "Comments" listed above for past use.
		South of the powerline eastment on the subject site: Consolidated Baseyard Lots.	See "Concerns" listed above for Consolidated Baseyard Lots.	See "Comments" listed above for Consolidated Baseyard Lots.
West of subject site	Past	Undeveloped vegetated land.	None.	None.
	Present	Nobriga's Feedlot and Ranch.	Storage of regulated materials and above-ground fuel tanks. Up-gradient off-site stormwater runoff leading to the on-site lagoon.	No significant releases have been reported at the site concerning regulated materials.

The interpretation of past uses of the adjoining properties was primarily made from aerial photographs, MEV site reconnaissance, Maui Country property tax records, and interviews. Topographic maps and the Hawaii Atlas provided limited regional information.

5.2.3 Topography

The project site lies on the western-central edge of the Kahului Isthmus near the southeastern slopes of West Maui Mountains (Kahalewai Volcano), on the island of Maui. The physiographic type feature of the subject site is described as Kahului Isthmus.

The site elevation ranges from approximately 200-270 feet above mean sea level and is characterized by easterly trending slopes of approximately 2%. On-site relief for the property is estimated to be approximately 70 feet, descending from a higher point near the northwestern corner to a lower point near the southeastern corner of the eastern portion of the subject site. The four-acre section of Fong Baseyard is graded relatively level. The remainder of the property is characterized by undulating 2-20 foot sandy knolls. See Figures 2A – 2D, Appendix A.

The nearest prominent natural feature is the intermittent Waikapu Stream located approximately 1,000 feet southwest of the western portion of the subject site and 2,500 feet south of the eastern portion of the property.

5.2.4 Geology and Soils

The West Maui Volcanics have been divided into three series. The oldest series are the Wailuku Volcanics, which are the basaltic flows that built the bulk of the West Maui island shield. The Honolua Volcanic Series overlies the Wailuku Volcanics and consists of thin, discontinuous andesitic and trachytic flows, domes and pyroclastic deposits. After a long period of erosion, renewal activity included the flows and cones of the Lahaina Volcanic Series.

The subject site local area is located at the west-central section of the isthmus of Maui. The isthmus was created during the shield building stage of Haleakala as lava flowed and piled against the eastern flank of older West Maui Volcano.

The subject property lies on geologically young, alluvial fans eroded from the West Maui Mountains and transported by storm water into the isthmus valley. These alluvium materials consist of rounded boulders, gravel and sand, very permeable to water and fluid releases. They have a cover of wind-blown sand as described below.

According to the U.S. Department of Agriculture, the following soil series underlie the subject site:

- Puuone Sand, 7 to 30 percent slopes (PZUE). Puuone Series soil includes overly drained sandy soil derived from coral and seashells. They tend to be moderately to steeply sloping. Specifically, PZUE soil occurs on sand hills near the ocean. In a representative profile, the surface layer is about 20 inches thick, consisting of grayish-brown, calcareous sand. At depth, this material becomes cemented. Permeability is rapid (6.3 to 20 inches per hour) above the cemented layer, and slow (less than 0.06 inches per hour) within the cemented layer. This soil is described as having a low corrosivity for uncoated steel and concrete. Runoff is slow, and the hazard of wind erosion is moderate to severe.

Other common, surface geologic phenomena investigated in an environmental site assessment are faults, landslides, rock falls, earthquake zones and volcanic eruptions. In 1992, the USGS reevaluated the seismic hazards for the State of Hawaii, and Maui County was classified as Zone 2B. This indicates that in any given year within a 50-year period (average building life span) there is a 10% chance that 1/5 the force of gravity (ground acceleration) during an earthquake will be exceeded.

After examination of the relevant data, it has been determined by MEV that these geologic phenomena are not a factor to the subject site. However, it should be noted that this is not an investigation for geological hazards.

5.2.5 Hydrology

The subject site area has an annual average rainfall of approximately 15-20 inches. The average temperature range from the annual high to the annual low is 82 degrees and 65 degrees Fahrenheit,

respectively. The pre-development vegetation zone within this temperature and rainfall range is characterized as Kiawe and Lowland Shrubs and Lantana-koa haole shrubs.

On-site drainage is generally directed from the higher property elevations along the northwestern boundary to the lower elevations of the southeastern boundary. See Figure 2A – 2D, Appendix A.

The pertinent Federal Insurance Rate Map (FEMA FIRM MAP #150003 0393E and 0394E dated September 25, 2009) depicts the area as determined to be outside the 0.2 percent annual chance floodplain (Zone X).

The Civil Defense Tsunami Evacuation Maps indicate the subject property is **not** within the Tsunami reach-zone. The Pacific Ocean (Maalaea Harbor) is located approximately 3.5 miles south of the subject site. The closest intermittent water course of significance is the Waikapu Stream, approximately 1000 feet to the southwest of the southeastern portion of the subject site.

5.2.6 Hydrogeology

As with all islands of the United States, Maui is regulated by the Coastal Zone Management Act of the Clean Water Act. These two designations require protective comprehensive plans for groundwater management and limit the extent of certain types of development and land use. One important management criterion is the disposal of wastewater. The Water Resource Management Department of Hawaii has designated the groundwater management area as the **Kahului Aquifer System** within the **Central Aquifer Sector**. The groundwater underlying the subject site is defined as follows:

Table 3.0 Aquifer Classification of the subject site

Aquifer Type: Hydrology & Geology	Status of Groundwater				
	Development Stage	Utility	Salinity (mg/l Cl⁻)	Uniqueness	Vulnerability to Contamination
Unconfined, basal aquifer comprised of alluvial and marine sediments deposited by erosion and biogenic processes.	Currently Used	Ecologically Important	Low (250-1000)	Irreplaceable	High
Unconfined basal aquifer occurring within horizontally extensive lavas (Flank)	Currently Used	Ecologically Important	Low (250-1000)	Irreplaceable	Moderate

The following are descriptions of the aquifer classification codes, according to Water Quality Plan: *basal* – freshwater in contact with seawater; *high level* – freshwater not in contact with seawater; *unconfined* – water table is the upper surface of the saturated aquifer; *confined* – aquifer is bounded by impermeable or poorly permeable formations; and *confined or unconfined* – the actual condition is uncertain.

Aquifer Type Geology: flank, dike, flank/dike, perched, dike/perched, and sedimentary.

Development Stage – currently used, potential use, no potential use: Aquifers are differentiated according to those already being used (currently used), those with potential utility (potential use), and those having no potential developability.

Utility – drinking, ecologically important, neither: Identifies aquifers by use.

Salinity – fresh, low, moderate, high, and seawater: The gradation of groundwater from fresh to seawater is a feature of all basal aquifers in Hawaii. The upper limit of the standard for drinking water is 250 mg/l Chlorine (Cl^-) (fresh) and true seawater has a chloride content of 18,980 mg/l.

Uniqueness – irreplaceable and replaceable: The classes irreplaceable and replaceable are direct EPA derivatives. Virtually all potable water in the state of Hawaii should be considered irreplaceable over the long term.

Vulnerability to Contamination – high, moderate, low, none: Because of the geographical limits of resources, interconnection among groundwater sources and the relatively rapid time of groundwater travel, aquifers can be described as being either vulnerable or not vulnerable to contamination.

The estimated depth to the basal groundwater varies throughout the subject site and is likely to be approximately 225 feet below the surface (depending on the location on the site) and is projected to flow in an easterly direction.

The subject site is located below (makai or seaward) of the Underground Injection Control (UIC) line. The UIC line is the designated boundary that divides protected inland areas situated over drinking water sources from seaward areas located over non-potable water sources. Sites mauka of the UIC line are considered drinking water sources and permit limitations are imposed by Maui County, Clean Water Branch (CWB).

5.2.7 Potable Water Supply and Sewage Disposal System

The Fong Construction Baseyard receives potable water supply from two (2) groundwater wells located on the eastern adjoining property (Consolidated Baseyard properties) located just east of Fong's Baseyard. The DLNR permitting requirements for these groundwater wells, (#5129-02 and #5129-03) are complete. Well #5129-02 was installed in 2001 for municipal use and is owned by Consolidated Baseyards, LLC. The well depth is 255 feet and the pump depth is 240 feet. Well #5129-03, located just northeast of Fong's Baseyard, was installed in 2005 for municipal use and is also owned by Consolidated Baseyards, LLC. The well depth is 300 feet and the pump depth is 253 feet. No violations or data exceeding EPA limits are associated with these wells.

According to the property owner, there are no known septic or cesspool systems on the Fong Baseyard premises. All human waste is deposited in portable toilet units on-site.

According to the property tenant, Mr. Dave Nobriga, there is one (1) operational cesspool associated with his business. MEV found no evidence of this cesspool on the subject site and believes it is located on the western off-site portion of the feedlot and ranch.

5.3 Interior and Exterior Observations

5.3.1 Hazardous/Regulated Substances and Petroleum Products in Connection with Identified Uses.

The following hazardous substances or regulated materials currently used on-site, as part of a production process, or otherwise directly related to on-site operations, as visually or physically observed during the site visit or identified from interviews or records review, are as follows:

Fong Construction Baseyard Co. This operation has been in existence on the subject site since the late 1980s, dedicated to heavy equipment storage and general construction baseyard activities. This operation generates and stores waste oil and other petroleum-based products from limited machine maintenance and other activities conducted on-site. MEV noted improper storage of limited quantities of waste oil and petroleum-based fluids on-site. The above-noted petroleum products have impacted the underlying surface soils. Leakage from heavy equipment stored on-site was also noted by MEV. According to the property owner, (and business owner) all trucks are re-fueled at an off-site location. Approximately eighty (80) derelict vehicles are located in this area. These vehicles may be removed off-site in the near future and may require the removal of vehicle fluids and batteries. If this takes place, a significant quantity of regulated materials will be generated on-site. The property and business owner should ensure all regulated items are being managed properly at all times. Notable sources of hazardous/regulated substances and petroleum products are listed below.

Numerous above-ground tanks (water and former fuel tanks) were noted on-site. The majority of these ASTs were empty, but some may contain residual fuel and sludge. No associated soil staining or petroleum odors were noted associated with these tanks. One (1) 1000-gallon diesel tank is currently in use;

An undetermined amount of solid waste storage and dumping has taken place on the subject site, including regulated items such as automobile tires (approximately 200), vehicle batteries (approximately 70) and white goods (approximately 2);

A large scrap metal stockpile is located near the northeastern corner of the baseyard. The majority of this consists of crushed derelict vehicles;

Bulk storage of petroleum products was evident on-site. Approximately seventy-five (75) 55-gallon drums and approximately twenty-five (25) 5-gallon containers are currently being stored on the premises. Most of these drums/containers contained moderate amounts of used oil or other petroleum-based products. The majority of these drums/containers were improperly stored, lacked secondary containment and were not labeled appropriately. Soil staining was noted in the area of some of these drums/containers. For the business owner storing containers/drums of regulated substances on-site, these drums should be properly managed in order to avoid unnecessary releases onto the underlying surface soils or into any nearby drainage systems;

Numerous pieces of heavy equipment (approximately 70) including trucks, tanker trucks, construction vehicles, and derelict construction machinery were noted on-site. The vast majority of this equipment is leaking petroleum-based fluids causing limited to moderate surface staining;

Surface staining is located in many areas throughout the baseyard associated with ineffective storage of waste oil and petroleum products, leaking heavy equipment and maintenance activities;

Eight (8) 40-foot storage containers and seven (7) 20-foot storage containers are located on-site. Most were inaccessible to MEV, but two of these contain 55-gallon drums (full) and vehicle batteries.

Drum/Container Management

MEV recommends the following management procedures be followed at facilities storing tanks/drums/containers of petroleum and other regulated or hazardous materials:

- Tanks or drums containing hazardous or regulated waste/product should be stored in an area with underlying secondary containment (40 CFR 112). This may include concrete ground surfaces with retaining berms or similar spill control protection. Drum storage should be located in an area (preferably covered) that will be protected from accidental machinery or vehicular impact.
- Any product filling or transferring operations should be done in the containment area. If this is not possible, proper spill kits should be nearby to handle any spilled product. Spills should be cleaned up immediately and any contaminated soil or absorbent material disposed of properly.
- All drums/containers should be properly labeled (HAR 11-279-22(c)(1)) with product identification and inventoried. Materials Safety Data Sheets (MSDS) should be available on each product inventoried.
- Drums with no remaining free product should be disposed of according to County regulations. Drums to be re-used and temporarily stored on-site should be empty, clean, and labeled "Empty".
- Containers should be properly secured to prevent accidental release of products.

Spills and leaks from drums, containers or from transfer operations should be kept to a minimum with proper product management and employee awareness. This will assist in minimizing the potential for soil contamination and even possible surface water or groundwater contamination.

Nobriga's Feedlot and Ranch The remaining twenty-seven (27) acres (eastern portion and western portion) of the subject site consists of Nobriga's Feedlot and Ranch, a commercial business operation for ranching (horses and other livestock), cattle feeding areas to prepare cattle for slaughter and cattle manure composting. The current bulk storage/use of hazardous/regulated substances was not noted on the subject property. The machine maintenance, cattle food production, fuel truck and above-ground storage tanks

(diesel) are all located west of the subject site, across the access road. Notable sources of hazardous/regulated substances and petroleum products are listed below.

Nobriga's Feedlot (western portion of the subject site)
Seven (7) pieces of heavy machinery (one of which is leaking) and one (1) derelict bulldozer exist on-site;

Eight (8) vehicle tires are located on the premises;

Nobriga's Ranch (eastern portion of the subject site)
Regulated items of note associated with the Ranch include eleven (11) vehicle tires, one (1) vehicle battery, one (1) 5-gallon canister containing a substance with odors resembling gasoline, one (1) 5-gallon container half full of petroleum-based product and several containers consisting of wood finish, primer, sealer and paint. A miscellaneous debris area lies immediately north of the eastern portion of the subject site. This area consists of vehicle tires, a white-good appliance, various construction debris, two (2) pieces of derelict machinery, three (3) 5-gallon containers with trace petroleum product, one (1) 300-gallon poly tote (empty) and two (2) 1000-gallon AST both of which had loose and flakey paint.

MEV is aware of the historic and current storage, use and generation of regulated products/wastes by tenants located on adjoining properties. This mainly consisted/consists of the storage of construction baseyard equipment including but not limited to waste container storage, above-ground fuel tanks and regulated items (vehicle tires, batteries etc.) associated with the Consolidated Baseyards.

Due to the industrial nature of the businesses previously and currently located in close proximity to the subject site, it is quite likely that there were historical spills/releases onto the surface soils near the subject property from large machinery malfunctions or possibly from improper storage and/or disposal in the earlier days of site use. MEV found no evidence during site reconnaissance to suggest migration and contamination of surface soils within the subject site from off-site sources of hazardous/regulated substances or petroleum-based products.

5.3.2 Hazardous/Regulated Substances and Petroleum Products/Containers (not in connection with identified current uses).

MEV did not identify any hazardous/regulated substances and/or petroleum products that are not in connection with identified current uses as visually and physically observed on the property at the time of the site visit.

5.3.3 Unidentified Substance Containers

MEV did not observe any unidentified substances suspected of being possible hazardous/regulated substances or petroleum products as visually and physically observed on the property at the time of the site reconnaissance except for the following:

Fong Construction Baseyard Co. - Approximately seventy-five (75) 55-gallon drums and approximately twenty-five (25) 5-gallon containers are currently being stored on the premises and likely contain regulated petroleum-based substances, however, the exact contents are unknown due to ineffective labeling. MEV did observe some minor leakage of product from some of these containers onto the underlying surface soils. See Section 5.3.1 for drum management information. Approximately seventeen (17) above-ground storage tanks are currently located on-site. Although the majority of these tanks appeared to be empty or historically contained water, MEV suspects that some of these tanks may have historically been former fuel tanks. It is possible that limited amounts of residual fuel or sludge remain in these tanks.

Nobriga's Feedlot and Ranch - Associated with the ranch are several 300-gallon poly totes (one is marked Praestol Flocculant and MEV suspects that the others likely contained water).

A miscellaneous debris and storage area lies immediately north of the eastern portion of the subject site. Two (2) 55-gallon drums containing an unknown product, three (3) 5-gallon containers with possible trace

petroleum product, and two (2) 1000-gallon AST (unknown use but labeled potable water) are located in this area.

5.3.4 Storage Tanks

No indications regarding the current presence of USTs on the subject site were obtained through our review of regulatory databases, interviews, or through MEV's site reconnaissance.

Fong Construction Baseyard Co.

MEV noted approximately seventeen (17) above-ground storage tanks associated with the baseyard. Although the majority of these tanks appeared to be empty or historically contained water, MEV suspects that some of these tanks may have historically been former fuel tanks. It is possible that limited amounts of residual fuel or sludge remain in these tanks. The following list represents MEV's findings of ASTs noted on the baseyard property:

Two (2) 100-gallon ASTs – empty;

One (1) 200-gallon AST – empty;

One (1) 300-gallon AST – empty;

One (1) 300-gallon poly tote – possibly contains residual unknown substance;

Three (3) 500-gallon ASTs – empty;

Two (2) 600-gallon ASTs – one is empty and the other possibly contains residual gasoline;

One (1) 1,000-gallon AST – currently in use and contains diesel. Amount unknown;

One (1) 1,500-gallon AST – empty;

One (1) 5,000-gallon AST – possibly contains residual fuel or sludge;

Two (2) 10,000-gallon ASTs – likely contained irrigation water;

Two (2) 20,000-gallon ASTs – likely contained irrigation water.

Nobriga's Feedlot and Ranch

MEV noted approximately two (2) 300-gallon poly totes associated with ranching activities. One of these tanks was full and labeled "Praestol Flocculant". The other tank had approximately four inches of liquid resembling water.

Storage Tanks noted just off-site:

MEV noted one (1) AST likely containing diesel west of the western portion of the property and across the access road. This tank is associated with fueling at the Nobriga's Feedlot and Ranch central maintenance and food production area. MEV noted one (1) 300-gallon poly tote, two (2) 1000-gallon ASTs (labeled potable water) and one (1) 100-gallon AST (empty) immediately north of the eastern portion of the property's northern boundary.

One (1) propane AST was noted in the northeastern corner of the Consolidated Baseyard Lots associated with DHX Warehouse.

One (1) 1000-gallon diesel tank is located along the western boundary of the Consolidated Baseyard Lots. Upon inspection, the tank is being stored in an area with underlying secondary containment including a concrete ground surface with retaining, spill-control walls. They appear to be constructed in compliance with the Spill Prevention, Control and Countermeasure (SPCC) regulations (40 CFR 112).

5.3.5 Odors

Fong Construction Baseyard Co.

Besides odors emanating from the containers previously noted above (Section 5.3.1), the only petroleum-like odors noted by MEV were from the areas of limited surface soil staining located on-site associated with leaking construction equipment and derelict machinery on Fong Baseyard. (See Section 5.5.2 and Figure 2D, Appendix B for surface soils staining locations).

Nobriga's Feedlot and Ranch

Strong livestock waste product odors were noted on Nobriga's Feedlot and Ranch.

5.3.6 Pools of Liquid

MEV did not observe any pools or sumps of liquids likely to be hazardous substances or petroleum products to the extent visually and/or physically observed on the subject property at the time of the site visit or from interviews or records review other than the two (2) catchment ponds associated with Nobriga's Feedlot and Ranch. The catchment pond located on the southwest side of the access road in the southwestern portion of the subject property appears to be used to collect storm water runoff from upgradient off-site food production, cattle feedlot and maintenance activities. The pond located in the north-central area of the western portion may be used for catchment purposes for the on-site feedlots located west of this pond.

5.3.7 Indications of PCBs

Pole or pad-mounted transformers numbered 7777 or above are considered non-PCB containing by the Maui Electric Company. Three (3) pole-mounted electrical transformers were observed along the western property boundary just north of Fong's Baseyard of the subject site. These transformers were noted to be non-PCB-containing (indicative of serial numbers) and in good condition with no visible leakage.

Background Information:

Polychlorinated biphenyls (PCBs) are groups of manufactured organic chemicals that contain 209 individual chlorinated chemicals (known as congeners) and were introduced in 1929. PCBs have been used widely as coolants and lubricants in transformers, capacitors, and other electrical equipment. Products containing PCBs are old fluorescent lighting fixtures, electrical appliances containing PCB capacitors, old microscope oil, and hydraulic fluids.

The manufacture of PCBs stopped in the United States in 1977 because of evidence that they build up in the environment and cause harmful effects. The distribution in commerce of PCB containing items was banned in 1979 (40 CFR 761.20). The EPA aggressively enforces regulations concerning PCB manufacturing, use, distribution, release and disposal under the Toxic Substance Control Act (TSCA). This federal agency extensively regulates the use, servicing, and disposal of PCBs in electrical equipment by enforcing marking, notification, inspection, and record keeping requirements.

5.4 Interior Observations

5.4.1 Heating and Cooling Systems of On-site Building Structures

There are approximately two (2) permanent building structures associated with the Fong Consolidated Baseyard Co.; the metal utility shed and the vehicle maintenance area. No heating and cooling systems were noted associated with these building structures.

5.4.2 Stains and Corrosion

No areas of significant staining or corrosion were noted on these buildings by MEV.

5.4.3 Indoor Wastewater Drains, Sumps and Grease Interceptors

No indoor wastewater drains, sumps and grease interceptors are associated with on-site building structures.

5.5 Exterior Observations

5.5.1 Pits, Ponds, and Lagoons

MEV identified two (2) on-site lagoons associated with Nobriga's Feedlot and Ranch that likely hold waste liquids from the Concentrated Animal Feeding Operation (CAFO). The two (2) catchment lagoons located on-site have been implemented as best management practices to control any potential contaminated runoff. A small storm water channel traverses from the off-site and upgradient ranch maintenance and feed shed area to the catchment lagoon located on the subject site adjacent to the access road.

There were no other areas identified as any man-made or natural depressions that are, or would have been, likely to hold waste liquids or sludge from industrial operations or other activities.

5.5.2 Stained Soil or Pavement

Fong Construction Baseyard Co.

MEV noted numerous areas of petroleum surface soil and/or concrete staining on the subject property associated with Fong Construction Baseyard. The source of petroleum contamination is likely from not practicing best management practices on the handling of petroleum products, waste oil storage or from heavy equipment leakage. The areas of petroleum-impacted soil should be excavated and properly managed on-site or disposed of off-site. Clearance soil testing could be conducted to ensure all contamination has been removed. More effective product and waste oil management and the implementation of spill protection should be undertaken to eliminate the ability for contaminants to impact the subject site in the future.

The following list of notable staining was compiled by MEV:

- Surface concrete staining and ponded water sheening was noted inside the metal utility shed.
- Surface concrete staining was noted inside of the vehicle maintenance area.
- Surface soil staining was noted just west of the vehicle maintenance area associated with a piece of heavy machinery.
- Areas of concrete staining were noted on a concrete pad just northwest of the vehicle maintenance area associated with four (4) pieces of leaking heavy equipment. Some soil staining is occurring adjacent to the concrete pad as well. (See Photo 20, Appendix A.)
- Surface soil staining was noted in several areas where waste oil was being improperly managed; an area where a 2-gallon open container of waste oil was being stored, and where several 5-gallon containers were being stored on the ground. (See Photo 22, Appendix A.)
- The vast majority of derelict machinery, heavy machinery and equipment was leaking petroleum-based products and impacting the surface soil below. (See Photos 20 and 23, Appendix A.)

(See also Figure 2D located in Appendix A for the above-noted soil stained locations).

The vertical extent of the petroleum contamination is unknown. In the event of a significant release (>25 gallons), the State of Hawaii is to be notified.

There were numerous minor amounts of vehicular staining noted on paved and unpaved areas of the site. None of these petroleum-based stains were particularly large and are considered to be *de minimis* releases that do not require further action.

Nobriga's Feedlot and Ranch

MEV noted one (1) area with limited surface soil staining associated with a piece of leaking heavy equipment located in the north-central area of the western portion of the subject site. (See Figure 2B and Photo 16, Appendix A)

5.5.3 Stressed Vegetation

There were no areas of stressed vegetation identified on the subject property at the time of the site visit that are, or would have been, likely caused from something other than insufficient water (or flooding).

5.5.4 Solid Waste

The following indications of solid waste dumping, storage activity and/or mounds of unknown content were observed on the subject property during the site reconnaissance:

Fong Construction Baseyard Co.

- Two (2) earthen mounds (soil piles) were noted near the eastern boundary of the Fong Baseyard. These mounds may have originated at an off-site location from an unknown source. The inner contents of the earthen mounds are unknown. If excessive construction debris, unidentifiable containers or petroleum-based odors are uncovered from these mounds, proper waste management and handling should be undertaken.
- Miscellaneous debris dumping, including asphalt, wood, metal and plastics were in various areas throughout the site. The inner contents of the dumped materials are unknown.
- One (1) significant scrap metal pile consisting of crushed derelict vehicles exists on the premises.
- Significant derelict vehicle storage (approximately 80) and derelict boats (approximately 6) were noted on-site;
- Numerous above-ground tanks (water and former fuel tanks) were noted on-site. The majority of these ASTs were empty, but some may contain residual fuel and sludge. No associated soil staining or petroleum odors were noted associated with these tanks. (See Photo 24, Appendix A.)
- An undetermined amount of solid waste storage and dumping has taken place on the subject site, including regulated items such as automobile tires (approximately 200), vehicle batteries (approximately 70) and limited amounts of white goods;

Nobriga's Feedlot and Ranch

- One (1) manure composting area is located in the southern portion of the site. Several manure mounds are located adjacent to the feedlot areas. (See Photo 15, Appendix A);
- Eight (8) vehicle tires are located on western portion and eleven (11) are located on the eastern portion;
- One (1) vehicle battery is located near the southwestern corner of the eastern portion;
- Construction debris including fencing material, corrugated metal and wood exist on-site.

Some wastes may be considered "Special Wastes" according to the Hawaii Administrative Rules (HAR) on Solid Waste, Title 11, Chapter 58.1. Special wastes are those wastes that do not fit in the mixed municipal solid waste (MMSW) category, either by general nature or because of special handling requirements. Special waste categories include: asbestos, sludge, medical waste, used oil, batteries, agricultural wastes, tires, derelict vehicles and white goods (i.e., appliances). Locally, the County of Maui, Department of Public Works, Solid Waste Division administers the disposal of these materials. These wastes need to be disposed of in a permitted solid waste landfill such as the Maui County Central Landfill. Special wastes' management needs to be performed in a manner that complies with all local, state, and federal regulations as applicable to the specific waste type.

5.5.5 Wastewater or Storm Water – Discharge Drains, Dry Wells, Drainage Ways, and Retention Basins

MEV noted two (2) lagoons on-site associated with the Nobriga's Feedlot and Ranch operations. These lagoons are part of the Feedlot's nutrient management program to control runoff from the Feedlots. One lagoon is located at the northern boundary of the western portion of the subject site and the other is located just to the west of the on-site access road. Upon observation, MEV noted a prominent drainage channel with possible feedlot pollutants (cattle urine and manure) originating from the heart of the Nobriga business located upgradient and west of the subject site. This area is the location of another feedlot, feed

shed, vehicle maintenance area and pineapple storage area. The property owner should ensure that no contaminated runoff leaves the subject property. (See Photos 18 and 19, Appendix A.)

Farm waste lagoons are susceptible to leakage or overflow, sending potentially toxic microbes, nitrate pollution and bacterial into water courses. For these reasons, the EPA recommends a National Stormwater Pollution Discharge Permit (NPDES) for Concentrated Animal Feeding Operations (CAFOs).

The EPA has finalized (November 20, 2008) revisions to the NPDES permitting requirements and Effluent Limitations Guidelines for CAFOs. According to the EPA, as authorized by the Clean Water Act (CWA), the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Under this final rule, any CAFO that discharges or proposes to discharge is required to seek permit coverage. The permit coverage provides certainty to CAFO operators regarding activities and actions that are necessary to comply with the CWA. Under the CWA, operators that do not apply for permits operate at their own risk because any discharge from an unpermitted CAFO (other than agricultural stormwater) is a violation of the CWA. The CAFO must implement site-specific nutrient management practices (NMP) that ensure appropriate agricultural utilization of the nutrients produced by the operation. A CAFO may be authorized to acquire a NPDES permit based on an on-site inspection by a NPDES permitting authority if the authority finds that the facility is a significant contributor of pollutants to waters of the United States.

In order to minimize the potential for regulatory profiling of the subject site, property management may consider implementing conservative, proactive environmental policies. These policies might include written environmental protection contracts with any industrial or special-use commercial tenants and posted notices regarding any use, storage and handling of hazardous substances and/or petroleum product. Special attention should be addressed to wastewater (possibly containing contaminants) that could impact the surface soils or enter nearby drainage systems.

All wastewater created on-site should be connected to the County's wastewater system or contained on-site and allowed to evaporate. Wastewater should not be allowed to migrate off-site or negatively impact the subject site's surface soils.

MEV reviewed the groundwater well data from both wells located on the adjacent Consolidated Baseyard Lots. Although a small amount of nitrate has been found (2.1 parts per million) this is below the recommended EPA limit (10 ppm) and is not an issue at this time, but will be monitored quarterly. (See Well Data, Appendix B.)

5.5.6 Wells

There are two (2) registered groundwater wells listed for the adjacent property at the Consolidated Baseyard Lots (DLNR Well # 5129-02 and Well # 5129-03). These wells are owned by Consolidated Baseyards, LLC and were drilled in 2001 (#5129-02) and 2005 (#5129-03) for distributing potable, municipal water for the Consolidated Baseyard lots. The well depth is 300 feet and the pump depth is 253 feet for Well # 5129-03. Well depth for Well # 5129-02 is 255 feet and the pump depth is 240 feet. All DLNR permitting requirements are complete for both wells. According to the State Department of Health, Safe Drinking Water Branch, these wells are sampled quarterly for analytes required by the EPA for drinking water standards. No violations have been cited for these systems and water quality data shows no significant contamination of groundwater exceeding EPA limits. However, the Fong Baseyard and Nobriga's Feedlot activities and any future development westerly should consider activity management to avoid the potential for contributing to changes in groundwater quality. (See Well Water Quality Data, Appendix B.)

5.5.7 Septic and Cesspool Systems

MEV did not obtain evidence of any former septic or cesspool system located on the subject site.

5.6 Non-Scope Considerations

The concerns listed below are not normally considered relevant under CERCLA, however, they may be considered regulated under other environmental laws and ordinances and may present a potential liability to the property owner.

5.6.1 Asbestos-Containing Materials (ACM)

The subject property did not have any notable building materials that would consist of asbestos-containing materials. Current OSHA regulations for occupational exposure to asbestos hazards require commercial building owners to presume all thermal system insulation, sprayed or textured surfacing materials and asphaltic and vinyl flooring installed in buildings constructed before 1981 to be ACM.

5.6.2 Lead-Based Paint

The building structures located on the subject property did not have materials consisting of lead-based paint. Suspect lead-based paint was observed on derelict boats at Fong Construction Baseyard and on two (2) 1000-gallon AST located just beyond the northern property boundary in the eastern portion of the subject site. (See Photo 14, Appendix A.)

5.6.3 Arsenic-Containing Substances

MEV did not observe any suspect arsenic-containing building materials or waste materials at the time of the site visit.

5.6.4 Radon

MEV did not identify any man-made products on the subject property that are known or suspected to emit radioactive decay elements.

Background Information:

Radon is a colorless and odorless radioactive gas that can produce health effects such as cellular injury. Radon gas can occur in the natural environment as concentrations from certain rocks and geologic conditions have a high radon-emanation potential.

These surface rock types are not known to occur in Hawaii. It is possible that increased concentrations of Radon could occur in regions where geologic fault and volcanic rift zones may release gases from deeper earth sources. However, the State of Hawaii, Department of Health (DOH) has not addressed concerns for any significant levels of gas to occur anywhere in Hawaii. This was based on the 1992 and 1996 DOH investigations conducted in elementary schools throughout the State.

5.6.5 Lead in Drinking Water

Two (2) groundwater wells are located on Consolidated Baseyard Lots, adjacent to the subject site. These wells were installed to provide a potable water supply to the Consolidated Baseyard Subdivision. The Safe Drinking Water Branch, (Department of Health) requires quarterly monitoring of the water obtained from these systems. According to the Safe Drinking Water Branch, no violations have been received on these wells. Data collected from these wells has not exceeded the US EPA maximum contaminant level for lead or any other required analytes.

5.6.6 Ecological Resources, Endangered Species, Cultural and Historic Resources, and Wetlands

There are no known critical habitats, or threatened and/or endangered species on the project site. The subject site is not located within the County of Maui's Special Management Area (SMA).

5.6.7 Indoor Air Quality

The subject property's building structures consist of storage sheds, machine shop equipment and vehicle maintenance areas. MEV did not identify any building surfaces that had characteristics that resembled

possible mold contamination at the time of the site visit. However, it should be noted that mold-contaminated surfaces may be located in interstitial wall spaces, and thus, would not be visually identified during the site investigation. This investigation was not performed with the objective of identifying the presence of mold amplification in the indoor environment.

Background Information:

Indoor air quality (IAQ) problems primarily result from indoor pollution sources that release gases or airborne particles. The term "Sick Building Syndrome" (SBS) is used to describe situations in which building occupants experience acute or chronic health and discomfort effects that appear to be linked to time spent in a building and may be localized in a particular room or zone or may be widespread throughout the building. Frequently, problems result when a building is operated or maintained in a manner that is inconsistent with its original design or prescribed operating procedures or as a result of poor building design or occupant activities.

Sources of indoor air contaminants can originate from within the building or be drawn in from the outdoors. The following causes may contribute to IAQ problems:

1. *Inadequate ventilation* – As a result of the oil embargo in 1973, national energy conservation measures called for a reduction in the amount of outdoor air provided for ventilation. In many cases the reduced outdoor air ventilation rates were found to be inadequate to maintain the health and comfort of building occupants. Potential air pollutant sources in ventilation or heating, ventilating, or air-conditioning (HVAC) systems include, but are not limited to: dust or dirt in ductwork; microbiological growth (i.e. mold, mildew, or bacteria); improper use of biocides, sealants, and cleaning compounds; and refrigerant leakage. Inadequate ventilation may increase the concentrations of these indoor air contaminants.
2. *Biological contaminants* – Bacteria, molds, pollen and viruses are types of biological contaminants. These contaminants may breed in stagnant water that has accumulated in ducts, humidifiers and drain pans, or where water has collected on ceiling tiles, carpeting, or insulation. Surfaces exposed to high humidity with limited air movement may also be subject to microbiological contamination.
3. *Chemical contaminants from indoor sources* – Potential air pollutant sources of indoor chemical contaminants include, but are not limited to: adhesives, carpeting, upholstery, manufactured wood products, pesticides, combustion products (i.e. carbon monoxide, carbon dioxide, and nitrogen oxides), and cleaning agents emitting volatile organic compounds (VOCs). Tobacco smoke contributes high levels of VOCs, other toxic compounds, and respirable particulate matter. Research has shown that some VOCs can cause chronic and acute health effects at high concentrations, and some are known carcinogens.
4. *Chemical contaminants from outdoor sources* – The outdoor air that enters a building can be a source of indoor air pollution. Potential air pollutant sources of outdoor chemical contaminants include, but are not limited to: motor vehicle exhausts; plumbing vents; combustion products (i.e. carbon monoxide, carbon dioxide, and nitrogen oxides); and building exhausts (i.e. bathrooms and kitchens). These contaminants can enter the building through poorly located air intake vents, windows, and other openings.

Indicators of SBS or IAQ related health problems include, but are not limited to, headache, eye, nose, or throat irritation, dry cough, dry or itchy skin, dizziness or nausea, fatigue, and sensitivity to odors.

5.6.8 High Voltage Transmission Lines

High voltage overhead power lines are located along the northern property boundary, the eastern border of the Fong Baseyard, near the southern boundary of the western portion of the subject site and through the south-central area of the eastern portion of the subject property. These lines may produce moderate

electromagnetic fields (EMF). This concern is not expected to significantly impact the subject site at this time, however, these lines should be addressed during the development of future buildings. EMF surveys can be conducted by Maui Electric Company (MECO) if there remains Client concern.

6.0 INTERVIEWS

MEV conducts interviews with persons that may have specific knowledge on the subject property and any land use activities that may have operated on-site in the past or continue to currently operate on the subject property. Interviews are also an effective tool to better understand the overall historical regional and local setting of the subject site. Whenever possible, MEV attempts to interview the present and past owner(s), site manager, occupants, local government officials and other relevant contacts. See also Section 8.3.

6.1 Interview with Property Owners

Information was provided by property owners, Mr. Roderick Fong and Mr. Henry Fong, who provided MEV with information regarding the on-site Fong Construction Baseyard Co. business practices and operations.

Mr. Roderick Fong informed MEV that the Fong family leased the property from A & B Properties for approximately 20 years and decided to buy it a few years ago. Mr. Fong stated that the original Fong Construction Baseyard was located at 237 Dairy Road in Kahului. Mr. Fong was aware of the petroleum hydrocarbon contamination from a leaking UST at the Kahului location and took the proper measures for environmental cleanup. As of 1993 a "No Further Action" was given by the State to signify closure. Mr. Fong stated that the on-site Fong Construction Baseyard does not have any USTs and that the majority of the current ASTs are empty or contain water.

Mr. Henry Fong made himself available to MEV for interviewing purposes and for on-site guidance during site reconnaissance. Mr. Fong informed MEV that currently the business has one operational diesel above-ground storage tank. The majority of the trucks are transported to an off-site fueling station for re-fueling purposes. Mr. Fong showed MEV their diesel AST, waste oil storage area, and vehicular maintenance location. Mr. Fong told MEV that Maui Petroleum pumps out all spent waste oil. Mr. Fong is in the process of compiling hazardous waste documentation for MEV.

6.2 Interview with Property Tenant

MEV spoke with Mr. Dave "Buddy" Nobriga, the owner and operator of Nobriga's Feedlot and Ranch. Mr. Nobriga informed MEV that he has leased the property since 1968 for his business operations. Mr. Nobriga told MEV that the tanker trucks haul in diesel and gas from Maui Soda located in Wailuku. Limited truck maintenance is done in the main area located just west of the subject site. Mr. Nobriga is aware of the EPA revisions (November 20, 2008) to the NPDES permitting requirements and Effluent Limitations Guidelines for CAFOs and is applying effort to follow these guidelines for his business.

6.3 Interviews with Adjacent Property Lessee

MEV interviewed the adjacent property tenant that uses/generates regulated petroleum products/waste.

Reef Development of Hawaii, Inc. – MEV was informed by Mr. Ron Brumling, development manager, that Reef Development has implemented the necessary SPCC regulations (secondary containment) for their diesel above-ground storage tank. Mr. Brumling also informed MEV that their used waste oil is pumped out of drums by Unitek, and vehicular batteries are taken to Napa for proper disposal. Mr. Brumling stated that all hazardous waste pick-up and disposal documentation is located at their Honolulu office.

6.4 Interviews with State Representatives

Mr. Charlie Ice of the Department of Lands and Natural Resources (DLNR) and Kumar Bhagavan of the Department of Health, Safe Drinking Water Branch, were contacted by MEV to discuss the nearby off-site groundwater wells. Mr. Bhagavan sent MEV detailed water quality reports and informed MEV that although nitrate is well below the environmental limits, they are watching the nitrate levels in these wells. No violations have been reported for these wells.

6.5 Other Persons Interviewed

A list of additional persons interviewed during the course of this investigation is located in Section 8.3. None of these persons interviewed had any specialized knowledge of the site relating to *Recognized Environmental Conditions* on the subject site.

7.0 FINDINGS, OPINIONS, AND CONCLUSIONS

7.1 Recognized Environmental Conditions

Recognized environmental conditions, as defined by ASTM Standard E1527-05, are the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. ***Recognized environmental conditions*** are described with regard to (1) the nature and extent of the environmental condition, (2) potential or actual environmental threat, (3) potential for transport (migration) of any environmental conditions, and (4) consideration for further investigation. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

MEV has performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of the ASTM Practice E 1527-05 for the subject property located at 445 East Waiko Road, just north of Waiko Road and west of Kuihelani Highway in the community of Waikapu, Maui, Hawaii, defined as the subject property.

Any exceptions to or deletions from this practice are described in Section 1.4, Limitations and Exceptions, of this report.

This assessment has revealed the following evidence of *recognized environmental conditions* in connection with the property:

7.1.1 Database Listings (See Section 4.0 & EDR Report, Appendix B)

Findings/Concerns:

The subject site is not listed.

The listed nearby site (Waikapu Dump) and the unlisted potential risk site (Maui Scrap Metal) were reviewed for environmental concerns relative to the subject site. It is possible that these sites that are in close proximity to the subject site have had or could have an environmental impact on the subject property.

Opinions and Conclusions:

Due to the distance relative to the subject property, it is not likely that the above-noted sites have had a significant environmental impact on the subject property, nor is there any expected impact therefrom. On-going groundwater monitoring is required for the well water system located adjacent to the subject property. This data can assist in determining if any contamination migration from the Maui Scrap Metal, Waikapu Dump or from other sources has occurred. Pural Water Specialty Company is the operations management for these wells and currently these wells have no violations or groundwater data that exceeds the required limits for potable water. Furthermore, the subject site and local area lies on alluvial fans eroded from the West Maui Mountains. The materials that lie beneath the surface consist of very porous, well-drained sands and course-grained soils. This type of earthen material would likely cause downward migration of any contaminants instead of horizontal flow. Any contamination from adjacent or nearby properties would likely not travel to the subject property as stormwater runoff, given these conditions.

7.1.2 Historic Use or Storage of Hazardous and Regulated Substances (See Sections 5.3.2, 5.3.3 and 5.3.4)

Findings/Concerns:

There is no evidence of any historic misuse or significant spills of hazardous or regulated substances on the subject property except for the areas of noted surface soil staining. (See Section 7.1.4 below).

Fong Construction Baseyard Co. stores, generates and/or uses limited hazardous or regulated substances and wastes. Hydraulic oil, transmission oil, waste oil, diesel fuel and gasoline, solvents, other automobile fluids and vehicle batteries were the main regulated items noted.

Opinions and Conclusions:

The above-noted regulated items should be managed properly to avoid any future releases onto the surface soils of the subject site. All drums should be properly secured, positioned and labeled to avoid any future release.

MEV has outlined management procedures in Section 5.3.1 that should be followed at facilities storing drums/containers.

7.1.3 Storage Tanks (See Sections 5.3.3, 5.3.4)

Findings/Concerns:

No indications regarding the current presence of USTs on the subject site were obtained through our review of regulatory databases, interviews, or through MEV's site reconnaissance.

MEV noted approximately seventeen (17) above-ground storage tanks associated with the Fong Construction Baseyard Co. Although the majority of these tanks appeared to be empty or historically contained water, MEV suspects that some of these tanks may have historically been former fuel tanks. It is possible that limited amounts of residual fuel or sludge remain in these tanks. An operational above-ground diesel tank is located on-site associated with the baseyard. The waste oil is recycled on an as needed basis by Maui Petroleum Company.

Opinions and Conclusions:

Spill protection measures should be used in order to minimize any spills onto the surface soils at the waste oil tank. All tanks should be properly managed.

7.1.4 Stained Soil or Pavement (See Section 5.5.2)

Findings/Concerns:

MEV noted numerous areas of petroleum surface soil and/or concrete staining on the subject property associated with Fong Construction Baseyard. The source of petroleum contamination is likely from not practicing best management practices on the handling of petroleum products, waste oil storage or from heavy equipment leakage.

MEV noted one (1) area with limited surface soil staining associated with a piece of leaking heavy equipment from Nobriga's Feedlot and Ranch located in the north-central area of the western portion of the subject site.

Opinions and Conclusions:

The areas of petroleum-impacted soil should be excavated and properly managed as per State and County regulations. Clearance soil testing could be conducted to ensure all contamination has been effectively removed. If the contamination extends to beyond the immediate upper surface soil layers (and the releases appear to be greater than 25 gallons), then sampling, State (DOH) notification and documentation should be conducted along with proper waste management. More effective product and waste oil management and the implementation of spill protection should be undertaken to eliminate the ability for contaminants to impact the subject site in the future.

The vertical extent of the petroleum contamination is unknown. In the event of a significant release (>25 gallons), the State of Hawaii is to be notified.

There were numerous minor amounts of vehicular staining noted on paved and unpaved areas of the site. None of these petroleum-based stains were particularly large and are considered to be *de minimis* releases that do not require further action.

7.1.5 Wastewater and Stormwater Management (See Section 5.5.5)

Findings/Concerns:

MEV noted two (2) lagoons on-site associated with the Nobriga's Feedlot and Ranch operations. These lagoons are part of the Feedlot's nutrient management program to control runoff from the Feedlot. Upon observation, MEV noted a prominent drainage channel with possible feedlot pollutants (cattle urine and manure) originating from the heart of the Nobriga business located upgradient and west of the subject site. This area is the location of another feedlot, feed shed, vehicle maintenance area and pineapple storage area. The property owner should ensure that no contaminated runoff leaves the subject property.

Unlined farm waste lagoons are susceptible to leakage or overflow, sending dangerous microbes, nitrate pollution and bacteria into water courses. For these reasons, the EPA recommends a National Stormwater Pollution Discharge Permit (NPDES) for Concentrated Animal Feeding Operations (CAFOs).

Opinions and Conclusions:

Under the EPA's final rule (2008), any CAFO that discharges or proposes to discharge is required to seek NPDES permit coverage. The permit coverage provides certainty to CAFO operators regarding activities and actions that are necessary to comply with the CWA. Under the CWA, operators that do not apply for permits operate at their own risk because any discharge from an unpermitted CAFO (other than agricultural stormwater) is a violation of the CWA. The CAFO must implement site-specific nutrient management practices (NMP) that ensure appropriate agricultural utilization of the nutrients produced by the operation. A CAFO may be authorized to acquire a NPDES permit based on an on-site inspection by a NPDES permitting authority if the authority finds that the facility is a significant contributor of pollutants to waters of the United States.

In order to minimize the potential for regulatory profiling of the subject site, property management may consider implementing conservative, proactive environmental policies. These policies might include written environmental protection contracts with any industrial or special-use commercial tenants and posted notices regarding any use, storage and handling of hazardous substances and/or petroleum product. Special attention should be addressed to wastewater (possibly containing contaminants) that could impact the surface soils or enter nearby drainage systems.

All wastewater created on-site should be connected to the County's wastewater system or contained on-site within a lined basin and allowed to evaporate. Wastewater should not be allowed to migrate off-site or negatively impact the subject site's surface soils.

MEV reviewed the groundwater well data from both wells located on the adjacent Consolidated Baseyard Lots. Although a small amount of nitrate has been found (2.1 parts per million) this is below the recommended EPA limit (10 ppm) and is not an issue at this time, but will be monitored quarterly. (See Well Data, Appendix B.)

7.2 Other Environmental Concerns

The concerns listed below may not be considered ***recognized environmental conditions*** by ASTM definition. However, they may be considered regulated under other environmental laws and ordinances and may present a potential liability to the property owner.

7.2.1 Solid Waste Management (See Section 5.5.4)

Findings/Concerns:

An undetermined amount of solid waste storage and dumping has taken place on the subject site, including regulated items such as automobile tires (approximately 200), vehicle batteries (approximately 70), derelict vehicles, limited amounts of white goods and scrap metal piles.

Opinions and Conclusions:

Any waste disposal should be in a permitted solid waste landfill or recycled in a manner that complies with all local, state, and federal regulations as applicable to the specific waste type with special attention given to regulated items.

If additional clearing of the property commences and significant amounts of construction debris items or unidentifiable substances (containers, equipment, etc.) are discovered, then proper waste identification, testing and applicable waste handling/disposal procedures should be followed in accordance with federal, state, and local regulations.

7.2.2 Groundwater Wells (See Section 5.5.6)

Findings/Concerns:

There are two (2) registered groundwater wells listed for the adjacent property at the Consolidated Baseyard Lots (DLNR Well # 5129-02 and Well # 5129-03). These wells are owned by Consolidated Baseyards, LLC and were drilled in 2001 (#5129-02) and 2005 (#5129-03) for distributing potable, municipal water for the Consolidated Baseyard lots. All DLNR permitting requirements are complete for both wells. According to the State Department of Health, Safe Drinking Water Branch, these wells are sampled quarterly for analytes required by the EPA for drinking water standards.

Opinions and Conclusions:

No violations have been cited for these systems and water quality data shows no significant contamination of groundwater exceeding EPA limits. However, the Fong Baseyard and Nobriga's Feedlot activities and any future development westerly should consider activity management to avoid the potential for contributing to changes in groundwater quality.

7.2.3 Surface Waters and Area Aquifer Protection (See Section 5.5.5)

If future land use includes developing the land for commercial or residential use, the developer and property owner should be aware of the potential for contaminants to run off-site and into nearby water courses. Products of concern relating to any future development project or grading activity would be earthen material (silt), paints, oils, antifreezes and other fluids from automobile or on-site machinery, or leaks from on-site stocked items.

Opinions and Conclusions:

The owner should ensure that storm water that leaves the subject site is free of any significant amount of contaminants.

Construction managers and developers of any future on-site development activities should consider implementing aggressive, proactive environmental policies during the development-planning phase. The above-noted Pollution Prevention Plan should be fully implemented.

Future land clearing of greater than one (1) acre will likely require both a County of Maui grading/grubbing permit and a National Pollution Discharge Elimination System (NPDES) General Permit (State of Hawaii, Department of Health).

The conclusions stated above should not be construed to mean that any regulatory agency would have the same opinion as this author, nor is any implication proposed therefrom.

The results of this environmental assessment are intended for general reference purposes only and are not intended as legal advice. The advice of legal counsel should be sought in regard to individual facts, circumstances and interpretation of environmental liability.

8.0 REFERENCES

8.1 Published References

1. American Standard of Testing and Materials, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, E1527-05, 2005.
2. "Atlas of Hawaii", 2nd Edition, Department of Geography, University of Hawaii at Hilo, 1983, University of Hawaii Press.
3. "Atlas of Hawaii", 3rd Edition, Department of Geography, University of Hawaii at Hilo, 1998, University of Hawaii Press.
4. County of Maui, Real Property Tax Division, Historical Records for TMK Number (2) 3-8-007:102.
5. Hawaii Administrative Rules, Title 11, Department of Health, Chapter 58.1, Solid Waste Management Control.
6. State of Hawaii, Department of Health, Solid and Hazardous Waste Branch, Underground Storage Tank Section, List of Leaking Underground Storage Tank Release Sites, September 2009.
7. State of Hawaii, Department of Health, Solid and Hazardous Waste Branch, Underground Storage Tank Section, List of Underground Storage Tank Facilities, September 2009.
8. State of Hawaii, Department of Health, Voluntary Response Program (VRP), List of Voluntary Response Program Sites, July 2008.
9. State of Hawaii, Department of Health, Office of Hazard Evaluation and Emergency Response, List of Release Notifications, July 2008.
10. State of Hawaii, Department of Health, Office of Hazard Evaluation and Emergency Response, List of Sites List, July 2008.
11. State of Hawaii, Department of Land and Natural Resources, Registered Wells and Dry Wells.
12. State of Hawaii, Department of Land and Natural Resources, "State of Hawaii Water Quality Plan and Groundwater Map", June 1990, Revised December 1991.
13. U.S. Department of Agriculture, Soil Conservation Service, "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii", 1972.
14. U.S. Environmental Protection Agency, Office of Air and Radiation et al., Indoor Air Facts No. 4 (revised) Sick Building Syndrome, April 1991.
15. U.S. Environmental Protection Agency, Building Air Quality: A Guide for Building Owners and Facility Managers, 1991.

8.2 Map and Other References

1. Environmental Data Resources, Inc., "The EDR Radius Map Report with GeoCheck prepared using FieldCheck", December 22, 2009.
2. Federal Emergency Management Agency, "Flood Insurance Rate Map", Number #150003 0393E & 0394E dated September 25, 2009
3. R.M. Towill Corporation, Aerial Photographs, Honolulu, Hawaii.
4. Air Survey Hawaii, Aerial Photographs, Honolulu, Hawaii.
5. Sanborn Maps (no coverage)
6. U.S. Geological Survey, 7.5 Minute Topographic Map, Wailuku, Hawaii 1983 and 1997.

8.3 Record of Personal Communications

Table 4.0 List of personal Interviews conducted by MEV

Date	Interviewee	Title & Organization	Address	Phone Number
12/15/09	Mr. Charlie Ice	Hydrologist DLNR Water Resources Management Division	1151 Punchbowl Street Room 227 Honolulu, HI	(808) 587-0218
12/15/09	Kumar Bhagavan	Department of Health, Safe Drinking Water Branch- Oahu	919 Ala Moana Blvd., Room 308 Honolulu, HI, 96814	(808) 586-4258
12/15/09	Mr. Ron Brumling	Development Manager Reef Development of Hawaii, Inc.	P.O. Box 243 Puunene, HI 96784-0243	(808) 871-8595
12/22/09	Mr. Henry Fong	Property Owner Fong Construction Baseyard	495 Hukilike Street Kahului, HI 96732	(808) 877-6501
12/23/09	Mr. Roderick Fong	Property Owner Fong Construction Baseyard	495 Hukilike Street Kahului, HI 96732	(808) 877-6501
12/23/09	Mr. Dave "Buddy" Nobriga	Property Lessee Owner of Nobriga's Feedlot and Ranch	918 Lower Main Street Wailuku, Maui, HI 96793	(808) 244-7951

Appendix A:

Maps, Plans, and Photographs

FIGURE 1: REGIONAL SETTING MAP

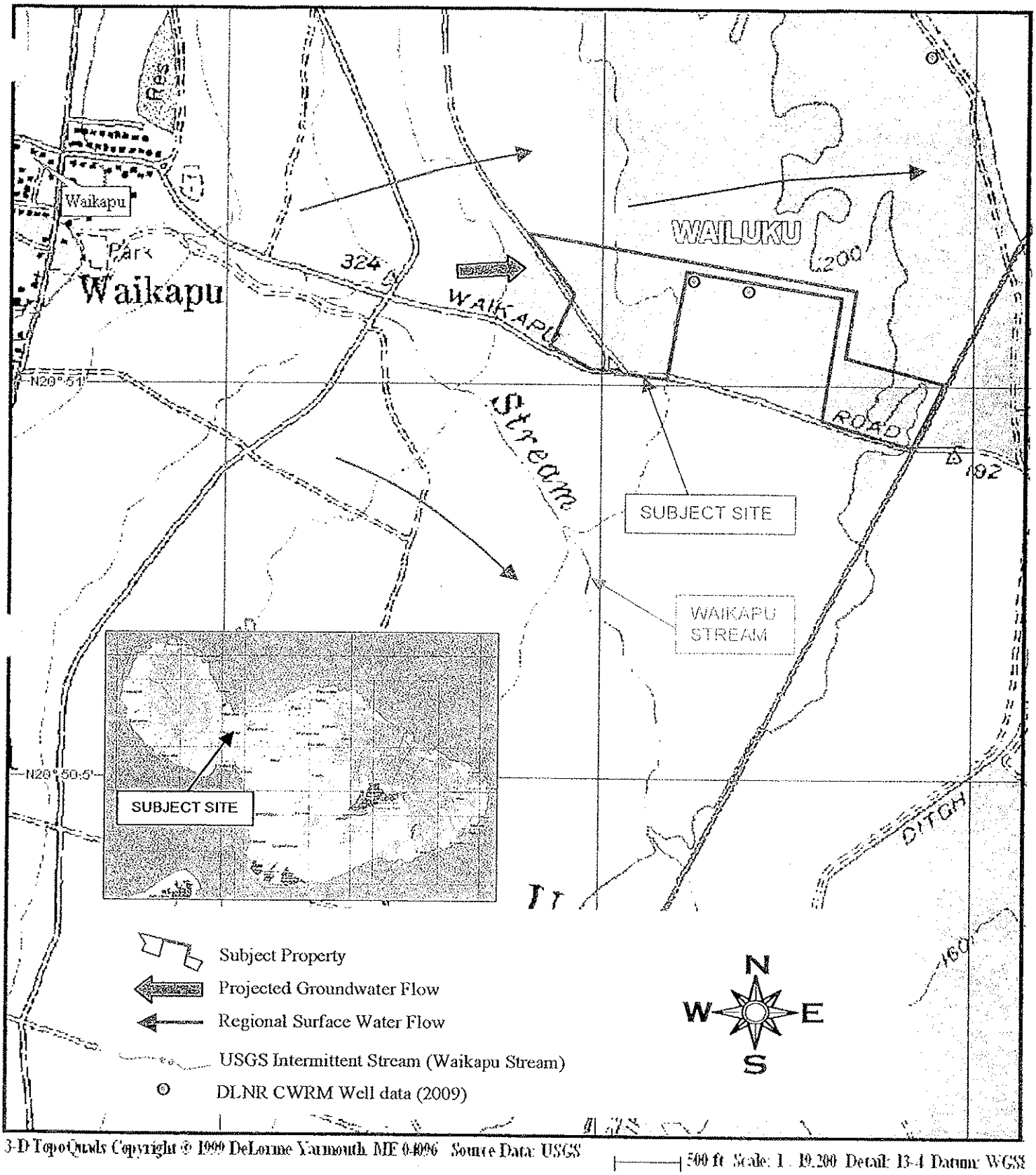


FIGURE 2A: SITE PLAN

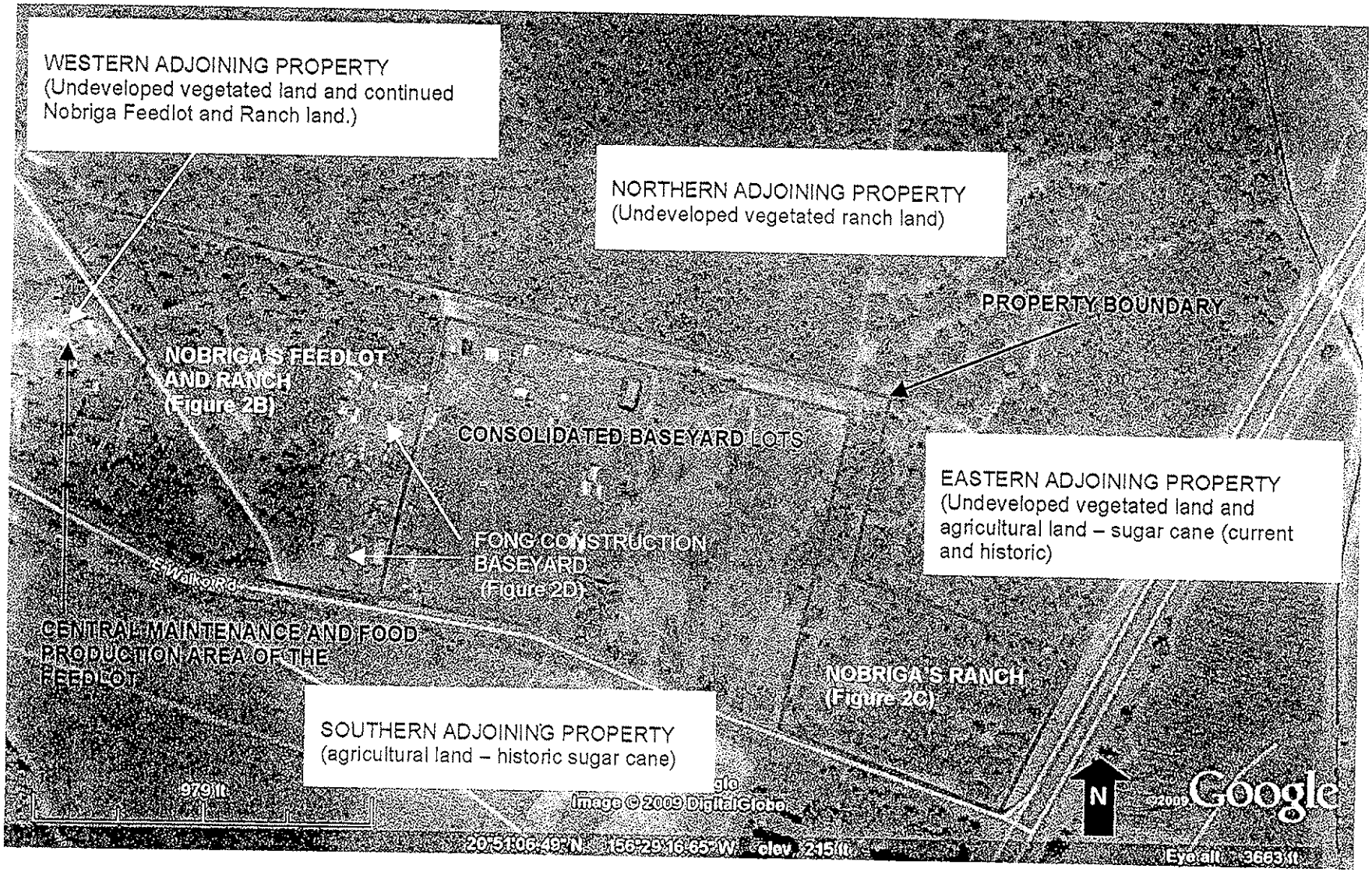


FIGURE 2B: SITE PLAN

Nobriga's Feedlot and Ranch (Western Portion)

SUBJECT PROPERTY BOUNDARIES
ADJACENT PROPERTY BOUNDARIES
PROJECTED GROUNDWATER FLOW DIRECTION
PROJECTED STORMWATER FLOW DIRECTION
GROUNDWATER WELL
TRANSMISSION POWER LINES
POND
MANURE BERM/PILE
CARGO TRAILER (NO ACCESS)
EARTHEN AND CONSTRUCTION DEBRIS BERM
HM HEAVY MACHINERY
DM DERELICT MACHINERY (BULLDOZER, POSSIBLY LEAKING)
BOULDER BERM/PILE
MD MISCELLENEOUS DEBRIS (tires, construction debris, and household refuse.)
VEHICLE TIRE
3 POLE-MOUNTED TRANSFORMERS (non-leaking, non-PCB containing)
Limited soil surface staining

FIGURE 2C: SITE PLAN
Nobriga's Ranch (Eastern Portion)

SUBJECT PROPERTY BOUNDARIES	GROUNDWATER WELL
ADJACENT PROPERTY BOUNDARIES	PROPANE TANK (AST)
PROJECTED GROUNDWATER FLOW DIRECTION	(2) 1000-GALLON (AST) – labeled potable water and
PROJECTED STORMWATER FLOW DIRECTION	(1) 100-GALLON (AST) (empty)
TRANSMISSION POWER LINES	(1) 300-GALLON POLY TANK (empty)

MD_1 MISCELLENEOUS DEBRIS - (1) vehicle tire, (1) 55-gallon drum (empty), (2) 5-gallon containers (empty), (1) 5-gallon container (partly full of petroleum product and household refuse.

MD_2 MISCELLENEOUS DEBRIS – (8) vehicle tires, (1) white good appliance, construction debris, (2) 55-gallon drums (full of unknown substance, (3) 5-gallon containers (empty, but may have contained waste oil), (2) pieces of derelict machinery. No surface staining noted from these materials.

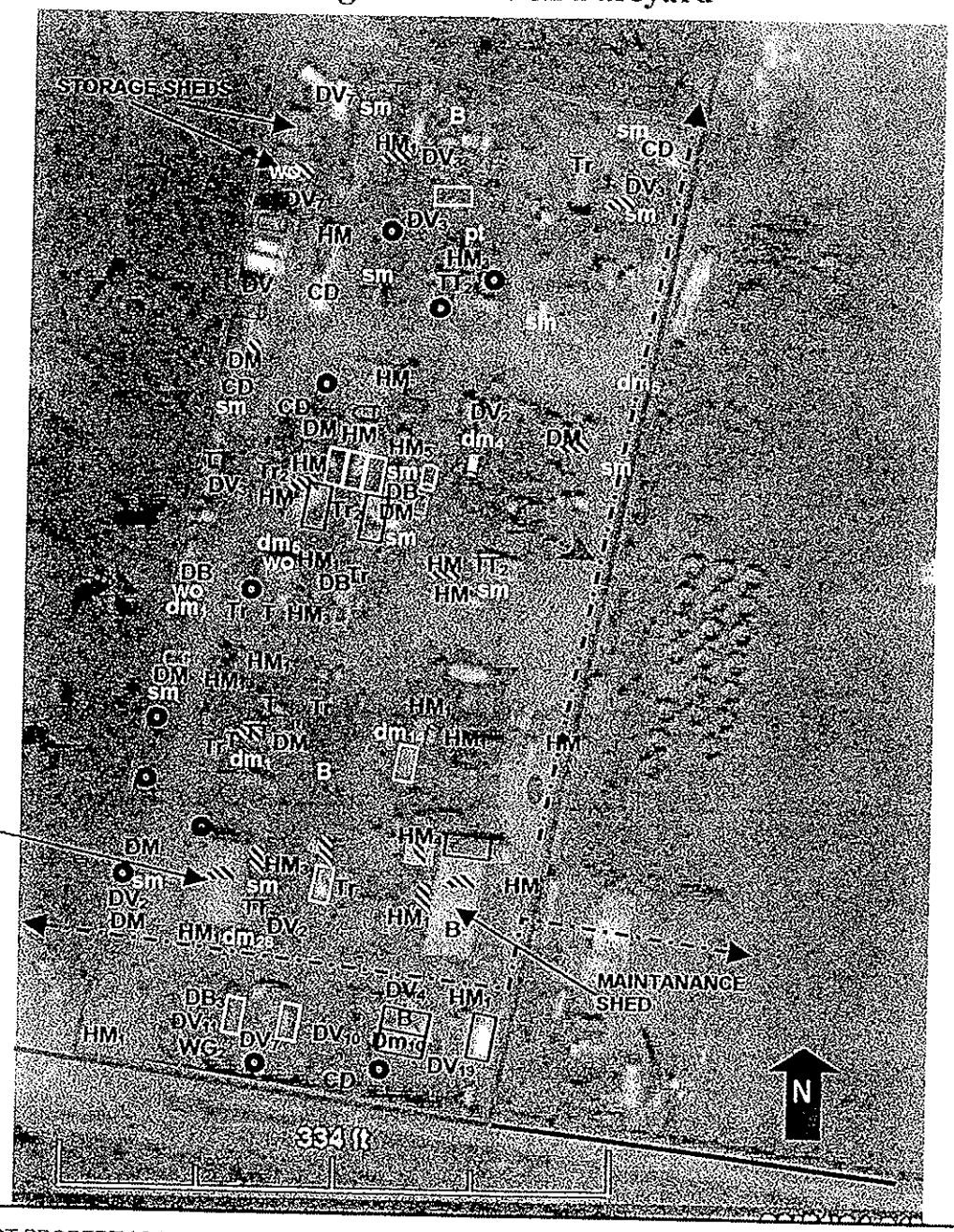
dm One (1) 55-gallon drum (limited petroleum-based sludge noted)

POWERLINE EASEMENT – Consists of maintenance materials (primer, wood sealer & wood finish), construction debris, horse feed drums, (7) vehicle tires, (1) 5-gallon can containing petroleum product, (1) 300-gallon poly tank (small amount of water), (3) ranch trailers.

Co Corral area – consists of (3) vehicle tires, construction debris, (3) 55-gallon drums (empty), (1) vehicle battery, (1) piece of derelict Machinery, (1) 300-gallon poly tank (1/4 full of product – labeled Praestol Flocculant)

FIGURE 2D: SITE PLAN

Fong Construction Baseyard



- SUBJECT PROPERTY BOUNDARIES
- FONG CONSTRUCTION BASEYARD BOUNDARY
- ADJACENT PROPERTY BOUNDARIES
- PROJECTED GROUNDWATER FLOW DIRECTION
- PROJECTED STORMWATER FLOW DIRECTION
- TRANSMISSION POWER LINES

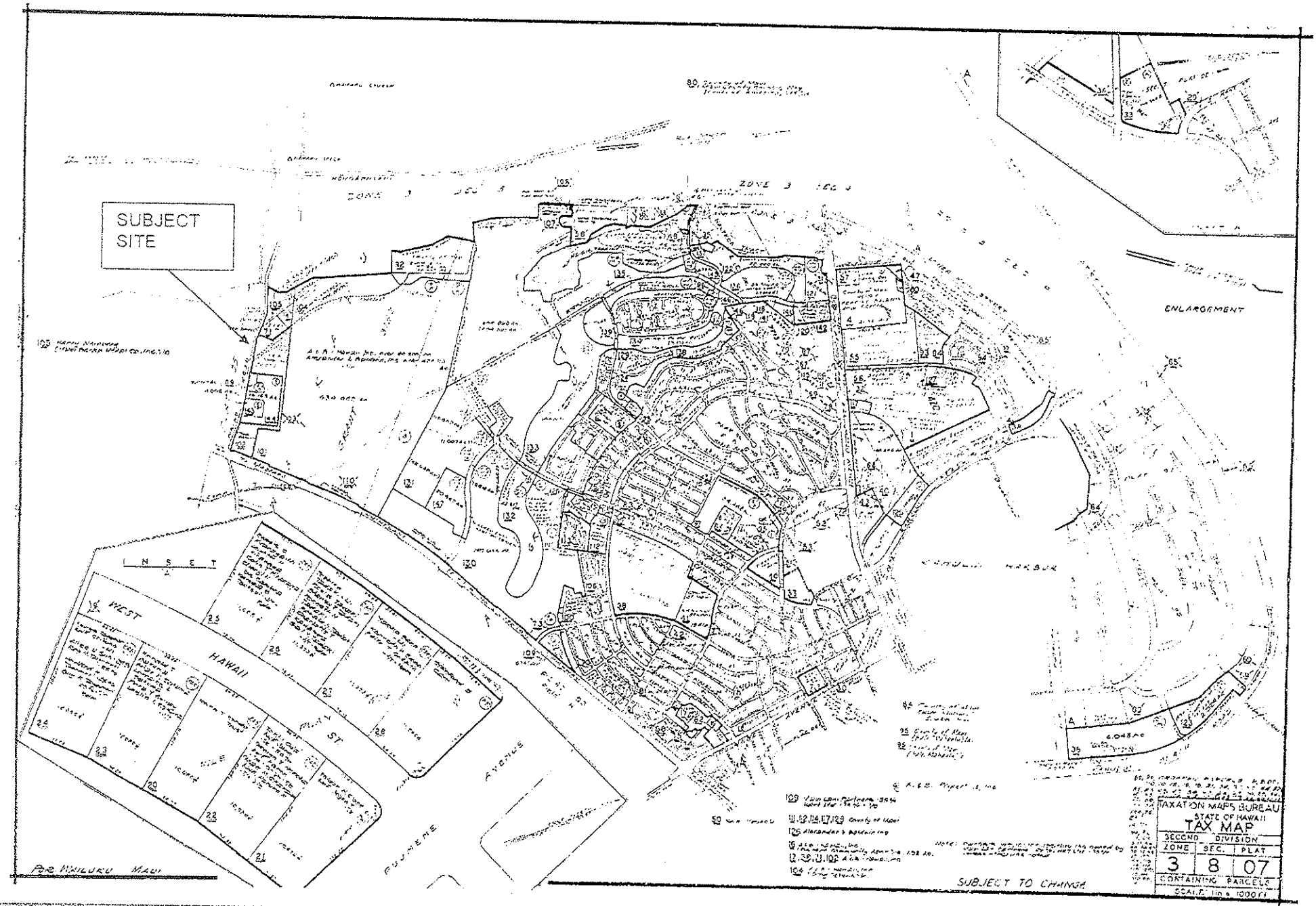
- DV DERELICT VEHICLE
- DB DERELICT BOAT
- HM HEAVY MACHINERY
- WG WHITE GOOD (APPLIANCE)
- sm SCRAP METAL STORAGE
- TT TANKER TRUCK
- Tr FLATBED TRUCK TRAILER
- DM DERELICT MACHINERY
- T TRUCK
- B VEHICLE BATTERY
- wo POSSIBLE WASTE OIL CONTAINER
- CD CONSTRUCTION DEBRIS

- VEHICLE TIRES
- SURFACE STAINING (PETROLEUM PRODUCT)
- (1) 200-gallon AST (empty)
- (1) 600-gallon (possibly contains gasoline)
- (1) 5000-gallon tank AST (empty, likely former fuel)
- (3) 500-gallon (empty)
- (2) 100-gallon AST (empty)
- (2) 20,000-gallon water tanks
- (1) 1000-gallon AST (diesel)
- (1) 1,500-gal AST
- (2) 10,000 gallon AST (labeled irrigation water)
- (1) 300-gallon AST (empty)
- (1) 600-gallon AST (empty)
- pt (1) 300-gallon poly tote
- 20-foot storage container
- 40-foot storage container
- Soil piles

Drum Storage Shed
Concrete Pad

Note: Subscript numbers refer to the number of items present in a given location

FIGURE 3: TAX MAP KEY



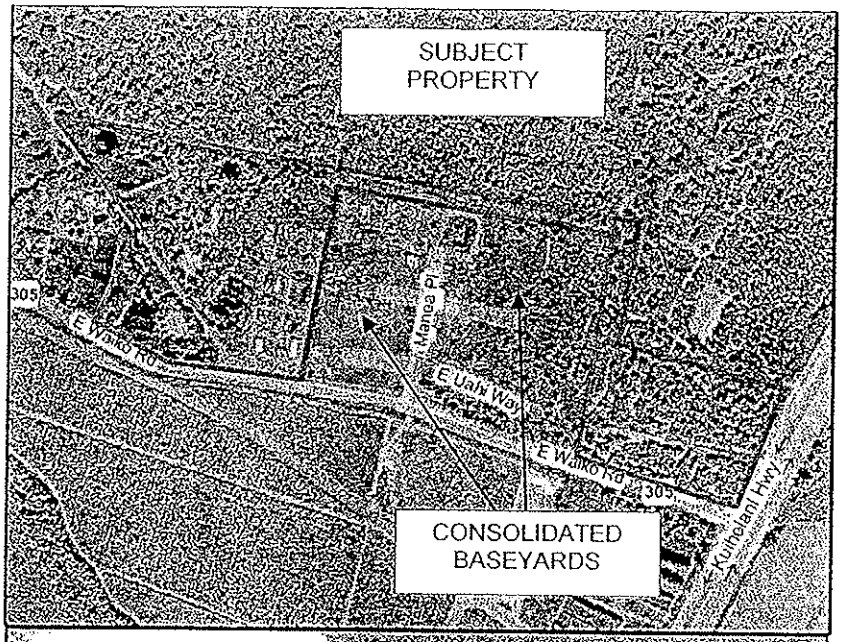


PHOTO 1

Aerial view of the subject property and the adjacent properties of 445 Waiko Road.

Photo source:
www.maps.live.com
Photo date 2000's.

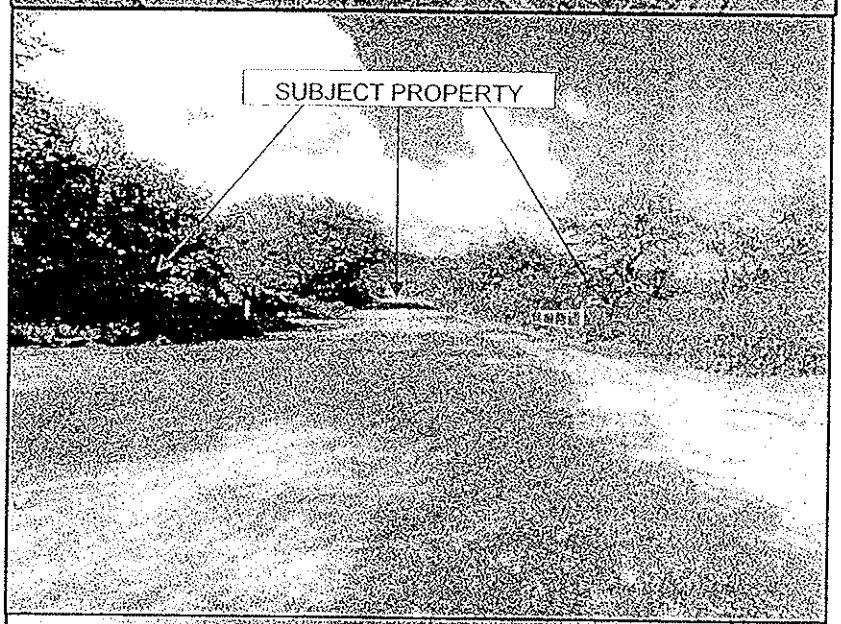


PHOTO 2

Northerly view, across Waiko Road, of the on-site access road that divides Nobriba's Feedlot and Ranch. The entrance to Fong Construction Baseyard is located farther to the right of the picture.

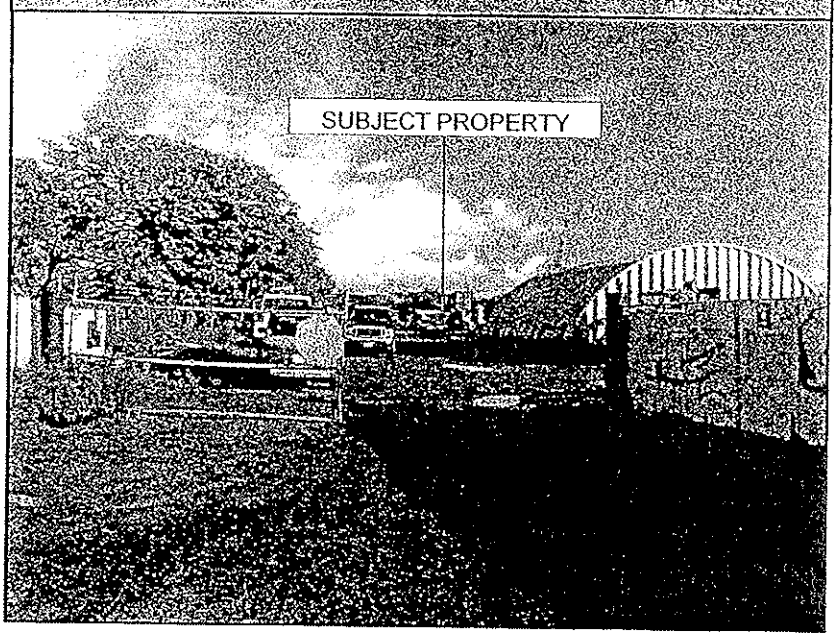


PHOTO 3

Northerly view of the entrance to the on-site Fong Construction Baseyard.

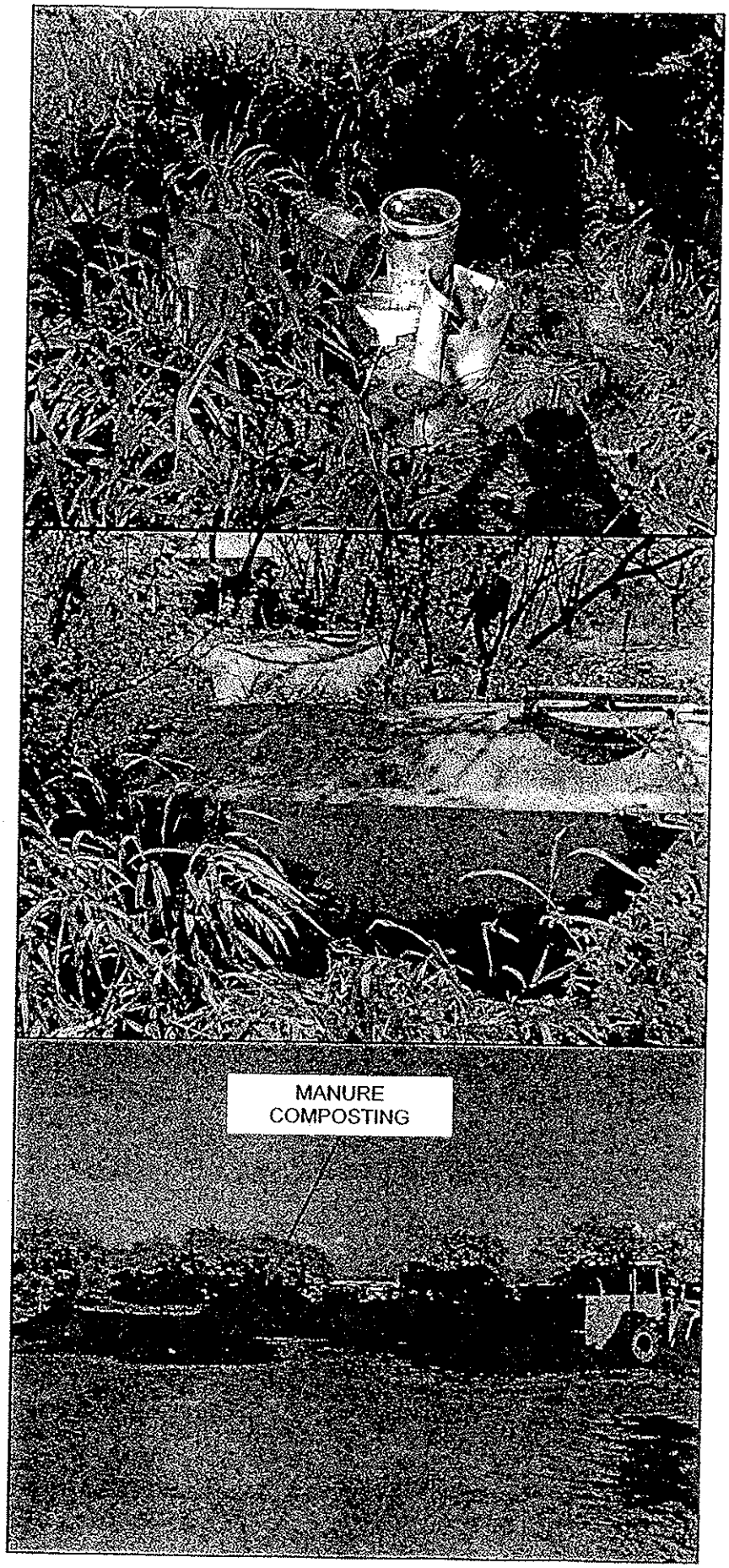


PHOTO 13

Miscellaneous debris area (denoted MD_1 on Figure 2C). Notable items include a vehicle tire, empty containers and one (1) 5-gallon container partly full of a petroleum-based product. This product should be properly managed.

PHOTO 14

Miscellaneous Debris and storage area (denoted MD_2 on Figure 2C) located just north of the northern property boundary. Shown in the photo are two (2) 1000-gallon ASTs. Although the contents could not be determined, these tanks were labeled potable water. Note the loose and flakey paint on the tank in the foreground. This paint could be lead-based.

PHOTO 15

View of the on-site manure composting area located at Nobriga's Feedlot area in the western section of the subject site. MEV noted one (1) piece of heavy machinery (non-leaking) in this area.

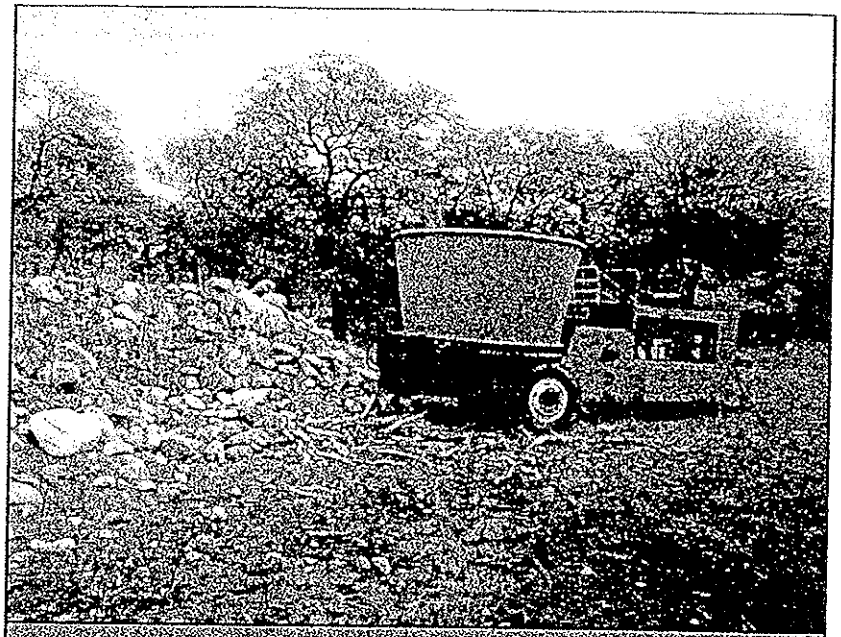


PHOTO 16

Boulder debris pile and heavy machinery located near the north-central property boundary of the western section of the subject site. This piece of heavy machinery was noted to be leaking petroleum-based product, causing limited staining on the ground below.

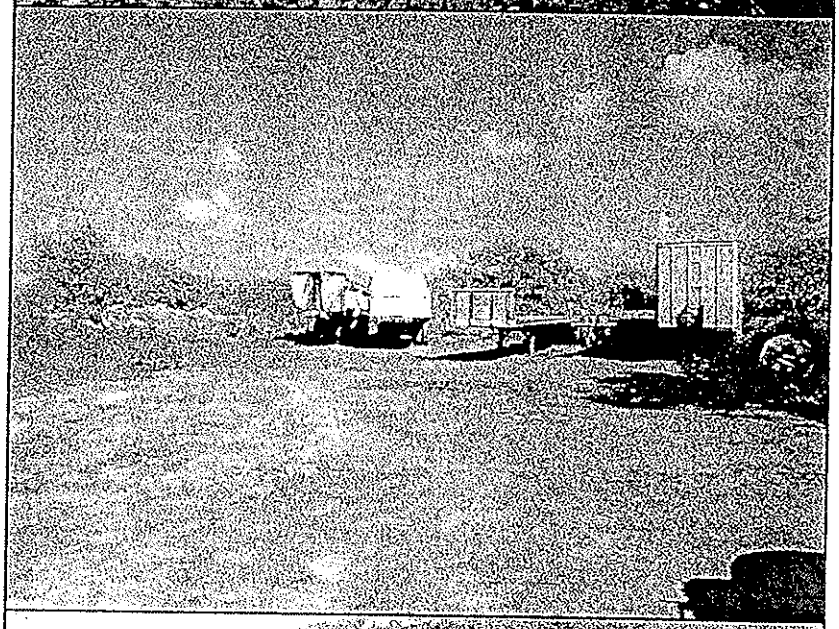


PHOTO 17

Cargo trucks associated with Nobriga's Feedlot and Ranch. This area is located near the northwestern corner of the subject site just east of the gravel access road. No associated soil staining was noted with these vehicles. Note the earthen debris berm located in the rear of the photo. This debris berm contained construction materials.

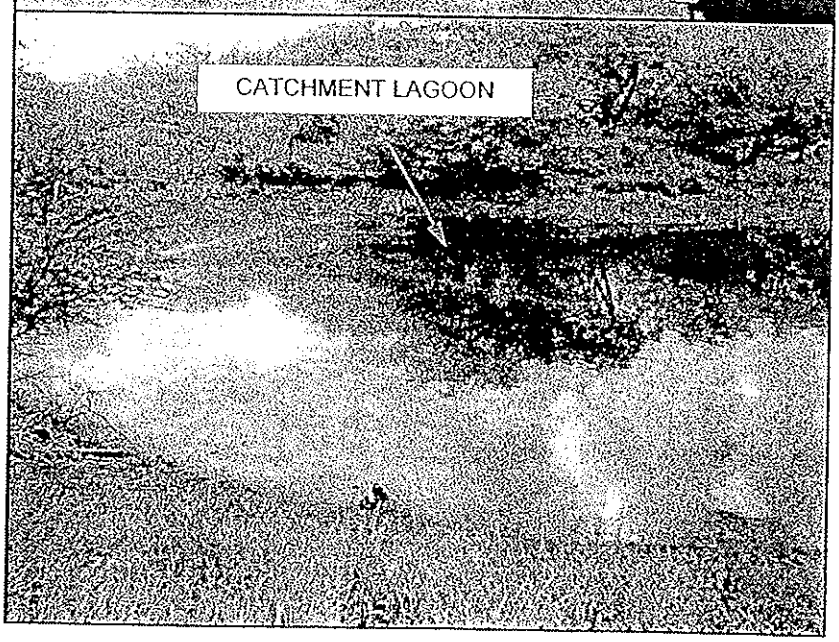


PHOTO 18

One of two catchment lagoons located on the western portion of the subject site. These lagoons are part of the Nobriga's Feedlot and Ranch nutrient management program intended to control runoff from the feedlot activities. Farm waste lagoons are susceptible to leakage and overflow causing pollution into water courses. For this reason, the EPA recommends a NPDES permit for Concentrated Animal Feeding Operations (CAFO).

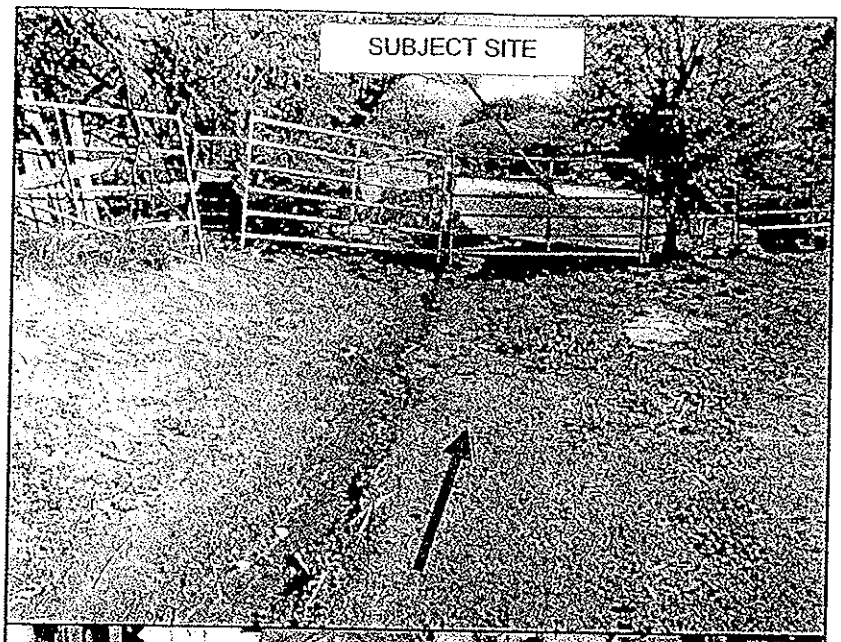


PHOTO 19

View of the on-site catchment lagoon located adjacent to the gravel access road on the western portion of the subject site. This lagoon is very close to the off-site and up-gradient main maintenance area, food production area and off-site feedlot. MEV estimates the parcel boundary for the subject property is located approximately at the bottom of the photo. The blue arrow represents stormwater runoff direction. This runoff originates from the up-gradient location describes above and likely includes cattle urine and other livestock bio-waste products. Although the tenant leases both areas, the up-gradient portion is off-site from the subject investigation.

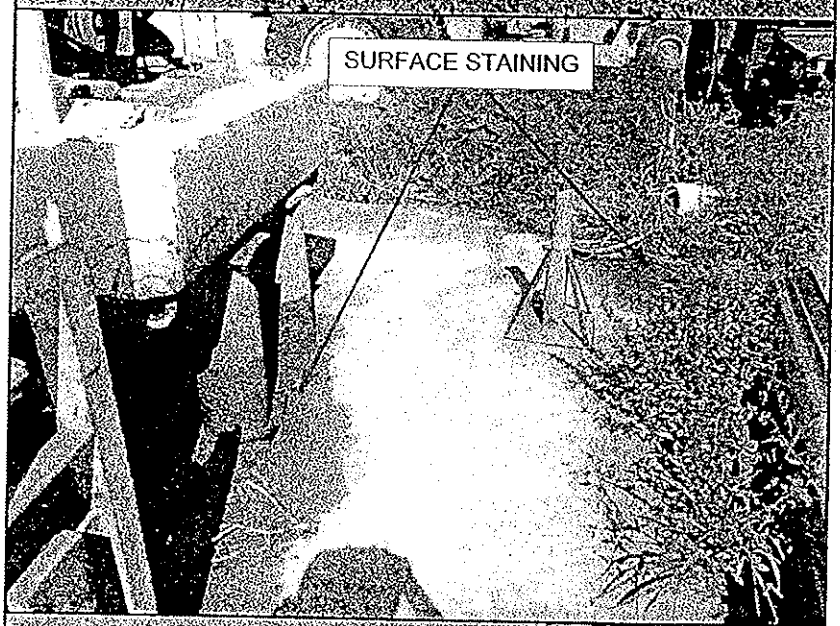


PHOTO 20

Concrete pad with four (4) pieces of heavy machinery located at Fong's Baseyard. All of these vehicles were leaking petroleum-based product. Prominent staining was noted beneath each vehicle and on the surface soil adjacent to the pad. The majority of the heavy equipment noted on the baseyard were leaking limited to moderate amounts of petroleum-based fluids. Areas of petroleum impacted surfaces should be properly managed.

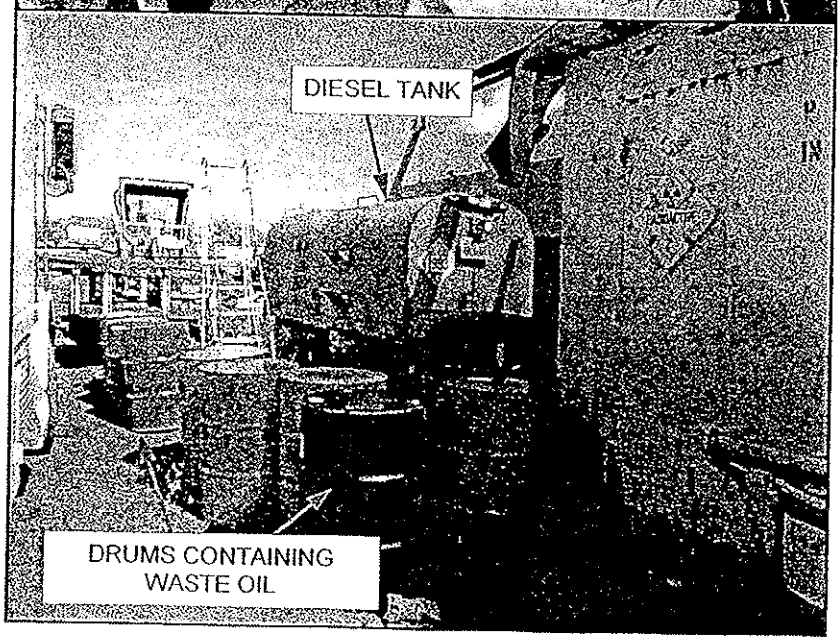


PHOTO 21

Operation diesel AST and approximately fourteen (14) 55-gallon drums. Nine (9) of these drums were empty and five (5) contained product. According to Mr. Henry Fong, these drums are used for waste oil storage. Approximately seventy-five (75) 55-gallon drums and twenty-five (25) 5-gallon containers were noted on the baseyard premises and likely contain regulated substances. The vast majority of these containers were not labeled and lacked secondary containment. See Section 5.3.1 for drum container management .

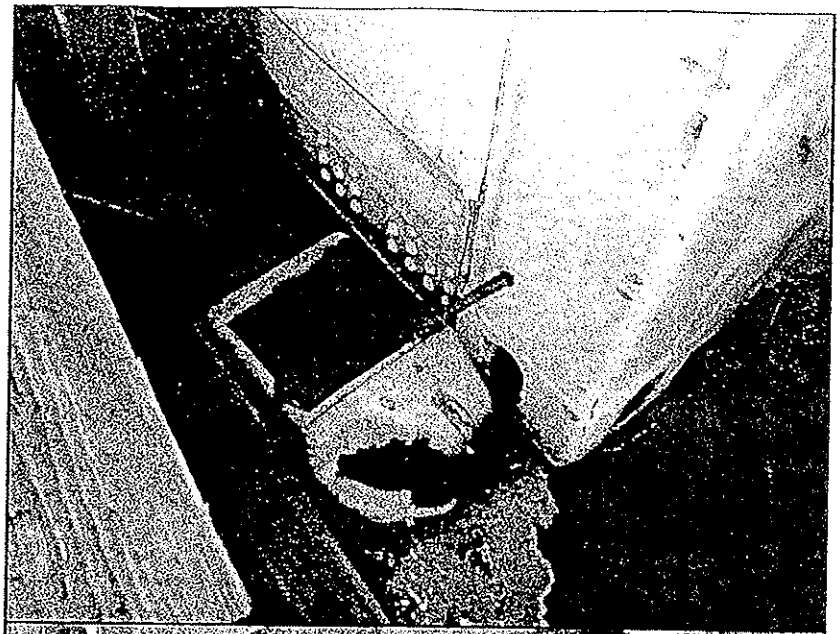


PHOTO 22

Open 2-gallon container of waste oil located on Fong's Baseyard. MEV noted several open containers containing waste oil located on the premises. Note the leakage and surface staining associated with this container. More effective waste oil management and the implementation of spill protection should be undertaken at this facility.

PHOTO 23

Heavy equipment located on Fong's Baseyard. This piece of equipment is leaking and has impacted the ground below. The surface below the machine is saturated with petroleum-based product. MEV noted numerous areas on the premises with surface soil staining. The source of the petroleum impact is from inadequate or less than regulatory standards for the handling of petroleum-based products and from leakage of heavy machinery. The areas of petroleum-impacted soil should be excavated and properly managed. Clearance soil testing should be conducted to ensure all contamination has been removed.

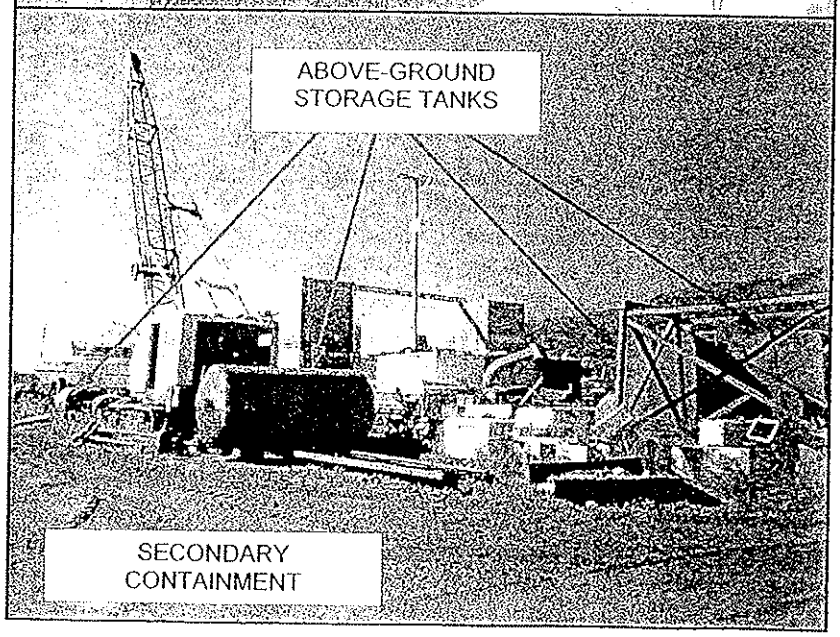


PHOTO 24

MEV noted approximately seventeen (17) above-ground storage tanks being kept at Fong's Baseyard. The majority of these tanks appeared to be empty, MEV suspects that some of these tanks may have historically been use as former fuel tanks. It is possible that limited amounts of residual fuel or sludge remain in some of these tanks.

Appendix B:

Regulatory Records Documentation
Site Specific Documentation

445 E. Waiko Road
445 E. Waiko Road
Kahului, HI 96732

Inquiry Number: 2663266.1s
December 22, 2009

EDR® Environmental Data Resources Inc

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of the environmental records was conducted by Environmental Data Resources, Inc. (EDR). MEV, LLC used the EDR FieldCheck System to review and/or revise the results of this search, based on independent data verification by MEV, LLC. The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

445 E. WAIKO ROAD
KAHULUI, HI 96732

COORDINATES

Latitude (North):	20.851400 - 20° 51' 5.0"
Longitude (West):	156.490600 - 156° 29' 26.2"
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	761123.1
UTM Y (Meters):	2307601.8
Elevation:	245 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	20156-G4 WAILUKU, HI
Most Recent Revision:	Not reported
West Map:	20156-G5 LAHAINA, HI
Most Recent Revision:	Not reported

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No sites were identified in following databases.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

EXECUTIVE SUMMARY

Federal CERCLIS list

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System

Federal CERCLIS NFRAP site List

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Transporters, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Permitted Landfills in the State of Hawaii

State and tribal leaking storage tank lists

LUST..... Leaking Underground Storage Tank Database
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST..... Underground Storage Tank Database
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

INST CONTROL..... Sites with Institutional Controls

State and tribal voluntary cleanup sites

VCP..... Voluntary Response Program Sites
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Sites

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL..... Clandestine Drug Labs
US HIST CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information
LUCIS..... Land Use Control Information System

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
SPILLS..... Release Notifications

Other Ascertainable Records

RCRA-NonGen..... RCRA - Non Generators
DOT OPS..... Incident and Accident Data
DOD..... Department of Defense Sites
FUDS..... Formerly Used Defense Sites
CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
UMTRA..... Uranium Mill Tailings Sites
MINES..... Mines Master Index File
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
SSTS..... Section 7 Tracking Systems
ICIS..... Integrated Compliance Information System
PADS..... PCB Activity Database System
MLTS..... Material Licensing Tracking System
RADINFO..... Radiation Information Database
FINDS..... Facility Index System/Facility Registry System
RAATS..... RCRA Administrative Action Tracking System
UIC..... Underground Injection Wells Listing
DRYCLEANERS..... Permitted Drycleaner Facility Listing
AIRS..... List of Permitted Facilities
INDIAN RESERV..... Indian Reservations

EXECUTIVE SUMMARY

SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
PCB TRANSFORMER..... PCB Transformer Registration Database

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants..... EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Health.

An online review and analysis by MEV, LLC of the SHWS list,
as provided by EDR, and dated 04/04/2008 has revealed that there is 1 SHWS site
within approximately 1 mile of the target property.

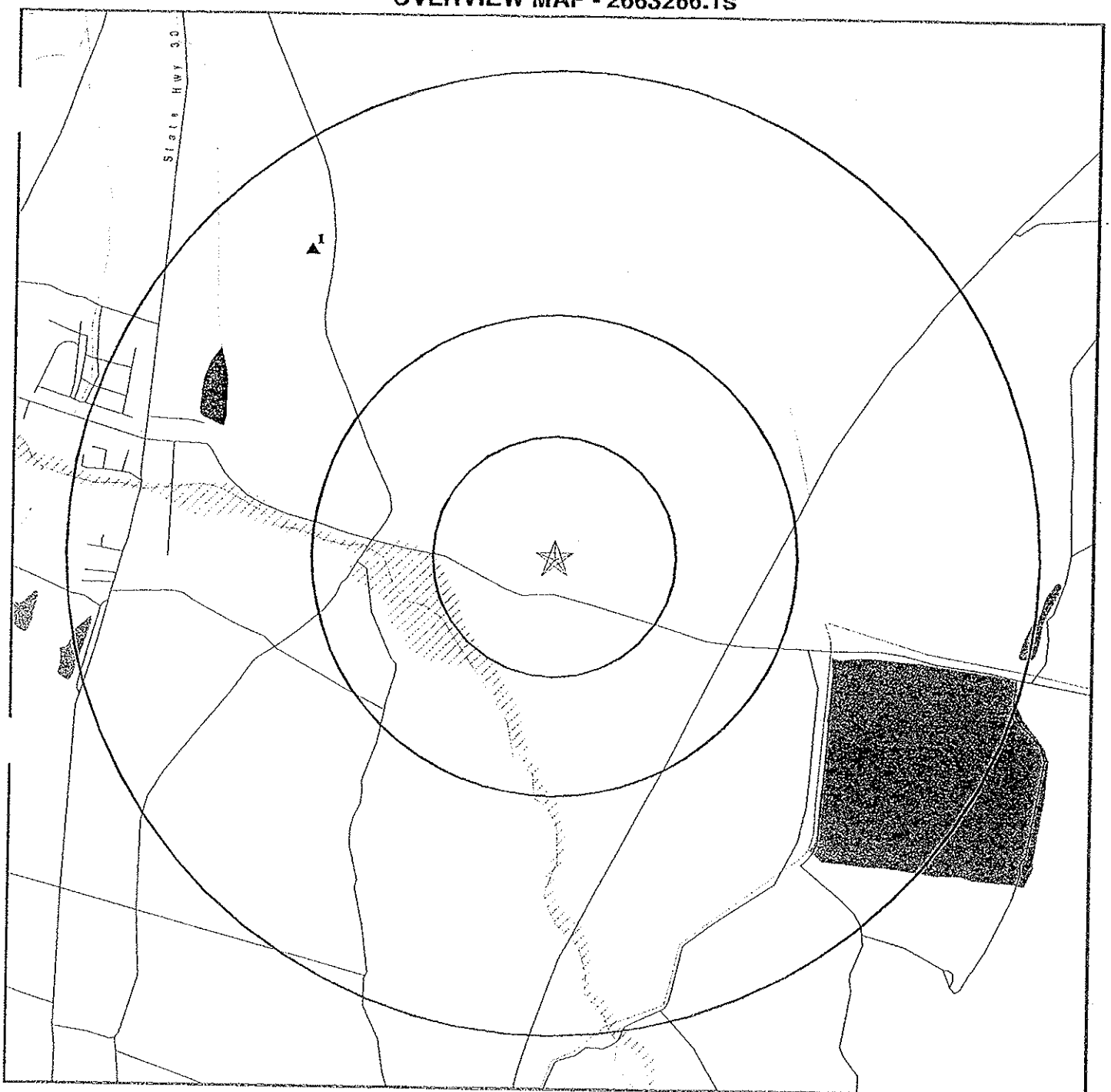
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WAIKAPU DUMP-MAUI COUNTY DUMP	*WAIKAPU RD*	*NW 1/2 - 1 (0.812 mi.)*	*1*	*7*

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
KANAHA POND EAST	CERC-NFRAP, SHWS, INST CONTROL
PEARL HARBOR NAVAL COMPLEXS	FINDS, SHWS, INST CONTROL
SMILE'S AUTO SPECIALISTS	SHWS, INST CONTROL
CROWBAR RANCH	FINDS, SHWS, INST CONTROL
KING'S TOWING	SHWS, INST CONTROL
F & M CONTRACTORS	SHWS, INST CONTROL
BIRD BUILDERS	SHWS, INST CONTROL
VECTOR CONTROL BRANCH, MAUI	SHWS
HECO TRANSFORMER 46-259 LILIPUNA ROAD	FINDS, SHWS, INST CONTROL
MAUI PETROLEUM HOBRON AVENUE	SHWS, INST CONTROL
FONG CONSTRUCTION	SHWS
MCC-AUTOMOTIVE TECHNOLOGY BUILDING CONTAMINATION	FINDS, SHWS, SPILLS
MAUI PALMS HOTEL UST	SHWS
94-236 KAHUANANI STREET BATTERIES DUMPING	FINDS, SHWS, INST CONTROL
MAUI MEAT COMPANY FACILITY (FORMER), UST CLOSURE	SHWS, SPILLS
KALAMAULA LANDFILL	SHWS, INST CONTROL
MECO GENERATING STATION MAALAEA	SHWS, SPILLS, INST CONTROL
WAIALE ASH PILE	FINDS, SHWS, INST CONTROL
Y HATA- MAUI	SHWS
WAIMALUHIA MAUI METH / DRUG LAB ACT 170	SHWS, SPILLS, INST CONTROL
E & E BLACK CONTRACTORS	CERC-NFRAP
DAVID PICO CESSPOOL DIGGING	FINDS, LUST
KIHEI WWTP	LUST, UST
MARK MILL34	LUST
HAWAIIAN CEMENT - WAIKAPU QUARRY	FINDS, LUST
DAVID PICO CESSPOOL DIGGING	UST
MONSANTO COMPANY	RCRA-SQG
MAUI SCRAP METALS	FINDS
MIDDLE STREET SERVICE ROAD ILLEGAL DUMPING	FINDS
RSA AND PERMITER ROAD IMPROVEMENTS AT KAHULUI AIRPORT	FINDS
FORMER MAUI SCRAP METAL LICENSE AREA, TMK (2)3-8-05:023 POR.	FINDS
BREWER ENVIRONMENTAL INDUSTRIES-BEACH ROAD	SPILLS

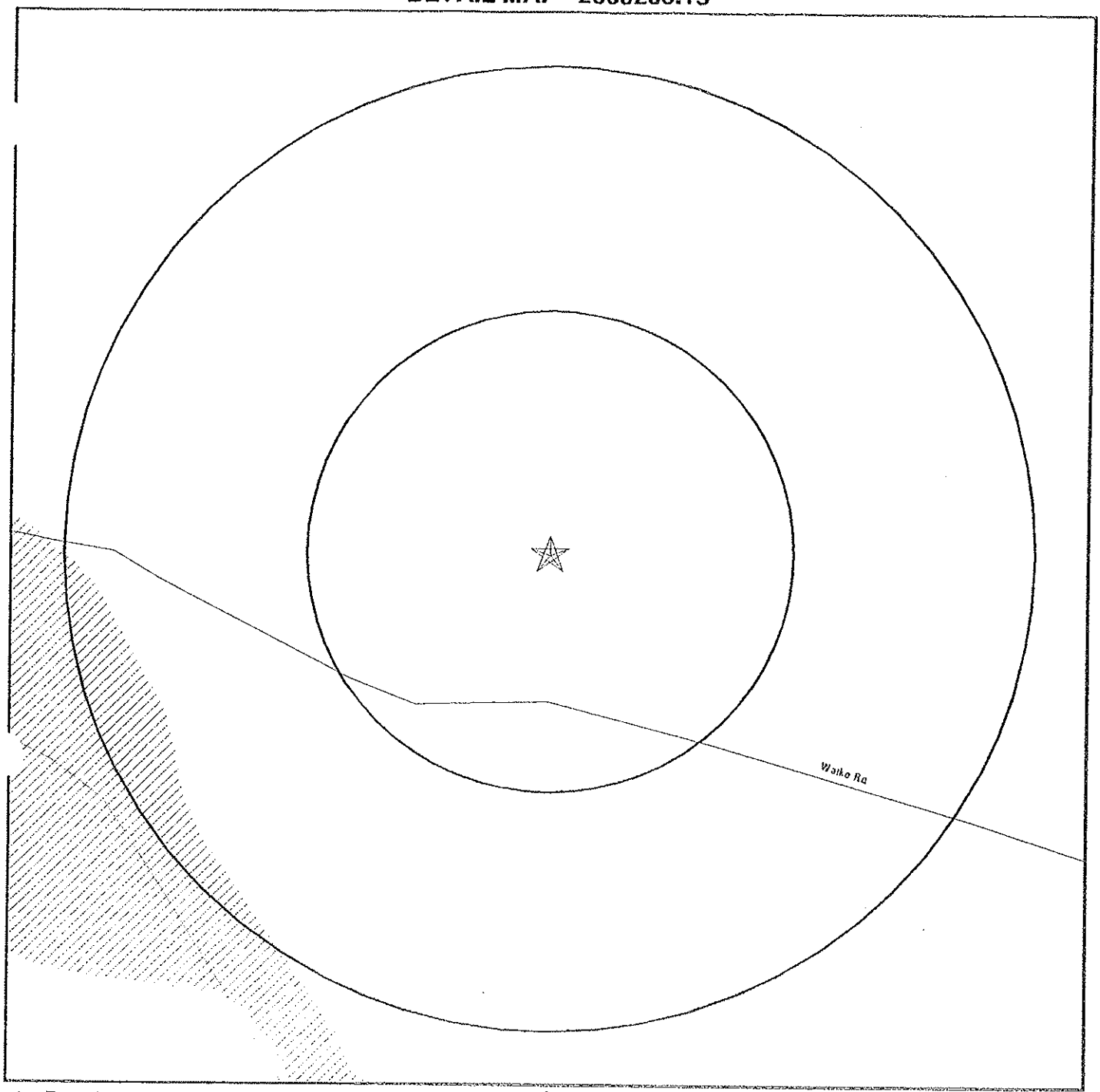
OVERVIEW MAP - 2663266.1s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

SITE NAME:	445 E. Waiko Road
ADDRESS:	445 E. Waiko Road Kahului HI 96732
LAT/LONG:	20.8514 / 156.4906
CLIENT:	MEV, LLC
CONTACT:	Amy Mathis
INQUIRY #:	2663266.1s
DATE:	December 22, 2009 10:46 pm

DETAIL MAP - 2663266.1s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone

ITE NAME: 445 E. Waiko Road	CLIENT: MEV, LLC
DDRESS: 445 E. Waiko Road	CONTACT: Amy Mathis
Kahului HI 96732	INQUIRY #: 2663266.1s
LAT/LONG: 20.8514 / 156.4906	DATE: December 22, 2009 10:46 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL		1.000	0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS		0.500	0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP		0.500	0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS		1.000	0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF		0.500	0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG		0.250	0	0	NR	NR	NR	0
RCRA-SQG		0.250	0	0	NR	NR	NR	0
RCRA-CESQG		0.250	0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
Federal ERNS list								
ERNS		TP	NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS		1.000	0	0	0	1	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF		0.500	0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST		0.500	0	0	0	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST		0.250	0	0	NR	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
State and tribal institutional control / engineering control registries								
INST CONTROL		0.500	0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
VCP		0.500	0	0	0	NR	NR	0
INDIAN VCP		0.500	0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS		0.500	0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI		0.500	0	0	0	NR	NR	0
DEBRIS REGION 9		0.500	0	0	0	NR	NR	0
INDIAN ODI		0.500	0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL		TP	NR	NR	NR	NR	NR	0
US HIST CDL		TP	NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2		TP	NR	NR	NR	NR	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS		TP	NR	NR	NR	NR	NR	0
SPILLS		TP	NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA-NonGen		0.250	0	0	NR	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
ICIS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
UIC		TP	NR	NR	NR	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
AIRS		TP	NR	NR	NR	NR	NR	0
INDIAN RESERV		1.000	0	0	0	0	NR	0
SCRD DRYCLEANERS		0.500	0	0	0	NR	NR	0
PCB TRANSFORMER		TP	NR	NR	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
EDR Proprietary Records								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID Direction Distance Elevation	Site	MAP FINDINGS	Database(s)	EDR ID Number EPA ID Number
1 NW 1/2-1 0.812 mi. 4288 ft. Relative: Higher Actual: 327 ft.	WAIKAPU DUMP-MAUI COUNTY DUMP WAIKAPU RD KAHULUI, HI 96732		FINDS SHWS	1006819647 N/A

FINDS:

Registry ID: 110013774870

Environmental Interest/Information System

Hawaii Hazard Evaluation and Emergency Response (HEER-FRS) system maintains basic information for facility/sites of interest to state of Hawaii, Department of Health, Hazard Evaluation and Emergency Response. It is used to index sites for hardcopy file retrieval and to present limited site status information. The environmental interests included are: release assessments, TRI reporters, EPCRA filers, RMP reporters and long term types of site investigations such as environmental cleanup study areas, state cleanup sites, Superfund NPL sites, voluntary clean up programs and Brownfields Pilot/Grants, properties, sites and targeted assessments.

The HI-ECS (Hawaii Environmental Compliance Program) is the Hawaii state regulatory program relating to environmental compliance and hazardous materials that ensures that program areas and facilities are in compliance with environmental regulations

SHWS:

File Under:	County of Maui, Department of Public Works and Waste Management, Solid Waste Division
Supplement:	Not reported
Restricted Use:	Not reported
Restricted Use Comm:	Not reported
Ic Relied On In Remedy:	Not reported
Unit:	Waikapu Dump
Fed Id:	HID050340843
Funding:	LMB
Agreement/program:	State Site
Sitelist Name:	Waikapu Dump
Activity Type:	File Review
Assignment Date:	10/1/2007
Activity Lead:	Lynn Bailey
Assignment End Date:	10/1/2007
End fill:	10/1/2007
Result fill:	Status Update
Overall Status:	Complete NFA/Site Referred

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
???	1010352340	MAUI SCRAP METALS	UNKNOWN	???	FINDS
HONOLULU	1009790851	MIDDLE STREET SERVICE ROAD ILLEGAL DUMPING	MIDDLE ST	96732	FINDS
KAHULUI	1001475719	KANAHA POND EAST	AMALA PLACE	96732	CERC-NFRAP, SHWS, INST CONTRC
KAHULUI	1003879870	E & E BLACK CONTRACTORS	AMALA PLACE	96732	CERC-NFRAP
KAHULUI	1006819968	PEARL HARBOR NAVAL COMPLEXS	AMALA PL	96732	FINDS, SHWS, INST CONTROL
KAHULUI	S106820468	SMILE'S AUTO SPECIALISTS	AMALA PL	96732	SHWS, INST CONTROL
KAHULUI	1006820295	CROWBAR RANCH	AMALA PL	96732	FINDS, SHWS, INST CONTROL
KAHULUI	S106818550	KING'S TOWING	AMALA PL	96732	SHWS, INST CONTROL
KAHULUI	S106817019	F & M CONTRACTORS	AMALA PL	96732	SHWS, INST CONTROL
KAHULUI	S106816558	BIRD BUILDERS	AMALA PL	96732	SHWS, INST CONTROL
KAHULUI	S106816589	BREWER ENVIRONMENTAL INDUSTRIES-BEACH RO.	2910 BEACH RD	96732	SPILLS
KAHULUI	S106820852	VECTOR CONTROL BRANCH, MAUI	54 HIGH ST, 641 MUA ST, KAHALE DR / PALAPALA ST	96793	SHWS
KAHULUI	1006820577	HECO TRANSFORMER 46-259 LILIPUNA ROAD	HOBRON AVE	96732	FINDS, SHWS, INST CONTROL
KAHULUI	1006818919	MAUI PETROLEUM HOBRON AVENUE	HOBRON AVE	96732	SHWS, INST CONTROL
KAHULUI	S106817098	FONG CONSTRUCTION	HUKILIKI ST	96732	SHWS
KAHULUI	1006818999	MCC-AUTOMOTIVE TECHNOLOGY BUILDING CONTAMINATION	310 KAAHUMANU AVE	96732	FINDS, SHWS, SPILLS
KAHULUI	S104534290	MAUI PALMS HOTEL UST	150 KAAHUMANU AVE	96732	SHWS
KAHULUI	1010026449	RSA AND PERMITER ROAD IMPROVEMENTS AT KAHULUI AIRPORT	KAHULUI AIRPORT TERMINAL BUILDING	96732	FINDS
KAHULUI	1006841969	DAVID PICO CESSPOOL DIGGING	OLD HALEAKALA HWY	96732	FINDS, LUST
KAHULUI	U001236769	DAVID PICO CESSPOOL DIGGING	OLD HALEAKALA HWY	96732	UST
KAHULUI	1006820345	94-236 KAHUANANI STREET BATTERIES DUMPING	W PAPA AVE	96732	FINDS, SHWS, INST CONTROL
KAHULUI	S106819004	MAUI MEAT COMPANY FACILITY (FORMER), UST CLOSURE	601 2ND ST	96732	SHWS, SPILLS
KANUNAKAKAI	S108859913	KALAMAULA LANDFILL	HOAWA RD	96793	SHWS, INST CONTROL
KIHEI	1010316486	MONSANTO COMPANY	2111 PIILANI HWY	96753	RCRA-SQG
KIHEI	U001236805	KIHEI WWTP	480 WELEKAHAO RD/PIILANI HWY	96753	LUST, UST
MAALAEA	S106819074	MECO GENERATING STATION MAALAEA	N KIHEI RD	96753	SHWS, SPILLS, INST CONTROL
WAIKAPU	S109096050	MARK MILL34	1487 / 1488 HONOAPIILANI HWY	96793	LUST
WAIKAPU	1010696372	FORMER MAUI SCRAP METAL LICENSE AREA, TMK (2)3-8-05:023 POR.	- WAIKO ROAD NEAR HC&S FIELD 920	96793	FINDS
WAILUKU	1006842014	HAWAIIAN CEMENT - WAIKAPU QUARRY	HONOAPIILANI HWY	96793	FINDS, LUST
WAILUKU	1006819707	WAIALE ASH PILE	MAHALANI ST	96793	FINDS, SHWS, INST CONTROL
WAILUKU	S106008644	Y HATA- MAUI	200 WAIEHU BEACH RD AND KAHULU BEACH RD	96793	SHWS
WAILUKU	S108859869	WAIMALUHIA MAUI METH / DRUG LAB ACT 170	115 WAIMALUHIA LANE		SHWS, SPILLS, INST CONTROL

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/01/2009
Date Data Arrived at EDR: 10/14/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 11/13/2009
Next Scheduled EDR Contact: 01/25/2010
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/01/2009
Date Data Arrived at EDR: 10/14/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 11/13/2009
Next Scheduled EDR Contact: 01/25/2010
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/01/2009
Date Data Arrived at EDR: 10/14/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 11/13/2009
Next Scheduled EDR Contact: 01/25/2010
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 06/30/2009
Date Data Arrived at EDR: 08/11/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 41

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 11/23/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 06/23/2009
Date Data Arrived at EDR: 09/02/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 19

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 11/24/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/15/2009
Date Data Arrived at EDR: 09/22/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 48

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/16/2009
Next Scheduled EDR Contact: 03/01/2010
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Transporters, Storage and Disposal
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 10/01/2009
Date Data Arrived at EDR: 10/09/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/10/2009
Next Scheduled EDR Contact: 03/29/2010
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 10/01/2009
Date Data Arrived at EDR: 10/09/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/10/2009
Next Scheduled EDR Contact: 03/29/2010
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 08/31/2009
Date Data Arrived at EDR: 09/17/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 53

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 10/06/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: Sites List
Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

Date of Government Version: 04/04/2008
Date Data Arrived at EDR: 06/18/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 34

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 12/04/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Permitted Landfills in the State of Hawaii
Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/01/2009
Date Data Arrived at EDR: 05/26/2009
Date Made Active in Reports: 06/25/2009
Number of Days to Update: 30

Source: Department of Health
Telephone: 808-586-4245
Last EDR Contact: 10/09/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 09/15/2009
Date Data Arrived at EDR: 09/16/2009
Date Made Active in Reports: 09/24/2009
Number of Days to Update: 8

Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 12/07/2009
Next Scheduled EDR Contact: 03/22/2010
Data Release Frequency: Semi-Annually

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 12/01/2009
Date Data Arrived at EDR: 12/01/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 15

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/24/2009
Date Data Arrived at EDR: 05/20/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 28

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 11/04/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/12/2009
Date Data Arrived at EDR: 11/12/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/19/2009
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 25

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/10/2009
Date Data Arrived at EDR: 11/12/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 34

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 11/24/2009
Date Data Arrived at EDR: 11/25/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 12/07/2009
Date Data Arrived at EDR: 12/09/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 7

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal registered storage tank lists

UST: Underground Storage Tank Database
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 09/15/2009
Date Data Arrived at EDR: 09/16/2009
Date Made Active in Reports: 09/23/2009
Number of Days to Update: 7

Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 12/07/2009
Next Scheduled EDR Contact: 03/22/2010
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/19/2009
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 25

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/10/2009
Date Data Arrived at EDR: 11/12/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 34

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Quarterly

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/12/2009
Date Data Arrived at EDR: 11/12/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/01/2008
Date Data Arrived at EDR: 12/30/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 76

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 11/04/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/12/2009
Date Data Arrived at EDR: 11/20/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 26

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 12/01/2009
Date Data Arrived at EDR: 12/01/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 15

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2009
Date Data Arrived at EDR: 11/05/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 41

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/22/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 12/07/2009
Date Data Arrived at EDR: 12/09/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 7

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/30/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Semi-Annually

State and tribal institutional control / engineering control registries

INST CONTROL: Sites with Institutional Controls
Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 04/04/2008
Date Data Arrived at EDR: 06/18/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 34

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 12/04/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 04/02/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 10/05/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

VCP: Voluntary Response Program Sites
Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 04/04/2008
Date Data Arrived at EDR: 06/18/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 34

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 12/04/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites
With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 04/04/2008
Date Data Arrived at EDR: 06/18/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 34

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 12/04/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 10/01/2009
Date Data Arrived at EDR: 11/04/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 11/04/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-972-3336
Last EDR Contact: 12/18/2009
Next Scheduled EDR Contact: 03/22/2010
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 11/09/2009
Next Scheduled EDR Contact: 02/22/2010
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 03/01/2009
Date Data Arrived at EDR: 06/22/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 91

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 12/14/2009
Next Scheduled EDR Contact: 03/22/2010
Data Release Frequency: Quarterly

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 11/03/2009
Date Data Arrived at EDR: 11/05/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/02/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Varies

LUCIS: Land Use Control Information System
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/20/2009
Next Scheduled EDR Contact: 03/08/2010
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 10/05/2009
Date Data Arrived at EDR: 10/05/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 35

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/05/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Annually

SPILLS: Release Notifications
Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

Date of Government Version: 04/04/2008
Date Data Arrived at EDR: 06/18/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 34

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 12/09/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Varies

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 10/13/2009
Date Data Arrived at EDR: 11/10/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 36

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 11/10/2009
Next Scheduled EDR Contact: 02/22/2010
Data Release Frequency: Varies

DOD: Department of Defense Sites
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 10/23/2009
Next Scheduled EDR Contact: 02/01/2010
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/30/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 62

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 12/18/2009
Next Scheduled EDR Contact: 03/29/2010
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 08/03/2009
Date Data Arrived at EDR: 10/27/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 13

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 10/06/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/01/2009
Date Data Arrived at EDR: 09/22/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 30

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/15/2009
Next Scheduled EDR Contact: 03/29/2010
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 01/05/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 05/08/2009
Number of Days to Update: 1

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/30/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/07/2009
Date Data Arrived at EDR: 09/18/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 52

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 12/08/2009
Next Scheduled EDR Contact: 03/22/2010
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 04/09/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 69

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 12/01/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 10/07/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 12/14/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 12/14/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 05/19/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 125

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 11/02/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 08/21/2009
Date Data Arrived at EDR: 08/27/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 09/28/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/01/2009
Date Data Arrived at EDR: 10/21/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 41

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/21/2009
Next Scheduled EDR Contact: 02/01/2010
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 09/25/2009
Date Data Arrived at EDR: 10/23/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 54

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 12/14/2009
Next Scheduled EDR Contact: 03/29/2010
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/15/2009
Date Data Arrived at EDR: 10/16/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/16/2009
Next Scheduled EDR Contact: 01/25/2010
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/19/2009
Date Data Arrived at EDR: 10/22/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 40

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 12/10/2009
Next Scheduled EDR Contact: 03/29/2010
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 05/22/2009
Number of Days to Update: 92

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/20/2009
Next Scheduled EDR Contact: 03/05/2010
Data Release Frequency: Biennially

UIC: Underground Injection Wells Listing

A listing of underground injection well locations.

Date of Government Version: 10/19/2009
Date Data Arrived at EDR: 10/23/2009
Date Made Active in Reports: 11/13/2009
Number of Days to Update: 21

Source: Department of Health
Telephone: 808-586-4258
Last EDR Contact: 12/07/2009
Next Scheduled EDR Contact: 03/22/2010
Data Release Frequency: Varies

DRYCLEANERS: Permitted Drycleaner Facility Listing

A listing of permitted drycleaner facilities in the state.

Date of Government Version: 05/05/2009
Date Data Arrived at EDR: 05/06/2009
Date Made Active in Reports: 05/19/2009
Number of Days to Update: 13

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 11/30/2009
Next Scheduled EDR Contact: 01/25/2010
Data Release Frequency: Varies

AIRS: List of Permitted Facilities

A listing of permitted facilities in the state.

Date of Government Version: 08/31/2009
Date Data Arrived at EDR: 09/01/2009
Date Made Active in Reports: 09/18/2009
Number of Days to Update: 17

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 10/09/2009
Next Scheduled EDR Contact: 01/25/2010
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/23/2009
Next Scheduled EDR Contact: 02/01/2010
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 09/09/2009
Date Data Arrived at EDR: 09/09/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 43

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/09/2009
Next Scheduled EDR Contact: 02/08/2010
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/23/2009
Next Scheduled EDR Contact: 02/01/2010
Data Release Frequency: N/A

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 02/18/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/13/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

445 E. WAIKO ROAD
445 E. WAIKO ROAD
KAHULUI, HI 96732

TARGET PROPERTY COORDINATES

Latitude (North):	20.85140 - 20° 51' 5.0"
Longitude (West):	156.4906 - 156° 29' 26.2"
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	761123.1
UTM Y (Meters):	2307601.8
Elevation:	245 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	20156-G4 WAILUKU, HI
Most Recent Revision:	Not reported
West Map:	20156-G5 LAHAINA, HI
Most Recent Revision:	Not reported

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

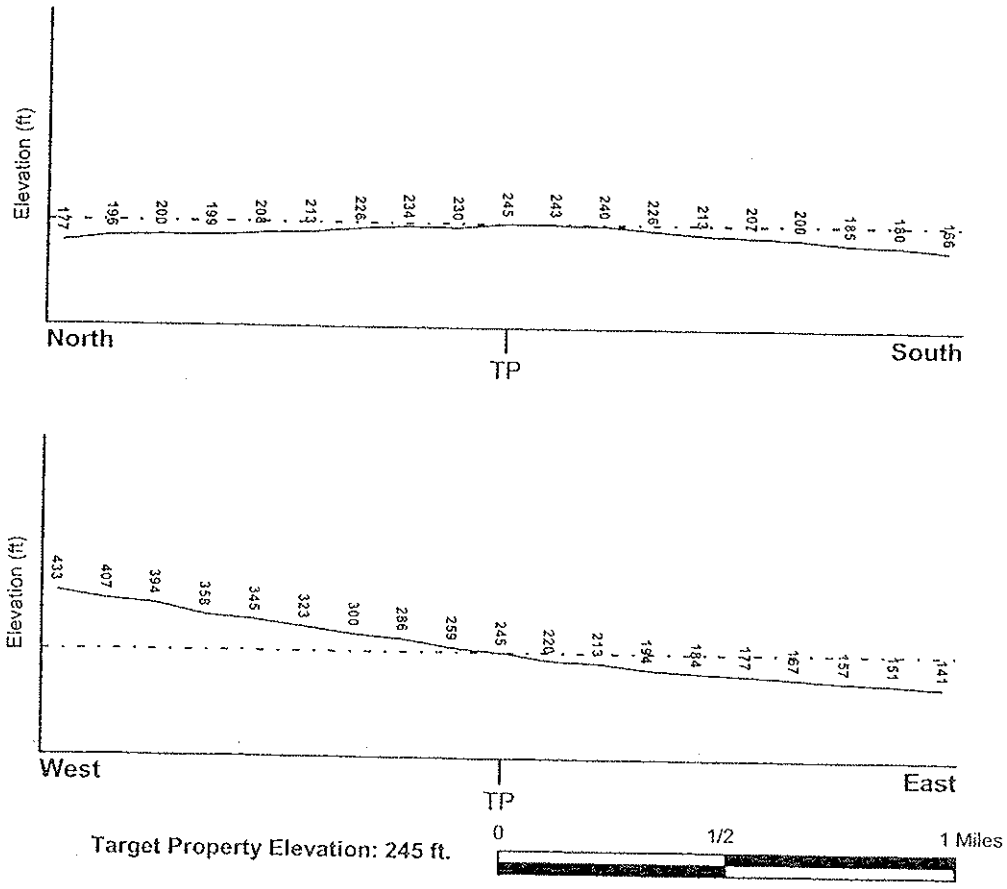
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General East

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
MAUI, HI	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 1500030190D

Additional Panels in search area: 1500030255B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
WAILUKU	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

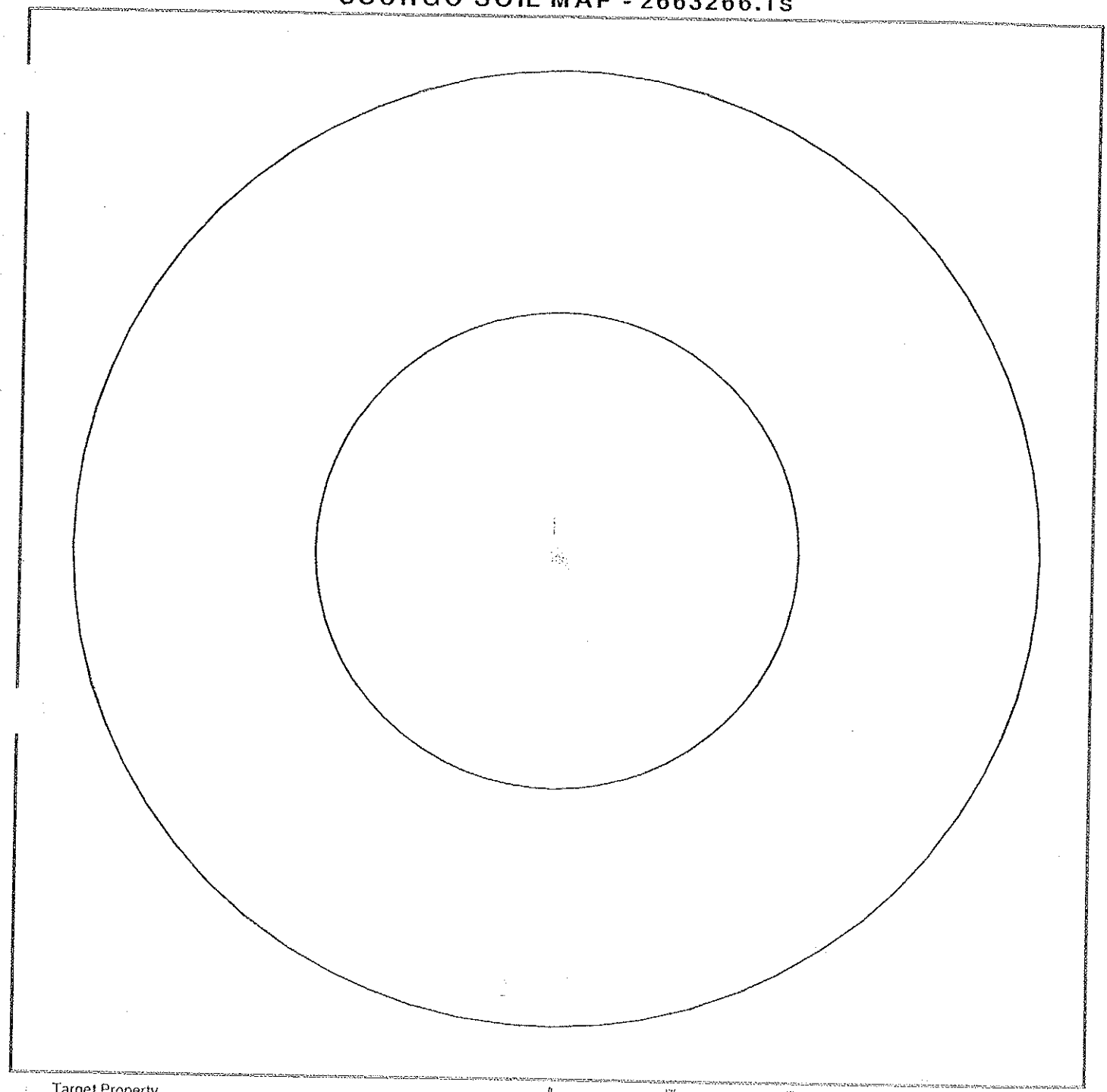
Era:	-
System:	-
Series:	-
Code:	N/A *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 2663266.1s



Target Property
SSURGO Soil
Water

SITE NAME: 445 E. Waiko Road ADDRESS: 445 E. Waiko Road Kahului HI 96732 LAT/LONG: 20.8514 / 156.4906	CLIENT: MEV, LLC CONTACT: Amy Mathis INQUIRY #: 2663266.1s DATE: December 22, 2009 10:46 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Puuone

Soil Surface Texture: sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14.11 Min: 4.23	Max: 8.5 Min: 8
2	20 inches	40 inches	cemented material	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14.11 Min: 4.23	Max: 8.5 Min: 8

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: Jaucas

Soil Surface Texture: sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	12 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42.34	Max: 8.4 Min: 6.6
2	12 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42.34	Max: 8.4 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

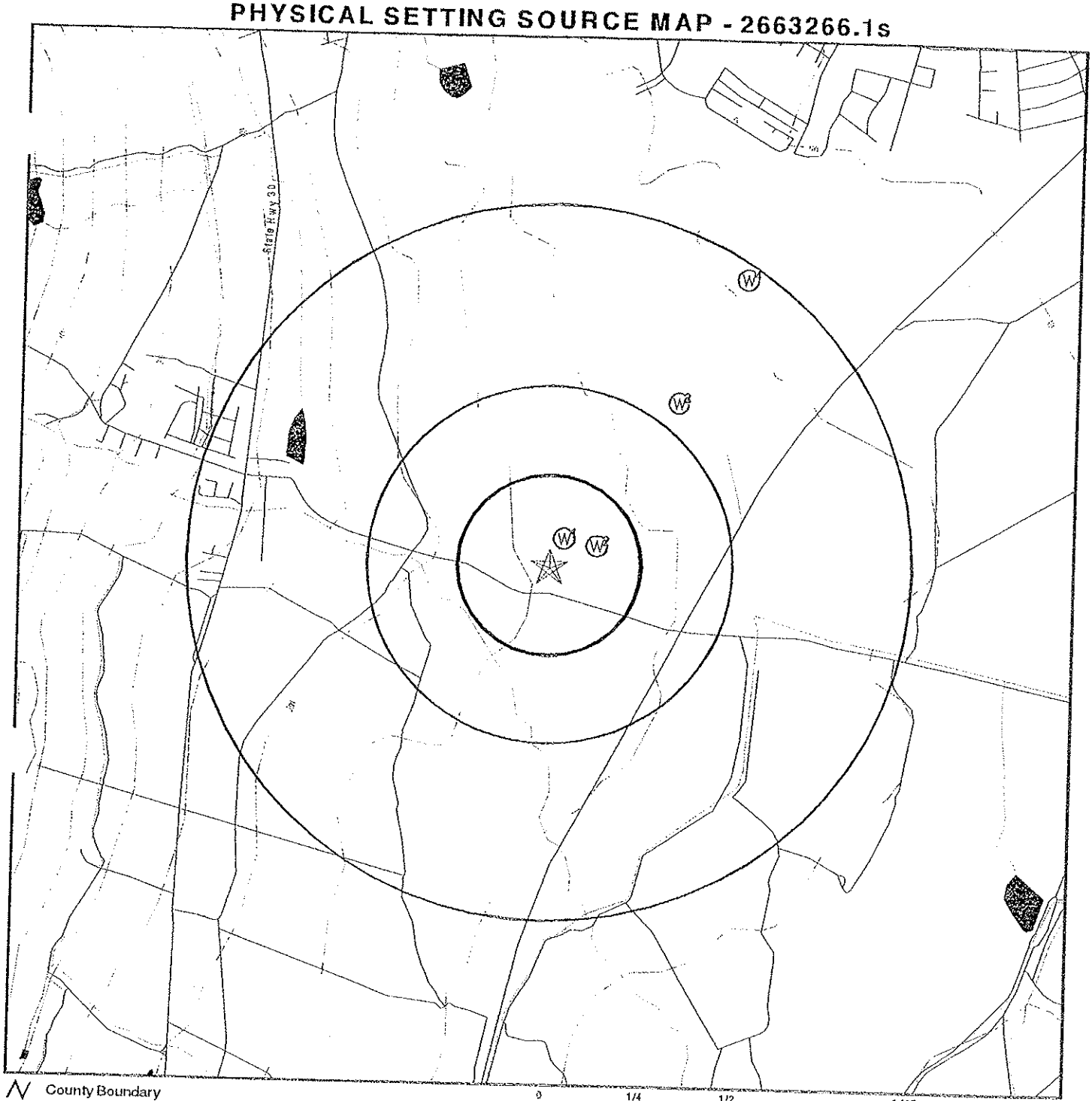
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	HI4000000001157	0 - 1/8 Mile NNE
2	HI4000000001156	1/8 - 1/4 Mile ENE
3	HI4000000001167	1/2 - 1 Mile NE
4	HI4000000001177	1/2 - 1 Mile NNE

PHYSICAL SETTING SOURCE MAP - 2663266.1s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location

TE NAME: 445 E. Waiko Road	CLIENT: MEV, LLC
DDRESS: 445 E. Waiko Road	CONTACT: Amy Mathis
Kahului HI 96732	INQUIRY #: 2663266.1s
LAT/LONG: 20.8514 / 156.4906	DATE: December 22, 2009 10:46 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
1 **NNE** **0 - 1/8 Mile** **Lower**	**HI WELLS**	**HI4000000001157**

Wid:	6-5129-003	Island:	6
Well no:	5129-03	Well name:	CB 2
Old name:	Not Reported	Yr drilled:	2005
Driller:	BEYLIK DRLG	Quad map:	05
Longitude2:	1562934	Latitude27:	205121
Longitude8:	1562924	Latitude83:	205109
Lat83d:	20	Lat83m:	51
Lat83s:	09	Lon83d:	156
Lon83m:	29	Lon83s:	24
Lat83dd:	20.8525		
Lon83dd:	-156.49		
Long83dd:	-156.49		
Lat83dd 1:	20.8525		
Gps:	1	Utm:	0
Owner user:	Consolidated Baseyards, LLC	Old number:	Not Reported
Well type:	PER	Casing dia:	10
Ground el:	232	Well depth:	300
Solid case:	260	Perf case:	300
Use:	MUNPR	Use year:	06
Init water:	Not Reported		
Init head:	4.46		
Init chlor:	Not Reported	Init cl:	26.00000
Test date:	8/2/2005	Test gpm:	100
Test ddown:	.7	Test chlor:	25
Test temp:	75.2	Temp unit:	F
Pump gpm:	135.00000	Draft mgy:	Not Reported
Head feet:	4.46	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	TK
Pump yr:	06	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	-68
Bot solid:	-28	Bot perf:	-68
Spec capac:	Not Reported	Pump mgd:	.194
Draft mgd:	Not Reported	Aquifer:	Not Reported
Tmk:	3-8-007:089	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1959
Pir:	Not Reported	Surveyor:	S D DEPONTE
T:	Not Reported	Pump elev:	-21
Pump depth:	253	Site id:	HI4000000001157

2 **ENE** **1/8 - 1/4 Mile** **Lower**	**HI WELLS**	**HI4000000001156**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wid:	6-5129-002	Island:	6
Well no:	5129-02	Well name:	Waikapu Baseyard
Old name:	Not Reported	Yr drilled:	2001
Driller:	BEYLIK DRLG	Quad map:	05
Longitude2:	1562930	Latitude27:	205119
Longitude8:	1562919	Latitude83:	205108
Lat83d:	20	Lat83m:	51
Lat83s:	08	Lon83d:	156
Lon83m:	29	Lon83s:	19
Lat83dd:	20.85222		
Lon83dd:	-156.48861		
Long83dd:	-156.48861		
Lat83dd 1:	20.85222		
Gps:	1	Utm:	0
Owner user:	Consolidated Baseyards LLC	Old number:	Not Reported
Well type:	PER	Casing dia:	8
Ground el:	224	Well depth:	255
Solid case:	233	Perf case:	253
Use:	INDOTH	Use year:	03
Init water:	Not Reported		
Init head:	0		
Init chlor:	Not Reported	Init cl:	Not Reported
Test date:	#########	Test gpm:	60
Test ddown:	.23	Test chlor:	32
Test temp:	73.0	Temp unit:	F
Pump gpm:	60.00000	Draft mgy:	Not Reported
Head feet:	2.7	Max chlor:	Not Reported
Min chlor:	0	Geology:	Not Reported
Pump yr:	03	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	-31
Bot solid:	-9	Bot perf:	-29
Spec capac:	Not Reported	Pump mgd:	0.086
Draft mgd:	Not Reported	Aquifer:	Not Reported
Tmk:	3-8-007:089	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	2.95000
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1959
Pir:	Not Reported	Surveyor:	EDGARDO VALERA
T:	195350.00000	Pump elev:	-16
Pump depth:	240	Site id:	HI4000000001156

3
NE
1/2 - 1 Mile
Lower

HI WELLS HI4000000001167

Wid:	6-5129-004	Island:	6
Well no:	5129-04	Well name:	Waiale 1
Old name:	Not Reported	Yr drilled:	2007
Driller:	Not Reported	Quad map:	05
Longitude2:	1562917	Latitude27:	205141
Longitude8:	1562907	Latitude83:	205129
Lat83d:	20	Lat83m:	51
Lat83s:	29	Lon83d:	156
Lon83m:	29	Lon83s:	07
Lat83dd:	20.85806		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Lon83dd:	-156.48528		
Long83dd:	-156.48528		
Lat83dd 1:	20.85806		
Gps:	1	Utm:	0
Owner user:	Not Reported	Old number:	Not Reported
Well type:	ROT	Casing dia:	14
Ground el:	183	Well depth:	208
Solid case:	177	Perf case:	208
Use:	UNU	Use year:	07
Init water:	Not Reported		
Init head:	3.4		
Init chlor:	Not Reported	Init cl:	Not Reported
Test date:	#########	Test gpm:	500
Test ddown:	.40	Test chlor:	41
Test temp:	73.9	Temp unit:	F
Pump gpm:	0.00000	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	-6
Bot solid:	6	Bot perf:	-6
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	Not Reported
Tmk:	3-8-071:101	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	3.32000
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	11/05/2007
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI4000000001167

4
NNE
1/2 - 1 Mile
Lower

HI WELLS **HI4000000001177**

Wid:	6-5129-001	Island:	6
Well no:	5129-01	Well name:	Reynolds 1
Old name:	Not Reported	Yr drilled:	1959
Driller:	PACIFIC DRLG	Quad map:	05
Longitude2:	1562907	Latitude27:	205159
Longitude8:	1562857	Latitude83:	205147
Lat83d:	20	Lat83m:	51
Lat83s:	47	Lon83d:	156
Lon83m:	28	Lon83s:	57
Lat83dd:	20.86306		
Lon83dd:	-156.4825		
Long83dd:	-156.4825		
Lat83dd 1:	20.86306		
Gps:	1	Utm:	0
Owner user:	Maui DWS	Old number:	12-
Well type:	ROT	Casing dia:	12
Ground el:	143	Well depth:	250
Solid case:	175	Perf case:	Not Reported
Use:	ABNSLD	Use year:	07
Init water:	9.0		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Init head:	9		
Init chlor:	Not Reported	Init cl:	Not Reported
Test date:	Not Reported	Test gpm:	1500
Test ddown:	4.0	Test chlor:	140
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	250.00000	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	313
Min chlor:	112	Geology:	THO
Pump yr:	96	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	1/1/1964
Maxchl yr:	64	Minchl:	1/1/1960
Minchl yr:	64	Bot hole:	-107
Bot solid:	-32	Bot perf:	Not Reported
Spec capac:	375	Pump mgd:	0.360
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-007:121	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1959
Pir:	1/1/1996	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI4000000001177

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for MAUI County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96732

Number of sites tested: 17

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	-0.271 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.200 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Well Index Database
Source: Department of Land and Natural Resources
Telephone: 808-587-0214
CWRM maintains a Well Index Database to track specific information pertaining to the construction and installation of production wells in Hawaii

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

STREET AND ADDRESS INFORMATION

DEPARTMENT OF HEALTH LABORATORIES – SAFE DRINKING WATER BRANCH CHAIN OF CUSTODY & **TRACE METALS** CHEMICAL REPORT

Sample Point No. 258-001 Type: Q408 001WL 1/1
Water System Name: CONSOLIDATED BASEYARDS
Source Name: WELL NO. 1 (CONSOLIDATED BASEYARDS)
Sample Location: WELL HEAD
Collection Remarks: _____
Treatment: B Cl2 Reading (if Chlorinated) NA mg/L
Sampler(s) G. Munekata
Date: 10-27-08 Time: 9:50

SAMPLE LAB NO.	ANALYST
P10-08-316	E. Chen

Relinquished by:	Date/Time:
Received by:	Date/Time:
Relinquished by:	Date/Time:
Received by:	Date/Time:
Delivered to Airport by: G. Munekata 10-27-08	Date/Time: 12:35
Method of Shipment: Hand Carried___: Hawaiian Air✓: Island Air___: Other:	
Received by:	Date/Time: OCT 28 2008/1230
Custody Seal intact? Yes___: No___: Not Used___: TSA / Carrier Inspected___ (circle)	
Relinquished by:	Date/Time:
Received by:	Date/Time:
Delivered to Lab by:	Date/Time: OCT 28 2008/1415
Received for Lab by:	Date/Time:
Sample Lab No.	10/28/08 14:15
Locked in Refrig. by:	Date/Time:
Removed from Refrig. by:	Date/Time:

Contaminant	MCL (mg/L)	ND (mg/L)	Lab Results (mg/L)	Analytical Method		Date Analyzed
Antimony	0.006	<0.002		200.8	200.9	NOV 13 2008
Barium	2.0	<0.010		200.8	3113B	
Beryllium	0.004	<0.0005		200.8	200.9	
Lead	0.015*	<0.005		200.8	200.9	
Mercury	0.002	<0.0005		200.8	245.1	
Nickel	[redacted]	<0.005		200.8	200.9	
Thallium	0.002	<0.001		200.8	200.9	
Arsenic	0.01	<0.002		200.8	200.9	
Selenium	0.05	<0.005		200.8	200.9	
Cadmium	0.005	<0.0002		200.8	200.9	
Copper	1.3*	<0.05		200.8	3111B	
Chromium	0.1	<0.002		200.8	200.9	NOV 17 2008
Sodium	[redacted]	<1			3111B	NOV 18 2008

MCL = Maximum Contaminant Level ND = Not Detectable * Action Level

Container: Metals HNO_3 ✓ Signature _____
Date 10/28/08 Sample Lab No. _____

SDWB Administration Only
___Copies Done ___Pos. Result
___Sent System ___Chem Pos.
___Sent NI Office ___Inor. Mon.
___Data Entered ___Violation
___SDWB Data ___Neg. Result
___GIS Data ___Reduce Mon.

Sample Location Map

Lab Comments

Reported by:	Date NOV 25 2008
QA Check:	Date 11/26/08
Forwarded by: C. Christina Chen	Date NOV 26 2008

DEPARTMENT OF HEALTH LABORATORIES – SAFE DRINKING WATER BRANCH CHAIN OF CUSTODY & **TRACE METALS** CHEMICAL REPORT

Sample Point No. 258-002 Type: Q408 002WL 1/1
Water System Name: CONSOLIDATED BASEYARDS
Source Name: WELL NO. 2 (CONSOLIDATED BASEYARDS)
Sample Location: WELL HEAD
Collection Remarks: _____
Treatment: B Cl2 Reading (if Chlorinated) NA mg/L
Sampler(s) G. Muraoka
Date: 10-27-08 Time: 1040

SAMPLE LAB NO.	ANALYST
P10-08-317	E. Chun

Relinquished by:	Date/Time:
Received by:	Date/Time:
Relinquished by:	Date/Time:
Received by:	Date/Time:
Delivered to Airport by: G. Muraoka 10-27-08	Date/Time: 12:35
Method of Shipment: Hand Carried___: Hawaiian Air___: Island Air___: Other:	
Received by:	Date/Time: OCT 28 2008 1230
Custody Seal intact? Yes___: No___: Not Used___: TSA / Carrier Inspected___ (circle)	
Relinquished by:	Date/Time:
Received by:	Date/Time:
Delivered to Lab by:	Date/Time: OCT 28 2008 1415
Received for Lab by:	Date/Time:
Sample Lab No. 10/28/08 14:15	
Locked in Refrig. by:	Date/Time:
Removed from Refrig. by:	Date/Time:

Contaminant	MCL (mg/L)	ND (mg/L)	Lab Results (mg/L)	Analytical Method		Date Analyzed
Antimony	0.006	<0.002		200.8	200.9	NOV 13 2008
Barium	2.0	<0.010		200.8	3113B	
Beryllium	0.004	<0.0005		200.8	200.9	
Lead	0.015*	<0.005		200.8	200.9	
Mercury	0.002	<0.0005		200.8	245.1	
Nickel	[redacted]	<0.005		200.8	200.9	
Thallium	0.002	<0.001		200.8	200.9	
Arsenic	0.01	<0.002		200.8	200.9	
Selenium	0.05	<0.005		200.8	200.9	
Cadmium	0.005	<0.0002		200.8	200.9	
Copper	1.3*	<0.05		200.8	3111B	
Chromium	0.1	<0.002		200.8	200.9	NOV 17 2008
Sodium	[redacted]	<1			3111B	NOV 18 2008

MCL = Maximum Contaminant Level ND = Not Detectable * Action Level

Container: Metals HNO_3 ___✓___ Signature _____
Date 10/25/08 Sample Lab No. _____

SDWB Administration Only	
___Copies Done	___Pos. Result
___Sent System	___Chem Pos.
___Sent NI Office	___Inor. Mon.
___Data Entered	___Violation
___SDWB Data	___Neg. Result
___GIS Data	___Reduce Mon.

Sample Location Map

Lab Comments

Reported by: _____ Date NOV 25 2008
QA Check: _____ Date 11/26/08
Forwarded by: _____ Date NOV 26 2008

DEPARTMENT OF HEALTH LABORATORIES – SAFE DRINKING WATER BRANCH CHAIN OF CUSTODY & **INORGANIC ANIONS** CHEMICALS REPORT

Sample Point No. 258-004 Type: Y09 001TP
Water System Name: CONSOLIDATED BASEYARDS
Source Name: WELLS 1 AND 2 (CONSOLIDATED BASEYARDS)
Sample Location: TANK TAP
Collection Remarks: _____
Treatment: A X Cl2 Reading (if Chlorinated) 0.52 mg/L
Sampler(s) G. Numuda
Date: 2-10-09 Time: 1015

SAMPLE LAB NO.	ANALYST
P2-09-38	VNA

Contaminants	MCL (mg/L)	ND (mg/L)	Lab Results (mg/L)	Analytical Method	Date Analyzed
Nitrate (as N)	10	<0.30		300.0	2/11/09
Nitrite (as N)	1	<0.05		300.0	
Fluoride	4.0	<0.20		300.0	
Cyanide	0.2				
Bromide	[redacted]			300.0	
Chloride				300.0	
Orthophosphate				300.0	
Sulfate		<10		300.0	

MCL = Maximum Contaminant Level ND = Not Detectable

Relinquished by: Date/Time:
Received by: Date/Time:
Relinquished by: Date/Time:
Received by: Date/Time:
Delivered to Airport by: Date/Time:
G. Numuda 2-10-09 1300
Method of Shipment: Hand Carried___: Hawaiian Air___: Island Air___: Other:
Received by: Date/Time:
FEB 11 2009 / 0940
Custody Seal intact? Yes___: No___: Not Used___: TSA / Carrier Inspected___ (circle)
Relinquished by: Date/Time:
Received by: Date/Time:
Delivered to Lab by: Date/Time:
FEB 11 2009 / 1030
Received for Lab by: Date/Time:
Sample Lab No. P2-09-38 VNA 2/11/09 1030
Locked in Refrig. by: Date/Time:
Removed from Refrig. by: Date/Time:

Lab Comments

Reported by: VNA Date 2/12/09
QA Check: R. Sato Date 2/20/09
Forwarded by: Date 2-23-09

SDWB Administration Only
___Copies Done ___Pos. Result
___Sent System ___Chem Pos.
___Sent NI Office ___Inor. Mon.
___Data Entered ___Violation
___SDWB Data ___Neg. Result
___GIS Data ___Reduce Mon.

Sample Location Map

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
SAFE DRINKING WATER BRANCH
919 Ala Moana Boulevard, Room 308
Honolulu, Hawaii 96814

In reply, please refer to:
File: SDWB

January 8, 2010

Ms. Amy R. Mathis
Malama Environmental
P. O. Box 880487
Pukalani, HI 96788-0487

Dear Ms. Mathis:

SUBJECT: UNDERGROUND INJECTION CONTROL (UIC);
REPLY TO YOUR INFORMATION REQUEST FOR
TMK: (2) 3-8-07:102, 31.222 ACRES
445 E. WAIKO ROAD, WAILUKU, HI

Based on your submitted information, there is no UIC permit associated with the subject property.

If a well is found at the property, please contact us so that we can determine if the injection well regulations are applicable.

If you have any questions about this subject, please call Chauncey Hew at (808) 586-4258 (Honolulu) or call direct toll free from Maui at 984-2400, ext. 64258.

Sincerely,

STUART YAMADA, P.E., CHIEF
Safe Drinking Water Branch
Environmental Management Division

CH:cb

NOTICE TO REQUESTER

DATE: December 30, 2009

TO: Amy R. Mathis / Malama Environmental

FROM: Dept. of Health/Hazard Evaluation & Emergency Response Office/(808)586-4249/
Department Name, Name & Telephone Number of Contact Person at Agency

ACCESS TO THE GOVERNMENT RECORD YOU REQUESTED (copy of request attached or brief description below)

attached

☐ will be granted in its entirety.

☒ cannot be granted because

- ☒ agency does not maintain the requested record.
- ☐ agency needs a further description or clarification of the requested record. Please contact the agency within _____ day or your request will be considered abandoned.
- ☐ the request would require the agency to create a summary or compilation from records that is not readily retrievable.

☐ is denied in its entirety or will be granted only to certain part(s) of this government record. Denial of access to this or portions of this government record is based upon the following subsections of section 92F-13, Hawaii Revised Statutes, or other laws as cited below. The portions of the record that the agency will not disclose are described in general terms:

STATUTE	RECORD OR PORTIONS WITHHELD

METHOD AND DATE OF DISCLOSURE:

☐ Inspection at the following location: _____ On date/time): _____

☐ Copy provided to you:

- ☐ available for pick-up at the agency on (date/time): _____
- ☐ to be mailed
- ☐ transmitted by other means as requested

☐ Incremental Disclosure: The record will be disclosed in increments. (The agency must attach a description of extenuating circumstances that support its intention to disclose incrementally. See §2-71-15 H.A.R.) The first increment will be available on _____

See Back for Information on Fees

Should you have questions about the agency's response, you may contact the person named above. If you are not satisfied with the agency's response, you may call the Office of Information Practices at 808-586-1400.

MALAMA
Environmental

December 20, 2009

State of Hawaii Department of Health
Environmental Management Division
919 Ala Moana Boulevard, Room 308
Honolulu, HI 96814

Attn: Safe Drinking Water Branch

Subject: REQUEST FOR PUBLIC RECORDS

Dear Sir/Madam:

We are requesting a search for any past or pending environmental permits, licenses, citations, releases, or other information pertaining to the site(s) described below.

SITE INFORMATION:

Project Number:	0912-0150
Tax Map Key No.:	(2) 3-8-07:102 31.222 acres
Address:	445 E. Waiko Road Wailuku, HI 96793
Current Owner:	Mr. Roderick Fong
Former Owner:	A & B Properties, Inc.
Current Occupant:	Fong Construction Baseyard and pasture land
Type of Business:	Construction baseyard (approximately 3-acres) and cattle grazing.

Tax Map Key is enclosed.

Truly yours,

Amy R. Mathis

PO Box 880487, Pukalani, Hawaii 96788-0487 • Phone (808) 876-0500 • Fax (808) 876-1900
Email: info@malamaenvironmental.com • Web: www.malamaenvironmental.com

MALAMA
Environmental

December 20, 2009

State of Hawaii Department of Health
Environmental Management Division
919 Ala Moana Boulevard, Room 206
Honolulu, HI 96814

Attn: Office of Hazard Evaluation
& Emergency Response (HEER)

Subject: REQUEST FOR PUBLIC RECORDS

Dear Sir/Madam:

We are requesting a search for any past or pending environmental permits, licenses, citations, releases, or other information pertaining to the site(s) described below.
Please notify us of any documentation (violations) you may have on the former Maui Scrap Metal site located at 109 Waiko road TMK (2) 3-8-05:23, as this area is quite close to the subject site

SITE INFORMATION:

Project Number:	0912-0150
Tax Map Key No.:	(2) 3-8-07:102 31.222 acres
Address:	445 E. Waiko Road Wailuku, HI 96793
Current Owner:	Mr. Roderick Fong
Former Owner:	A & B Properties, Inc.
Current Occupant:	Fong Construction Baseyard and pasture land
Type of Business:	Construction baseyard (approximately 3-acres) and cattle grazing.

Tax Map Key is enclosed.

Truly yours,

Amy K. Mathis

PO Box 880487, Pukalani, Hawaii 96788-0487 · Phone (808) 876-0500 · Fax (808) 876-1900
Email: info@malamaenvironmental.com · Web: www.malamaenvironmental.com

MALAMA Environmental

December 20, 2009

Hawaii State Department of Health
919 Ala Moana Blvd., Room 203
Honolulu, HI 96814
Attn: Wastewater Branch

Subject: REQUEST FOR PUBLIC RECORDS

Dear Sir:

We are requesting a search for any past or pending environmental permits, licenses, citations, releases, or other information pertaining to the site(s) described below.

SITE INFORMATION:

Project Number:	0912-0150
Tax Map Key No.:	(2) 3-8-07:102 31.222 acres
Address:	445 E. Waiko Road Wailuku, HI 96793
Current Owner:	Mr. Roderick Fong
Former Owner:	A & B Properties, Inc.
Current Occupant:	Fong Construction Baseyard and pasture land
Type of Business:	Construction baseyard (approximately 3-acres) and cattle grazing.

Tax Map Key is enclosed.

Truly yours,

Amy R. Mathis

P.O. Box 880487, Pukalani, Hawaii 96788-0487 ▲ Phone: (808) 876-0500 ▲ Fax: (808) 876-1900
Email: info@malamaenvironmental.com · Web: www.malamaenvironmental.com

MALAMA Environmental

December 20, 2009

State of Hawaii Department of Health
Environmental Management Division
919 Ala Moana Boulevard, Room 212
Honolulu, HI 96814

Attn: Solid & Hazardous Waste Branch

Subject: REQUEST FOR PUBLIC RECORDS

Dear Sir/Madam:

We are requesting a search for any past or pending environmental permits, licenses, citations, releases, or other information pertaining to the site(s) described below.
Please notify us of any documentation (violations) you may have on the former Maui Scrap Metal site located at 109 Waiko road TMK (2) 3-8-05:23, as this area is quite close to the subject site.

SITE INFORMATION:

Project Number:	0912-0150
Tax Map Key No.:	(2) 3-8-07:102 31.222 acres
Address:	445 E. Waiko Road Wailuku, HI 96793
Current Owner:	Mr. Roderick Fong
Former Owner:	A & B Properties, Inc.
Current Occupant:	Fong Construction Baseyard and pasture land
Type of Business:	Construction baseyard (approximately 3-acres) and cattle grazing.

Tax Map Key is enclosed.

Truly yours,

Amy R. Mathis

PO Box 880487, Pukalani, Hawaii 96788-0487 • Phone (808) 876-0500 • Fax (808) 876-1900
Email: info@malamaenvironmental.com • Web: www.malamaenvironmental.com

MALAMA Environmental

December 20, 2009

State of Hawaii Department of Health
Environmental Management Division
919 Ala Moana Boulevard, Room 301
Honolulu, HI 96814

VERBAL RESPONSE RECEIVED
- NO RECORD
- DATE: 1/5/10
- BY: J.V

Attn: Clean Water Branch

Subject: REQUEST FOR PUBLIC RECORDS

Dear Sir/Madam:

We are requesting a search for any past or pending environmental permits, licenses, citations, releases, or other information pertaining to the site(s) described below.

SITE INFORMATION:

Project Number:	0912-0150
Tax Map Key No.:	(2) 3-8-07:102 31.222 acres
Address:	445 E. Waiko Road Wailuku, HI 96793
Current Owner:	Mr. Roderick Fong
Former Owner:	A & B Properties, Inc.
Current Occupant:	Fong Construction Baseyard and pasture land
Type of Business:	Construction baseyard (approximately 3-acres) and cattle grazing.

Tax Map Key is enclosed.

Truly yours,

Amy R. Mathis

PO Box 880487, Pukalani, Hawaii 96788-0487 • Phone (808) 876-0500 • Fax (808) 876-1900
Email: info@malamaenvironmental.com • Web: www.malamaenvironmental.com

MALAMA Environmental

December 20, 2009

Maui County Fire Department
Hazardous Materials Division
200 Dairy Road
Kahului, Hawaii 96732
Attn: Acting Officer

RE: Request for Public Records for

Dear Sir/Madam:

MEV is requesting any past or present information of environmental concern pertaining to the subject site and adjacent sites from the Maui County Fire Department's database. This could include information on environmental releases (spills), permits, citations, inspections, fires, etc.

SITE INFORMATION:

Project Number:	0912-0150
Tax Map Key No.:	(2) 3-8-07:102 31.222 acres
Address:	445 E. Waiko Road Wailuku, HI 96793
Current Owner:	Mr. Roderick Fong
Former Owner:	A & B Properties, Inc.
Current Occupant:	Fong Construction Baseyard and pasture land
Type of Business:	Construction baseyard (approximately 3-acres) and cattle grazing.

Thank you for your assistance.

Sincerely yours,

Amy R. Mathis

Attachment: TMK map

P.O. Box 880487, Pukalani, Hawaii 96788-0487 ▲ Phone: (808) 876-0500 ▲ Fax: (808) 876-1900
Email: info@malamaenvironmental.com • Web: www.malamaenvironmental.com

Appendix C:

Qualifications of Environmental Professionals

MALAMA Environmental

JOHN S. VUICH

President & CEO

STATEMENT OF QUALIFICATIONS:

M. S. Geological Engineering, University of Arizona
B. S. Geological Engineering, University of Arizona
Registered Geologist (California)
Registered Environmental Assessor (California)
Certified Environmental Manager (Nevada)

AREAS OF EXPERTISE

ENVIRONMENTAL

- Site Assessments, Phase I, II, III Investigations
- Underground Storage Tank Closure
- Asbestos Inspection and Monitoring, Management Planning, and Abatement Project Design and Removal
- Lead-Containing Paint Surveys and Inspections, and Disturbance Design and Removal
- Site Characterization for Remedial Investigations
- Facility Operation Compliance Audits-ISO 14000 Audits
- Soils/Groundwater Remediation
- Hazardous Waste Management
- Risk Assessment Investigations
- RCRA Compliance and Closure Projects
- Expert Witness/Litigation Support
- Industrial Hygiene Qualified/Competent Person
- Mold/Fungi Sampling, Remediation and Abatement Design and Removal

GEOLOGICAL

- Hydrogeology
- Geologic Hazards Analysis
- Subsurface Excavations and Drilling Investigations and Sampling

P.O. Box 880487, Pukalani, HI 96788-0487 (808) 876-0500 Phone (808) 876-1900 Fax
Email: jvuich@malamaenvironmental.com

RELEVANT EXPERIENCE

Owner-President • MEV, LLC.
Maui, HI • (June 2006 - Present)
Consulting services and project management for remediation projects, property transfers, sampling and site characterization plans, hazardous and toxic waste management, underground storage tanks, regulatory compliance, permit applications and litigation support.

Owner-President • Vuich Environmental Consultants, Inc.
Maui and Honolulu, Oahu • (March, 1994 - Present)
Licensed contractor for asbestos, mold and lead-based paint abatement, general demolition and construction cleanup.

Project Manager • Various Environmental and Geological Companies
Southwest U.S.A • (1972-1994)
Hazardous materials' and environmental assessment. Site characterization and remediation.

OTHER CERTIFICATIONS AND TRAINING

- Asbestos & Demolition Contractor (C-19, C-24) **HI LIC #21212**
- Accredited Asbestos Contractor/Supervisor
- Continuing Education in Hazardous Materials Management, Environmental Studies and Environmental Regulations.

P.O. Box 880487, Pukalani, HI 96788-0487 (808) 876-0500 Phone (808) 876-1900 Fax
Email: jvuich@malamaenvironmental.com

MALAMA Environmental

STATEMENT OF QUALIFICATIONS

for

Amy Mathis, Environmental Scientist

Company Position

Environmental Scientist (Geologist)

Responsibilities and Duties:

- Project Coordinator on Phase I & II Environmental Site Assessments/Investigations
- Project Coordinator on Phase III Remediation Projects
- Assist on Underground Storage Tank (UST) Closures
- Asbestos Inspections and Sampling
- Assist on Lead-Based Paint Inspections
- Indoor Air Quality Investigations and Sampling
- Erosion Control Plan (BMP) Development
- QA/QC Officer for Sampling Projects

Experience:

- Soil Investigations/Remediation
- UST Removal and Closure
- Hazardous Materials Management
- Asbestos and Lead-Based Paint Projects (Inspections & Sampling)
- Air Quality Sampling for Particulate and Microbiological Contaminants
- Wetland Delineations
- Environmental Report Writing and Compilation
- Ornithological counts/data collections
- Entomological counts/data collections
- Chemical technician specializing in wet chemical methods, analytical instrumentation and sample preparation.
- Geological mapping
- Vegetation mapping

Training & Education

- Bachelor of Science, Geology with Environmental Science Option New Mexico Institute of Mining and Technology, 1996-1999.
- Bachelor of Fine Arts, Music with minors in Fine Art and Theater Kutztown University Pennsylvania 1991-1995.
- 40-hr OSHA HAZWOPER Course
- AHERA Asbestos Building Inspector HIASB-3044
- Asbestos Air Quality Project Monitor
- Asbestos Contract Supervisor

P.O. Box 880487, Pukalani, HI 96788-0487 (808) 876-0500 Phone (808) 876-1900 Fax
Email: amathis@malamaenvironmental.com

RECYCLING BUSINESS PARTNERS

These businesses and organizations provide valuable community service by accepting, recycling, reusing or processing so much of our recyclables that might otherwise go into the landfill. Please phone first to confirm policies, hours of operation and acceptable materials.

Ad-Ventures	893-2209	telephone books
Aloha Recycling	871-8544	HI 5 redemption & processing
Aloha Shares Network	268-4380	usable materials exchange
Aloha Shell	877-5894	HI 5 redemption
Aloha Waste Systems	893-0932	waste/recyclables hauling
Big Brothers/Big Sisters	242-9754	household items, clothing
Calasa Service Station	878-1818	used motor oil
Cartridge World	871-6460	ink/laser cartridges
Community Workday	877-2524	paint
EKO Compost	572-8844	green waste, sells compost
Goodyear Tires	244-4074	tires
Graphics Technology	879-9390	rebuilt computers, repairs
Hasegawa General Store	248-8231	HI 5 redemption
Home Depot	893-7800	household & tool batteries, CFLs
Hawaiian Telcom	242-5148	cell phones & batteries
International Market Place, Lahaina	298-7159	HI 5 redemption
Interstate Battery Systems of Hawaii	242-5887	auto & marine batteries
Joy of Worms	573-3911	home compost education, worms & sells compost systems
Kihei/Wailea Union 76	879-2728	used motor oil
Kitagawa Towing	877-5611	junk cars
Lanai NAPA	565-9027	used motor oil
Lanai Waste Removal	565-6478	waste/recyclables hauling
Longs Drugs Kahului-Photo Dept.	877-0322	household batteries
Longs Drugs Kihei-Photo Dept.	879-2669	household batteries
Longs Drugs Lahaina-Photo Dept.	661-5439	household batteries
Maui Construction & Demolition Landfill	242-1101	commercial & residential C&D
Maui Disposal Company	242-7999	waste/recyclables hauling, processing
Maui Earth Compost	877-0403	green waste, sells compost
Maui Food Bank	243-9500	usable produce & packaged food
Maui Oil Change & Tune-Up	877-7522	used motor oil
Maui Recycling Group	268-4380	recycling education
Maui Recycling Service	244-0443	curbside recycling service, residential & commercial
Maui Tires	357-3241	tires in large quantities
Maui Transmissions	573-0600	used motor oil
NAPA/United Auto Parts-Wailuku	244-3774	used motor oil
NAPA/United Auto Parts-Lahaina	661-4461	used motor oil
Office Max	877-9448 / 662-0011	all toner cartridges
Pacific Biodiesel	877-3144	fats, oils, grease from restaurants
Paia Chevron	579-9440	sells B20 (biodiesel blend)
Paradise Pages	1-800-489-8230	telephone books
Parts Plus/Car Quest	871-7668	used motor oil
PF Restoration	244-5905	patio furniture repair
Pua'a Food Waste Service	268-3287	food waste from restaurants
Quiet Time Recycled Insulation	357-1908	newsprint cellulose insulation
Reynolds Aluminum	385-1867	HI 5 redemption, non-ferrous metals
SOS Metals Island Recycling	280-8844	metals, autos, appliances
Teens on Call	579-6011	event recycling
Tri-Isle RC&D	244-1800	Lanai recycling programs
Unitek Solvent Services	877-2667	commercial oil
WalMart	871-7062	used oil, tires, auto batteries
Zitro Recycling	357-3227	HI 5 redemption

SECONDHAND STORES AND THRIFT SHOPS

A-1 Recycled Appliances	242-6937	repairable appliances
Buyers Paradise	878-2826	usable furniture, decor
Endangered Pieces	572-6444	sells furniture, decor
Friends of the Library	871-6563	books, magazines
Habitat for Humanity-Restore	968-8050	building materials, refurb. computers
Holy Rosary Thrift Store	579-8714	household items, clothing
Ilin's New & Used Furniture	242-4788	furniture
Kala Iki Thrift Store	878-1221	household items, clothing
Pink Plumeria Consignment	877-0007	clothing
Salvation Army Kihei	875-8065	household items, clothing
Salvation Army Lahaina	661-8827	household items, clothing
Savers	871-7244	household items, clothing
St. Anthony's Thrift Store	242-7785	household items, clothing
St. Joseph's Thrift Store	572-9150	household items, clothing

If your business offers a recycling service and is not listed, please accept our apologies.

COUNTY OF MAUI
STATE OF HAWAII
www.mauicounty.gov/recycle

RECYCLE MAUI COUNTY

GLASS
- Δ Jars, bottles, containers of all sizes
- Δ Discard lids and corks, rinse clean
- Δ No need to remove labels
- Δ Please kokua: *NO food residue!*

PLASTIC BOTTLES WITH NECKS
- Δ Plastic bottles and containers with necks
- Δ Discard caps
- Δ Please kokua: *NO food residue!*

PLASTIC SHOPPING BAGS
- Δ Plastic shopping bags and dry cleaning bags only
- Δ Completely empty, tie each bag, put all bags in one bag and tie
- Δ Please kokua: *NO trash or debris!*

WHAT & HOW TO RECYCLE AT RESIDENTIAL RECYCLING CENTERS

METAL CANS
- Δ Aluminum and bi-metal cans
- Δ CLEAN, RINSED food cans with lids removed, labels can stay
- Δ Please kokua: *NO food residue!*

NEWSPAPER
- Δ All newspapers, including inserts
- Δ Remove rubber bands, plastic wrap
- Δ Do not tie in a bundle or bag

CARDBOARD & PAPER BAGS
- Δ Corrugated boxes, boxboard, paper egg cartons, cardboard rolls, paper bags, all colors, all sizes
- Δ Remove all plastic or foam liners
- Δ Please kokua: *Break down, cut or flatten every size of box*
- Δ *NO food residue!*

YARD TRIMMINGS
- Δ Including plants, grass clippings, tree and bush trimmings, Christmas trees, etc.
- Δ Leave grass clippings on lawns; they act as a natural fertilizer and mulch
- Δ Does NOT include food scraps
- Δ Take trimmings to EKO Compost (572-8844) located at the Central Maui Landfill, or in West Maui at the Olowalu Recycling & Refuse Center on Honoapiilani Hwy.

Compost at home: yard trimmings, food scraps, and shredded. For info, go to: www.joyofworms.com or 573-3911 for workshop information, $5 fee

PHONE BOOK RECYCLING
Drop off phone books in the bin located outside of Royal Hawaiian Movers, 400 Hana Hwy., Kahului. 873-0777. Sponsored by Paradise Yellow Pages, A Yellowbook Company.

RECYCLE USED MOTOR OIL

HOW TO RECYCLE USED MOTOR OIL
- Δ For Home Mechanics only, not for business or commercial operators
- Δ Clean Motor oil from cars and trucks only – up to 2 gallons in a clean container. No bleach bottles
- Δ Drain oil filters overnight & discard filter
- Δ Please sign in at the recycle location
- Δ No oil 'contaminated' with water or other auto fluids. For 'contaminated' oil: absorb, triple bag in plastic and take to landfill.
- Δ It is against the law to leave oil at a closed site. (HRS 342J-9). Please kokua!

E-CYCLING
Habitat for Humanity Restore, 970 Lower Main St., beginning Jan. 09, accepts for recycling: computers, televisions, stereos and anything that attaches to these items, copiers, fax machines, point of sale (POS) systems, cell phones & office equipment with circuit boards. Tues.9-2, Sat. 9-12. Businesses with large loads or anyone interested in a refurbished computer please call: 573-4018

CFL's
Home Depot accepts compact fluorescent light bulbs (CFL's) at the Customer Service Desk

HI-5 REDEMPTION PROGRAM

What Can Be Redeemed for 5¢:
- Δ Beverage containers labeled HI-5
- Δ Size: 68 ounces (2 liters) or smaller
- Δ Glass, plastic, aluminum, or bi-metal
- Δ Beverage types include: water, soda, juice, tea, coffee, beer & malt beverages, mixed spirits if less than 15% alcohol and wine beverages if less than 7% alcohol

What Cannot Be Redeemed:
- Δ Milk, supplements, infant formula, meat replacements, liquor, wine and all containers larger than 68 oz

Be Prepared:
- Δ Empty containers completely, NO liquid, food or trash
- Δ Remove caps from all bottles
- Δ Do NOT remove labels
- Δ Sort by material type and size.
- Δ Aluminum & plastic may be flattened except when redeeming at Reverse Vending Machines (RVMs)

COUNTY OF MAUI

KEEP MAUI NO KA OI
Prevent litter, cover your load of recyclables or refuse.
Littering and dumping are against the law!

APPLIANCE RECYCLING
When buying a new appliance, have the delivery service remove your old appliance for recycling.

For QUICK & EASY Drop Off of Home appliances, FREE for residents, to:
SOS METALS ISLAND RECYCLING
Mon - Fri 8-3:30 • Sat 8-11:30

Cannot take it to SOS yourself?
Call a Refuse Service Office to schedule a FREE County residential* pick-up
Central, South & West Maui: 270-7452
Upcountry: 572-3958
- Δ Please leave a message, with a number where you can be reached and someone will call to schedule the pick up time.
- Δ Put the appliance out by the curb the day before the scheduled pick-up.

*Pick up service not available to condo and apartment complexes. See the complex manager.

BUSINESSES:
Take appliances to Kitagawa's (877-5611) or SOS Metals (280-8844) for a fee.

VEHICLES
Cars and trucks may be taken to Kitagawa's (877-5611) located in Kahului on Alamaha St. or SOS Metals (280-8844) located in the Central Maui Baseyard. Call for fees.

SCRAP METAL
Take most metals to SOS Metals (280-8844) or non-ferrous metals only to Reynolds Recycling (385-1867). Call first for what is accepted.

AUTO BATTERIES & TIRES
State law requires stores that sell batteries and tires to accept used ones when new ones are purchased. Most stores that sell batteries and tires will accept used ones; a fee may be charged. Call stores first, to check for individual store policies.

HOUSEHOLD BATTERIES
Take rechargeable household or tool batteries to Home Depot. Take household batteries to Long's Drugs and place in the Big Green Box at the photo center.

PAINT
Usable paint may be donated for reuse. Donate new cans to Habitat for Humanity-Restore 893-0334.Take partial cans to Community Work Day Program, 877-2524. Residents: Non-usable paint – solidify by absorbing with a material such as cat litter or newspaper, triple bag in plastic bags and take to the landfill. Businesses with large quantities of unusable paint should call a licensed hazardous waste processor.

RECYCLING EVENTS SEE KOU [illegible]

Appendix E:

Acronyms and Abbreviations

Abbreviation	Definition
AST	Aboveground Storage Tank
AHERA	(Federal) Asbestos Hazard Emergency Response Act
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BLM	Bureau of Land Management
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CAA	Clean Air Act: Regulates Air Quality
CAMU	Corrective Action management Unit
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act: Federal Superfund for Cleanup of Environmental Contamination (1980, 1986)
CERCLIS	CERCLA Information System (data base)
CESQG	Conditionally Exempt SQG: Hazardous Waste Generator less than 100 kg/mo.
C.F.R.	Code of Federal Regulations: National Standard Regulations
COLIWASA	Composite Liquid Waste Sampler
CRC	Chlorofluorocarbon
CMU	Concrete Masonry Unit
CWA	Clean Water Act: Regulates Water Quality (1972, 1987)
CZMA	Coastal Zone Management Act
DLNR	Department of Land and Natural Resources
DOT	Department of Transportation: Administers hazardous Waste Containers-Marking-Labeling-Placarding and Transportation Procedures.
DOH	Department Of Health (State Of Hawaii)
DRASTIC	EPA Standardized System for Evaluating Groundwater Pollution Potential Using Hydrogeologic Settings.
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency: Administers CERCLA, RCRA and SARA
FID	Flame Ionization Detector
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act: Regulates Pesticides (1972, 1988)
FSP	Field Sampling Plan
FWPCA	Federal Water Pollution Control Act
HAP	Hazardous Air Pollutant
HCS	(OSHA) Hazard Communication Standard
HSWA	(Federal) Hazardous and Solid Waste Amendments of 1984
LEL	Lower Explosive Limit
LQG	Large Quantity Generators; Hazardous Waste Generator in Excess of 100 kg/mo.
LUST	Leaking Underground Storage Tank.
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MSDS	Material Safety Data Sheets: Hazard Information Required for Chemical Substances by OSHA
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants (Under CAA Regulations)
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operating and Maintenance
OCS	Outer Continental Shelf
OSHA	Occupational Safety and Health Act: Established Hazard Communication Program and Employee Right-to-Know Law (1970)
OVA	Organic Vapor Analyzer
PCB	Polychlorinated Biphenyls: Toxic Substance Used in Electric-Device Cooling.
PCi/l	Picocuries Per Liter
PEL	Permissible Airborne Exposure Level
PID	Photoionization Detector

POTW	Publicly Owned Treatment Works
ppb	parts per billion
ppm	parts per million
PWP	Project Work Plan
PRPs	Potentially Responsible Parties
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RBCA	Risk Based Corrective Action and Decision-Making at Sites with Contaminated Soil and Groundwater. (Hawaii DOH)
RCRA	Resource Conservation and Recovery Act: Federal Hazardous Waste Management Law. Regulates Waste Generation, Transportation, Treatment, Storage or Disposal Sites (1976, 1984)
RQ	Reportable Quantity
RUST	Registry of Underground Storage Tanks
SAP	Sampling & Analysis Plan
SARA	Superfund Amendments and Reauthorization Act: Amends CERCLA and includes Community Right to Know Law. Requires facilities report their chemical inventories and emissions (1986).
SDWA	Safe Drinking Water Act: Establishes maximum contaminant levels for drinking water (1974, 1986).
SHSP	Site Health & Safety Plan
SIC	Standard Industrial Classification
SIP	State implementation plan
SPCC	Spill Prevention Control and Countermeasure
SQG	Small Quantity Generator: Hazardous Waste Generator between 100-1000 kg/mo.
TCLP	Toxicity Characteristic Leaching Procedure: A toxicity test for certain substances declared hazardous by the EPA.
TMK	(Hawaii) Tax Map Key
TPH	Total Petroleum Hydrocarbons
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act: Regulates PCBs in electrical devices and chromium in evaporative cooling towers, asbestos in schools. (1976)
TSD	Treatment, Storage, and Disposal
UEL	Upper Explosive Limit
UIC	Underground Injection Control
USGS	United States Geological Survey
UST	Underground Storage Tank
VOA	Volatile Organic Analyses
VOC	Volatile Organic Compound: EPA listed toxic or carcinogenic organic substances.
Minimal, Minor or Not Significant	1) An unlikely or remote event, i.e., possible, but not anticipated under current conditions and observed features. 2) Insignificant when compared to regulatory acceptance levels, guideline action levels or when compared to background and/or baseline conditions of the local environment. 3) Any potential effect or impact attributed to the subject factor may be considered as the least likely source among a number of potentially responsible factors. 4) Any potential effect may not be measurable or detected by current technology. 5) Education, experience, and background of the investigator were utilized to conclude the situation or condition as trifle.

Appendix L

Market Analysis Report

PREPARED FOR: WAIKO INDUSTRIAL INVESTMENT, LLC

C/O MR. CHARLES JENCKS
Pacific Rim Land, Inc.
P.O Box 220
Kihei, Hawaii 96753

EFFECTIVE DATE: March 15, 2011

A MARKET STUDY OF THE PROPOSED WAIKO INDUSTRIAL PARK, WAILUKU, ISLAND OF MAUI, HAWAII

ACM CONSULTANTS, INC.

March 29, 2011 11-9028

Waiko Industrial Investment, LLC
c/o Mr. Charles Jencks
Pacific Rim Land, Inc.
P.O. Box 220
Kihei, Hawaii 96753

Re: Market Analysis for the proposed Waiko Industrial Park in Wailuku, Island and County of Maui

Dear Mr. Jencks:

In accordance with your request, we have inspected the above-referenced property in order to provide a defined scope market study for the proposed Waiko Industrial Park in Wailuku, Island and County of Maui. This *counseling report*, and the conclusions herein, is based on the on-site inspection of the property, a study of current political and economic conditions, and a historical review of the real estate market in Central Maui and on Maui overall. The effective date of this report is March 15, 2011.

The subject consists of approximately 31.222 acres of land and is currently zoned Agricultural District. Its Community Plan classification is Agricultural (AG). The project, which is still in its preliminary planning stage, will consist of 38 light industrial lots off Waiko Road, in an area that currently contains other industrial and agricultural uses. A portion of the subject site is presently utilized as an industrial baseyard authorized by a Conditional Permit which expires on March 1, 2014.

The assignment will include the following:

Market Analysis – The Consultant agrees to provide a market analysis for this proposed project by (1) defining and delineating the market area; (2) identifying and analyzing the current supply and demand conditions that comprise the specific real estate market segment; and (3) identifying, measuring and forecasting the effect of anticipated developments or other changes on future supply of each market segment; and (4) to the extent possible, forecasting the effect of anticipated economic or other changes on future demand.

Economic Impact – The Consultant agrees to provide a basic economic impact report estimating the general and specific economic effects arising from the development of the proposed subdivision. This report would likely address estimated construction costs for the land, the sale of individual lots, and costs for building construction, employment creation, and ongoing business operation. It will also briefly address fiscal benefits such as state income tax, general excise tax, and real property tax.

The following report presents a narrative review of the study and our analysis of data along with other pertinent materials on which this report is predicated. It contains data and exhibits gathered in our investigations, and will include a description of the analytical process and our conclusions, as of March 15, 2011.

Thank you for allowing us the opportunity to work on this interesting assignment.

Respectfully submitted,
ACM Consultants, Inc.

Glenn K. Kunihisa, MAI, CRE
Certified General Appraiser,
State of Hawaii, CGA-039
Expiration: December 31, 2011

TABLE OF CONTENTS

PART I – INTRODUCTION

A. EXECUTIVE SUMMARY

Background

The Waiko Industrial Park is a proposed 38-lot, light industrial subdivision situated on Waiko Road between Kuihelani and Honoapiilani Highways, in Waikapu, District of Wailuku, Island and County of Maui.

The subject consists of approximately 31.222 acres of agricultural-zoned land. The Wailuku-Kahului Community Plan designates this site as Agricultural (AG). It is anticipated that the project, which is still in its preliminary planning stage, will have industrial lots ranging from 9,536 square feet to 8.43 acres in size. The majority of the inventory, approximately 28 lots, will be less than 15,000 square feet in size; another 7 lots will range from about 20,000 to 35,000 square feet; and 3 lots will be between 1 and 2 acres in size. There will also be one, 8.43 acre lot, which will be situated at the eastern portion of the site near the Waiko Road and Kuihelani Highway intersection.

In seeking the change to Urban and Light Industrial classifications, the applicant is attempting to seek conformity with the present utilization of the site, as well as with a few of the surrounding uses.

Study Objectives

ACM Consultants, Inc. has been retained by Waiko Industrial Investment, LLC to analyze the Central Maui industrial market as it relates to this proposed project. In particular, we studied economic trends and demographics, and supply and demand factors for industrial property. In the process, we have gathered as much information as possible on industrial real estate sales on Maui and, more specifically, in the Wailuku-Kahului region. Specific attention has been paid to industrial land ownership, the availability of vacant parcels, and the future supply of additional industrial land.

The objectives of our study were as follows: (1) to define and delineate the market area; (2) to identify and analyze the current supply and demand conditions specific to the subject's market; (3) identify, measure and forecast the effect of anticipated developments or other factors on future supply; and (4) forecast the effect of anticipated economic or other factors on future demand.

Key Supply Factors

The following points summarize the supply of industrial land in the Central Maui region at this time.

- ❑ The majority of the industrial land in Central Maui is provided by five subdivisions in Wailuku and six other subdivisions in Kahului. There is a total of about 549 gross acres of land in these projects.

- In interviewing Realtors and property owners, there is a distinction made among them between vacant land and available land. In other words, although the land is vacant, it may not be available for purchase by the market because the property owner has near-term development plans. Therefore, although there appears to be numerous vacant lots in the Consolidated Baseyards Subdivision and Waiko Baseyard Subdivision, most of them have development plans and are not available to the market.

- There are approximately 48.18 acres of industrial land available in the Central Maui subdivisions. Another 8.85 acres are available in other free-standing parcels.

- There are 69 industrial parcels totaling 34.99 acres currently listed for sale; the majority, or 32.77 acres, is situated within the Maui Lani Village Center.

- Including the subject, approximately 235 acres of light industrial land are proposed for Central Maui. Proposed industrial developments in the Central Maui region, aside from the subject, include the Maui Business Park, Phase II (179 acres), Waikapu Light Industrial (9 acres), and the light industrial segment of Waiale Master Plan Development (16.3 acres).

- The most imminent of the proposed developments is the Maui Business Park Phase II. With construction expected to begin in mid-2011, build-out of the entire project is expected to expand over the next 10 to 15 years.

Key Demand Factors

The following points summarize the demand of real estate in the Central Maui region at this time.

- Population in Maui County between 2000 and 2010 grew by 20.12 percent to 154,834. The Central Maui region has the largest populace with approximately 32 percent of the total population. Increasing population must be followed with the availability of commercial and industrial establishments to support the growth.

- Central Maui is the hub of commerce, transportation and employment on Maui. It currently has approximately 83 percent of all industrial land on Maui.

- Central Maui has the highest number of employees of all regions on Maui and the combined payroll dollars of Wailuku-

Kahului surpass all other regions of Maui County.

- Although Central Maui has the lowest ratio of population to acres of finished commercial and industrial land area, unit prices remain comparable to commercial and industrial parks in South Maui and West Maui. This would indicate the continued demand for commercial and industrial land in Central Maui.

- Although the deficient sales activity in Central Maui can partially be attributed to softened market conditions, there is also a lack of suitable vacant land available for purchase. Vacant land prices in Central Maui have decreased, similar to all commercial and industrial areas on Maui. Upon economic recovery, prices are expected to rebound significantly, due to resurgence in demand.

- Rental rates for commercial and industrial space have declined since their peaks in 2007. Based on historical performance in this region, it can be assumed that this trend will reverse course as the economy gains traction.

- Since 1991, there has been a total of about 174.74 acres of new industrial land in Central Maui absorbed in the Central Maui subdivisions. This equates to about 8.74 acres per year.

B. PURPOSE OF THE REPORT

The purpose of this report, as of March 15, 2011, is to generate a market analysis and economic impact report with respect to the proposed Waiko Industrial Park.

C. INTENDED USE OF THE REPORT

The intended use or function of this report is to provide real property information and real estate market data in support of an Environmental Impact Statement, a State Land Use District Boundary Amendment, a change in County of Maui Zoning, and a Wailuku-Kahului Community Plan Amendment.

D. INTENDED USER OF THE REPORT

The intended users of this report are Waiko Industrial Investment, LLC and the appropriate State and County agencies involved in the proposed land use changes.

E. SCOPE OF THE REPORT

The Consultant has agreed to provide a current Market Analysis of this project by (1) defining and delineating the market area; (2) identifying and analyzing the current supply and demand conditions that make up the specific real estate market; and (3) identifying, measuring and forecasting the effect of anticipated developments or other changes on future supply; and (4) to the extent possible, forecasting the effect of anticipated economic or other changes on future demand. The market analysis will be developed and prepared in conformity with, and subject to, the requirements of the Code of Professional Ethics and the Standards of Appraisal Practice of the Appraisal Institute, and the Uniform Standards of Professional Appraisal Practice.

Furthermore, the Consultant also agreed to provide a basic Economic Impact Report estimating the general and specific economic effects arising from the development of the proposed subdivision.

F. STATEMENT OF COMPETENCY

ACM Consultants, Inc. has been actively involved in the real estate appraisal research and consulting business since 1982. Our business emphasis has focused mainly on the counseling and valuation of residential and commercial properties located within the State of Hawaii. The company considers itself competent to conduct a market

study for a proposed industrial project in Wailuku, Island and County of Maui.

G. EXTRAORDINARY ASSUMPTIONS AND HYPOTHETICAL CONDITIONS

1. As of March 2011, the subject was still in the preliminary stages of planning. A Conceptual Plan prepared by Otomo Engineering, dated February 25, 2011, provided a visual indication of the proposed layout of the development. The consultant is not liable for any changes in the project plan past this date, nor for information that has not been developed, released or communicated to the Consultant.

2. The Consultant has no control over economic conditions and other international events that could have an affect upon Hawaii's economy and the Maui real estate market. As a result, this report has not made any assumptions regarding potential conflicts with other nations, or external factors affecting economic conditions here.

3. The counseling report is also subject to standard "Limiting and Contingent Conditions" located in the Addenda.

H. CONFIDENTIALITY PROVISION

The contents of this market study are confidential. Release of this counseling report by ACM Consultants, Inc. is limited to you for the intended uses stated above. Any further release of this report, or portions herein, is strictly prohibited and you shall accept the risk and liability for any such release without the previous written consent of **ACM** Consultants, Inc. Further, you shall indemnify and defend **ACM** Consultants, Inc., and its individual consultants/appraisers, from any claims arising out of any such unauthorized disclosure.

I. CERTIFICATION

The undersigned does hereby certify that except as other-wise noted in this consulting report:

1. The Consultant's compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.

2. The Consultant has no present or prospective interest in the property that is the subject of this report, and no personal interest or bias with respect to the parties involved. Any "Estimate(s) of Market Value" in the consulting report is not based in whole or in part upon the race, color, or national origin of the prospective owners or occupants of the properties in the vicinity of the property appraised.

3. The Consultant has personally inspected the property, and is a signatory of this Certification.

4. To the best of the Consultants' knowledge and belief, all statements of fact and information in this report are true and correct, and the Consultant(s) have not knowingly withheld any significant information.

5. Ashley Haleakala, an appraiser assistant and employee of ACM Consultants, Inc., provided significant professional assistance to the person(s) signing this report.

6. The reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal unbiased professional analyses, opinions and conclusions.

7. All analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Appraisal Practice.

8. This counseling report is subject to and in conformance with the Code of Professional Ethics and Standards of Professional Conduct of the Appraisal Institute. The analyses, opinions and conclusions of this counseling report have been made in conformity with, and are subject to, the requirements of Title XI of the Federal Financial Institutions Reform, Recovery, and Enforcement Act of 1989.

9. This counseling report is to be used only in its entirety and no part is to be used without the whole report. All conclusions and

opinions concerning the real estate are set forth in the counseling report were prepared by the Consultant(s) whose signature(s) appears on the counseling report. No change of any item in the counseling report shall be made by anyone other than the Consultant, and the Consultant shall have no responsibility for any such unauthorized change.

10. The Appraisal Institute, of which this Consultant is a member, has a legal right to review this report.

11. The qualifications of this Consultant, including completed educational requirements of his/her candidacy are located in the Addendum to this report. Any member signing the report has completed the requirements of the Appraisal Institute's continuing education program.

12. The Consultant has performed a previous appraisal of the subject property within the three years prior to this assignment.

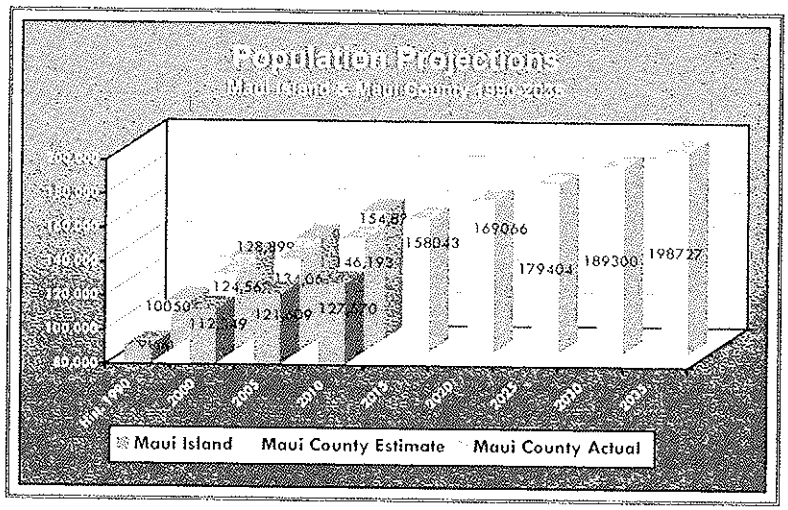
ACM Consultants, Inc.

Glenn K. Kunihisa, MAI, CRE
Certified General Appraiser,
State of Hawaii, CGA-039
Expiration: December 31, 2011

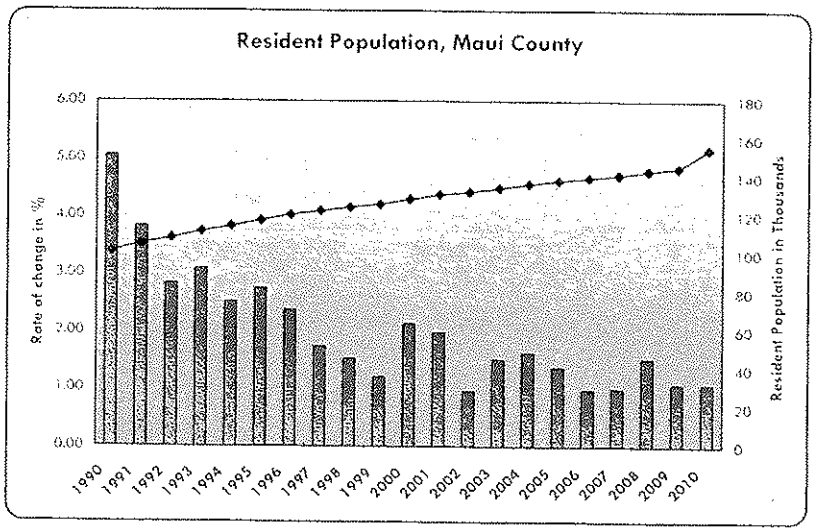
PART II – FACTUAL DATA

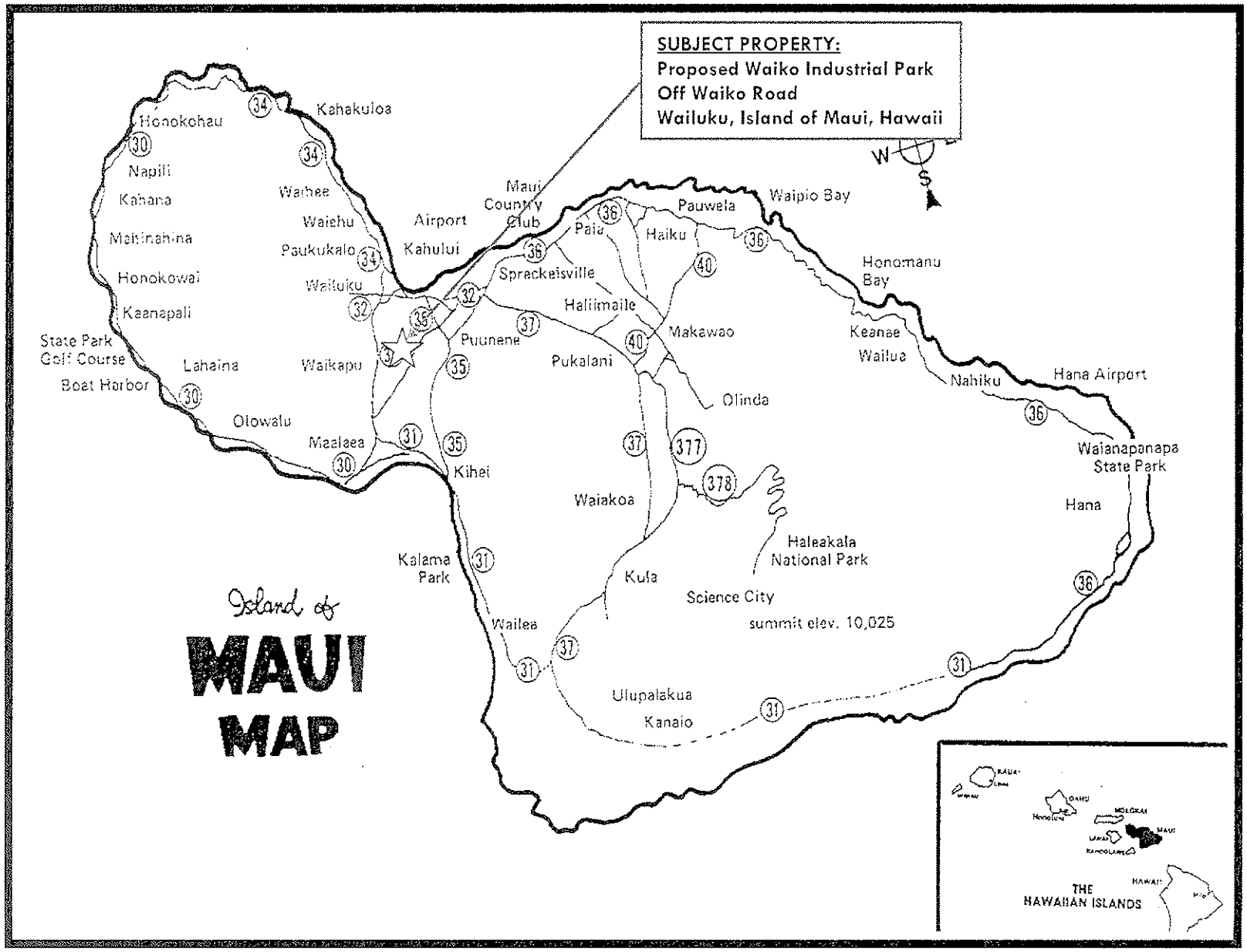
A. REGIONAL DATA - MAUI COUNTY

Maui County is the third most populous of the four counties of Hawaii, with a total resident population of 154,834 (2010 Census); a change of 20.12 percent from 2000 and 52.23 percent since 1990. Maui County consists of the islands of Maui, Molokai, Lanai, and Kahoolawe. Ninety percent (90%) of County residents live on Maui Island; The Island of Maui consists of a total of 734.5 square miles, or 470,080 acres. Population Projections for Maui County and the Island Maui are illustrated on the table below.



The following graph illustrates the resident population change in Maui County from 1990 through 2010. The graph indicates that although Maui's population has been steadily growing, it now appears to be rising at a decreasing rate.




SUBJECT PROPERTY:
Proposed Waiko Industrial Park
Off Waiko Road
Wailuku, Island of Maui, Hawaii
W
S
Honokohau
Napili
Kahana
Maalinahina
Honokowai
Kaanapali
State Park
Golf Course
Boat Harbor
Lahaina
Olowalu
Kahakuloa
Wahee
Waiehu
Paukukalo
Wailuku
Waikapu
Maalaea
Kihei
Airport
Kahului
Maui
Country
Club
Spreckelsville
Puunene
Pukalani
Haliimaile
Paia
Haiku
Pauwela
Waipio Bay
Makawao
Olinda
Honomanu
Bay
Keanae
Wailua
Nahiku
Hana Airport
Waianapanapa
State Park
Hana
Waiakoa
Kula
Haleakala
National Park
Science City
summit elev. 10,025
Kalama
Park
Wailea
Ulupalakua
Kanaio
Island of
MAUI
MAP
THE
HAWAIIAN ISLANDS

Like all the Hawaiian Islands, Maui, Molokai and Lanai are blessed by warm air temperatures year-round, and ocean waters that range from 72-77°F in winter to 77-81°F in summer. The islands' distance from other continents, the moderating effects of the surrounding water and the tropical location combine to create this pleasant climate. Hawaii's topography, particularly the mountains and valleys and location of each island, contributes to the great variety of microclimates within very small areas. On Maui, the West Maui Mountains and Haleakala are the primary geological features affecting the weather. Due in part to the above geographical factors, Maui, for sixteen out of the last seventeen years, was selected "Best Island in the World" by readers of Condé Nast Traveler magazine.

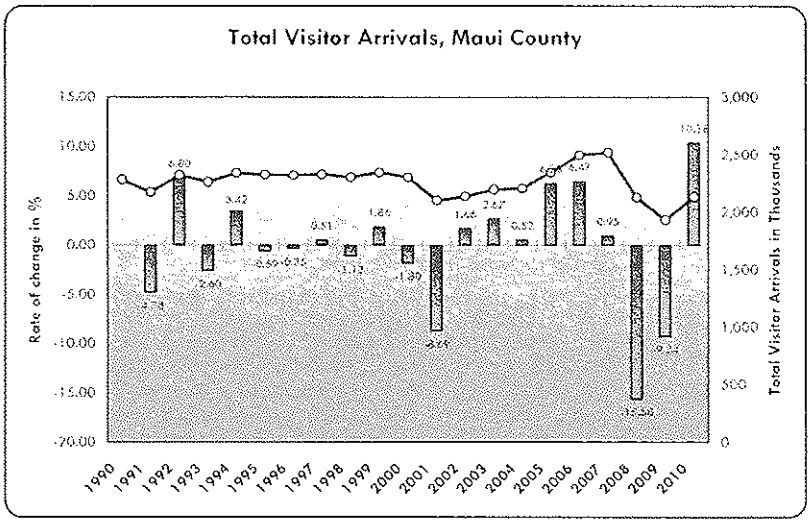
Visitor Industry

Historically, Maui hotel occupancies typically exceeded any area in the state with the exception of Waikiki. Its high rating is due to a number of factors. First, Maui receives the good fortune of location and climate. Second, Maui has the infrastructure in place to move tourists to a diverse variety of activities with a minimum of inconvenience and down time. The accommodations on Maui are another reason. Maui resort hotels have consistently ranked above other Hawaii resort destinations. In the Condé Nast Traveler magazine, nine of the "Top 20 Hawaii Resorts" for 2010 were Maui County resorts. The Four Seasons Resort Maui at Wailea topped the list, while other Maui County resorts garnering honors included: Hotel Hana Maui and Honua Spa (2nd); Four Seasons Resort Lanai at Manele Bay (4th); Four Seasons Resort Lanai, The Lodge at Koele (5th); Fairmont Kea Lani (9th); Grand Wailea (11th); Ritz-Carlton Kapalua (tied 15th); Hyatt Regency Maui Resort & Spa (tied 15th); and Westin Maui Resort & Spa (tied 20th).

With the possible exception of Kauai, Maui is more dependent on tourism than any of Hawaii's four counties. That sector is not treating Maui very well today. For years, Maui has worked very hard at cultivating a worldwide image as a premier, upscale tropical island destination. In fact, it is the only county government in Hawaii that spends money to support tourism. In the wake of the current financial crisis, Maui's tourism counts and hotel occupancy have fallen significantly. Even the upscale and affluent markets, it appears, have curtailed their spending on trips to the Valley Isle.

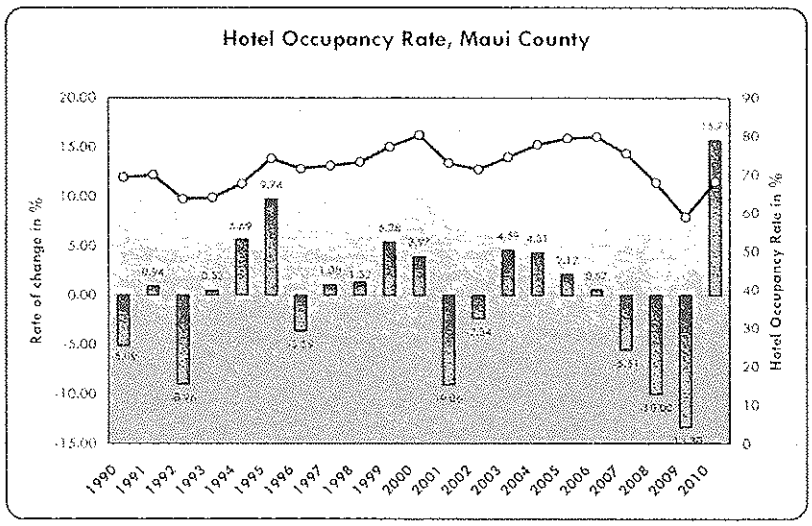
Tracking the tourism counts during this decade begins with the effects of the September 11, 2001 terrorist attacks on this country which had a drastic impact on the tourism industry. The final Maui visitor count for 2001 was 2,104,480. In 2002, the visitor count rebounded slightly to 2,139,427 as the visitors slowly returned during the mid to latter part of the year. Visitor totals from 2003 to 2007 indicate positive increases. As a result of the dismal economic conditions ub 2008 and 2009, total visitor arrivals declined by 15.58 percent (2,129,040) and 9.24 percent (1,932,360), respectively, in those

years. The lowest visitor arrival in Hawaii and many other visitor destinations worldwide were severely impacted by the national and global economic recession. However, in 2010 the visitor count rebounded with a 10.38 percent jump to 2,132,860, as the economic conditions began to show signs of stability.



Source: UHERO Economic Information Service

In 2010, Maui County had the second highest occupancy rate of all the Hawaii counties at just 68.2 percent, behind Oahu at 78.25 percent. Meanwhile, Kauai showed occupancy of 59.11 percent and Big Island at 56.44 percent. Maui's occupancy rate increased by 15.71 percent in 2010 over 2009; the first increase in several years. The hotel occupancy rate generally follows the trend of total visitor arrivals.



Source: UHERO Economic Information Service

Visitor shopping opportunities have increased in recent years with the opening of The Maui Marketplace, a 275,000 square foot shopping complex, modeled after Oahu's successful Waikele Center. The Maui Marketplace is now home to such retail superstores like Lowe's Hardware, Pier One Imports, Borders Books and Music, Sports Authority, Starbucks Coffee, and Office Max, as well as many small local retailers and restaurants. Also opening in the same Kahului area were Home Depot, Wal-Mart, Big K and Costco. In addition, the Shops at Wailea opened in December 2000 and added approximately 150,000 square feet of high-end retail space in the Wailea Resort. At about the same time, the 150,000 square foot Piilani Shopping Center opened in Kihei with Safeway as its anchor tenant. The latest entry into the retail sector is the Lahaina Gateway, which opened in 2007. Dubbed a "lifestyle center", Lahaina Gateway, offers almost 137,000 square feet of gross leasable area. Tenants include Barnes and Noble, Foodland Farms, Office Max, Outback Steakhouse, Melting Pot, Central Pacific Bank and many other smaller retail shops.

Maui offers more than any other Neighbor Island in the way of proven vacation experiences. It has a larger tourism activities industry relative to the size of its economy than any other county. Such activities include ocean recreation, helicopter tours, biking down Haleakala, ziplining, and golfing, among numerous other activities. Maui's well-developed ocean recreation industry ranges from windsurfing to snorkeling, scuba diving and sailing cruises which leave regularly from Lahaina and Ma`alaea Harbors.

Maui also has theme destinations, such as the Maui Tropical Plantation, Maui Nui Botanical Gardens, Alii Kula Lavender Farm, and Surfing Goad Dairy. But the premier theme destination on the island is the Maui Ocean Center. This center, featuring the marine environment of the Hawaiian Islands, is modeled after five other aquarium parks developed elsewhere in the world by Coral World International. This ocean center is located just behind the Maalaea Boat Harbor, and is easily accessible from Kahului/Wailuku, and the resort areas of Lahaina/Kaanapali and Kihei/Wailea. The Maui Ocean Center anchors the 18-acre Maalaea Harbor Village, which also includes a retail strip shopping center, restaurants and other services.

When the United States and the world in general recover from the current economic crisis, it is hoped that Maui will continue to be a strongly favored destination for Mainland tourists. The island has a large share of condominiums available for families and groups on a budget. The California recovery in the early 2000's fueled higher demand for condominium rentals and this may possibly happen again in the next decade.

Hotels have not been adding much in the way of jobs, in fact, many hotel and other tourism-related industries have cut back their work force. Even when tourism numbers were growing steadily, job creation in the visitor industry was not matching that growth. Today, with tourism waning, the work force is noticeably decreasing. While tourism still dominates the labor force, the profitability problems of the large resorts have led managers to refine their operations.

Real Estate

Residential real estate can be divided into three broad categories (single-family homes, condominiums and residential lots) and four important geographic regions. With a variety of property types in each of the regions, the market has proven capable of moving up and down with relatively little correlation amongst regions.

All of the neighborhoods have single-family housing and residential lots. However, several neighborhoods such as such as Kapalua, Kaanapali, and Wailea are virtually comprised solely of luxury housing. Areas such as Kahului have no luxury housing and Wailuku has very little. All other areas have a mix.

With respect to condominium units, Upcountry and East Maui have virtually no condominium properties. All other areas have condominium units. When looking at leasehold versus fee simple projects, South Maui and Central Maui have very few leasehold condominiums. Only West Maui has a mixture of both types.

Areas such as Upcountry and East Maui are made up primarily of agricultural and rural properties. All other areas are limited in this property type.

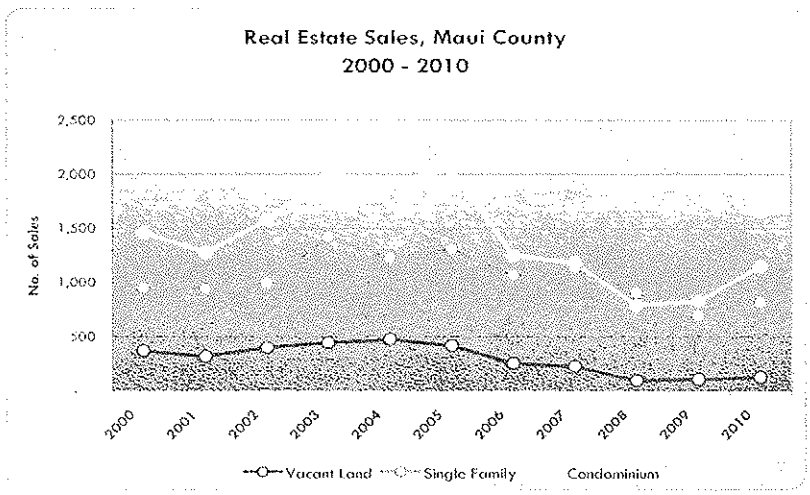
Owner-occupied housing on Maui runs about 56 percent of all occupied housing units. The total housing stock has been growing at a rate of about 1,000 units a year in the 1980's. The total accelerated to 1,500-2,000 new units in the late 1980's, well short of demand. The Maui population has expanded tremendously for the past 10 to 12 years, but housing was not being built at the same pace as the 1980s. As a result, demand for housing during that period outpaced supply and homes prices and rents rose dramatically. The median single-family home price on Maui averaged $462,821 in 2010, which is a drop of 7.2 percent from 2009's average of $498,708. Median sales price for a single family home was $574,760 in 2008, $627,887 in 2007, $697,450 in 2006, and $678,321 in 2005. Years 2005, 2006, and 2007 are considered the height of the real estate market.

Since then, the real estate market has changed direction, with a less stable economy and more stringent lending practices. In 2010, interest rates averaged 4.69 percent, down from the previous year's average of 5.04 percent. Average annual interest rates have been

on a steady decline since 2006 when the average interest rate was 6.41 percent. The 2010 average interest rate represented the lowest annual average since 1971. While interest rates remain relatively stable, the current economic recession and tightened lending continues to stifle Maui real estate.

The following summarizes a sales volume history for Maui County from 1990 to 2010, which includes resales and new project sales.

Year	Vacant Land	Single Family	Condominium
1990	298	560	1,459
1991	116	430	593
1992	120	382	496
1993	121	361	461
1994	148	404	592
1995	118	331	495
1996	126	451	577
1997	182	507	812
1998	276	641	999
1999	408	965	1,348
2000	372	951	1,456
2001	318	938	1,274
2002	402	997	1,578
2003	447	1,420	2,001
2004	477	1,228	1,935
2005	421	1,311	2,041
2006	255	1,066	1,247
2007	226	1,138	1,179
2008	97	907	788
2009	110	693	826
2010	127	814	1,147

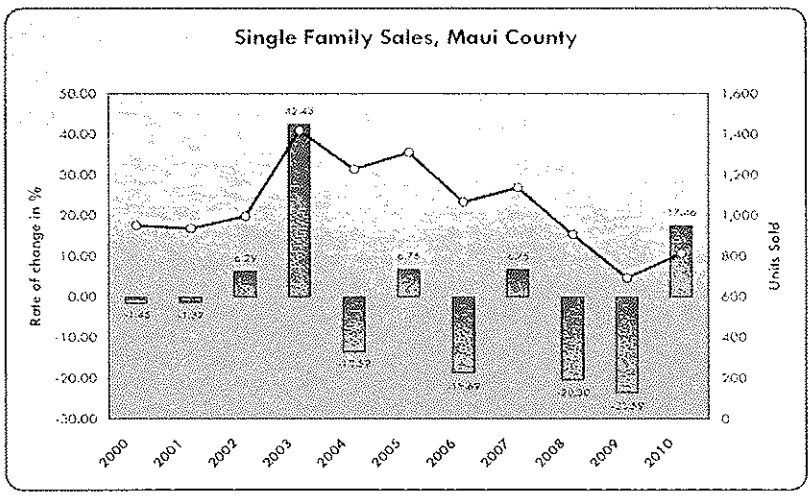


Source: Realtors Association of Maui

The real estate market increased significantly between 2002 and 2006. Single-family sales saw noteworthy increases in 2003, where the number of single-family sales leaped upwards of 42 percent. There was a 13 percent dip in 2004, followed by a rebound of almost 7 percent in 2005. For 2006, there was a decrease of 18 percent, with a subsequent upward bounce of almost 7 percent in 2007. Then, with the eroding economic conditions and financial crisis in 2008 and 2009, Maui County experienced a 20 and 23 percent drop in sales in each of the respective years. This was the biggest decline in sales since 1991, when sales of single-family homes dropped by 25 percent.

In 2010, however, there was a significant increase in the number of single family sales. This is attributed to the low property prices which have attracted market participants. The market for single family homes has experienced a price depreciation of about 30 percent since the peak of the market in 2006 and 2007.

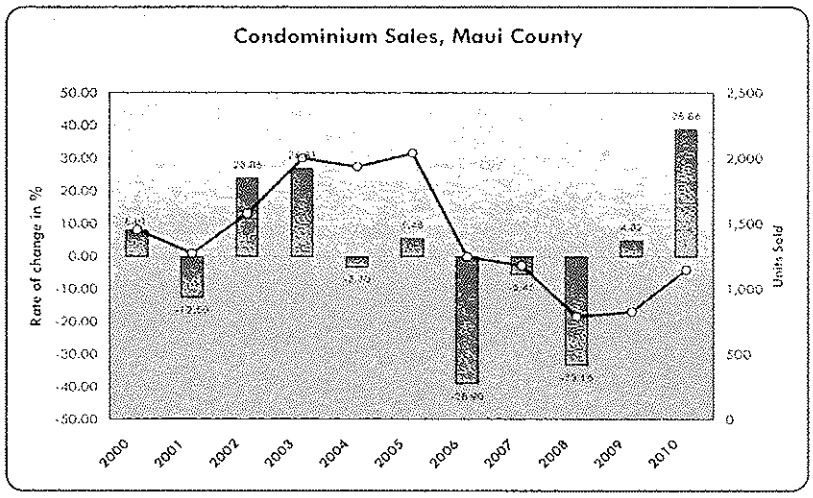
The following graph further illustrates the single-family sales volume history for Maui County from 2000 to 2010.



Source: Realtors Association of Maui

Similarly, condominium sales had experienced significant increases since 1999 in terms of units sold, achieving a new high in 2002 and a slight decrease in 2003. In 1999, 1,348 condominium units were sold, registering a 34 percent increase from the prior year. In 2001, the number of sales fell slightly, but rebounded significantly in 2002. In 2003, however, total condominium sales skyrocketed to 2,001, fell slightly to 1,935 units in 2004 and then jumped to 2,041 units in 2005. It appears that 2006 was the turning point for sales volume, as condominium sales plunged over 38 percent, followed by another 5 percent fall in 2007. For 2008, sales volume dived 33 percent. This was however off set by a 38 percent increase in 2010. Again, this is due to the falling unit prices which have attracted market participants.

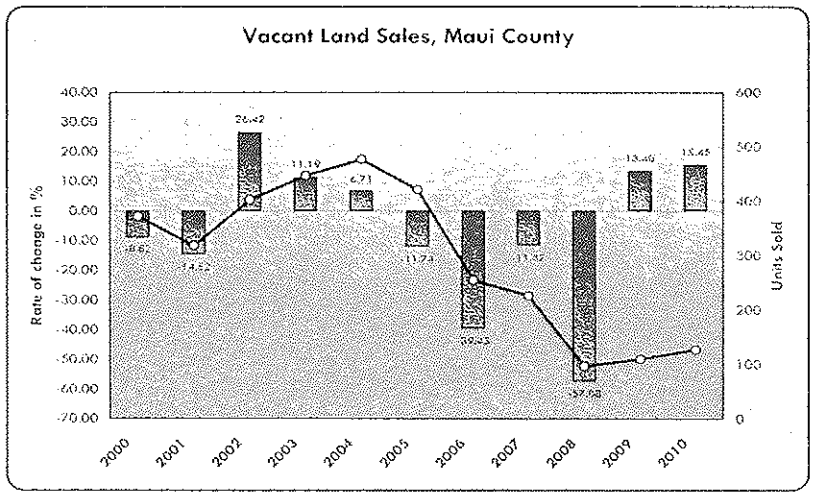
The following graph further illustrates the condominium sales volume history for Maui County from 2000 to 2010.



Source: Realtors Association of Maui

Land sales increased steadily between 2001 and 2004, but dropped 11 percent in 2005 with only 421 sales, then another 39 percent to 255 sales in 2006. This trend continued in 2007, with an 11 percent slide to 226 sales, surpassed by a huge 57 percent plunge in 2008. The first increase in four years was witnessed in 2009, as vacant land sales volume increased by 13 percent and again increased in 2010 by 15 percent. Many developers, realtors and lenders consider the passage of the Workforce Housing Ordinance (December 2006) and the Water Availability Ordinance (December 2007) to have had a significant contribution to the severe decline of sales of vacant land.

The following graph further illustrates the vacant land sales volume history for Maui County from 2000 to 2010.



Source: Realtors Association of Maui

Median prices continued to rise until 2006 for all categories of real estate. The average monthly median prices in 2006, for land parcels, single-family homes and condominium units, increased 29 percent, 2 percent and 33 percent, respectively. In 2007, average monthly median prices for land and single-family property decreased 19 percent and 10 percent, respectively, while the average median price for a condominium increased 6 percent. It should be noted that the average condominium median price were heavily influenced upward by December closings in Honua Kai, a luxury oceanfront property. For 2008, the average monthly median prices for single-family homes retreated by approximately 8 percent. Vacant land saw a gain of about 4 percent over 2007, while condominiums decreased by 6 percent. In 2009, vacant land median price again increased by little over 3 percent. However, single-family and condominium properties decreased by 13 and 12 percent, respectively. As the economic recession continued into 2010, the median sales price for all property types declined. Vacant land showed the largest drop of 33 percent from 2009 levels, and single family and condominium properties decreased by 7 and 16 percent, respectively.

Construction and Development

The construction industry, in the mid part of this decade, benefitted from a robust economy and building climate.

Three new commercial centers were built in 2000. The Wailea Shopping Village had been demolished and was replaced with The Shops at Wailea, which includes 150,000 square feet of upscale retail and restaurant space. Also, the 150,000 square foot Piilani Village shopping center was built at the same time and is anchored by a 55,000 square foot Safeway store, one of the largest Safeway in the state. The Ma`alaea Harbor Village shopping complex, where the premier Maui Ocean Center presently stands, was also built during the same period; however, since then, no other project has been attempted and the majority of the lots in this commercial subdivision sit vacant. As previously discussed, the Lahaina Gateway was completed in 2007 and injected an additional 137,000 square feet of retail space.

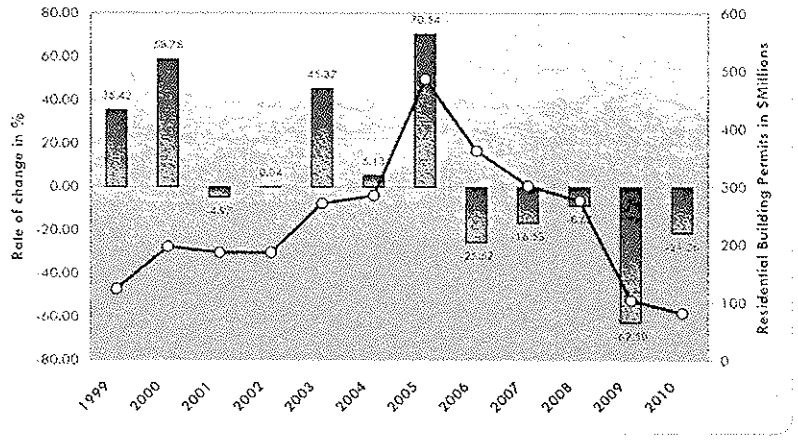
The effects of the late-2008 financial crisis and subsequent economic recession are still clearly visible across the island, as many new commercial and industrial projects completed during this period remain empty, or are having difficulty selling off or leasing units.

Construction of single-family and condominium properties has fallen significantly, as developers have curtailed building to meet their anticipated sales levels. As mentioned earlier, the single-family and condominium real estate markets have softened, with median prices decreasing as well as an increase in marketing days. Although the

economic recession has played a big part in the decrease of construction of residential properties; the enactment of two ordinances—the Workforce Housing Ordinance (2006; revised 2010) and the Water Availability Ordinance (2007; revised 2011), which have forced stringent requirements on developers, has also greatly affected construction on Maui.

The following graph illustrates the trend of residential building permits (in dollars) in Maui County from 1999 through 2010. As shown in the following graph, residential permits peaked in 2005 at the height of the real estate market. As previously discussed, many feel that the passage of County ordinances relating to development in 2006 and 2007, coupled with increased construction costs and poor economic conditions, have severely lessened the ability to feasibly create new housing projects.

Residential Building Permits, Maui County



Source: UHERO Economic Information Service

In Central Maui, the majority of the residential construction is within the Kehalani and Maui Lani project districts, which are being developed with several new subdivisions and condominium projects. Situated in the Kehalani district are Koa, which offers both house lots and single-family homes; Akolea and Cottages, both consisting of house and lot packages; Villas at Kehalani and Milo Court, which are townhouse condominium developments. Presently, there are four ongoing projects at Maui Lani. They include Na Hoku and Traditions (single-family homes), Sand Hills Estates (house lots), and Parkways (both house lots and single-family homes).

The demand for housing in the Central Maui area had been extremely strong up to mid-2006, with projects usually sold out prior to completion of construction. Due to the more recent downward trend of the economy and residential real estate market, developers are now

finding themselves holding inventory and most new construction has ceased.

Meanwhile, Spencer Homes completed construction of a 410-unit affordable project in 2008, called Waikapu Gardens. Approximately half of the houses met County affordable housing pricing requirements. This project was welcomed by the community as "affordable" prices were stated to be below $300,000. This project gained approval by the Maui Nui Affordable Housing Taskforce which was set up in response to the growing need for affordable housing on Maui.

Up to 2006, Kihei had also seen an upswing in residential development brought upon by ongoing residential projects including Ke Ali`i Ocean Villas (townhouse condominiums) and Moana Estates (single-family homes) by Towne Development, Kamali`i Alayna (single-family homes) by Betsill Brothers, Inc., and Signature Homes' Hokulani Golf Villas (residential condominiums). Other current South Maui projects are Kilohana Waena (house lots) and Kai Ani (townhouse condominiums). Similar to Central Maui, the developers of ongoing projects have slowed construction while continuing to market their units; whereas, previous Kihei developments were often sold out prior to construction completion.

In Wailea, the Shops at Wailea and Wailea Town Center are the only established commercial developments. Both centers target the high-end residents of this resort community and Wailea's upscale visitors. Phase I of Wailea Town Center was completed in 2006 while Phase II was completed in 2007. It contains neighborhood services which include retail and office owner-occupants. The second phase included more commercial condominium units and residential units on the second floor. Current condo owners in this project include Coldwell Banker and First Hawaiian Bank. This development was met with high demand as all of the units sold initially and some have even resold. Another commercial retail/office project, Wailea Gateway Center, was completed in 2009.

Retailing

In retail, the most significant addition to Maui is the Lahaina Gateway situated along Honoapiilani Highway across from the Lahaina Cannery Mall. It was dubbed as a "lifestyle center" with specialty retail shops, services and restaurants. Opened in late 2007, this 137,000 square foot center includes anchor tenants such as Office Max, Barnes & Noble, Outback Steakhouse, The Melting Pot, and Lahaina Farms, a supermarket owned by Foodland's Sullivan family.

Prior to Lahaina Gateway, Maui Marketplace on Dairy Road was the last large retail development to be built, at 275,000 square feet. This center contains the likes of Lowe's Hardware, Office Max, Sports

Authority, Old Navy, Petco, Pier One Imports, Burger King and Starbucks Coffee.

Wal-Mart and Home Depot are also located on Dairy Road, immediately west of the Maui Marketplace. These outlets joined earlier arrivals Costco and Kmart, as well as Alexander & Baldwin's neighboring Triangle Square, in carving up the Maui retail pie. However, the local malls are answering the challenge with more food and entertainment, and retailers that can compete in their niche. Maui's largest mall, Queen Kaahumanu Center in Kahului, has been challenged by the presence of these large box retailers and vacancies are very noticeable.

In Kaanapali, Whalers Village has taken a turn toward the luxury market popular with the Japanese. After completing a $3 million renovation and a change in its tenant mix, this oceanfront center now aims for both westbound and eastbound visitors. Japanese visitors are targeted with Duty Free Shoppers, Louis Vuitton, Prada, Loewe and other high-end shops.

The 150,000-square foot Shops at Wailea opened in 2000, offering upscale shopping in its high-end retail shops. Tenants include Louis Vuitton, Coach, Bally, Fendi, Tiffany & Co., Banana Republic, and Georgiou. Restaurants in this mall include Ruth Chris Steak House, Tommy Bahama Café and Emporium, and Longhi's. Other retailers include Crazy Shirts, Hot Topix, Gap, Wolf Camera, and Whalers General Store.

Agriculture

Agriculture on Maui is dominated by larger operations like Hali'imaile Pineapple Company and Alexander & Baldwin's Hawaii Commercial and Sugar (HC&S).

Pineapple now confronts more foreign competition from places like Thailand. In 2007, Maui Land & Pine shut down the canning portion of its operation to rely solely on the more profitable fresh fruit segment. Downsizing of the plantation occurred in 2008, which resulted in a reduction of over 200 employees. In December 2009, Maui Land and Pine announced that it would be shutting down its agricultural arm, citing continued annual losses. However, a new company, Hali'imaile Pineapple Company, was formed the following week and immediately took over pineapple operations.

HC&S survives as Hawaii's only remaining sugar operation due in part to its economies of scale, its land configuration (a relatively compact and contiguous area in the isthmus of the Valley Isle), and its commitment and ability over the years to reinvest and upgrade plant and equipment. But the last active sugar plantation in the state is facing other hardships, namely water. There had been drought conditions on Maui between 2007 and 2009, contributing to low

yields. According to HC&S, future viability is heavily dependent on continued stream diversion; however, there have been opposition to this continued practice. HC&S continues to re-evaluate its operations to remain viable, including consideration of potential biofuels and other energy alternatives.

Another of Maui's sugar operation casualties, Pioneer Mill in West Maui, is missed visibly. For years, proponents of maintaining and sustaining Hawaii's sugar industry argued that growing sugarcane imparted to this economy an important, if underestimated, non-pecuniary benefit; sugar kept the land green and attractive, for tourists and locals alike, an its cultivation contributed to the recharge of groundwater resources. Economists call this situation an "externality," an activity that affects others for better or worse, without those others paying or being compensated for activity.

Anyone who doubts that logic now has only to drive the West Maui coast from Olowalu to Kaanapali and look mauka, at an entire mountain side of dry brush and unused fields. As with many cases where sugar plantations have shut down, most diversified agriculture crops are just not land intensive enough to utilize all the vacant land. Coffee and seed corn operations are possibilities, but they make only a small dent.

In addition to sugar and pineapple cultivation, Maui also offers rich opportunities for agricultural diversification by small farmers and large agribusinesses. Top among new agricultural products are: papaya, cut flowers, coffee, Kula onions and strawberries, and Chinese cabbage from Kula. Molokai offers its sweet potatoes, lettuce and alfalfa, as well as taro.

High-Tech

Maui's contribution to Hawaii's fledgling high-tech industry remains pre-eminent in the state. It also represents genuine diversification of the economy. The Maui Research and Technology Park in Kihei has all of it's infrastructure in place, and has completed three major building projects. Most important, it houses one of the country's most powerful supercomputers. The park now hosts over 30 companies and over 300 employees on 415 acres.

With access to one of the most powerful supercomputers in the world, funded by the U.S. Air Force, the Maui Research and Technology Park is continuing its efforts to diversify the Maui economy into something fundamentally different from what exists in the county or anywhere else in the state.

An office building was developed by the Maui Economic Development Board in 2006, and contains approximately 31,500 square feet of rentable area on a 2.8-acre site. Another completed project is Park Plaza, a 26-unit commercial office condominium building developed

by Goodfellow Brothers and Betsill Brothers. Since its completion in 2008, sales have been very sluggish.

The Park is sticking to its long-run strategic plan to capitalize on its location at the center of the Pacific Basin. Its extensive fiber-optic network to the U.S. Mainland makes it one of the most fiber-rich environments in the world, greater than many facilities actually located on the Mainland.

County Government

Maui County is unique in having several inhabited islands in its jurisdiction: Maui, Molokai, as well as Lanai, and the uninhabited island of Kahoolawe.

Maui County has an elected Mayor and County Council, and the Liquor Control Commission is semi-autonomous with appointed directors. Although all courts are conducted by the State, the County is responsible for prosecution and the Mayor appoints the prosecutor. The council has nine members, each residing in one of nine districts; however, voters cast ballots for all nine seats.

Unlike other states, Hawaii has only two layers of government: State and County. The State is responsible for many functions that elsewhere come under the jurisdiction of municipalities, such as schools, hospitals, and airports. Also, unlike other states, Hawaii has statewide zoning carried out by the State Land Use Commission. The County has zoning authority within the boundaries established by the commission.

In recent years, the County of Maui has passed two ordinances that have greatly affected development—the Workforce Housing Policy and the Water Availability Ordinance. In an effort to provide affordable housing, they passed the Workforce Housing Policy, Ordinance 3418, on December 5, 2006, under which all proposed developments are subject to review if they are to contain five or more residential units or lots. Under this ordinance, if the average sales price is projected to be less than $600,000, 40 percent of the total units must be priced to meet the various affordable categories. If the average sales price in the project is $600,000 or more, then 50 percent of the units must be affordably priced. An alternative to providing the affordable units is to pay an in-lieu fee equal to 30 percent of the average projected sales price of the market rate units multiplied by the number of affordable units required in the development. Or, the owner may elect to provide land which is equal in value to the in-lieu fee. This ordinance has had a profound effect on residential development since its passage. The subsequent reduction in proposed projects had many in the building and real estate industries questioning whether the ordinance created too much of an obstacle for developers.

In an effort to stimulate residential construction, the ordinance was revised by the County Council on February 26, 2010, as Ordinance No. 3719, reducing the amount of required affordable housing units built on site to 25 percent, provided the average sales price of the market units is projected to be less than $600,000. If the average sales price in the project is $600,000 or more, then 50 percent of the units must be affordably priced. The new law also clarified the calculation of required affordable units built off site; based on 50 percent of the total number of on-site market units, regardless of their projected average sales price.

The Water Availability Ordinance is another law that has made an impact on the development community. On December 14, 2007, the County of Maui passed into law Ordinance 3502. As a result, the Department of Water Supply (DWS) is presently restricting the issuance of meters for all uses in the central and south Maui service areas and this bill restricts issuance of any building permits until the DWS can issue a meter consistent with the provisions of the bill. In order to do so, the DWS director needs to provide verifiable, long-term supply of water to the property. Landowners and professionals in the development community have been openly critical of the ordinance, some calling it a de facto moratorium on housing. Not surprisingly, sales of vacant development lands have been very scarce. Recently, the County Council has been reviewing the impact of this ordinance and considering revisions to it.

B. NEIGHBORHOOD DESCRIPTION

Since real estate is fixed in location, its marketability and rentability are strongly influenced by economic and social trends in its immediate environment. The continuing attractiveness of this neighborhood environment to potential users and tenants, and its competitive relation to those of substitute properties, must therefore be evaluated and forecast by the consultant. In particular, perceived neighborhood trends affect both the quality and quantity of the revenues the subject property can reasonably be expected to generate.

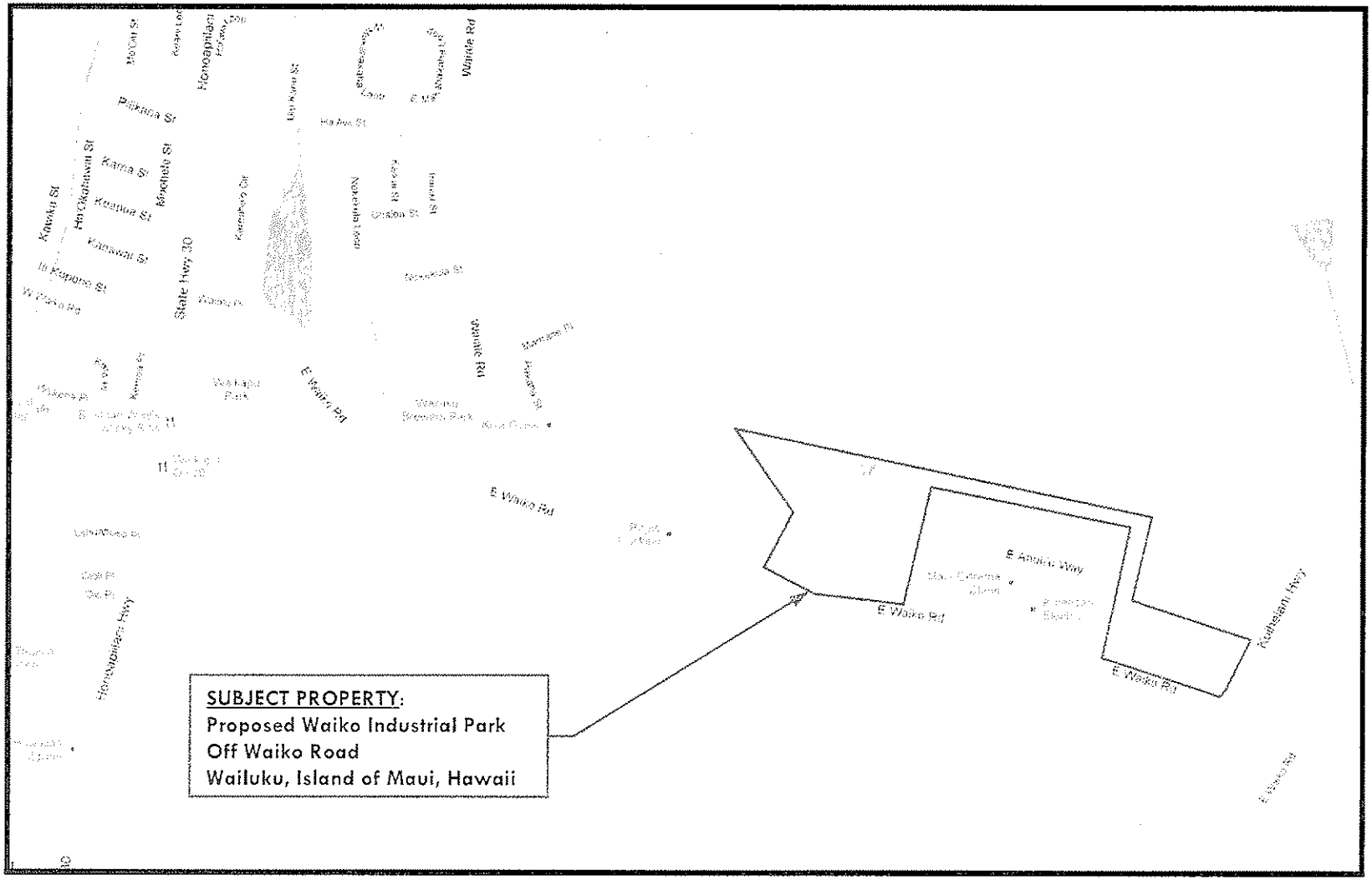
A neighborhood of income-producing properties is a geographic area characterized by similarity of uses and/or users, within which any change has a direct and immediate effect on the subject property and its value.

The geographic area surrounding the subject property is defined by physical and man-made boundaries, and encompasses an area known as Wailuku-Kahului. This region is located on the north shore of the Island of Maui and encompasses the civic and business centers of Wailuku and Kahului. The island's major seaport and primary airport are also contained within the boundaries of this region. The surrounding agricultural land of Central Maui, and the eastern half of the West Maui Mountains, is also within the Wailuku-Kahului neighborhood.

The boundaries of the Wailuku-Kahului region are the northern shoreline from Poelua Bay to Baldwin Park on the north, Kailua Gulch and Lowrie Ditch on the east, Spanish Road to Waikapu Road to Honoapiilani Highway to Pohakea Gulch on the south, and the Wailuku Judicial District boundary on the west.

Population is concentrated in the urban centers of the region. Wailuku has maintained its role as the civic-financial-cultural center while Kahului has strengthened its role in recent years as the business and industrial center.

In addition to the urban centers of Wailuku-Kahului, the region also includes the more rural settlements of Waihee to the north and Waikapu and Puunene to the southeast. Agricultural lands are adjacent on the lower slopes of the West Maui Mountains and in the central plain south and east of Kahului. This green border is a significant part of the settlement pattern because of its open space and economic value. Kahului Harbor and Airport are major land users along the Kahului shoreline. As major ports of entry for people and goods, they serve as an important center of jobs and economic activity.



Not to Scale!

NEIGHBORHOOD MAP

The major thoroughfares through Kahului and Wailuku are Kaahumanu Avenue which begins in Kahului and provides primary access to Wailuku as well as Lahaina and Kihei; Hana Highway, which is actually a continuation of Kaahumanu Avenue, leads from Kahului to the eastern or "upcountry" portions of the island; and Puunene Avenue which provides access to all major areas in Kahului and ultimately leads to the new Kuihelani Highway which provides by-pass access to Lahaina and Kihei. The Kaahumanu Avenue also runs into Main Street, and via secondary access, runs into Waiehu Beach Road and Lower Main Street.

Kahului, adjacent to Wailuku, is situated on the northwest portion of the island of Maui, and is the central commercial, industrial and residential area of Maui. Kahului Town contains Maui's major shopping centers, centralized industrial areas, financial institutions, medical office facilities and business offices. Additionally, the Kahului Airport and Kahului Harbor are located in Kahului proper and houses the majority of firms providing various goods and services throughout the island, as well as to Lanai and Molokai. Consistent with its central location, post office facilities, community library, parks, schools (elementary, intermediate, high school and a community college), churches of various denominations, entertainment facilities, food outlets and a fire station are located in Kahului.

Wailuku, at one time, was the heart of Maui's business activities. Decentralization of business to nearby Kahului and lack of maintenance and modernization of buildings to keep up with the new shopping habits brought about a gradual decline. However, since the creation of the municipal parking area in Wailuku, several new buildings have been built or renovated and a rejuvenation of the Wailuku Town is being experienced. The recently passed Community Plan envisions Wailuku as the "governmental, cultural and professional center of Maui". Located in Wailuku are the various government agencies, courts, hospital, major recreational facilities and police station.

Wailuku's Fire Station sits in the heart of Wailuku Town, and until the opening of the Kahului Fire Station, was the only one in Central Maui. Kahului Fire Station is a 21,300 square foot facility that includes two main buildings and is situated on Dairy Road.

The Maui Memorial Medical Center, which is Maui's primary facility of medical and emergency service, is located between the connecting boundaries of Kahului and Wailuku. In 2006, work was completed on a new wing for the hospital. The Police Station is also conveniently located nearby.

Numerous preschools, elementary, intermediate and high schools are located throughout Kahului and Wailuku, with the University of Hawaii Maui College also located on Kaahumanu Avenue, in Kahului.

In order to fully understand and appreciate Kahului and Wailuku's potential for expansion, as well as factors that could limit the growth of this region, a brief summary of recent or proposed developments in these Central Maui districts along with a few important issues facing future development are in order.

RESIDENTIAL

The residential districts surrounding these two centers are significantly different in character. Wailuku Town is comprised of older residential areas, intermixed with business uses, varying lot sizes, and a more haphazard street pattern representative of older subdivisions. Surrounding Wailuku Town, are more modern, strictly, residential subdivisions, which feature wide curvilinear streets and varied lot sizes. The newest subdivisions in the area are situated in the Kehalani Project District where most feature tighter roadways and zero lot line developments. The residential areas in Kahului are also varied. The older projects feature with wide curvilinear streets and larger lots; where as the newer subdivisions, primarily within the Maui Lani Project District, features smaller lots, narrow roadways, and zero lot line development. There are also several gated communities with golf-course frontage.

Kahului

In Kahului, the major residential area is represented by Alexander & Baldwin, Inc.'s Kahului Town Development. This subdivision consists of 14 increments that were built between 1951 and 1981. There are a total of 3,400 lots within the 14 increments. Kahului Town is distinguished as the first planned "new town" in Hawaii to provide quality housing at affordable prices.

Today, Kahului Town is a bustling residential community. The ongoing Maui Lani Project District development will include up to 3,000 new residential units, ranging from executive golf homes to affordable units and span 1,000 acres on the south side of Kahului and east side of Wailuku. In addition to single-family and multi-family residential units, the Maui Lani development includes a golf course, churches, school and a recreational center. Already, several phases have been constructed and sold over the past several years including The Greens, The Grand Fairways, The Bluffs, The Islands, Sandhills Estates, Legends Phase I and II and Na Hoku. Upcoming developments in Maui Lani include Traditions, a 153 house-and-lot single-family subdivision and Parkways at Maui Lani, a 210-lot single-family subdivision.

Wailuku

In Wailuku, the older residential homes are mixed with small businesses throughout central Wailuku Town. There are three primary

residential subdivisions on the outskirts of the town including Wailuku Heights, Waiehu Terrace, Waiehu Heights and Leisure Estates.

The older Wailuku Heights area was extended by two exclusive and prestigious phases. The first extension offers 270 lots while the second phase offers an additional 130 lots to the subdivision. Once verdant pastureland, Wailuku Heights is nestled in the West Maui Mountains and offers underground utilities, scenic views and a landscaped park.

Directly below the Wailuku Heights neighborhood is the Kehalani Project District. Single-family residential developments in this area include the Ohia and Maunaleo subdivisions. These projects, by Towne Development and Stanford Carr Development, were sold strictly as house-and-lot packages. Kehalani Gardens and Iliahi at Kehalani, both condominium projects, were also built by the same developers and were completed shortly after in 2005.

Two other single-family projects were then constructed in Kehalani 2006 and 2007. These included the Koa at Kehalani (72 residential lots) and Akolea at Kehalani (97-unit house and lot subdivision), developed by Towne Development. In 2008, Stanford Carr Development developed the Cottages at Kehalani (114-unit house and lot subdivision).

More recent construction in the Kehalani Project District included Milo Court, a 97-unit duplex-style condominium developed by Towne Development, and the Villas at Kehalani a 103-unit townhouse condominium developed by Stanford Carr Development.

In addition to construction in the Kehalani Project District, residential development spread southerly to the Waikapu a small community in Wailuku proper. Jesse Spencer completed the last home in Waikapu Gardens at the end of 2008, a 410-unit affordable housing project. In 2007, two house lot subdivisions also came to market in Waikapu, Waiolani Pikake (37 lots) by KSD Hawaii and Waiolani Mauka (105 lots) by Scott Nunokawa.

Another unique subdivision that was constructed in the Wailuku area is the Wailuku Country Estates Subdivision, which consisted of 184 agriculture lots located near the Puuohala Camp neighborhood just north of Wailuku Town.

COMMERCIAL

Commercial development in Kahului is concentrated along the major thoroughfares in strip fashion, while Wailuku's main commercial activity is concentrated in the central core of the town. Due to the central location of these communities, there has historically been strong

demand for commercial space in Central Maui, and vacancies within established projects in this region tended to be very low. However, the recent downturn has resulted in less demand for commercial spaces and higher vacancies, as well as reduced rental rates.

Kahului

There are four major shopping centers in Kahului. Maui Mall, opened in late 1971 contains a gross leasable area of 181,500 square feet on a 25-acre site. It is anchored by tenants such as Longs Drug Store, and the Maui Mall Megaplex, by Wallace Theater Corporation. Star Market closed its doors in March 2008, but was replaced by a Whole Foods supermarket. The largest center, Queen Kaahumanu Center, opened in 1973 and had 300,000 square feet of gross leasable area. Extensive renovations were completed in 1995, which included a two-level shopping wing, a six-screen movie theater, expanding the major stores, renovating the existing mall and adding a parking structure and access road. The project expanded the center to 500,000 square feet. It is currently anchored by Macy's and Sears. The Maui Marketplace on Dairy Road is home to a number of big-box retailers including Lowes Hardware, Sports Authority, Office Max, Petco, Pier One Imports, Starbucks Coffee, Jamba Juice, Bank of Hawaii and Burger King. Lastly, Kahului Shopping Center, the oldest major shopping center which opened in 1951, was partially destroyed by fire in 2005 and plans are underway to redevelop the entire block into the Kahului Town Center. This development will consist of retail, office and condominium living.

In addition to these centers, Kahului is home to other large retailers including Costco, Kmart, Home Depot, and Wal-Mart. All of the major financial institutions and the large automobile dealerships are also located in Kahului. The Maui Arts and Cultural Center (MACC) was built here in 1993 and includes a 1,200-seat theater, a 250-seat studio theater, an art gallery, meeting rooms, dance studios, courtyard, administrative offices, an amphitheater able to accommodate about 5,000 people, and an event lawn. The MACC is constructed on 12-acres at Maui Central Park, which is located between the Maui Community College and the Maui Botanical Gardens.

Wailuku

The hub of commercial activity in Wailuku is concentrated in an area along Market Street and Main Street. Known as Old Wailuku Town, this neighborhood is characterized by older, low-rise buildings consisting of small, individual shops and offices. Civic uses surrounding this area of Wailuku include the State office building, the County office buildings, and the judicial building.

The town is home to numerous professionals in the fields of architecture, engineering, law, financial management, real estate and banking. All of the major financial institutions have branches in

Wailuku Town. Notable office buildings in Wailuku include One Main Plaza, Wailuku Executive Center, Maui Realty Suites, the Trask Building, and Wells Professional Plaza. Wailuku's office market is also feeling the affects of the economic slowdown with evidence of higher vacancies and decreasing rents.

INDUSTRIAL

Vacant industrial has typically been difficult to acquire, due to the lack of inventory in the market. Much of the vacant land in Central Maui's industrial parks is being held by business owners, some of whom are waiting for more ideal conditions to build new facilities. Others may be looking for a turn around in the real estate market before putting their property up for sale. However, the same economic downturn that has significantly impacted demand for commercial space in Central Maui has taken its toll on industrial space. Vacancies have increased, while at the same time warehouse rents and land prices appear to have decreased.

Kahului

There are several industrial parks in Kahului, but the largest and most established of them all is the Maui (Kahului) Industrial Park, which is bordered by Hana Highway, Puunene Avenue, Dairy Road and Kamehameha Avenue. It includes low-rise warehouse and commercial uses and is occupied with a mixture of industrial, retail and office tenants.

Maui Business Park, Phase I-A and I-B (76 acres) has also attracted commercial, office and industrial users along Dairy Road and Hookele Street. Phase II of Maui Business Park is currently in design and will ultimately add approximately 179 acres of light industrial land surrounding the first phase.

Other existing industrial subdivisions include the Airport Triangle on about 13 acres, the 40-lot Kamehameha Parkway No. 2, and the Central Maui Baseyard on Mokulele Highway.

Wailuku

Existing industrial subdivisions in Wailuku include Wailuku Industrial Park, The Millyard, Waiko Baseyard and Consolidated Baseyard. The oldest of which is the Wailuku Industrial Park, an improved light industrial subdivision with 74, fee simple lots off of Lower Main Street in Wailuku. Lots range from 10,106 square feet to a parcel 3.089 acres in size. This subdivision is approximately 95 percent developed and includes the Wailuku Town Center anchored by Sack 'n Save.

The Millyard was developed in 1985 as an improved light industrial subdivision located at the old Wailuku Sugar Mill site. This industrial subdivision contains 57 lots, and is home to the Wailuku Post Office which opened there during the late-1990s. Approximately 84 percent of this subdivision has been developed with a mixture of

commercial and light industrial uses. The Millyard Plaza is one of the largest complexes in this subdivision. Also, several dentists and veterinarians have seen fit to build their own free-standing facilities in The Millyard, which has developed into more of an office park than an industrial center.

Completed in 2006, the Waiko Baseyard in Waikapu consists of 19 lots on approximately 15 acres of land. This subdivision was immediately sold prior to subdivision completion. The Consolidated Baseyard, also in Waikapu followed shortly after and was completed in 2007. Built on about 23 acres of land, the 35 lots in this light industrial park saw very strong interest and were sold quickly. The majority of purchasers within both subdivisions were local business owners whom intended to relocate their operations. These subdivisions were geared toward true industrial users.

The most recent development in the Wailuku area is the Maui Lani Village Center. This project completed construction in 2009 and features 78 lots zoned Village-Mixed Use Commercial/Residential. This zoning allows for a mixture of commercial, industrial, and residential use on each property. Businesses that intend to occupy this subdivision include Paradise Beverage, Ace Hardware, Menehune Water, 76 Gas Station, Oceanic Time Warner Cable, Times Supermarket, Walgreens, etc. However, only a handful of transactions have actually closed to date. Absorption in this project is moving at a slow pace, which is directly attributed to the economic recession.

CONCLUSION

All public utilities including electricity, water, telephone, and sewer service are available in Kahului and Wailuku, as is police, fire and ambulance services. Propane gas is not a public utility, however, is available. All charges for public services are standardized for the Island of Maui.

With the increase of public transportation now available on Maui, Kahului and Wailuku are easily accessible from most parts of the island. This and the fact that it is central to airport and harbor facilities, commercial and industrial establishments, properties located in this area are ideal.

Due to this region being the center of County, State and Federal offices, as well as community services, properties in these areas are anticipated to be in greater demand in the years ahead. Based on the desirability of this area and forecasted demand here, property values are expected to continue their appreciation in the long-term.

C. PROJECT DATA

ENVIRONS

The Waiko Industrial Park is a proposed 38-lot, light industrial subdivision situated on Waiko Road between Kuihelani and Honoapiilani Highways, in Waikapu, District of Wailuku, Island and County of Maui.

The town of Waikapu is a small community located approximately 1.5 miles from Wailuku Town. Much of the community is situated along Honoapiilani Highway, which extends in a north-south direction and Waiko Road which runs in an east-west direction.

Established residential subdivisions in the area include Waikapu Village, Waikapu Homesites, and Waiolani Elua. The neighborhood has enjoyed a spurt of growth in recent years. The two newest subdivisions in the area are Waiolani Mauka, a 105-lot subdivision on the mauka side of Honoapiilani Highway; and Waikapu Gardens, a 411-house and lot subdivision constructed on the makai side of Honoapiilani Highway.

Commercial establishments situated along Honoapiilani Highway include Waikapu On 30, a local eatery and snack shop; The Maui Tropical Plantation, a 60-acre working plantation and tourist attraction; and two golf courses, the Kahili and The King Kamehameha Golf Club.

Industrial and agricultural uses are situated makai of Honoapiilani Highway along Waiko Road, which extends easterly toward Kahului. There are two industrial subdivisions in the immediate area. West of the subject is the Waiko Baseyard. Constructed in 2006, this subdivision consists of 19 lots, some of which have been combined. Businesses in this subdivision include Rojac Trucking and Rojac Construction, Brewer Environmental Services Hawaii, Kula Glass, and Miyake Concrete. The Consolidated Baseyards Subdivision abuts the subject property. This subdivision was constructed in 2007, and contains 38 lots. Businesses here include Island Tile Inc., American Electric, Kiwi Car Care, Pacific Source, DHX, Tri Isle, Lanes Carpet and Service and the Maui County Fire Department. Other surrounding properties include fallow agricultural land, a cattle feed lot, a compost processing area, and an orchid farm.

As mentioned above, the subject will have easy access to two major highways which will help to facilitate trips to other parts of the island. Honoapiilani Highway (Highway 30) provides access to the west end of Maui which includes the Lahaina, Kaanapali and Kapalua destinations. On the way to these communities, Honoapiilani Highway connects to Highway 31 which furnishes roadway access to the Kihei-Wailea-Makena region.

Kuihelani Highway (Highway 380) will take care of travel to Kahului and other communities to the north and east. It also connects with Highway 350 (Puunene Avenue) which also travels to Kihei via Mokulele Highway.

DESCRIPTION OF THE REAL ESTATE:

Property Data:

Legal Description: A title report was not available for review by the Consultant. The State of Hawaii Tax Map identifies the subject as Division 2, Zone 3, Section 8, Plat 07, Parcel 102.

Census Tract: The subject is identified as being within Census Tract No. 311.01.

Owner of Record: The owner of record, as identified by County of Maui public records, is Waiko Industrial Investment, LLC.

Transaction History: Public records indicate that the subject was conveyed from Roderick Fong to Waiko Industrial Investment, LLC for a purchase price of $1,700,000. This transaction was recorded in the Bureau of Conveyances on July 30, 2010 as Document No. 10-108418. Prior to this transaction, the property was conveyed from A&B Hawaii, Inc. to Roderick Fong for $1,690,000. This sale was recorded in the Bureau of Conveyances on July 21, 2009 as Document No. 09-111117. There were no other conveyance of the subject within three (3) years prior to the effective date of this report.

Subject Offering Information: A search of Maui Multiple Listing Service did not reveal any listing of the subject within three (3) years prior to the effective date of this report.

Real Property Tax Assessments and Taxes: Research at the Maui County Real Property Assessment Division revealed the following assessments and taxes for the subject during the tax periods between 2008 and 2010.

Table 1 – REAL PROPERTY TAX AND ASSESSMENTS

	2010	2009	2008
Land (Agricultural):	$400,300	$400,300	$400,300
Land (Industrial):	$2,106,600	$2,106,600	$1,728,500
Building (Industrial):	$100,700	$97,700	$91,100
Total:	$2,607,600	$2,604,600	$2,219,900
Rate per $1,000 (Ag):	$5.00	$4.50	$4.50
Rate per $1,000 (Ind):	$6.50	$6.50	$6.50
R. P. Taxes:	$16,348.95	$16,129.30	$13,628.75

Zoning: The site is designated Agriculture District under the State of Hawaii Land Use, County of Maui Zoning, and the Wailuku-Kahului Community Plan.

Site Description:

Size and Shape: The subject has a land area of 31.222 acres, which included a 1.230 acre roadway easement. The parcel is highly irregular in shape, surrounding the Consolidated Baseyards property on its north, east and west sides.

Topography and Soil Condition: A physical inspection of the property confirmed that topography is generally level to gently sloping. The Consultant has not been provided with soil, subsoil or other engineering studies to determine the load-bearing capacity of the subject; however, based on typical construction in the neighborhood and our knowledge of other properties in the immediate vicinity, the site is presumed to have stable soil conditions and any drainage problems are assumed to be correctable.

Access: Vehicular access to the subject is via Waiko Road.

Easements and Restrictions: According to the State of Hawaii Tax Maps, the subject is encumbered by "Easement C" a 1.230 acre roadway easement on the western side of the property. In addition, a 25-foot wide power line easement runs along the southern side of the parcel. Along Waiko Road (southern side), there is a 20-foot wide building setback. A 30-foot wide building setback exists along Kuihelani Highway (eastern side). Furthermore, vehicular access is prohibited from Kuihelani Highway.

Flood Status: Flood Hazard Districts are delineated on Flood Boundary and Floodway Maps and the Federal Insurance Rate Maps prepared by the Federal Insurance Administration and Federal Emergency Management Agency. The parcel is situated on Map Numbers 1500030393E and 1500030394E, by the Federal Emergency Management Agency; of which there is currently no printed map. As confirmed by County of Maui public records, the subject lies in Flood Zone X. Zone X within Maui County indicates areas determined to be outside of the 0.2 percent annual chance flood plain. Flood insurance is not required for properties within this flood zone.

Utilities: The subject has adequate availability to electricity, with power lines actually running through the property, via an overhead utility easement. Water and sewer service are not currently available to the property.

Current Uses: On the day of inspection, it was noted that a portion of the site was being utilized for the repair and storage of heavy

equipment, vehicles and scrap. These uses are allowed, as the property has a Conditional Permit for industrial use. Other areas were fenced off and being used for grazing and keeping livestock. The roadway easement on the western side of the property was in-use, providing access for heavy machinery and tractor trailers working in the Maui Lani Project District.

Description of the Proposed Project

Land & Improvements: The subject consists of approximately 31.222 acres of land. The land is presently designated Agricultural District under the State of Hawaii Land Use, County of Maui Zoning, and Wailuku-Kahului Community Plan.

The project proposed is a 38-lot light industrial subdivision. It is anticipated that the project, which is still in its preliminary planning stage, will have industrial lots ranging from 9,536 square feet to 8.43 acres in size. The majority of the inventory, approximately 28 lots; will be less than 15,000 square feet in size; another 7 lots will range from about 20,000 to 35,000 square feet; and, 3 lots will be between 1 and 2 acres in size. There will also be one, 8.43 acre lot, which will be situated at the eastern portion of the site near the Waiko Road and Kuihelani Highway intersection. The lots are expected to be fully-serviced and building-ready. Access will be via Waiko Road which runs between Honoapiilani and Kuihelani Highways.

Likely Purchasers or Tenants: In light of its unique location, away from the central business districts, the harbor and the airport, this proposed subdivision is expected to attract pure-industrial users. This is meant to include businesses that are looking primarily for warehouse space and fenced yards. Tenants like these have been displaced from the central areas of Kahului and Wailuku by higher rents which were being driven upward by retail and service users competing for space. Typical industrial tenants may include plumbers, electricians, contractors, building suppliers, wholesalers, fabrication companies, auto repair companies, warehousing companies, trucking companies, and similar type businesses. From a market perspective, the subject is well-suited for a light industrial development of this type. The neighboring Consolidated Baseyards Subdivision and Waiko Baseyard have been successful in attracting these pure-industrial users.

The developer does, however, envision the larger 8.43-acre lot to be utilized for commercial use. This lot's location at the corner of Kuihelani Highway and Waiko Road allows for visibility and exposure to traffic that would support a variety of commercial uses. A traffic signal recently installed at this intersection allows for convenient access to Waiko Road off this busy highway.

Commercial uses such as retail businesses, professional offices, and service companies are not expected to occupy the northerly portion of the subdivision unless the complexion of Waikapu and Waiko Road changes immensely.

Present Use: The subject site is present zoned and community planned for agricultural use; however, the site is currently utilized as an industrial baseyard in accordance with a Land Use Commission Special Use Permit and a Conditional Use Permit. The Conditional Permit is set to expire on March 1, 2014.

Most Appropriate Use: The proposed industrial subdivision is the most appropriate use of this site from a market perspective. Under its agricultural zoning, the subject has poor to fair agricultural potential. Industrial utilization of the site is reasonable given the complementary businesses situated in the neighboring Consolidated Baseyards and Waiko Baseyard subdivisions.

In addition, the subject has easy access to two major highways, Kuihelani Highway and Honoapiilani Highway. The subject borders Kuihelani Highway to the south. This highway provides convenient access directly to Kahului, as well as to the Upcountry and East Maui regions, or to Lahaina and Kihei in the opposite direction. Honoapiilani Highway, 0.9 miles north of the subject, provides vehicular access to Wailuku and travels in the opposite direction toward Lahaina and Kihei. The subject has a desirable location in terms of accessibility to all areas of the island.


WAIKO ROAD
KUIHELANI HIGHWAY
WAIKO INDUSTRIAL PARK
CONCEPTUAL PLAN
OTOMO

SITE MAP

PART III – ANALYSIS AND CONCLUSION

A. MARKET STUDY

For the purpose of estimating the market response to this project, a market study was conducted to determine how current supply and demand for industrial properties might be affected by the development of the subject's 38 industrial lots. The extent of our survey encompassed existing, ongoing (in sales process), and proposed industrial developments on Maui, specifically in the Central Maui region of Wailuku-Kahului.

Overview

One of the more difficult factors in determining the success of a proposed project is estimating future supply and demand. There are several components to this, including the design and pricing of the proposed project. This, of course, is well within the developer's control but has not yet been determined for the subject. Second, is the overall market environment at the time of pre-sale and project completion. This is, obviously, more difficult to define because it involves forecasting such variables as interest rates, overall market conditions, and general and specific sector real estate market conditions.

The added complications with most projects are the time frames and time lags involved. Since most subdivision projects take several years between conception and completion, market and interest rate conditions can change significantly. Thus, a project may commence in a favorable environment and be completed in an unfavorable one (or vice versa). Furthermore, real estate is a cyclical industry and sales activity tends to move in spurts. It is not unusual for a new project to sell half its units in the first year of marketing and require 2 to 3 years (or longer) to sell the remaining half. Thus, the notion of a linear sales rate may be deemed unrealistic for practical purposes, but is a useful and convenient tool for planning.

INDUSTRIAL SUPPLY CHARACTERISTICS

The area identified as the Central Maui region encompasses the major communities of Kahului and Wailuku. This popular area contains the major business, civic and transportation centers for the entire island of Maui. Many businesses service the entire island from this convenient Central Maui location; and, as a result, demand for industrial space is strong here.

As research was conducted into light industrial lands in Central Maui, it became very clear that, although there are a number of vacant lots in Central Maui, a large number of them are planned for near-term development. Thus, there is a very noticeable difference between (1) vacant industrial land that is available for sale and future development and (2) vacant industrial land that is not available for sale because it is already planned for a near-term project.

This distinction has been addressed in the supply analysis because it identifies which parcels are truly available in the industrial market. The following paragraphs briefly describe the existing, newly developed and proposed industrial developments in Central Maui's industrial market.

Maui's Existing Industrial Developments

Central Maui has approximately 83 percent of the island's industrial land, with the largest amount situated in Kahului, near the harbor and airport. In Kahului, these industrial subdivisions are the Maui Industrial Park; Kamehameha Parkway Subdivision No. 2; Maui Business Park Phase IA and IB; Airport Triangle; and Wakea Industrial Subdivision. Wailuku's industrial projects include the Wailuku Industrial Park, The Millyard, Waiko Baseyard, Consolidated Baseyards Subdivision, and the Maui Lani Village Center.

Table 2 – SUMMARY OF COMMERCIAL AND INDUSTRIAL DEVELOPMENTS ON MAUI

Project Name	Location	Gross Project Area In Acres	Primary Users
EXISTING (Central Maui)			
Maui Industrial Park, Hana Highway and Dairy Road Industrial Subdivisions	Kahului	136	Mixed-Use, Light Industrial
Kamehameha Parkway Subdivision	Kahului	62	Commercial, Mixed-use, Light Industrial
Maui Business Park, Phase 1A & 1-B	Kahului	78	Commercial, Mixed-use, Light Industrial
Traingle Square Subdivision	Kahului	13	Retail & Commercial
Wakea Industrial Subdivision	Kahului	12	Commercial, Mixed-use, Light Industrial
Central Maui Baseyard	Kahului	15	Light Industrial
Wailuku Industrial Park	Wailuku	55	Commercial, Mixed-use, Light Industrial
The Millyard Subdivision	Wailuku	30	Commercial, Mixed-use, Light Industrial
Waiko Baseyard Subdivision	Wailuku	15	Light Industrial
Consolidated Baseyard Subdivision	Wailuku	23	Light Industrial
Maui Lani Village Center	Wailuku	110	Commercial, Mixed-use, Light Industrial
	Total	**549**	
EXISTING (South Maui)			
Kihei Commercial Center	Kihei	16	Commercial, Mixed-use, Light Industrial
Piilani Business Park	Kihei	7	Commercial, Mixed-use, Light Industrial
Kihei Business Park	Kihei	14	Retail & Commercial
	Total	**37**	
EXISTING (West Maui)			
Wili Ko Industrial Subdivision	Lahaina	37	Commercial, Mixed-use, Light Industrial
Lahaina Business Park (Phases I and II)	Lahaina	41	Mixed-Use, Light Industrial
	Total	**78**	
PROPOSED			
Waiko Industrial Park (SUBJECT)	Wailuku	31	Light Industrial
Waikapu Light Industrial	Wailuku	9	Light Industrial
Maui Business Park, Phase II	Kahului	179	Commercial, Mixed-Use, Light Industrial
Waiale Master Plan	Kahului	16.3	Mixed-Use, Light Industrial
	Kahului	23	Commercial
Kaonoulu Business Park	Kihei	75	Commercial, Mixed-Use, Light Industrial
	Total	**333**	

Wailuku

Wailuku Industrial Park

This light industrial subdivision was developed by C. Brewer in the late-1970s and it consists of 74 fee simple lots off of Lower Main Street in Wailuku. Lots range from 10,106 square feet to a parcel 3.089 acres in size. Approximately 72 percent of the parcels are less than one-half acre in size. This subdivision is approximately 95 percent developed with only three lots not improved or used as yard space.

The Millyard

Developed in 1985, this subdivision is comprised of 57 fee simple light industrial lots. Of the 57 lots in this development, only eight are more than one-half acre in size. The remaining balance of properties is between 10,055 and 20,119 square feet in size. Approximately 84 percent of this subdivision has been developed with a mixture of commercial and light industrial uses. This subdivision has developed

into more of an office park than an industrial center. Nine lots are presently vacant with no proposed developments.

Waiko Baseyard Subdivision

The Waiko Baseyard Subdivision consists of 14.891 acres of land that was subdivided into 19 finished lots in 2005. It is located along Waiko Road in Waikapu Town of Wailuku. The lots range in size from 13,342 square feet to 2.86 acres. Lot No. 16 was deeded back to Brewer Environmental, Inc. and was not available for sale. Lots No. 17, 18 and 19 were retained by the developer and also not made available for sale. Of the fifteen remaining lots, fourteen (14) were sold and one retained by the developer for yard space. Approximately 57 percent of the subdivision is improved, 20 percent used for yard space. Businesses in this subdivision include Rojac Trucking and Rojac Construction, Brewer Environmental Services Hawaii, Kula Glass, and Miyake Concrete. Twenty percent (or four lots) remains vacant.

It is noted that public records indicate initial sales between $20.00 and $25.00 per square foot; however, according to the developer, these prices were based on an agreement with the prior land owner and considered below-market. Those lots that sold at market levels indicated prices of $35.00 per square foot. The last resale occurred in April 2006 at a price of $37.50 per square foot for Lot 3.

Consolidated Baseyards Subdivision

The Consolidated Baseyards Subdivision is situated next to the subject. This property was previously zoned for Agriculture use. Rezoning of the site to Light Industrial was approved and the subdivision was developed in 2007. This 35-lot light industrial subdivision is located on Waiko Road in the Waikapu area of Wailuku and encompasses 23.164 acres of land. The lots range in size from 10,375 to 85,502 square feet. Twenty-five (25) lots sold in 2006 with prices ranging from $28.16 to $38.00 per square foot with an average price of $32.89. The lowest prices at about $28.00 to $29.00 per square foot were discounted prices offered only to initial buyers. In 2007, ten (10) more lots sold at prices ranging from $25.18 per square foot for an 85,504 square foot lot to $40.01 per square foot for a 12,933 square foot lot. The average price in 2007 was $32.85 per square foot. The two most recent sales in 2008 indicated prices of $34.99 per square foot for an 85,504 square foot site, and $39.50 per square foot for a 42,715 square foot parcel.

Within this subdivision, approximately 50 percent of the parcels are improved and 23 percent used for yard space. Businesses present in this subdivision include Island Tile Inc., American Electric, Kiwi Car Care, Pacific Source, DHX, Tri Isle, Lanes Carpet and Service and the Maui County Fire Department. Only 18 percent (or 8 lots) remains

vacant, and 9 percent (or 2 lots) have near-term proposed developments.

Maui Lani Village Center Subdivision

The Maui Lani Village Center was recently completed in 2009 and features 78 lots zoned Village-Mixed Use Commercial/Residential. This zoning allows for a mixture of commercial, industrial, and residential use on each property. Lots in this subdivision range from 7,545 square feet to 7.54 acres in size, with the majority around 10,000 to 20,000 square feet. As of the effective date, there have only been 11 sales in this project. These sales ranged in price from $50.00 to $60.00 per square foot. In addition to selling the lots fee simple, the developer has also advertised build-to-suit projects as well.

Businesses that have closed on their lots include Paradise Beverage, Group Investments LLC, Retina Institute of Hawaii, Menehune Water Co., 76 Gas Station, Wailuku Federal Credit Union, Commercial Plumbing and Grace Pacific Roadway Solutions. Others that intend to occupy this subdivision include Times Supermarket, Oceanic Time Warner Cable, Ace Hardware, and Walgreens. Absorption in this project is moving at a slow pace, which is directly attributed to the economic recession.

Kahului

Maui (Kahului) Industrial Park

This leasehold industrial subdivision was developed and owned by Alexander and Baldwin, Inc., in the early 1960's. Most of the land in the Kahului Industrial Park is being leased on a long-term basis to developers and owner-users that have constructed and sub-leased the improvements. Beginning in 1988, A&B began selling the leased fee interest in some of these properties to a select group of lessees. Since that time several other offerings have been made to the lessees of their properties. In fact, many of the lessees have chosen to purchase the leased fee interest in the land rather than renegotiate their respective ground leases. These leased fee sales, according to a representative of Alexander & Baldwin, reflected their estimate of "fee simple" land value.

On Maui, the Kahului Industrial Park subdivision is by far the most established, and enjoys a superior location with respect to harbor and airport facilities, as well as other supporting commercial activities. Occupancy is high, and demand has spurred the development of additional industrial land along Wakea Avenue with this subdivision, as well as other projects in Kahului. According to officials at A&B Properties, their developments in the Kahului Industrial Park have historically had high occupancy rates.

Kamehameha Parkway Subdivision No. 2

High demand in Kahului prompted A&B to develop the Kamehameha Parkway Subdivision. This subdivision contains 40 parcels ranging in size from 12,826 square feet to 2.42 acres. A number of lots in this subdivision were combined to make larger sites.

Currently 96 percent of the subdivision has been improved. Properties include such projects as the Valley Isle Motors, Tesoro Gas Station and Convenience Store, Slims Power Tools, the Valley Isle Community Federal Credit Union, Kula Produce, Kula Community Federal Credit Union, Maui Community Federal Credit Union, Anheuser-Busch Sales of Hawaii, The Fairgrounds office building, three medical office buildings, and Service Rentals and Sales. Only two lots remain vacant in this subdivision.

Airport Triangle

In response to continued demand, A&B Properties developed the Airport Triangle, located makai of the Hana Highway, across the Maui Industrial Park. Airport Triangle is comprised of 42 acres total. The area identified as Triangle Square consists of about10-acres, and is bound by Haleakala Highway, Dairy Road, and Hana Highway. There are 11 lots in this subdivision ranging between 7,172 square feet to 2.32 acres. Properties include a Lexus dealership; a BMW dealership; Tesoro; Krispy Kreme; the Kele Building anchored by Denny's Restaurant; the Triangle Square Apex Building; and a small retail center at the corner of Hana Highway and Dairy Road.

Across from Triangle Square, two large lots of 7.30 and 12.84 acres were sold and developed by Costco and Kmart. With the exception of the Costco and Kmart parcels, all lots in this subdivision were offered as ground leases. In 2008, A&B began selling the leased fee interest in these properties to a select group of lessees and investors. Only two lots remain vacant in this subdivision.

Maui Business Park

A&B then developed seventy-six (76) acres into the Maui Business Park. Phase IA includes 32 light industrial zoned lots ranging in size from 16,801 to 35,522 square feet on about 42 acres of land. Lots were initially priced at an average of $30.00 to $35.00 per square foot. When marketing began in 1995, nine (9) parcels immediately sold, which ranged from $26.00 to $34.38 per square foot. The only parcel to be resold in 2008 was purchased at a price of $41.15 per square foot for an 8,505 square foot lot. The most recent resale occurred in April 2010 and consisted of a 16,525 square foot parcel selling for $41.45 per square foot. The largest project in this subdivision is the Maui Marketplace, which was patterned after Waikele Center in Oahu and was completed in 1997. It includes

tenants such as Lowe's Hardware, Office Max, Old Navy, Petco, Pier One Imports and Sports Authority.

Phase IB consists of 12 lots of about 34 acres of land and includes the large Wal-Mart and Home Depot sites which were 14.014 acres and 12.701 acres, respectively. The remaining 10 lots are located along Hookele Street and range in size from 17,990 to 45,869 square feet, with an average of 22,817 square feet. Initial sales in this subdivision began in 2000 and 2001 with prices ranging from $ 23.75 to $27.00 per square foot. Another wave of developer sales occurred in 2003 and 2004 with prices ranging from $26.00 to $33.35 per square foot. There are presently two vacant lots; only one of which has proposed development in the near term.

Other Industrial Parcels

Outside of the industrial parks, there are a few other industrial lots available individually. In Wailuku, there are two adjacent, industrial-zoned site situated along Kaahumanu Avenue in the Puuone neighborhood. These sites contain a total area of 18,510 square feet. Along Lower Main Street, and interior roads that extend off of Lower Main Street, there are 4 industrial-zoned lots totaling 1.25 acres of available land.

In Kahului, one parcel is the former Brewer Chemical site next to Harbor Lights condominium in Kahului. This light industrial site contains 4.484 acres, and is vacant and available for development. Also, a 2.69-acre, highly irregular shaped site is bounded by Hobron Avenue, Kaahumanu Avenue and Hana Highway near the oil refineries. This site is vacant and available for development.

Other large parcels are visible in the market, but are not considered to be available for development. For instance the former Y. Hata site on Waiehu Beach Road in Wailuku appears to have a significant amount of vacant land. This 6.12-acre light industrial site is highly under-improved with a single warehouse building; however, it is located in a coastal flood zone and further development of the property is judged to not be feasible. Another 2 lots are located adjacent to Kanaha Pond in Kahului. One has an area of 8.46 acres and is zoned M-1 Light Industrial District. Although it is vacant, it is not available for development because it is being utilized by a towing company as a baseyard. The other, a 2.5 acre lot, is the site of a proposed medical center.

Summary of the Supply Characteristics

The existing supply of vacant industrial land available for development in Central Maui is limited to the following amounts. The Consultant surveyed the existing industrial parks as well as other individual industrial-zoned parcels situated in Wailuku and Kahului.

Available Land in Subdivisions

Wailuku Industrial Park	1.62 acres
The Millyard	3.75 acres
Waiko Baseyard	2.89 acres
Consolidated Baseyards	3.67 acres
Maui Lani Village Center	32.77 acres
Maui (Kahului) Industrial Park	0 acres
Kamehameha Parkway No. 2	0.86 acres
Airport Triangle	1.05 acres
Maui Business Park, IA	0.83 acres
Maui Business Park, IB	0.74 acres
Total:	48.18 acres

Other Land Available

Off Lower Main Street	1.25 acres
Off Kaahumanu Avenue	0.42 acres
Off Kahului Beach Road	4.48 acres
Off Hobron Avenue	2.69 acres
Total:	8.85 acres

In order to determine the number of vacant industrial properties truly available to the market, a search was conducted on the Multiple Listing Service. A total of 69 parcels with a total of 34.99 acres of land were found to be actively listed for sale. Of this total, approximately 32.77 acres is situated in the Maui Lani Village Center Subdivision, leaving only 2.22 acres available in industrial subdivisions and other industrial areas in Central Maui.

Central Maui's Proposed Industrial Projects

Research has revealed that the economic recession that started in late 2007 has greatly affected development on the island of Maui. During this same time, two government ordinances, the Workforce Housing Policy and the Water Availability Ordinance, passed by the County of Maui in 2006 and 2007, respectively, placed stringent restrictions on development. Consequently, many developers chose to shelve their near-term proposed projects that were deemed unfeasible.

Developers of long-term projects, however, have continued their planning and approval process despite the current unfavorable market and economic conditions. The Consultant is aware of three proposed projects that will contain industrial-zoned land in Central Maui. The first is Phase II of A&B's Maui Business Park, the second is Waikapu Industrial, and the third is the Waiale Master Plan

Community. Extensive information was not available for these proposed or announced projects, but a summary of these developments follows.

Maui Business Park, Phase II

The Maui Business Park Phase II is comprised of 179 acres of land. This subdivision will be completed on two non-contiguous parcels. One parcel is an extension of the existing Maui Business Park, Phase I, and consists of about 140.8 acres. This area is identified as the South Project Area which will contain 112 lots of various sizes ranging from about 20,000 square feet to 12.5 acres. This portion is planned for mixed light industrial and commercial uses. Expected users include supply companies, mini-storage businesses, warehouses, contractors, clinics, restaurants, and retailers. The other portion of this subdivision, identified as the North Project Area, is a 38.1-acre parcel on the eastern side of the Costco and Kmart properties. This section will consist of 32 lots ranging from 0.5 to 3.3 acres in size. Due to its proximity to the airport, this area may be used for airport-related businesses in addition to other mixed light industrial and commercial users.

Rezoning for the land from Agricultural to Light Industrial was approved by ordinance in 2008. As a condition to the zoning, the State Land Use Commission imposed a restriction on the amount of land area to be used for commercial retail use versus non-retail/light industrial use. For a period of eight (8) years, no less than 50 percent of the project shall be used and developed for non-retail/light industrial use. Since the zoning approval was attained in 2008, the condition is effective until 2016.

The owner, A&B Properties, Inc., has recently opened bids for infrastructure construction of the first increment of the project. They expect to break ground in May or June 2011, with active marketing of the lots to follow shortly thereafter in the later half of the year. Construction of the first increment is expected to take approximately one year; however, absorption of the lots is expected to take several years. The second increment is planned to commence around 2018.

Waikapu Industrial

This project will feature seven land condominium units on an 8.55-acre site in Waikapu, which was previously utilized by a scrap metal operation. The site is situated east of Waiko Baseyard and west of the subject. The land is presently designated Agriculture District under the State Land Use, County Zoning, and Wailuku-Kahului Community Plan. The proposed project is currently in the initial planning stage.

Waiale Master Plan Community

Wai'ale, which is still in its preliminary planning stage, consists of

approximately 545 acres of land located to the west of Kuihelani Highway. This project will abut the subject along its northerly boundary as well as span across Waiko Road to the south of the subject. Preliminary plans call for areas of single-family residential, multi-family residential, village mixed-use, commercial, business/light industrial, park, cultural preserve, as well as a regional park, a community center, an intermediate school site with associated recreational fields, greenway paths and roads. The light industrial segment of this master plan community will be comprised of 16.3 acres with lots forecasted to be between 15,000 and 25,000 square feet. The area reserved for light industrial use will neighbor the subject to the west.

The owner, A&B Properties, Inc. filed a request with the state Land Use Commission to reclassify the entire project site to urban from agricultural. If the reclassification is approved, the next step will be to change the County zoning and community plan for the property. It is anticipated that these State and County Approvals will be obtained by 2013. Build-out is expected to take 10 years.

Summary of the Proposed Projects

The proposed projects will add approximately 204 acres of light industrial land to the Central Maui inventory over the near- and long-term. As mentioned above, the Maui Business Park, Phase II is the most imminent with construction expected in mid-2011. In the case of Waiale, the build-out out could start as early as 2013; however, it is uncertain when the industrial portion will be constructed during the 10 year span of the project. The anticipated timing of the Waikapu Industrial land condominiums is unknown at this time.

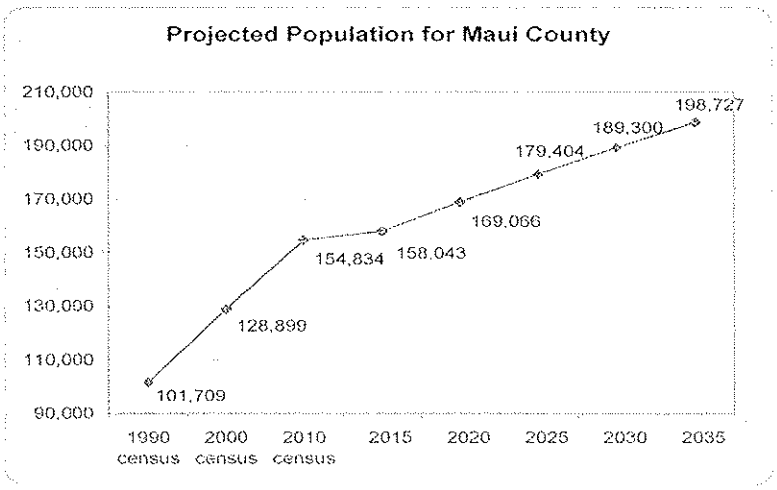
INDUSTRIAL DEMAND CHARACTERISTICS

Demand is analyzed from two perspectives: The first is "demographic" demand, the number of units needed for a given market or employment base. Second is "effective" demand, the process which involves looking at the number of buyers who would be qualified and interested in purchasing industrial properties.

Population

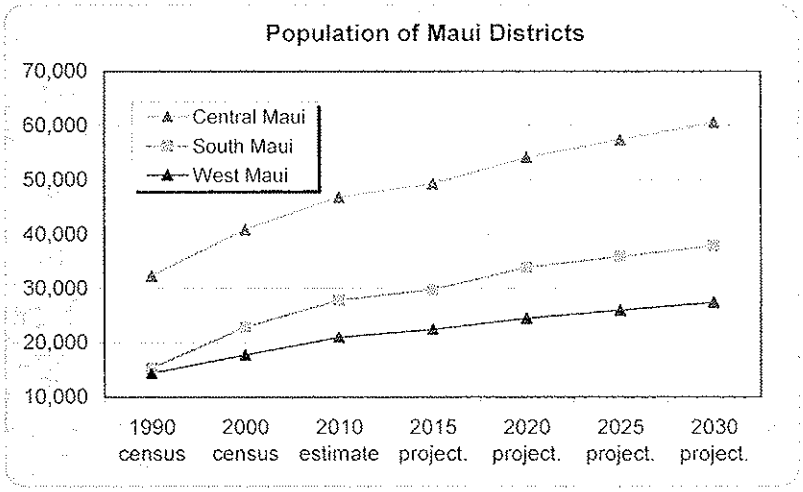
Population growth on Maui over the last past 20 years (1980 to 2000) has been exceptionally high. Overall, population growth for the County of Maui during 1980 to 1990 was 41.67 percent. Meanwhile, the 2000 census figures indicate that population in Maui County increased by 26.73 percent between 1990 and 2000. Maui County was the fastest growing county in the state. With this growth in population came a surge in real estate prices. This increase, driven primarily by foreign and domestic investment and speculation, put the price of homes in Maui County well above the reach of many local residents, and affordable housing became a major concern to everyone. The most recent census data indicates an increase of 20.12 percent in population from 2000 to 2010. Maui County's resident population now stands at 154,834 (2010 census).

According to Resident Population Projections, by County: 2005 to 2035 (*State of Hawaii Data Book 2009*), the projected population of Maui County is expected to be 189,300 by 2030 and 198,727 by the year 2035. The 2030 and 2035 estimates represent 22.3 and 28.3 percent increases over the 2010 census numbers, respectively.



According to demographic statistics by Claritas, Central Maui's population grew by approximately 26 percent from 32,310 people in the 1990 census to 40,867 people in the 2000 census (It is noted that demographic information for individual districts are not yet available from the 2010 census). Central Maui has consistently

maintained approximately 32 percent of the total population of Maui County during this period. The 2010 estimate indicates a population growth rate of approximately 14 percent over the 2000 census numbers. The population of South Maui and West Maui accounted for approximately 18 and 14 percent of Maui County's population, respectively, in each of the past census counts. It should be noted that while West Maui has remained at approximately 14 percent, South Maui jumped to almost 20 percent by 2020 projections. The 2015 population projection for Central Maui indicates a growth rate of approximately 5 percent over the 2010 estimate.



To keep up with its very strong demand for commercial or industrial park space, Central Maui has had numerous developments built within the last 10 years. The Waiko Baseyard Subdivision was completed in 2005, with the Consolidated Baseyards Subdivision following in 2006. The Maui Lani Village Center was also completed in early 2010.

The significantly higher amount of land within Central Maui's commercial/industrial parks can be attributed to its proximity to major transportation and shipping facilities located in Kahului. Based on population estimates for 2010, Central Maui has the lowest number of persons per acre of commercial and/or industrial land (in projects) with a ratio of approximately 85 persons per acre. This demonstrates a very strong demand for industrial land in this region. Meanwhile, West Maui's ratio is approximately 269 persons per acre of land area, while South Maui has the largest ratio, at about 751 persons per acre. Historically, there has been less demand for industrial land in these areas due to their locations far from the main airport and harbor port of the island.

As previously shown in **Table 2** on Page 33, Central Maui's inventory will increase to approximately 784 acres with the addition of A&B Properties' Maui Business Park, Phase II (179 acres), the Waikapu

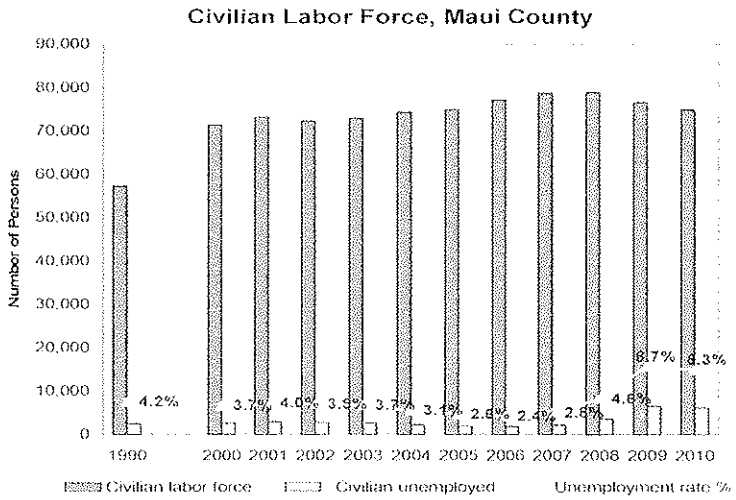
Industrial Land Condominium (9 acres), the Waiale Master Plan (16 acres), and the subject's Waiko Industrial Park (31 acres). In South Maui, the Kaonoulu Light Industrial is slated to add approximately 75 acres of inventory. When the proposed developments are taken into consideration, both Central Maui's and South Maui's ratio would fall, while West Maui's ratio would remain the same.

Table 3 – POPULATION TO LAND AREA IN COMMERCIAL/INDUSTRIAL PARKS

	Central Maui	South Maui	West Maui
Population (2010 estimate)	46,795	27,797	20,996
Commercial and Industrial Land Area			
Total acres (in parks)	549	37	78
Persons per acre	**85.2**	**751.3**	**269.2**
Total acres (includes proposed parks)	784	112	78
Persons per Acre (includes proposed parks)	**59.7**	**248.2**	**269.2**

Employment and Household Income

The unemployment rate on Maui had been on a decline since 1992 when unemployment was at 8.0 percent. In 2007, the unemployment rate was 2.8 percent. For 2008, this rate rose to 4.5 percent, after seeing month-over-month gains beginning May 2008. This trend continued in 2009, with the average unemployment rate jumping to 8.7 percent. The unemployment rate was 8.9 percent in January 2010 and gradually declined throughout the year ending at 7.4 percent in December 2010; the lowest it has been since late 2008. The average unemployment rate for 2010 was 8.3 percent.



Source: State of Hawaii Department of Business, Economic Development & Tourism Monthly Economic Indicators

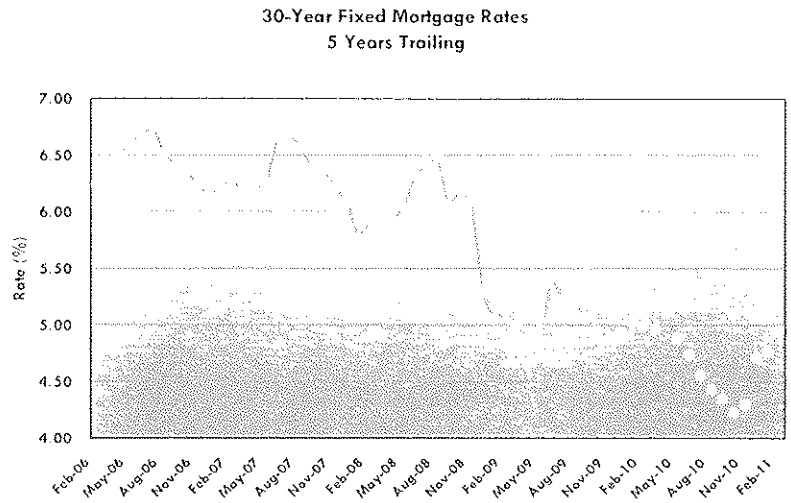
Household income figures have also been increasing. The estimated median annual household income for Maui in 2010 is $76,000 (*Source: U.S. Department of Housing and Urban Development*), a rise of

approximately 53 percent over the 1999 median household income of $49,489 (*Source: US Census 2000*) and a 96 percent increase over the 1989 figure of $38,771 (*Source: US Census 1990*). During the 12 year period from 1999 to 2010, this represented an average increase of over 4 percent per year.

Mortgage Interest Rates

From late-1991 to 2002, mortgage rates varied from 6.0 to 9.0 percent. In 2003, mortgage rates for a 30-year fixed rate mortgage fell below 6.0 percent for the first time since Freddie Mac began tracking 30-year mortgage rates in 1971. Over the next six years, the monthly interest rate fluctuated between 5.23 and 6.76 percent. However, due to cuts to the Federal Funds Rate in late 2008, interest rates in 2009 dipped below the 5.0 percent level on numerous occasions. The average interest rate for 2009 was 5.04 percent. Through 2010, the interest rate has averaged 4.69 percent, with the lowest rate seen in October at 4.23 percent. Records that reach back earlier than Freddie Mac's indicate that this rate is below record lows witnessed in the 1940s, during World War II. Mortgage rates have been steadily increasing over the last four months since October 2010. (See **Table 4** below.)

Table 4 – HISTORICAL TREND OF 30 YEAR, FIXED MORTGAGE RATES



Source: Freddie Mac-Primary Mortgage Survey

The lower mortgage rates typically mean that real estate becomes more affordable to a larger segment of the population. At the same time, however, prices rise. The rising prices can be driven even higher if developers are restrained from building additional inventory by government restrictions, the unavailability of development land, or unreasonably high land prices.

Industrial/Commercial Land Pricing Trend

Up to the Year 2007, there was significant appreciation for commercial/industrial vacant land in Central Maui, as well as the entire island. This rise in prices was attributed primarily to favorable economic conditions, coupled with the lack of entitled land. In Central Maui, a majority of the lots in existing commercial/industrial subdivisions have been built-out or are being held by their owners for development in the short-term future.

There have been very few sales of industrial lots in all areas on Maui since 2008; however it is obvious that there has been a downward trend since the peak of the market in 2007. The Consultant has surveyed the Central Maui industrial parks as well as other areas on the island for trend evidence within the industrial/commercial market.

Waiko Baseyard Subdivision

It is noted that public records indicate initial sales between $20.00 and $25.00 per square foot; however, according to the developer, these prices were based on an agreement with the prior land owner and considered below-market. Those lots that sold at market levels indicated prices of $35.00 per square foot in 2005. In 2006, sales in this project indicated pricing from $36.72 to $37.50 per square foot. The last resale occurred in July 2008 at a price of $36.80 per square foot.

Currently there is only one (1) active listing in this subdivision for $30.06 per square foot. This listing indicates depreciation of about 25 percent from 2006 prices.

Consolidated Baseyards Subdivision

Twenty-five (25) lots sold in 2006 with prices ranging from $28.16 to $38.00 per square foot with an average price of $32.89. The lowest prices at about $28.00 to $29.00 per square foot were discounted prices offered only to initial buyers. In 2007, ten (10) more lots sold at prices ranging from $25.18 per square foot for an 85,504 square foot lot to $40.01 per square foot for a 12,933 square foot lot. The average price in 2007 was $32.85 per square foot. The most recent sales in 2008 indicated prices as high as $34.99 per square foot for an 85,504 square foot site, $39.50 per square foot for a 42,715 square foot parcel, and $41.00 for a 13,145 square foot lot at the entrance to the subdivision.

There are five (5) vacant lots presently listed for sale. Asking prices range from $35.00 to $38.00. Although asking prices are not significantly lower than sales in 2007 and 2008, these listing have extended days on market ranging from 707 to 1,057 days. This suggests that the asking prices of these lots may need to be significantly decreased to attract buyers in today's market.

Maui Business Park

Lots in Phase IA were initially priced at an average of $30.00 to $35.00 per square foot. Nine (9) parcels immediately sold in the late 1990s at a range of $22.00 to $39.00 per square foot in the late 1990s. The remaining lots sold over a period of five years with the same price range. Initial sales in Phase IB of this subdivision began in 2000 and 2001 with prices ranging from $ 23.75 to $27.00 per square foot. Another wave of developer sales occurred in 2003 and 2004 with prices ranging from $26.00 to $33.35 per square foot.

One resale in 2007 indicated a price per square foot of $43.77 for a 27,188 square foot lot. Another parcel resold in 2008 at a price of $41.15 per square foot for an 8,505 square foot lot. The most recent resale occurred in April 2010 and consisted of a 16,525 square foot parcel selling for $39.64 per square foot. This sale indicates 5 to 10 percent deprecation since the peak sales in 2007 and 2008.

There are two (2) active listings with the Maui Business Park. One lot, listed for $55.90 per square foot includes plans and permits for a proposed office building. This property has been on the market for 331 days. The second is a small, 8,503 square foot lot with an asking price of $47.04 per square foot. This lot has been on the market for 1,402 days. The original list price for this lot was $79.97 per square foot. This price was significantly reduced; however, further reduction of the price may be needed to attract potential buyers.

Lahaina Business Park

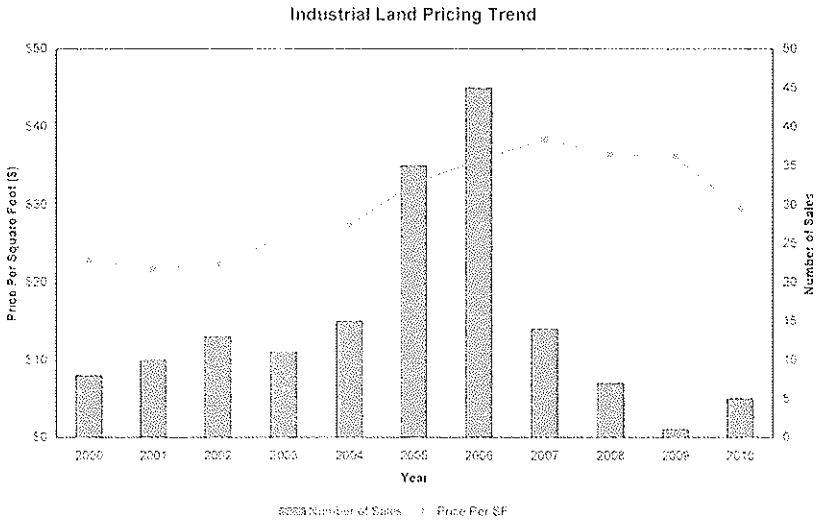
Sales were brisk following the completion of the 28 lots in Phase I in early 2001. These lots originally ranged between $19.00 and $24.00 per square foot. Phase II was completed in 2006 and initial sales prices ranged from $30.00 to $34.00 per square foot. The Consultant notes that sale prices for lots in Phase II in January 2006 averaged $33.75 per square foot.

Resales in the Phase I of the subdivision in 2005 ranged from $31.50 to $34.00. In 2006, resales ranged from $36.99 up to $51.00 per square foot. The average lot price in 2006 appreciated 24 percent from 2005. There were no sales of vacant land in this subdivision in 2007, 2008, and 2009. In April 2010, a bulk sale of five (5) lots occurred with the purchase price reflecting $26.00 per square foot for 127,428 square feet of industrial land. In July 2010 there were two additional bulk sales of two (2) lots each. These transactions indicated a price per square foot of $28.00 and $24.80 for 37,243 and 51,893 square feet of land area, respectively. The 2010 sales indicated depreciation of approximately 33 percent from the peak in 2006.

There are five (5) vacant lots presently listed for sale in the Lahaina Business Park. Asking prices range from $33.22 to $44.00. With the most recent sales occurring in 2010 at prices of $24.80 to $28.00 per square foot. The asking prices of the listed properties will likely require a significant decrease to become attractive in this market.

Kihei Business Park

Business-zoned land sales also reached $51.00 per square foot in Kihei Business Park in 2006. The latest sale in 2009 reflected a 30 percent reduction to $36.12 per square foot. One active listing in this subdivision is asking $35.68 per square foot, a slight decrease from the most recent sale.



When compared to 2007, sales prices in 2009 and 2010 as well as current listings indicate a decrease in land values of between 5 and 35 percent.

The Consultant has not included the sales within the Maui Lani Village Center as part of this analysis. Pricing within the subdivision ranges from $50.00 to $60.00 per square foot. The developer has maintained this price range since it began offering the lots to the market in 2009. Given the subdivision's location and the multitude of uses allowed under the Village Mixed Use zoning ordinance, these lots are able to command a high price range, although the pace of absorption has been slow. The Maui Lani Village Center is situated between the Maui Lani and Kehalani Project Districts and is expected to serve as the primary commercial center for these neighborhoods. Kuikahi Drive, which the subdivision is situated along, is also expected become a major thoroughfare connecting Wailuku and Kahului as the area continues to be developed.

The Village Mixed Use is a unique zoning ordinance that allows for an array of commercial, industrial, and residential uses. All types of uses may be mixed and incorporated into a single project. For example, you could have commercial retail/office on the ground floor, residential units on the second floor, and possibly even warehouse bays in a detached building all on the same lot. The flexibility of its zoning and its central location has attracted potential buyers to the Maui Lani Village Center.

Based on the characteristics described, the Consultant believes that the Maui Lani Village Center provides a unique product very different from typical industrial subdivisions like the proposed Waiko Industrial Park.

Rental Rate Trends

The pricing of real estate mentioned above has a lot to do with the availability of industrial space for rent, such as warehouses, sheds and yards. Our survey of current listings of competing spaces in the Central Maui neighborhood indicates that rents are lower than two to three years ago. Whereas warehouse or storage spaces were being rented for upwards of $1.25 to $1.50 per square foot per month on an absolute net basis, current available spaces are clustered within a general range of $0.75 to $1.00 per square foot per month. There is approximately 186,178 square feet of pure warehouse space available for rent in Central Maui. The average rental rate is $1.06 per square foot, absolute net.

A survey of actual rents was also conducted. Not surprisingly, asking rent was found to be lower than current rent levels. Commercial leasing agents indicated that property owners have had to lower expectations and in some cases provide rent reductions, in order to keep their tenants.

At the height of the market, rental rates for warehouses rose dramatically as the supply of industrial spaces diminished. Part of the reasoning behind it is the gradual conversion of pure industrial space to commercial retail and office uses. This contributed to the rise in the value of industrial land due to the higher rents being received from retail and office tenants as opposed to warehouse occupants. Land prices made it almost impossible for an investor to develop a feasible warehouse project. With the introduction of Waiko Baseyard and Consolidated Baseyards, two subdivisions situated outside of the central business district, pure-industrial users were able to establish their business away from the commercial sprawl. These subdivisions enabled many owner-users to purchase industrial land and feasibly develop their own facilities.

Since late 2007, land prices have been on a downward trend.

Although decreasing prices have vacant land more affordable, the economic recession and tightened financial market has prohibited many from purchasing and developing land. In 2010, signs of stability have been evident in certain local markets. Economists forecast the economy will turnaround in late-2011 and early-2012. As economic conditions continue to recover demand for vacant industrial land and warehouse space is expected to increase.

Vacancy Rates

Most of the industrial development in Central Maui consists of owner-user facilities. Conversations with commercial leasing agents revealed that investment-driven warehouse properties have showed an increase in vacancy, as many businesses have shutdown their operations, or relocated to smaller accommodations.

Vacancy rates for warehouse spaces in Central Maui are estimated to be between 10 and 15 percent, much higher than the norm of about 5 percent. Poor economic conditions have forced many businesses to downsize or even close their operations. There are a number of mid-sized (from 3,000 to 8,000 square feet) and large warehouse facilities (from 10,000 to 23,000 square feet) that are vacant and available for lease. Based on the Consultant's, calculation there is approximately 186,178 square feet of vacant warehouse space available for rent in Central Maui compared to the nearly 2,000,000 square feet of pure industrial space constructed in the district. Since the downturn in the economy in late 2007, the amount of available space has been steadily increasing, and there appears to be little demand at this time.

Market Absorption of Industrial Land

Absorption in Industrial Subdivisions

Recently built subdivisions in Central Maui indicate significantly fast absorption rates. The 11 lots released by the developer of Waiko Baseyard in October 2005 totaled just over five acres and were absorbed within five months. This would indicate an absorption rate of 11.90 acres per year.

Consolidated Baseyards was completed in 2006, with 35 marketable lots totaling approximately 22 acres. There were 27 lots, totaling almost 16 acres, immediately sold between October and December 2006. The remaining eight lots, of approximately 6 acres, were sold in 2007. Overall monthly absorption averaged 1.6 acres, which would translate into about 19 acres per year.

For comparative data, the Consultant has analyzed the market absorption of vacant lots in the Maui Business Park Subdivision in Kahului and the Kihei Business Park in Kihei. These commercial/industrial projects were developed in the mid 1990s when economic real estate market conditions were unfavorable.

These two subdivisions indicated lengthy absorption periods. The Maui Business Park, which has a desirable location in Kahului in close proximity to the other commercial developments, the airport, and harbor facilities, sold its 32 industrial-zoned lots at a pace of 0.44 per month, which extended over a period of 7 years from 1995 through 2002. In the years preceding the completion of the Maui Business Park subdivision, the real estate market was on the rise and began to stabilize. By the time the subdivision was completed, however, the market was cooling and economic conditions deteriorated. Overall monthly absorption averaged 0.44 acres, which would translate into about 5 acres per year.

Similarly, the Kihei Business Park was under construction in the early 1990s. Due to the lack of commercial-zoned land in the Kihei area, it was anticipated that the Kihei Business Park would fill a great need and would be absorbed relatively quickly. Softening market and economic conditions contributed to an actual absorption period extending over 11 years from 1994 through 2005. The 47 business-zoned lots sold at a rate of 0.34 per month. Overall monthly absorption averaged 0.10 acres, which would translate into about 1.27 acres per year.

Although considered a different product, the Consultant also looked at the absorption of the ongoing Maui Lani Village Center. Completed in early 2010, the subdivision features 78 lots, totaling approximately 42 acres. There have been 11 closings, amounting to 9.10 acres, within the 24 months that this subdivision has been marketed. This translated into an absorption rate of about 6.83 acres per year, thus far. It is noted that this project was introduced to the market during the current economic recession.

Absorption of Industrial Land in Central Maui Overall

The Consultant has researched all subdivisions constructed and marketed over the last 20 years in Central Maui. There are seven (7) commercial/industrial subdivisions that have been developed during this time. With the exception of the new Maui Lani Village Center which only began closing lots within the last year, all other subdivisions have been successfully absorbed by the market. Over the last 20 years, approximately 174.74 acres of industrial land has been absorbed, which reflects a market absorption rate of 8.74 acres per year. (Refer to **Table 5** on the following page)

Table 5 – ABSORPTION OF INDUSTRIAL LAND (1991-2011)

Subdivision/Parcel	Tax Map Key	Year Introduced	Absorbed Land Area (Acres)
Kamehameha Pkwy	(II) 3-7-Plat 12	1991	19.34
Airport Triangle (incl. Kmart/Costco)	(II) 3-8-Plat 79	1992-1994	42.23
Maui Business Park 1-A	(II) 3-8-Plat 80	1995	39.65
Maui Business Park 1-B	(II) 3-8-Plat 84	2000	31.95
Waiko Baseyard	(II) 3-5-Plat 27	2006	12.50
Consolidated Baseyards	(II) 3-8-Plat 94	2007	19.98
Maui Lani Village Center	(II) 3-8-Plat 97	2009	9.10
		Total in Acres:	174.74
Average acres absorbed per year (20 Year Period to Present) =			**8.74**

The market has exhibited strong fluctuations during this twenty year period. From early to mid 1990s, the market was stagnant followed by poor economic conditions in the late 1990's. Projects introduced at this time, Maui Business Park in particular, demonstrated lengthy absorption periods. In the early 2000s, the market rebounded and continued to accelerate until the peak in 2006. This rising market resulted in the rapid absorption of Waiko Baseyard and Consolidated Baseyards. The market began to stabilize until late 2007 when the economic downturn followed by the financial crisis in 2008. The economic recession continued into 2010. Signs of stability are evident in some local markets; however, economists forecast economic recovery to begin in late 2011 in to 2012.

Although market conditions are currently soft for commercial and industrial segments, it is the Consultant's opinion that there will be strong demand for the subject's industrial lots upon economic recovery.

B. CONCLUSIONS

The Island of Maui has seen significant growth in virtually all aspects (e.g., population, visitor arrivals, economy) of the community through the last 20 years. Most of the industrial development is typically found in Central Maui where industrial land is currently about 83 percent of the island's total. Its close proximity to the air and sea ports has resulted in the conglomeration of retail, office, service and industrial uses in the Wailuku-Kahului region. As a result, Central Maui has become the center of commerce for the Island of Maui.

During this time, there have been several industrial subdivisions that have been introduced and have been successfully absorbed by the market. With the Maui Business Park selling off the last of their industrial lots in 2003, there was no new product available to the market. The inventory of industrial land in Central Maui had been depleted to a point where land values and industrial rents began to rise significantly.

Through the years, much of the industrial lands have been developed or redeveloped with retail and office uses. This has also occurred on secondary streets within the industrial parks, especially in the sections of the buildings facing the road. This transformation from industrial to commercial utilization is primarily a function of the broad spectrum of permitted uses of the M-1 and M-2 Industrial District zoning ordinances. These industrial designations permit all uses within the B-1, B-2 and B-3 Business Districts which include, among other things, office and retail uses.

As land values rose, retail utilization became more plentiful as landowners sought higher and better uses for their appreciating sites. Former warehouse buildings were converted to retail spaces with second floor offices, thus reducing the amount of true industrial inventory. New projects built on industrial land took on a strong retail flavor reducing the amount of yard space available. Although it may have looked like A&B Properties, Inc. was bringing a lot of light industrial land to the Kahului market in the 1990s, much of it was absorbed by the large retailers. Similarly, The Millyard industrial subdivision in Wailuku has taken on an office park flavor as opposed to the intended industrial use. Although there are one or two dedicated warehouses in the subdivision, most of the development has shifted to office users. This has also occurred in the Kamehameha Parkway Subdivision No. 2 behind Safeway in Kahului.

The conversion to commercial uses in the subdivisions led to increasing land prices. High land prices then dictate that developments have higher rents to financially support the new project. Consequently, the only feasible developments arising in Kahului and Wailuku were

office or retail buildings. Warehouses could not be feasibly constructed due to the increasing land values; hence, there were not any new warehouses built in Central Maui unless they were intended for an owner-occupant.

In 2006 and 2007, the Waiko Baseyard and Consolidated Baseyards Subdivisions, both in Waikapu, brought new inventory to the market. These subdivisions catered to the pure-industrial users, a segment of the market that was displaced from existing industrial subdivisions that had become more commercial retail oriented. Consequently, the lots in these subdivisions were quickly absorbed.

In mid-2007, the United States began to experience an economic slowdown due to the subprime mortgage crisis, high oil prices, and global inflation. In September 2008, the downturn in the economy was solidified by the financial crisis following the bankruptcy of Lehman Brothers, the sale of Merrill Lynch to Bank of America, and the sudden bailout of American International Group by the Federal Reserve. Since these events, lending has tightened up nationwide. Signs of weakening economic and market conditions continued through 2009 including increases in the number of commercial rental listings, listed rental rates being significantly reduced, higher vacancy, longer days on market, decreases in asking list prices, and an overall lack of sales and leasing activity.

The economic downturn being witnessed across the nation has significantly affected Maui, through a drop in visitor counts and the drastic slowdown of construction. These industries are two of the primary employment forces on the island and their decline has had an adverse impact on the local economy. Unemployment has been on the rise, with many who are still employed stating that job security is a concern. Meanwhile, the heavy losses witnessed in the financial sector since the fourth quarter of 2007 have surely diminished the investment capital for other potential buyers. Combined with a more stringent lending environment, it has become increasingly difficult to purchase real estate, regardless of current market conditions. Local economists have varied opinions as to the timing of the economic recovery, but many have pointed to late-2011 or 2012 for this turnaround.

If the Waiko Industrial Park came on-line today, it would likely be facing the same types of sales difficulties that other ongoing projects are witnessing. However, the subject will still need to go through entitlement, design and construction processes, which are expected to take roughly 2 years. As such, construction and release of the subject's lots may be very well timed with the economic recovery. Once market conditions improve, the project can expect to see heightened demand.

It must be noted, that A&B's Maui Business Park Phase II, will also be offered to the Central Maui market at approximately the same time. By the time the subject's project begins construction and marketing, it is anticipated that infrastructure improvements will be completed and initial sales will have closed within the first increment of the Maui Business Park Phase II. Although these two subdivisions will be exposed to the market simultaneously, they will likely attract different users. The Maui Business Park Phase II will attract the large mixed-use commercial users and the national big-box retailers, while the subject is meant to attract the smaller, local pure-industrial users.

Pure-industrial users include plumbers, electricians, contractors, building suppliers, wholesalers, fabrication companies, auto repair companies, warehousing companies, trucking companies, and similar type businesses. Tenants like these which have been displaced from the central areas of Kahului and Wailuku by higher rents driven upward by retail and service users competing for space. The Waiko Industrial Park is meant to include industrial businesses that are looking primarily for warehouse space and fenced yards. The subject's Waikapu neighborhood, outside of the commercial core of Central Maui, has proven to be an ideal location attracting these types of users as evidenced by the success of the neighboring Consolidated Baseyards and Waiko Baseyard Subdivisions.

Also, the majority of the subject's offering includes small lots ranging from 9,536 to less than 15,000 square feet; lots sizes which are not being offered in the Maui Business Park Phase II. These smaller lots provide flexibility—the lots are a better fit for the small owner-user or may be easily combined for larger multi-tenant users. Furthermore, the smaller lots offer affordability—it is easier for small businesses to finance and develop a small lot.

The market absorption was demonstrated earlier to equal about 8.74 acres per year over the past 20 years. At this rate, it would first appear that it would take 6.5 years to absorb the existing inventory. The real estate market, however, does not function in that manner. During a soft market, like the one we are currently experiencing, industrial land is absorbed at a very slow rate. As previously discussed, a stagnant real estate market in the mid-1990s contributed to the lengthy absorption period of the industrial lots in the Maui Business Park. In the years preceding the completion of Phase I of the Maui Business Park subdivision, the real estate market was on the rise and began to stabilize. By the time the subdivision was completed, however, the market was cooling and economic conditions deteriorated. Ultimately, the subdivision took 7 years to sell out indicating absorption of 5 acres per year. Today, the Maui Lani Village Center is experiencing a similar dilemma. The real estate market was on the rise just 2 to 3 years prior to the completion of the

subdivision. However, when the subdivision was actually completed economic conditions deteriorated locally and nationally which inevitably stalled the selling of these lots. Of the 78 lots, only 11 have sold since 2009; indicating absorption of 6.83 acres per year.

On the other hand, during rising markets, absorption rates have doubled, as evidenced by the Waiko Baseyard and Consolidated Baseyards Subdivisions. These projects were completed and offered for sale when demand was high and the market was appreciating, and, as a result were absorbed briskly at rates of 12 and 19 acres per year, respectively.

The real estate market is cyclical. Although the causes and characteristics of these cycles vary, the implications for market participants remain similar in each cycle. On a basic level, when economic activity increases and interest rates rise, real estate becomes less affordable, resulting in decreases in demand and falling prices. Then, as economic activity slows and interest rates decline, properties again become more affordable and, consequently, demand and prices go up repeating the cycle.

According to economists, the local economy has begun its recovery with an expected rebound in late-2011 and early-2012. The real estate market will likely follow suit in the years to follow. As previously stated, the proposed Waiko Industrial Park is presently in its planning stage and would require approximately 2 to 3 years to acquire all necessary entitlements and begin construction. Based on this projection, the project may be very well timed with the economic recovery; thus, encountering strong demand from their target market.

PART III. ECONOMIC IMPACTS OF THE PROPOSED DEVELOPMENT

The development of this project will generate significant expenditures by the developer of this subdivision and the secondary owners and developers of the 38 light industrial lots. These investments are expected to favorably impact the Maui economy on a broad scale, and in a multitude of ways.

- ❑ Site work and infrastructure construction for this subdivision will immediately infuse capital into the Maui economy. Numerous consultants will be involved in the initial planning stages, and the construction trades will benefit from the job creation of this project.
- ❑ Advertising for the project and marketing of the lots will benefit graphic artists, advertising companies, newspapers, real estate sales agents, escrow companies, etc.
- ❑ Individual site development will again result in additional work for engineers, architects, material suppliers, equipment rentals and sales, landscaping companies, and other related industries.
- ❑ The new buildings will not only attract existing businesses, but it should also stimulate the generation of new businesses and employment growth. This will have an indirect affect on retail businesses, restaurants and service establishments as the expanded work force purchases goods and services. This should pass through the entire community, causing a ripple effect and increase the amount of capital flowing through Maui.
- ❑ Maintenance of this subdivision and the buildings will also translate into work for maintenance companies, painting companies, real estate management and leasing groups, etc.
- ❑ Fiscal benefits of this development will include increases in real estate taxes collected by the County of Maui, and additional income tax and general excise tax inflow for the State of Hawaii.

Capital Investment and Construction Costs

Capital investment into the project development is expected to immediately stimulate various phases of the Maui economy.

Construction of the Subdivision Improvements

According to the client, construction costs for this subdivision are estimated to be $10,880,000, or approximately $8.00 per square foot of gross land area. This figure is inclusive of all site work, roads, utilities and landscaping. It also includes the cost of hiring the civil and electrical engineers, soil engineer, environmental engineer, archaeologist, real estate appraiser, traffic engineer, planner, and

other consultants.

Indirect Sales

Development and construction activities will also generate indirect sales, through the supply of goods and services to the various construction companies, in addition to the families of their employees. By the same token, these suppliers and their families will purchase goods and services from other companies. This chain reaction continues over and over, with some of the revenues leaking out of Hawaii's economy with each cycle. Based on State economic multipliers, off-island indirect sales were estimated at about $8,051,379 over the term of the project. Meanwhile, Maui indirect sales were estimated at about $5,635,966 over the term of the project. Indirect sales attributed to the development totaled approximately $13,687,345.

Sales of Individual Light Industrial Lots

The 38 lots will have a total net land area of about 24.42 acres or approximately 1,063,704 square feet of light industrial zoned land. At approximately $30.00 per square foot, the sales of these lots are expected to generate income of about $31,910,000. As an example of the ripple effect of this capital investment, the lot sales are expected to generate approximately $1,910,000 in real estate commissions alone.

Building Construction

The individual developments of the 38 lots are expected to span a period of about five to ten years. Based on the total net land area of about 1,063,704 square feet, and an average building-to-land ratio of 50 percent, the total building area in this subdivision is expected to be approximately 531,852 square feet. Site work on each lot is estimated to be about $100,000 per lot, or about $3,800,000. Building construction costs, at $125 per square foot (direct and indirect costs) are forecasted to be about $66,480,000.

In all, Waiko Industrial Park is expected to infuse an anticipated $113,000,000 into the economy over the development term of the 38 lots. In addition to vacant lot sales over several years, individual project development may span over five to eight years, which equates to an average capital infusion of about $14,100,000 to $22,600,000 per year. This capital infusion is expected to be in the form of added employment and material costs.

Employment Creation

Subdivision Development

New job opportunities created by this development will start with the design and entitlement process, employing architects, engineers, surveyors, and land use planners. These jobs are expected in the first

two years prior to construction. Site work, road work and the installation of utility and drainage lines typically utilize heavy equipment operators, tractor-trailer drivers and utility personnel. These jobs are short-term within the subdivision's initial construction phase, possibly spanning a six- to twelve-month period. Application of State economic multipliers resulted in a forecasted annual average of 44 jobs directly related to the construction of this development. At an average wage of $60,000, inclusive of benefits, this amounts to approximately $2,640,000 spent toward construction employees.

Individual Building Construction

In addition, construction of the individual buildings on the 38 lots will again increase the demand for construction jobs for heavy equipment operators, masons, carpenters, sheet metal workers, roofers, drywall installers, plumbers, electricians, and painters. Finish work will require cabinet makers, carpet and tile installers, interior decorators, and landscapers. These jobs would also be considered temporary in that they will last for only about six to twelve months for each building. Cumulatively, however, they will definitely add a substantial number of hours to Maui's work force over the years, and assist in maintaining employment levels. Over the last five years, there has been approximately 124,000 square feet of floor area constructed each year within industrial subdivisions on Maui. Based on an anticipated 531,852 square feet of building area in the Waiko Industrial Park, total build-out of this subdivision equates to approximately 4.3 years.

Application of State economic multipliers resulted in a forecasted annual average of 281 jobs directly related to the construction of vertical improvements within the subdivision. Again, based on an average wage of $60,000 annually (inclusive of benefits), this amounts to $16,860,000 over the term of construction.

Indirect Employment

The increase in construction will also create the need for supplementary companies to strengthen their labor force. These jobs may be from building supply companies, hardware stores, equipment rental companies, and shipping/warehousing companies. In addition, the construction laborers and their families will patronize local goods and services providers. Grocers, restaurants, service stations, auto repair shops, financial institutions, recreational venues, medical facilities and personal care businesses could be considered potential companies that would need to bolster their employee count.

Ongoing Business Operations

The subject is projected to be highly industrial in the nature of its businesses, due to its location away from the commercial centers of Kahului and Wailuku, and amongst similar industrial subdivision such as the Consolidated Baseyards and Waiko Baseyard Subdivisions.

Retail and commercial businesses generally have one employee per 300 to 500 square feet of building area; however, due to the subject's strong industrial orientation, it is estimated that employment for business operations there can be estimated at one worker per 1,000 square feet of light industrial floor space. This equates to about 66 to 106 jobs created per year based on a five to eight year build-out of the subdivision. At an estimated average wage of $39,000 per year, payroll figures are forecasted to reach nearly $2,600,000 to $4,100,000 annually.

While it is acknowledged that the businesses occupying these buildings will not be entirely new companies, with new workers, Waiko Industrial Park will provide employment opportunities for Maui residents, new arrivals, and youths reaching employment age. The subdivision is being developed based on the expanding demand for additional industrial space on Maui; therefore, the spaces vacated by companies moving to Waiko Industrial Park, will in turn be filled by expanding or newly formed companies which will also offer new employment opportunities.

Fiscal Benefits

State Income Tax

It is anticipated that the State of Hawaii will receive additional income tax revenue due to (1) the increase in employment generated by construction of this project, and the ongoing operation of Waiko Industrial Park and (2) the profits generated by companies doing business within this development, and by the profits of businesses who benefit from doing business with these companies.

General Excise Tax

The State of Hawaii will also recognize increased revenue of 4.166 percent applied against (1) the construction cost of this new subdivision, (2) the construction costs of the individual buildings on each lot, (3) the total gross sales of companies within this subdivision, (4) the gross spending of the work force employed by companies within this development.

Real Property Tax

Land: Based on a total net land area of about 1,063,704 square feet, and an estimated value of approximately $30.00 per square foot, the land alone would amount to an aggregate value of about $31,910,000. At an industrial tax rate of $6.50 per $1,000 of assessed value, this equates to an annual income of $207,415.

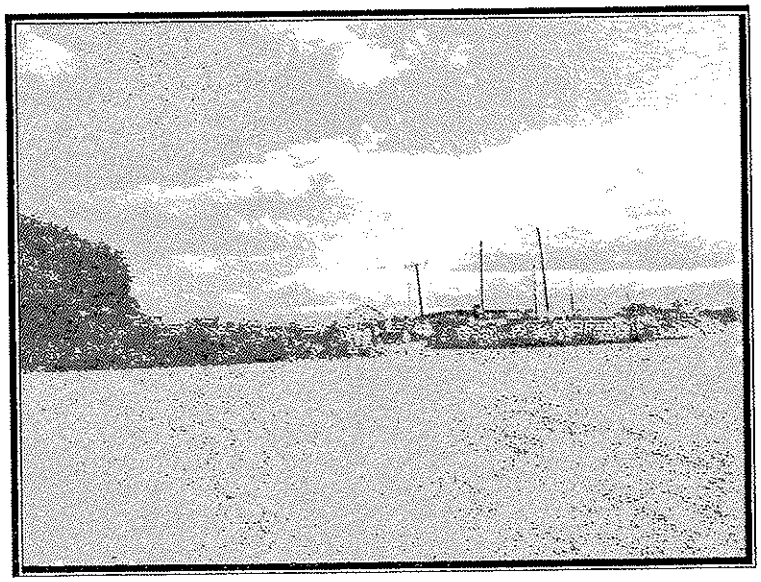
Buildings: The individual lots are expected to be developed over the next 5 to 8 years, and continue to expand the tax base. As estimated earlier in this report, at an average building-to-land ratio of 50 percent, the total building area in this subdivision is expected to be

approximately 531,852 square feet. Building construction costs, at $125 per square foot (direct and indirect costs) are forecasted to be about $66,480,000. Employing this figure as an anticipated tax assessment results in an annual income of $432,120. Since all the lots are not expected to be developed at once, this property tax income is expected to steadily increase over the build-out years.

EXHIBITS

EXHIBIT A

Photographs of the Subject Site



Photograph No. 1

Overall view of subject (westerly portion) from Waiko Road. The camera is facing easterly.

Photograph No. 2

Additional overall view of westerly portion of subject taken from Waiko Road. The camera is facing northerly.

PHOTOGRAPHS OF THE SUBJECT

Photograph No. 3

Overall view of subject (southerly portion) from Waiko Road. The camera is facing northwesterly.

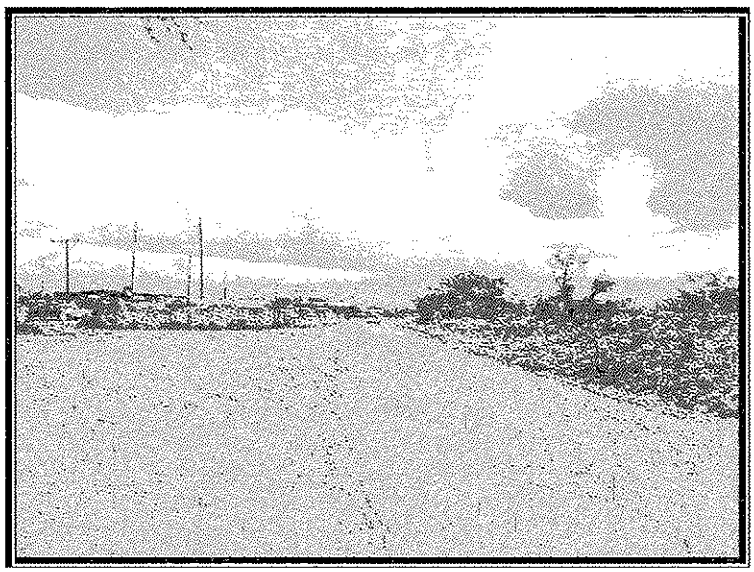
Photograph No. 4

Additional overall view of subject (southerly portion) from intersection of Waiko Road and Kuihelani Highway. The camera is facing northwesterly.

PHOTOGRAPHS OF THE SUBJECT

Photograph No. 5

View of Waiko Road with subject at right of photo. The camera is facing westerly.



Photograph No. 6

View of Waiko Road with subject at left of photo. The camera is facing easterly.

PHOTOGRAPHS OF THE SUBJECT

EXHIBIT B

Claritas Demographic Data

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total *County*	*%*
Population		
2015 Projection	153,962	
2010 Estimate	146,193	
2000 Census	128,094	
1990 Census	100,374	
Growth 2010-2015	5.31%	
Growth 2000-2010	14.13%	
Growth 1990-2000	27.62%	
2010 Est. Pop by Single Race Class	146,193	
White Alone	54,988	37.61
Black or African American Alone	1,361	0.93
Amer. Indian and Alaska Native Alone	731	0.50
Asian Alone	40,388	27.63
Native Hawaiian and Other Pac. Isl. Alone	14,700	10.06
Some Other Race Alone	2,443	1.67
Two or More Races	31,582	21.60
2010 Est. Pop Hisp or Latino by Origin	146,193	
Not Hispanic or Latino	131,667	90.06
Hispanic or Latino:	14,526	9.94
Mexican	5,914	40.71
Puerto Rican	4,581	31.54
Cuban	55	0.38
All Other Hispanic or Latino	3,976	27.37
2010 Est. Hispanic Pop by Single Race Class	14,526	
White Alone	3,628	24.98
Black or African American Alone	30	0.21
American Indian and Alaska Native Alone	175	1.20
Asian Alone	1,331	9.16
Native Hawaiian and Other Pacific Islander Alone	804	5.53
Some Other Race Alone	2,224	15.31
Two or More Races	6,334	43.60

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total *County*	*%*
2010 Est. Pop Asian Alone Race by Cat	40,388	
Chinese, except Taiwanese	1,191	2.95
Filipino	22,491	55.69
Japanese	12,829	31.76
Asian Indian	110	0.27
Korean	812	2.01
Vietnamese	332	0.82
Cambodian	10	0.02
Hmong	0	0.00
Laotian	49	0.12
Thai	81	0.20
All Other Asian Races Including 2+ Category	2,483	6.15
2010 Est. Population by Ancestry	146,193	
Pop, Arab	145	0.10
Pop, Czech	180	0.12
Pop, Danish	485	0.33
Pop, Dutch	1,000	0.68
Pop, English	6,800	4.65
Pop, French (except Basque)	2,059	1.41
Pop, French Canadian	582	0.40
Pop, German	6,384	4.37
Pop, Greek	123	0.08
Pop, Hungarian	666	0.46
Pop, Irish	5,553	3.80
Pop, Italian	5,796	3.96
Pop, Lithuanian	179	0.12
Pop, United States or American	1,540	1.05
Pop, Norwegian	1,106	0.76
Pop, Polish	1,742	1.19
Pop, Portuguese	4,494	3.07
Pop, Russian	566	0.39
Pop, Scottish	1,801	1.23
Pop, Scotch-Irish	1,353	0.93
Pop, Slovak	13	0.01
Pop, Subsaharan African	84	0.06
Pop, Swedish	1,407	0.96
Pop, Swiss	567	0.39
Pop, Ukrainian	65	0.04
Pop, Welsh	857	0.59
Pop, West Indian (exc Hisp groups)	186	0.13
Pop, Other ancestries	93,362	63.86

Prepared By:

Nielsen Solution Center 1 800 866 6511

CLARITAS MARKETPLACE

Prepared For:

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total *County*	*%*
2010 Est. Population by Ancestry		
Pop, Ancestry Unclassified	7,098	4.86
2010 Est. Pop Age 5+ by Language Spoken At Home	136,459	
Speak Only English at Home	109,296	80.09
Speak Asian/Pac. Isl. Lang. at Home	20,876	15.30
Speak IndoEuropean Language at Home	2,669	1.96
Speak Spanish at Home	3,585	2.63
Speak Other Language at Home	33	0.02
2010 Est. Population by Sex	146,193	
Male	74,631	51.05
Female	71,562	48.95
2010 Est. Population by Age	146,193	
Age 0 - 4	9,734	6.66
Age 5 - 9	8,979	6.14
Age 10 - 14	8,732	5.97
Age 15 - 17	5,643	3.86
Age 18 - 20	4,645	3.18
Age 21 - 24	6,623	4.53
Age 25 - 34	21,519	14.72
Age 35 - 44	21,211	14.51
Age 45 - 54	22,098	15.12
Age 55 - 64	18,620	12.74
Age 65 - 74	9,895	6.77
Age 75 - 84	5,686	3.89
Age 85 and over	2,808	1.92
Age 16 and over	116,907	79.97
Age 18 and over	113,105	77.37
Age 21 and over	108,460	74.19
Age 65 and over	18,389	12.58
2010 Est. Median Age	38.40	
2010 Est. Average Age	38.60	

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total *County*	*%*
2010 Est. Male Population by Age	74,631	
Age 0 - 4	5,031	6.74
Age 5 - 9	4,610	6.18
Age 10 - 14	4,417	5.92
Age 15 - 17	2,877	3.85
Age 18 - 20	2,416	3.24
Age 21 - 24	3,457	4.63
Age 25 - 34	11,890	15.93
Age 35 - 44	11,278	15.11
Age 45 - 54	10,979	14.71
Age 55 - 64	9,388	12.58
Age 65 - 74	4,740	6.35
Age 75 - 84	2,474	3.31
Age 85 and over	1,074	1.44
2010 Est. Median Age, Male	37.32	
2010 Est. Average Age, Male	37.70	
2010 Est. Female Population by Age	71,562	
Age 0 - 4	4,703	6.57
Age 5 - 9	4,369	6.11
Age 10 - 14	4,315	6.03
Age 15 - 17	2,766	3.87
Age 18 - 20	2,229	3.11
Age 21 - 24	3,166	4.42
Age 25 - 34	9,629	13.46
Age 35 - 44	9,933	13.88
Age 45 - 54	11,119	15.54
Age 55 - 64	9,232	12.90
Age 65 - 74	5,155	7.20
Age 75 - 84	3,212	4.49
Age 85 and over	1,734	2.42
2010 Est. Median Age, Female	39.64	
2010 Est. Average Age, Female	39.50	

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total County	%
2010 Est. Pop Age 15+ by Marital Status	118,748	
Total, Never Married	37,238	31.36
Males, Never Married	21,914	18.45
Females, Never Married	15,324	12.90
Married, Spouse present	54,591	45.97
Married, Spouse absent	6,861	5.78
Widowed	6,128	5.16
Males Widowed	1,208	1.02
Females Widowed	4,920	4.14
Divorced	13,930	11.73
Males Divorced	6,403	5.39
Females Divorced	7,527	6.34
2010 Est Pop Age 25+ by Edu Attained	101,837	
Less than 9th grade	5,342	5.25
Some High School, no diploma	6,039	5.93
High School Graduate (or GED)	33,352	32.75
Some College, no degree	22,833	22.42
Associate Degree	9,806	9.63
Bachelor's Degree	16,576	16.28
Master's Degree	5,208	5.11
Professional School Degree	2,101	2.06
Doctorate Degree	580	0.57
2010 Est Pop Hispanic or Latino by Edu Attained	101,837	
Less than 9th grade	269	0.26
Some High School, no diploma	1,258	1.24
High School Graduate (or GED)	3,740	3.67
Some College, no degree	1,409	1.38
Associate Degree	569	0.56
Bachelor's Degree	250	0.25
Master's Degree	292	0.29

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total *County*	%
Population		
2015 Projection	54,018	
2010 Estimate	50,880	
2000 Census	43,507	
1990 Census	33,145	
Growth 2010-2015	6.17%	
Growth 2000-2010	16.95%	
Growth 1990-2000	31.26%	
2010 Households by Household Type	50,880	
Family Households	34,948	68.69
Nonfamily Households	15,932	31.31
2010 Est. Group Quarters Population	1,608	
2010 Est. Vacant Housing Units	3,585	7.05
2010 Est. HHs by HH Income	50,880	
Income Less than $15,000	4,374	8.60
Income $15,000 - $24,999	3,869	7.60
Income $25,000 - $34,999	4,201	8.26
Income $35,000 - $49,999	6,485	12.75
Income $50,000 - $74,999	9,847	19.35
Income $75,000 - $99,999	8,241	16.20
Income $100,000 - $124,999	4,520	8.88
Income $125,000 - $149,999	3,216	6.32
Income $150,000 - $199,999	3,251	6.39
Income $200,000 - $499,999	2,340	4.60
Income $500,000 and more	536	1.05
2010 Est. Average Household Income	$85,521	
2010 Est. Median Household Income	$66,530	
2010 Est. Per Capita Income	$30,004	

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total *County*	*%*
2010 Census: Population by Single Race Class. for Hisp		
White Alone	67,201	
Black or African American Alone	57,839	
American Indian and Alaska Native Alone	55,000	
Asian Alone	73,355	
Native Hawaiian and Other Pacific Islander Alone	57,608	
Some Other Race Alone	47,914	
Two or More Races	62,030	
Hispanic or Latino	53,365	
Not Hispanic or Latino	67,580	
2010 Est. Family HH Type (Census 2000 Definition)	34,948	
Married-Couple Family, own children	11,017	31.52
Married-Couple Family, no own children	14,837	42.45
Male Householder, own children	1,152	3.30
Male Householder, no own children	1,686	4.82
Female Householder, own children	3,127	8.95
Female Householder, no own children	3,129	8.95
2010 Est. Household by Household Size	50,880	
1-person household	11,722	23.04
2-person household	15,854	31.16
3-person household	8,725	17.15
4-person household	6,925	13.61
5-person household	3,722	7.32
6-person household	1,988	3.91
7 or more person household	1,944	3.82
2010 Est. Average Household Size	2.84	

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total County	%
2010 Est. Households by Presence of People	50,880	
Households with 1 or more People under Age 18:	17,967	35.31
Married-Couple Family	12,183	23.94
Other Family, Male Householder	1,657	3.26
Other Family, Female Householder	4,089	8.04
Nonfamily, Male Householder	24	0.05
Nonfamily, Female Householder	14	0.03
Households no People under Age 18:	32,913	64.69
Married-Couple Family	12,978	25.51
Other Family, Male Householder	1,105	2.17
Other Family, Female Householder	1,996	3.92
Nonfamily, Male Householder	8,770	17.24
Nonfamily, Female Householder	8,064	15.85
2010 Est. Households by Number of Vehicles	50,880	
No Vehicles	2,629	5.17
1 Vehicle	15,744	30.94
2 Vehicles	19,766	38.85
3 Vehicles	7,584	14.91
4 Vehicles	3,316	6.52
5 or more Vehicles	1,841	3.62
2010 Est. Average Number of Vehicles	2.01	
Family Households		
2015 Projection	37,102	
2010 Estimate	34,948	
2000 Census	29,899	
1990 Census	23,537	
Growth 2010-2015	6.16%	
Growth 2000-2010	16.89%	
Growth 1990-2000	27.03%	
2010 Est. Families by Poverty Status	34,948	
2010 Families at or Above Poverty	33,167	94.90
2010 Families at or Above Poverty with Children	16,990	48.62
2010 Families Below Poverty	1,781	5.10
2010 Families Below Poverty with Children	1,345	3.85

Prepared By:
Nielsen Solution Center 1 800 866 6511

CLARITAS MARKETPLACE

Prepared For:

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total *County*	*%*
2010 Est. Pop 16+ by Employment Status	116,907	
In Armed Forces	396	0.34
Civilian - Employed	77,635	66.41
Civilian - Unemployed	3,734	3.19
Not in Labor Force	35,142	30.06
2010 Est. Civ Employed Pop 16+ Class of Worker	74,231	
For-Profit Private Workers	50,672	68.26
Non-Profit Private Workers	4,052	5.46
Local Government Workers	2,815	3.79
State Government Workers	6,815	9.18
Federal Government Workers	1,363	1.84
Self-Emp Workers	8,207	11.06
Unpaid Family Workers	307	0.41
2010 Est. Civ Employed Pop 16+ by Occupation	74,231	
Architect/Engineer	958	1.29
Arts/Entertain/Sports	2,212	2.98
Building Grounds Maint	5,559	7.49
Business/Financial Ops	1,742	2.35
Community/Soc Svcs	1,249	1.68
Computer/Mathematical	501	0.67
Construction/Extraction	6,380	8.59
Edu/Training/Library	4,083	5.50
Farm/Fish/Forestry	880	1.19
Food Prep/Serving	6,994	9.42
Health Practitioner/Tec	2,753	3.71
Healthcare Support	1,620	2.18
Maintenance Repair	2,864	3.86
Legal	539	0.73
Life/Phys/Soc Science	518	0.70
Management	6,545	8.82
Office/Admin Support	8,824	11.89
Production	2,145	2.89
Protective Svcs	2,472	3.33
Sales/Related	8,881	11.96
Personal Care/Svc	2,800	3.77
Transportation/Moving	3,712	5.00

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CLARITAS MARKETPLACE

Prepared For:

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total County	%
2010 Est. Pop. (16+) By Occupation Classification	74,231	
Blue Collar	15,101	20.34
White Collar	38,805	52.28
Service and Farm	20,325	27.38
2010 Est. Workers Age 16+ by Transp. To Work	72,261	
Drove Alone	50,850	70.37
Car Pooled	10,971	15.18
Public Transportation	1,361	1.88
Walked	1,986	2.75
Bicycle	461	0.64
Other Means	1,541	2.13
Worked at Home	5,091	7.05
2010 Est. Workers Age 16+ by Travel Time to Work	72,261	
Less than 15 Minutes	26,723	36.98
15 - 29 Minutes	21,220	29.37
30 - 44 Minutes	12,554	17.37
45 - 59 Minutes	4,876	6.75
60 or more Minutes	3,324	4.60
2010 Est. Ave Travel Time to Work in Minutes	22.72	
2010 Est. Total # Occupied Housing Units	50,880	
Owner Occupied	29,265	57.52
Renter Occupied	21,615	42.48
2010 Owner Occ HUs: Ave Length of Residence	17	
2010 Renter Occ HUs: Ave Length of Residence	8	

Prepared By:

Nielsen Solution Center 1 800 866 6511

CLARITAS MARKETPLACE

Prepared For:

Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total *County*	*%*
2010 Est. All Owner-Occupied Housing Values	29,265	
Value Less than $20,000	67	0.23
Value $20,000 - $39,999	53	0.18
Value $40,000 - $59,999	130	0.44
Value $60,000 - $79,999	66	0.23
Value $80,000 - $99,999	82	0.28
Value $100,000 - $149,999	300	1.03
Value $150,000 - $199,999	625	2.14
Value $200,000 - $299,999	2,989	10.21
Value $300,000 - $399,999	3,835	13.10
Value $400,000 - $499,999	4,622	15.79
Value $500,000 - $749,999	8,863	30.29
Value $750,000 - $999,999	3,625	12.39
Value $1,000,000 or more	4,008	13.70
2010 Est. Median All Owner-Occupied Housing Value	$552,572	
2010 Est. Housing Units by Units in Structure	66,980	
1 Unit Attached	2,868	4.28
1 Unit Detached	37,488	55.97
2 Units	3,871	5.78
3 or 4 Units	2,482	3.71
5 to 19 Units	8,881	13.26
20 to 49 Units	4,302	6.42
50 or More Units	7,024	10.49
Mobile Home or Trailer	64	0.10
Boat, RV, Van, etc.	0	0.00
2010 Est. Housing Units by Structure Built	66,980	
Housing Unit Built 2000 or later	11,064	16.52
Housing Unit Built 1990 to 1999	13,092	19.55
Housing Unit Built 1980 to 1989	14,033	20.95
Housing Unit Built 1970 to 1979	16,550	24.71
Housing Unit Built 1960 to 1969	5,562	8.30
Housing Unit Built 1950 to 1959	2,756	4.11
Housing Unit Built 1940 to 1949	1,645	2.46
Housing Unit Built 1939 or Earlier	2,278	3.40
2010 Est. Median Year Structure Built **	1983	

**1939 will appear when at least half of the Housing Units in this reports area were built in 1939 or earlier.

Prepared By:

Nielsen Solution Center 1 800 866 6511

CLARITAS MARKETPLACE

Prepared For:

Pop-Facts: Demographic Snapshot Report

Appendix: Area Listing

Area Name:

Type: List - County Reporting Detail: Aggregate Reporting Level: County

Geography Code	Geography Name	Geography Code	Geography Name
15009	Maui County, HI		

Project Information:

Site: 1

Order Number: 969072959

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
Population		
2015 Projection	49,269	
2010 Estimate	46,795	
2000 Census	40,867	
1990 Census	32,310	
Growth 2010-2015	5.29%	
Growth 2000-2010	14.51%	
Growth 1990-2000	26.48%	
2010 Est. Pop by Single Race Class	46,795	
White Alone	7,916	16.92
Black or African American Alone	241	0.52
Amer. Indian and Alaska Native Alone	203	0.43
Asian Alone	20,346	43.48
Native Hawaiian and Other Pac. Isl. Alone	5,222	11.16
Some Other Race Alone	686	1.47
Two or More Races	12,181	26.03
2010 Est. Population by Origin	46,795	
Not Hispanic or Latino	41,668	89.04
Hispanic or Latino:	5,127	10.96
Mexican	1,499	29.24
Puerto Rican	2,135	41.64
Cuban	7	0.14
All Other Hispanic or Latino	1,486	28.98
2010 Est. Hispanic Pop by Single Race Class	5,127	
White Alone	880	17.16
Black or African American Alone	6	0.12
American Indian and Alaska Native Alone	66	1.29
Asian Alone	580	11.31
Native Hawaiian and Other Pacific Islander Alone	307	5.99
Some Other Race Alone	632	12.33
Two or More Races	2,656	51.80

Prepared By:

Nielsen Solution Center 1 800 866 6511

CLARITAS MARKETPLACE

Prepared For:

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
2010 Pop, Part Asian Alone by Cat	20,346	
Chinese, except Taiwanese	472	2.32
Filipino	10,764	52.90
Japanese	7,319	35.97
Asian Indian	26	0.13
Korean	451	2.22
Vietnamese	131	0.64
Cambodian	3	0.01
Hmong	0	0.00
Laotian	22	0.11
Thai	23	0.11
All Other Asian Races Including 2+ Category	1,135	5.58
2010 Est Population by Ancestry	46,795	
Pop, Arab	38	0.08
Pop, Czech	25	0.05
Pop, Danish	14	0.03
Pop, Dutch	73	0.16
Pop, English	814	1.74
Pop, French (except Basque)	284	0.61
Pop, French Canadian	145	0.31
Pop, German	801	1.71
Pop, Greek	1	0.00
Pop, Hungarian	76	0.16
Pop, Irish	712	1.52
Pop, Italian	669	1.43
Pop, Lithuanian	14	0.03
Pop, United States or American	209	0.45
Pop, Norwegian	152	0.32
Pop, Polish	183	0.39
Pop, Portuguese	1,514	3.24
Pop, Russian	36	0.08
Pop, Scottish	165	0.35
Pop, Scotch-Irish	156	0.33
Pop, Slovak	1	0.00
Pop, Subsaharan African	19	0.04
Pop, Swedish	187	0.40
Pop, Swiss	18	0.04
Pop, Ukrainian	1	0.00
Pop, Welsh	80	0.17
Pop, West Indian (exc Hisp groups)	41	0.09
Pop, Other ancestries	38,217	81.67

Prepared By:
Nielsen Solution Center 1 800 866 6511

CLARITAS MARKETPLACE

Prepared For:

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
2010 Est. Population by Ancestry		
Pop. Ancestry Unclassified	2,150	4.59
2010 Est. Pop Age 5 by Language Spoken At Home	43,428	
Speak Only English at Home	32,768	75.45
Speak Asian/Pac. Isl. Lang. at Home	9,355	21.54
Speak IndoEuropean Language at Home	385	0.89
Speak Spanish at Home	913	2.10
Speak Other Language at Home	7	0.02
2010 Est. Population by Sex	46,795	
Male	23,694	50.63
Female	23,101	49.37
2010 Est. Population by Age	46,795	
Age 0 - 4	3,367	7.20
Age 5 - 9	2,954	6.31
Age 10 - 14	2,937	6.28
Age 15 - 17	1,840	3.93
Age 18 - 20	1,548	3.31
Age 21 - 24	2,157	4.61
Age 25 - 34	7,335	15.67
Age 35 - 44	6,462	13.81
Age 45 - 54	6,062	12.95
Age 55 - 64	5,352	11.44
Age 65 - 74	3,171	6.78
Age 75 - 84	2,419	5.17
Age 85 and over	1,191	2.55
Age 16 and over	36,937	78.93
Age 18 and over	35,697	76.28
Age 21 and over	34,149	72.98
Age 65 and over	6,781	14.49
2010 Est. Median Age	36.95	
2010 Est. Average Age	38.40	

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total *Place*	*%*
2010 Est. Male Population by Age	23,694	
Age 0 - 4	1,747	7.37
Age 5 - 9	1,517	6.40
Age 10 - 14	1,485	6.27
Age 15 - 17	937	3.95
Age 18 - 20	856	3.61
Age 21 - 24	1,125	4.75
Age 25 - 34	4,061	17.14
Age 35 - 44	3,425	14.46
Age 45 - 54	3,021	12.75
Age 55 - 64	2,646	11.17
Age 65 - 74	1,423	6.01
Age 75 - 84	1,016	4.29
Age 85 and over	435	1.84
2010 Est. Median Age, Male	35.35	
2010 Est. Average Age, Male	37.10	
2010 Est. Female Population by Age	23,101	
Age 0 - 4	1,620	7.01
Age 5 - 9	1,437	6.22
Age 10 - 14	1,452	6.29
Age 15 - 17	903	3.91
Age 18 - 20	692	3.00
Age 21 - 24	1,032	4.47
Age 25 - 34	3,274	14.17
Age 35 - 44	3,037	13.15
Age 45 - 54	3,041	13.16
Age 55 - 64	2,706	11.71
Age 65 - 74	1,748	7.57
Age 75 - 84	1,403	6.07
Age 85 and over	756	3.27
2010 Est. Median Age, Female	38.76	
2010 Est. Average Age, Female	39.80	

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
2010 Est. Pop Age 15+ by Marital Status	37,537	
Total, Never Married	11,963	31.87
Males, Never Married	6,997	18.64
Females, Never Married	4,966	13.23
Married, Spouse present	16,993	45.27
Married, Spouse absent	2,676	7.13
Widowed	2,447	6.52
Males Widowed	490	1.31
Females Widowed	1,957	5.21
Divorced	3,458	9.21
Males Divorced	1,569	4.18
Females Divorced	1,889	5.03
2010 Est. Pop Age 25+ by Educ Attainment	31,992	
Less than 9th grade	2,757	8.62
Some High School, no diploma	2,365	7.39
High School Graduate (or GED)	11,515	35.99
Some College, no degree	6,245	19.52
Associate Degree	3,065	9.58
Bachelor's Degree	4,389	13.72
Master's Degree	1,127	3.52
Professional School Degree	491	1.53
Doctorate Degree	38	0.12
2010 Est Pop Age 25+ Educ Attain (Hisp Ori)	2,684	
Less than 9th grade	99	3.69
Some High School, no diploma	364	13.56
High School Graduate (or GED)	1,360	50.67
Some College, no degree	444	16.54
Associate Degree	196	7.30
Bachelor's Degree	111	4.14
Graduate or Professional Degree	110	4.10

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total *Place*	%
Households		
2015 Projection	15,593	
2010 Estimate	14,735	
2000 Census	12,626	
1990 Census	9,953	
Growth 2010-2015	5.82%	
Growth 2000-2010	16.70%	
Growth 1990-2000	26.86%	
2010 Est. Households by Household Type	14,735	
Family Households	10,921	74.12
Nonfamily Households	3,814	25.88
2010 Est. Group Quarters Population	937	
2010 Est. Households by Ethnicity/Origin	1,186	8.05
2010 Est. HHs by HH Income	14,735	
Income Less than $15,000	1,351	9.17
Income $15,000 - $24,999	1,288	8.74
Income $25,000 - $34,999	1,150	7.80
Income $35,000 - $49,999	1,797	12.20
Income $50,000 - $74,999	2,955	20.05
Income $75,000 - $99,999	2,328	15.80
Income $100,000 - $124,999	1,388	9.42
Income $125,000 - $149,999	928	6.30
Income $150,000 - $199,999	888	6.03
Income $200,000 - $499,999	553	3.75
Income $500,000 and more	109	0.74
2010 Est. Average Household Income	$81,332	
2010 Est. Median Household Income	$65,071	
2010 Est. Per Capita Income	$25,887	

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
2010 Median HH Inc by Single Race Class. or Ethn		
White Alone	57,933	
Black or African American Alone	50,466	
American Indian and Alaska Native Alone	60,417	
Asian Alone	73,339	
Native Hawaiian and Other Pacific Islander Alone	57,698	
Some Other Race Alone	73,877	
Two or More Races	61,999	
Hispanic or Latino	44,619	
Not Hispanic or Latino	66,688	
2010 Est. Family HH Type, Presence Own Children	10,921	
Married-Couple Family, own children	3,524	32.27
Married-Couple Family, no own children	4,280	39.19
Male Householder, own children	309	2.83
Male Householder, no own children	572	5.24
Female Householder, own children	1,008	9.23
Female Householder, no own children	1,228	11.24
2010 Est. Households by Household Size	14,735	
1-person household	3,078	20.89
2-person household	3,908	26.52
3-person household	2,610	17.71
4-person household	2,252	15.28
5-person household	1,340	9.09
6-person household	723	4.91
7 or more person household	824	5.59
2010 Est. Average Household Size	3.11	

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total *Place*	*%*
2010 Est. Households by Presence of Kids	14,735	
Households with 1 or more People under Age 18:	5,877	39.88
Married-Couple Family	4,009	68.22
Other Family, Male Householder	472	8.03
Other Family, Female Householder	1,388	23.62
Nonfamily, Male Householder	3	0.05
Nonfamily, Female Householder	5	0.09
Households no People under Age 18:	8,858	60.12
Married-Couple Family	3,664	41.36
Other Family, Male Householder	378	4.27
Other Family, Female Householder	785	8.86
Nonfamily, Male Householder	1,890	21.34
Nonfamily, Female Householder	2,141	24.17
2010 Est. Households by Number of Vehicles	14,735	
No Vehicles	1,015	6.89
1 Vehicle	4,451	30.21
2 Vehicles	5,283	35.85
3 Vehicles	2,300	15.61
4 Vehicles	1,070	7.26
5 or more Vehicles	616	4.18
2010 Est. Average Number of Vehicles	2.03	
Family Households		
2015 Projection	11,589	
2010 Estimate	10,921	
2000 Census	9,312	
1990 Census	7,549	
Growth 2010-2015	6.12%	
Growth 2000-2010	17.28%	
Growth 1990-2000	23.35%	
2010 Est. Families by Poverty Status	10,921	
2010 Families at or Above Poverty	10,291	94.23
2010 Families at or Above Poverty with Children	5,416	49.59
2010 Families Below Poverty	630	5.77
2010 Families Below Poverty with Children	499	4.57

Prepared By:
Nielsen Solution Center 1 800 866 6511

CLARITAS MARKETPLACE

Prepared For:

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
2010 Est. Pop Age 16+ by Employment Status	36,937	
In Armed Forces	150	0.41
Civilian - Employed	22,730	61.54
Civilian - Unemployed	1,221	3.31
Not in Labor Force	12,836	34.75
2010 Est. Civ Employed 16+ by Class of Worker	21,397	
For-Profit Private Workers	14,966	69.94
Non-Profit Private Workers	1,252	5.85
Local Government Workers	1,170	5.47
State Government Workers	2,324	10.86
Federal Government Workers	401	1.87
Self-Emp Workers	1,205	5.63
Unpaid Family Workers	79	0.37
2010 Est. Civ Employed 16+ by Occupation	21,397	
Architect/Engineer	382	1.79
Arts/Entertain/Sports	324	1.51
Building Grounds Maint	1,888	8.82
Business/Financial Ops	498	2.33
Community/Soc Svcs	293	1.37
Computer/Mathematical	110	0.51
Construction/Extraction	1,519	7.10
Edu/Training/Library	1,016	4.75
Farm/Fish/Forestry	315	1.47
Food Prep/Serving	1,478	6.91
Health Practitioner/Tec	807	3.77
Healthcare Support	564	2.64
Maintenance Repair	1,085	5.07
Legal	186	0.87
Life/Phys/Soc Science	146	0.68
Management	1,355	6.33
Office/Admin Support	3,012	14.08
Production	826	3.86
Protective Svcs	807	3.77
Sales/Related	2,824	13.20
Personal Care/Svc	617	2.88
Transportation/Moving	1,345	6.29

Prepared By:

Nielsen Solution Center 1 800 866 6511

CLARITAS MARKETPLACE

Prepared For:

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
2010 Est. Pop 16+ by Occupation Classification	21,397	
Blue Collar	4,775	22.32
White Collar	10,953	51.19
Service and Farm	5,669	26.49
2010 Est. Workers Age 16+ by Transp. To Work	20,957	
Drove Alone	15,014	71.64
Car Pooled	3,830	18.28
Public Transportation	474	2.26
Walked	400	1.91
Bicycle	59	0.28
Other Means	464	2.21
Worked at Home	716	3.42
2010 Est. Workers Age 16+ by Travel Time to Work *		
Less than 15 Minutes	9,000	
15 - 29 Minutes	5,176	
30 - 44 Minutes	3,622	
45 - 59 Minutes	1,772	
60 or more Minutes	889	
2010 Est. Avg Travel Time to Work (in minutes)	22.96	
2010 Est. Tenure of Occupied Housing Units	14,735	
Owner Occupied	9,000	61.08
Renter Occupied	5,735	38.92
2010 Owner Occ HUs: Avg Length of Residence	19	
2010 Renter Occ HUs: Avg Length of Residence	9	

Prepared By:

Nielsen Solution Center 1 800 866 6511

CLARITAS MARKETPLACE

Prepared For:

Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total *Place*	%
2010 Est. Specified Owner-Occupied Housing Values	9,000	
Value Less than $20,000	1	0.01
Value $20,000 - $39,999	26	0.29
Value $40,000 - $59,999	74	0.82
Value $60,000 - $79,999	35	0.39
Value $80,000 - $99,999	38	0.42
Value $100,000 - $149,999	60	0.67
Value $150,000 - $199,999	214	2.38
Value $200,000 - $299,999	878	9.76
Value $300,000 - $399,999	1,430	15.89
Value $400,000 - $499,999	1,927	21.41
Value $500,000 - $749,999	3,104	34.49
Value $750,000 - $999,999	814	9.04
Value $1,000,000 or more	399	4.43
2010 Est. Median All Owner-Occupied Housing Value	$490,482	
2010 Est. Housing Units by Units in Structure	15,348	
1 Unit Attached	984	6.41
1 Unit Detached	10,542	68.69
2 Units	490	3.19
3 or 4 Units	545	3.55
5 to 19 Units	1,892	12.33
20 to 49 Units	468	3.05
50 or More Units	399	2.60
Mobile Home or Trailer	28	0.18
Boat, RV, Van, etc.	0	0.00
2010 Est. Housing Units by Year Structure Built	15,348	
Housing Unit Built 2000 or later	2,402	15.65
Housing Unit Built 1990 to 1999	3,146	20.50
Housing Unit Built 1980 to 1989	2,377	15.49
Housing Unit Built 1970 to 1979	2,586	16.85
Housing Unit Built 1960 to 1969	2,305	15.02
Housing Unit Built 1950 to 1959	1,367	8.91
Housing Unit Built 1940 to 1949	497	3.24
Housing Unit Built 1939 or Earlier	668	4.35
2010 Est. Median Year Structure Built**	1981	

*This row intentionally left blank. No total category data is available.

**1939 will appear when at least half of the Housing Units in this reports area were built in 1939 or earlier.

Pop-Facts: Demographic Snapshot 2010 Report

Appendix: Area Listing

Area Name:

Type: List - Place Reporting Detail: Aggregate Reporting Level: Place

Geography Code	Geography Name	Geography Code	Geography Name
1522700	Kahului CDP	1575510	Waihee-Waiehu CDP
1575950	Waikapu CDP	1577450	Wailuku CDP

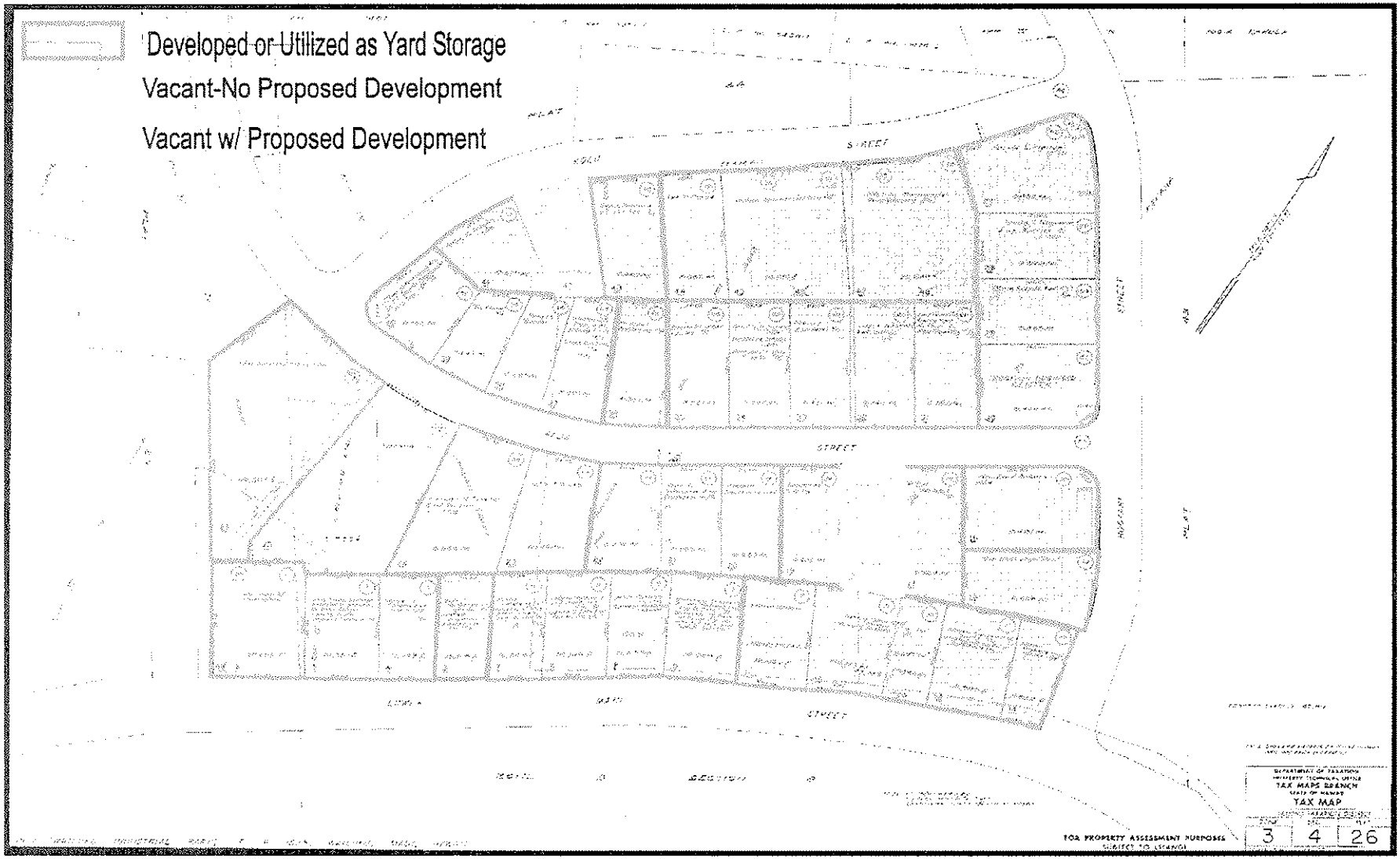
Project Information:

Site: 1

Order Number: 969114179

EXHIBIT C

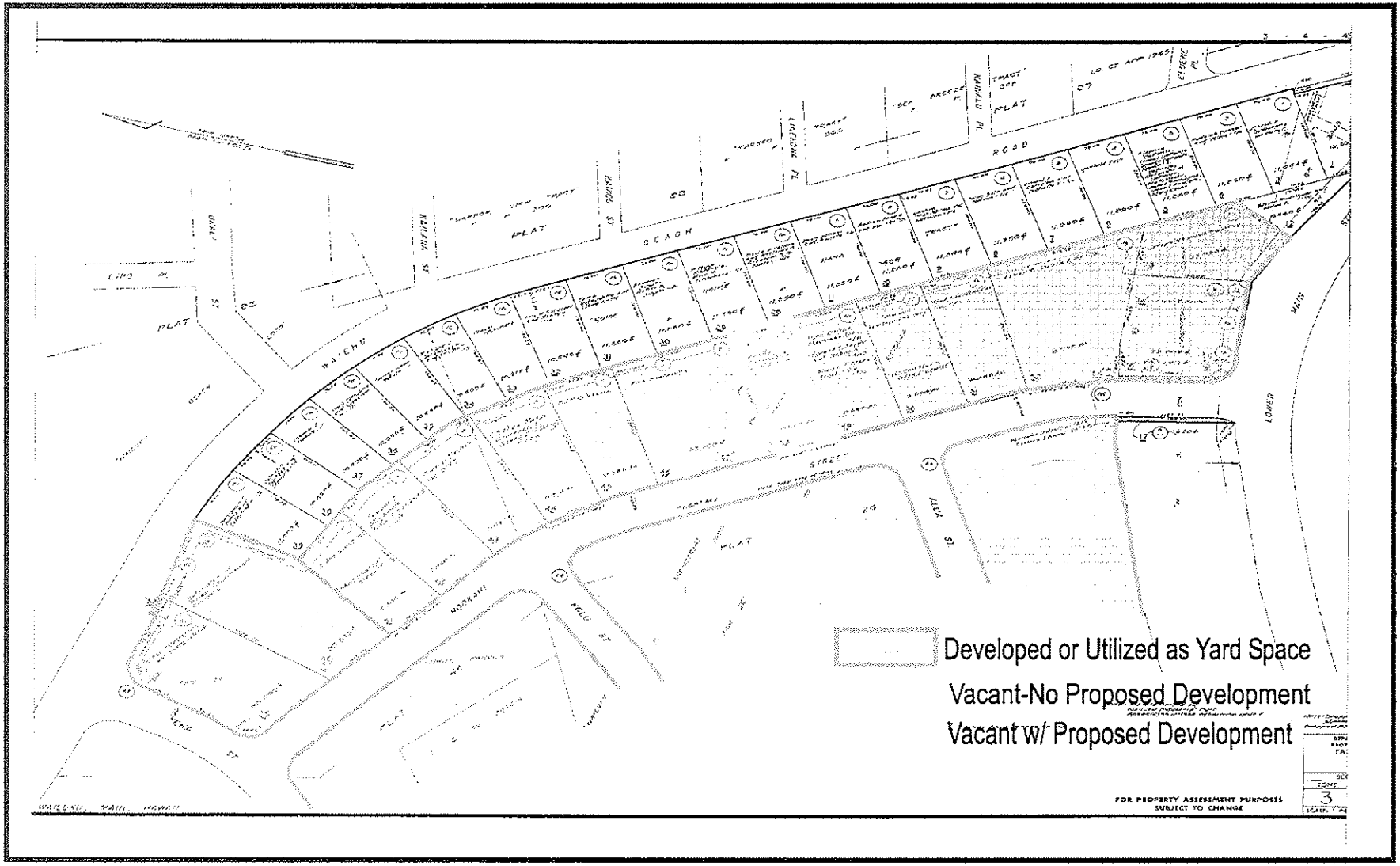
Maps of the Industrial Subdivisions in Central Maui



Not To Scale!

WAILUKU INDUSTRIAL SUBDIVISION (MAP I)

TMK: (II) 3-4-Plat 026



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WAILUKU INDUSTRIAL SUBDIVISION (MAP II)

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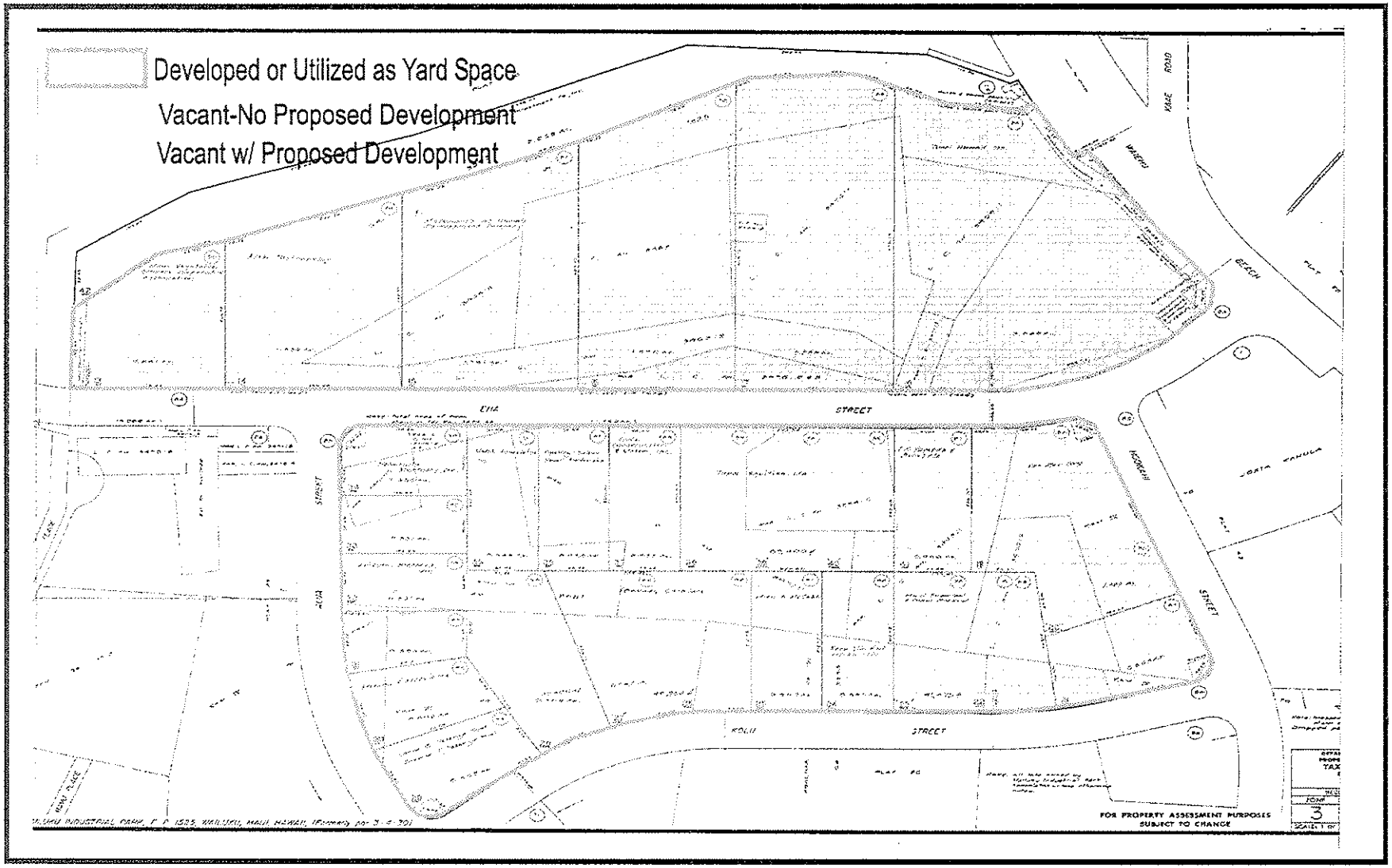

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WAILUKU INDUSTRIAL SUBDIVISION (MAP III)

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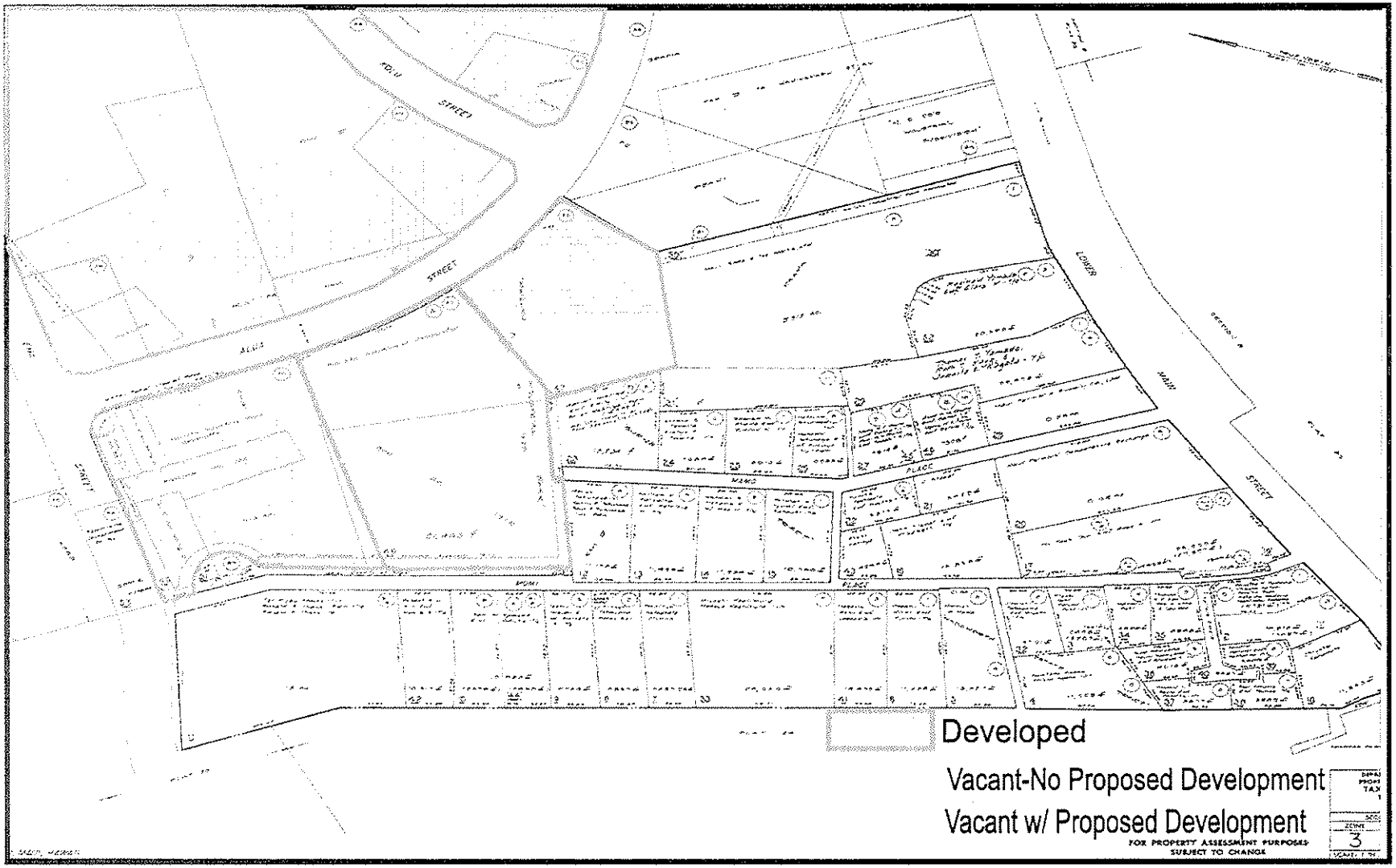

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WAILUKU INDUSTRIAL SUBDIVISION (MAP IV)

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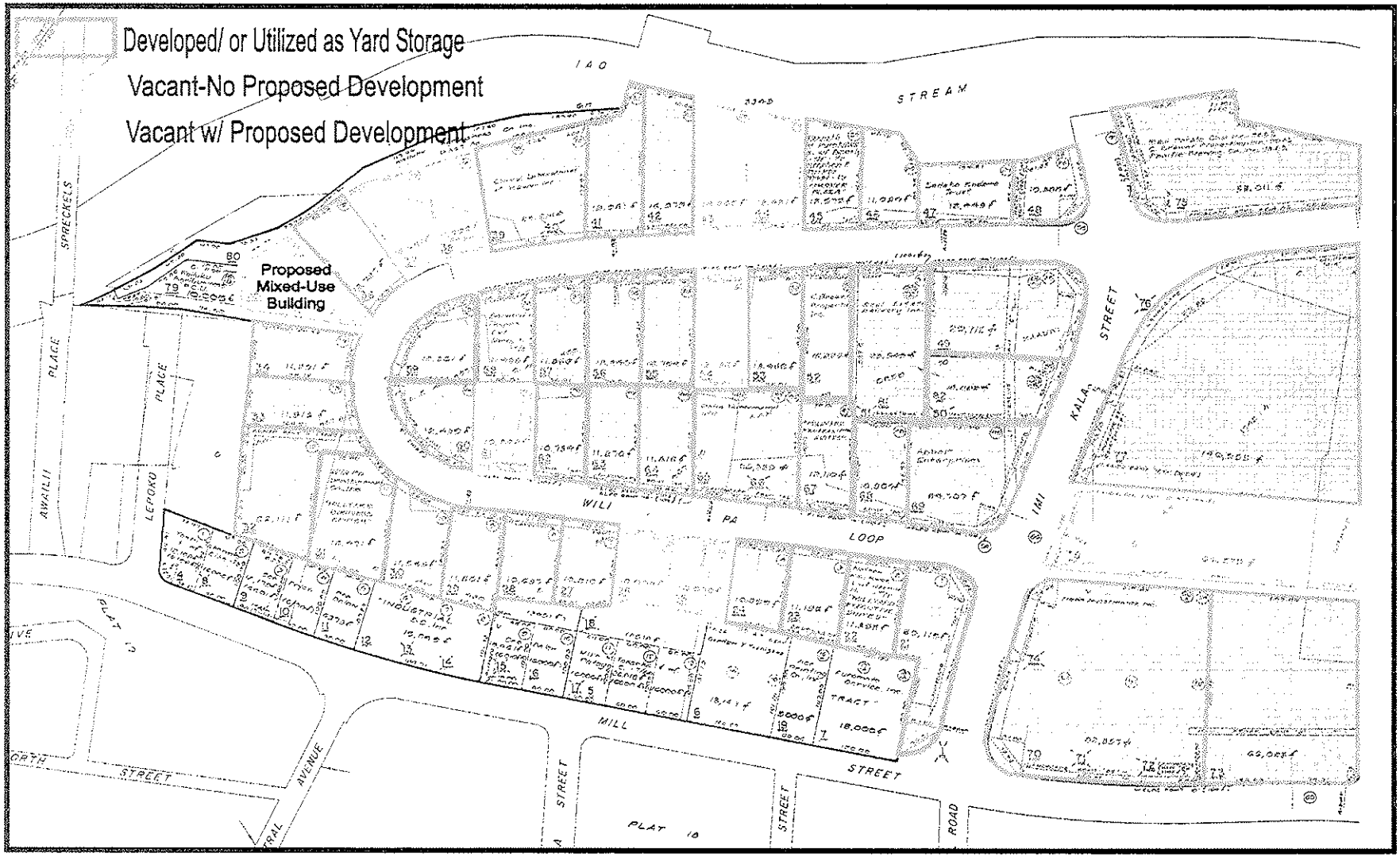

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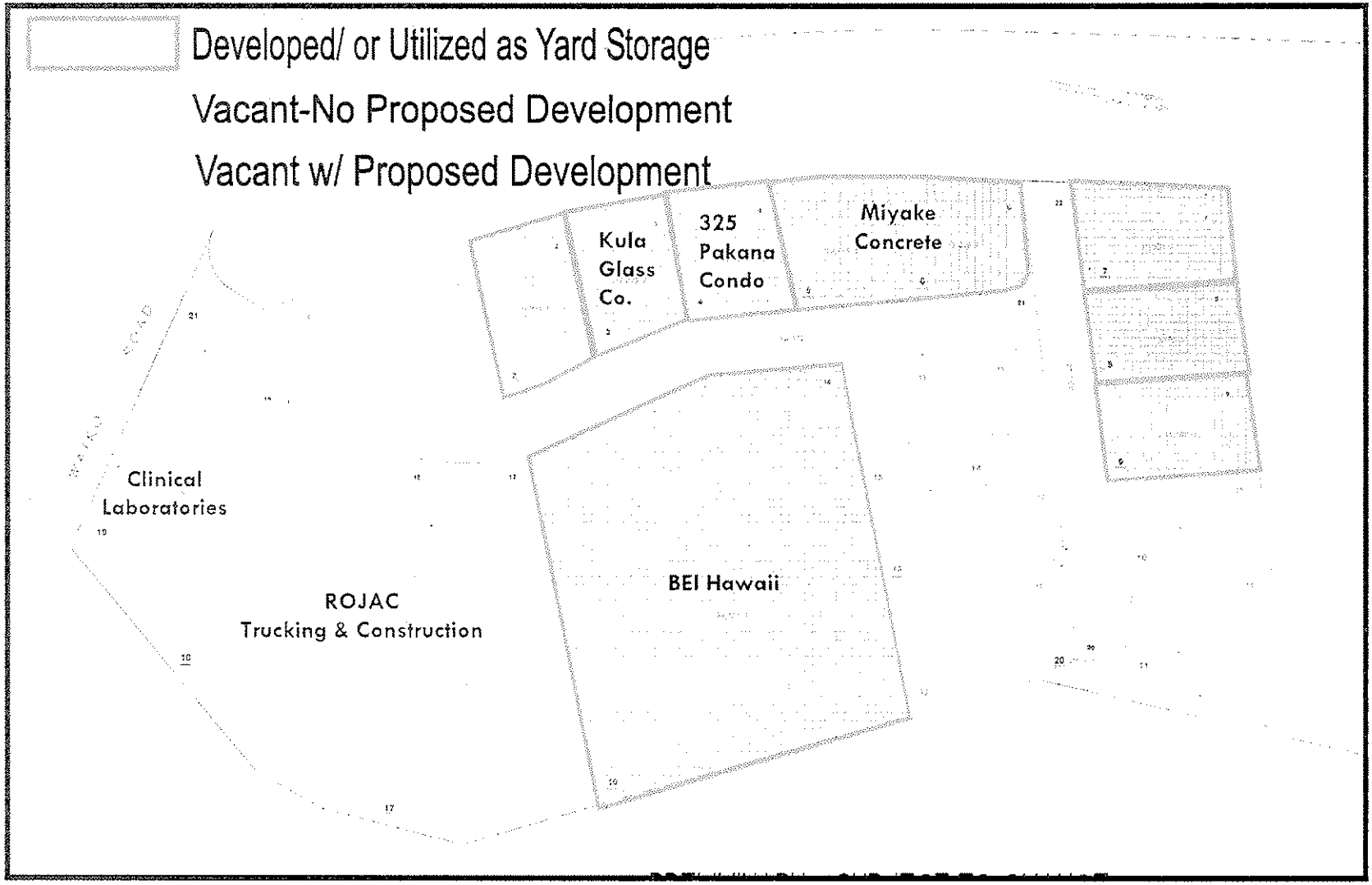
THE MILLYARD SUBDIVISION

TMK: (II) 3-4-Plat 020



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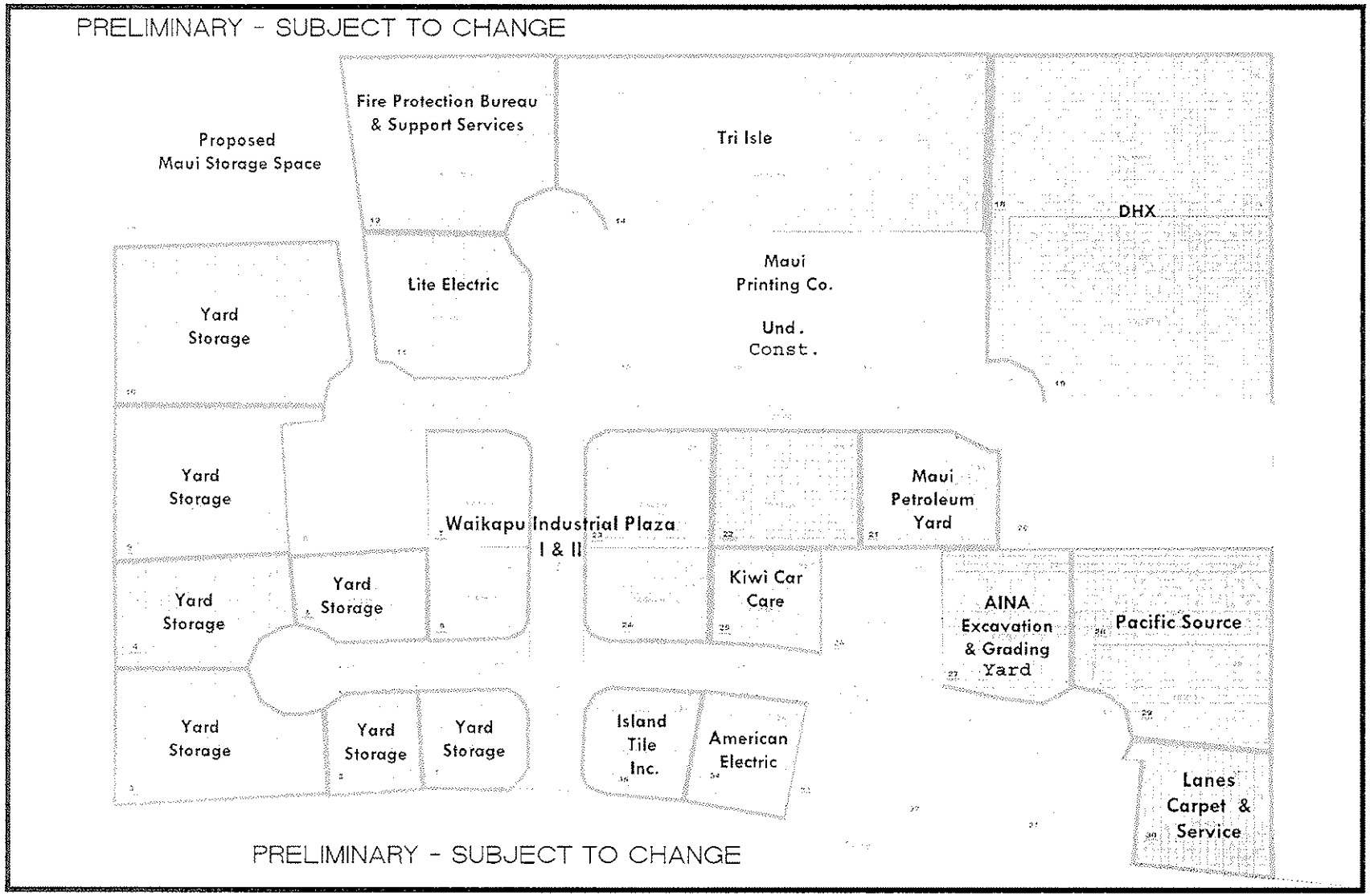
WAIKO BASEYARD SUBDIVISION
TMK: (II) 3-5-Plat 027



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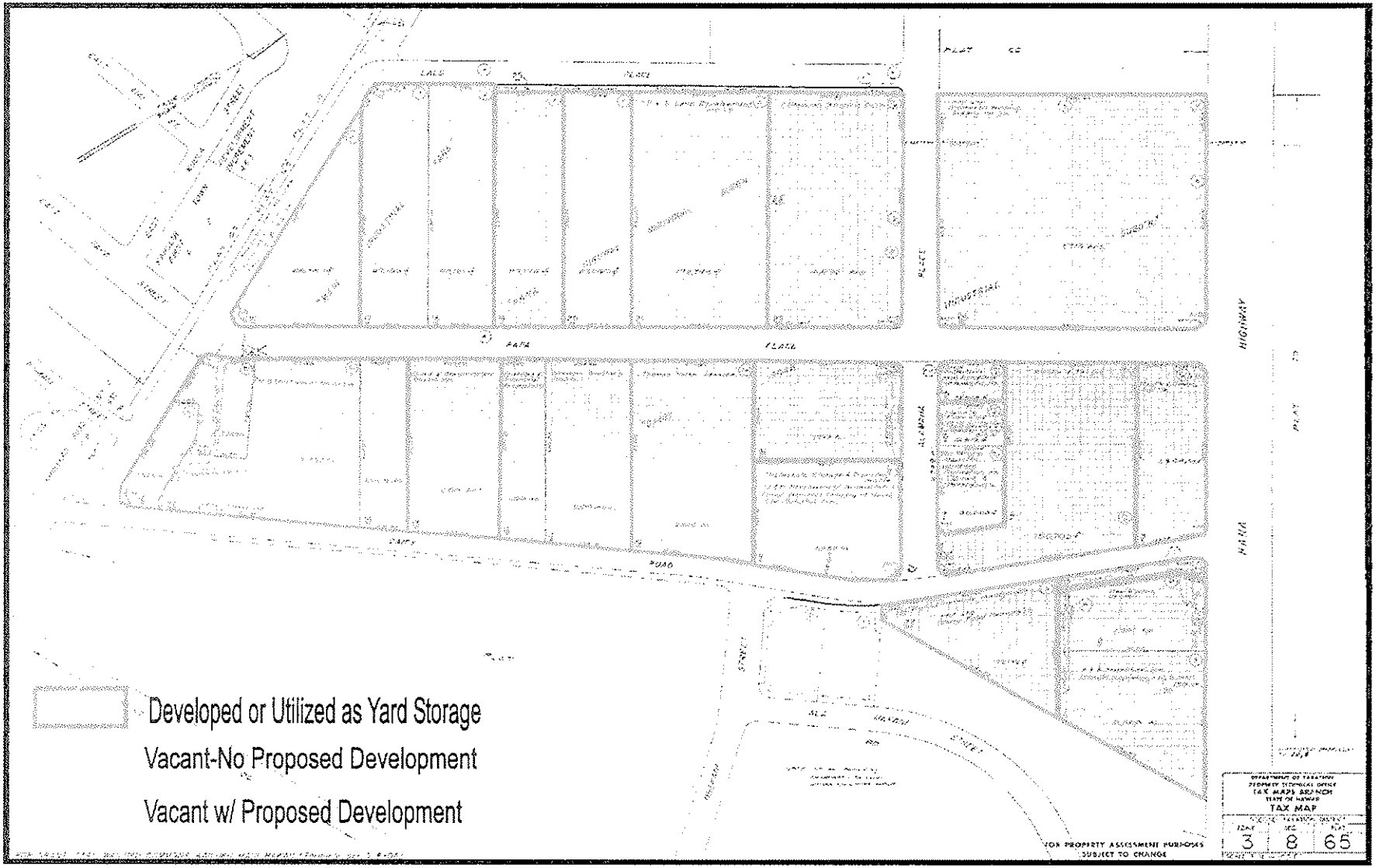
CONSOLIDATED BASEYARDS SUBDIVISION

TMK: (II) 3-8-Plat 094



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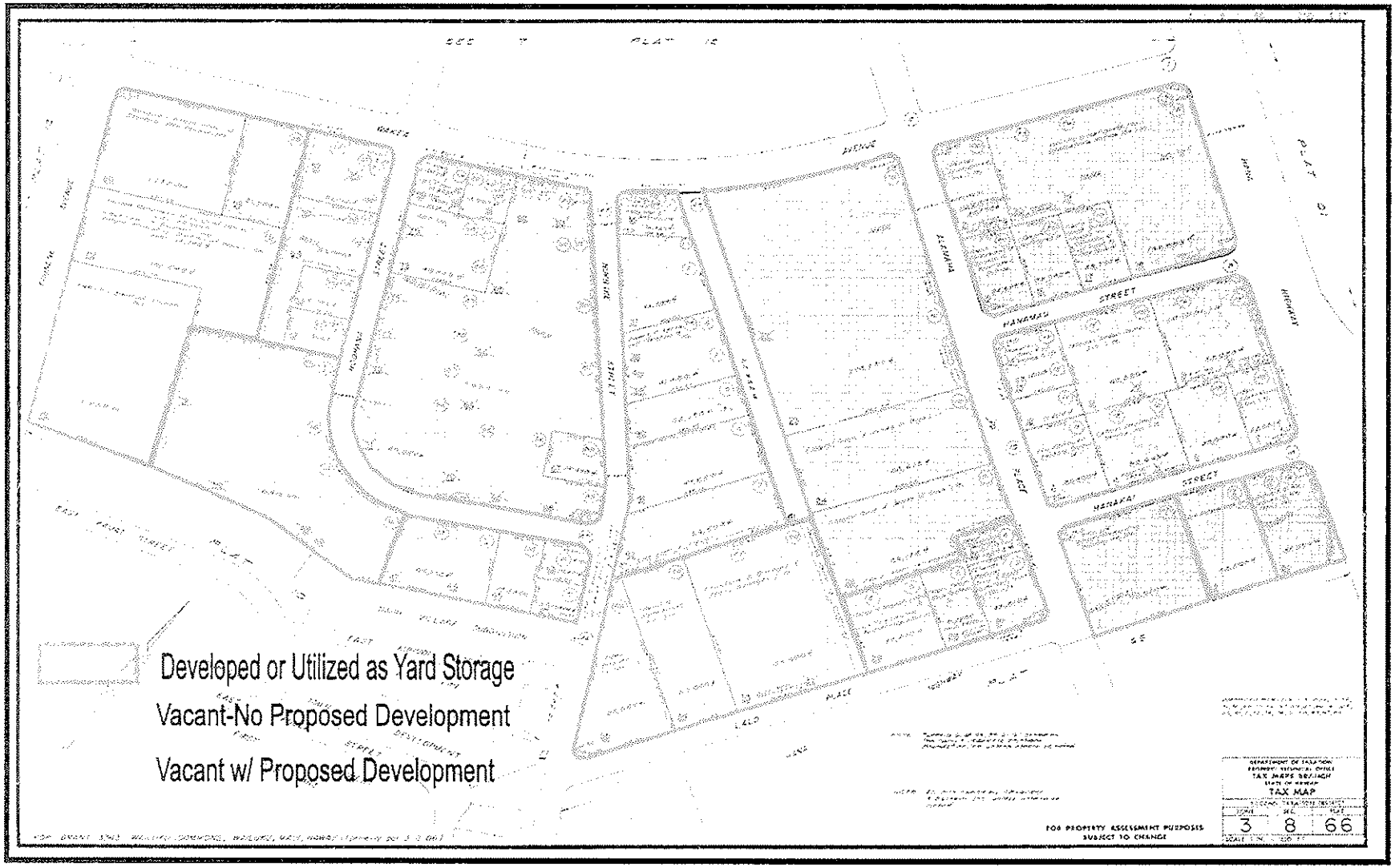
KAHULUI INDUSTRIAL SUBDIVISION (MAP I)

TMK: (II) 3-8-Plat 065



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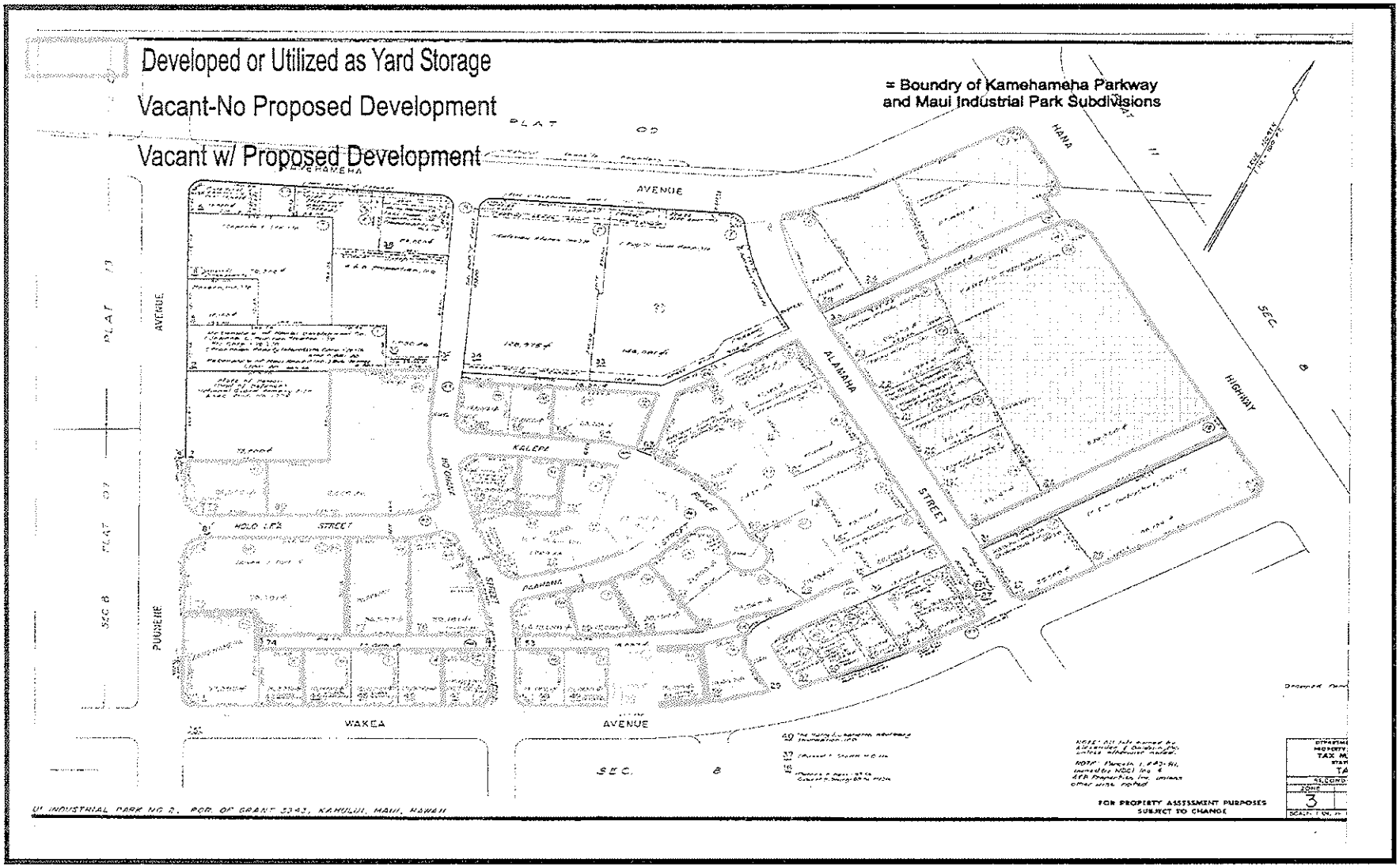
KAHULUI INDUSTRIAL SUBDIVISION (MAP II)

TMK: (II) 3-8-Plat 066



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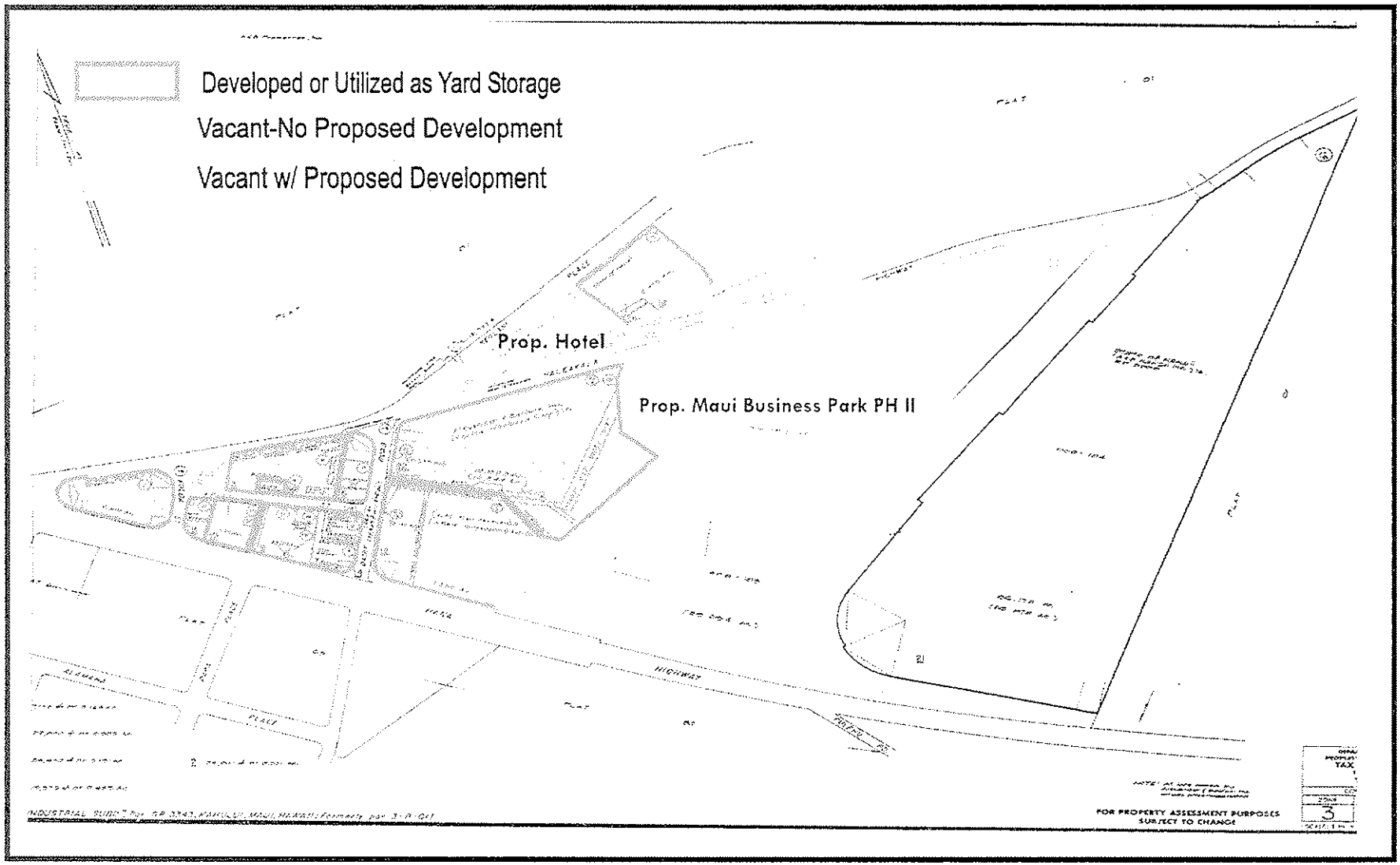
KAMEHAMEHA PARKWAY SUBDIVISION

TMK: (II) 3-7-Plat 012



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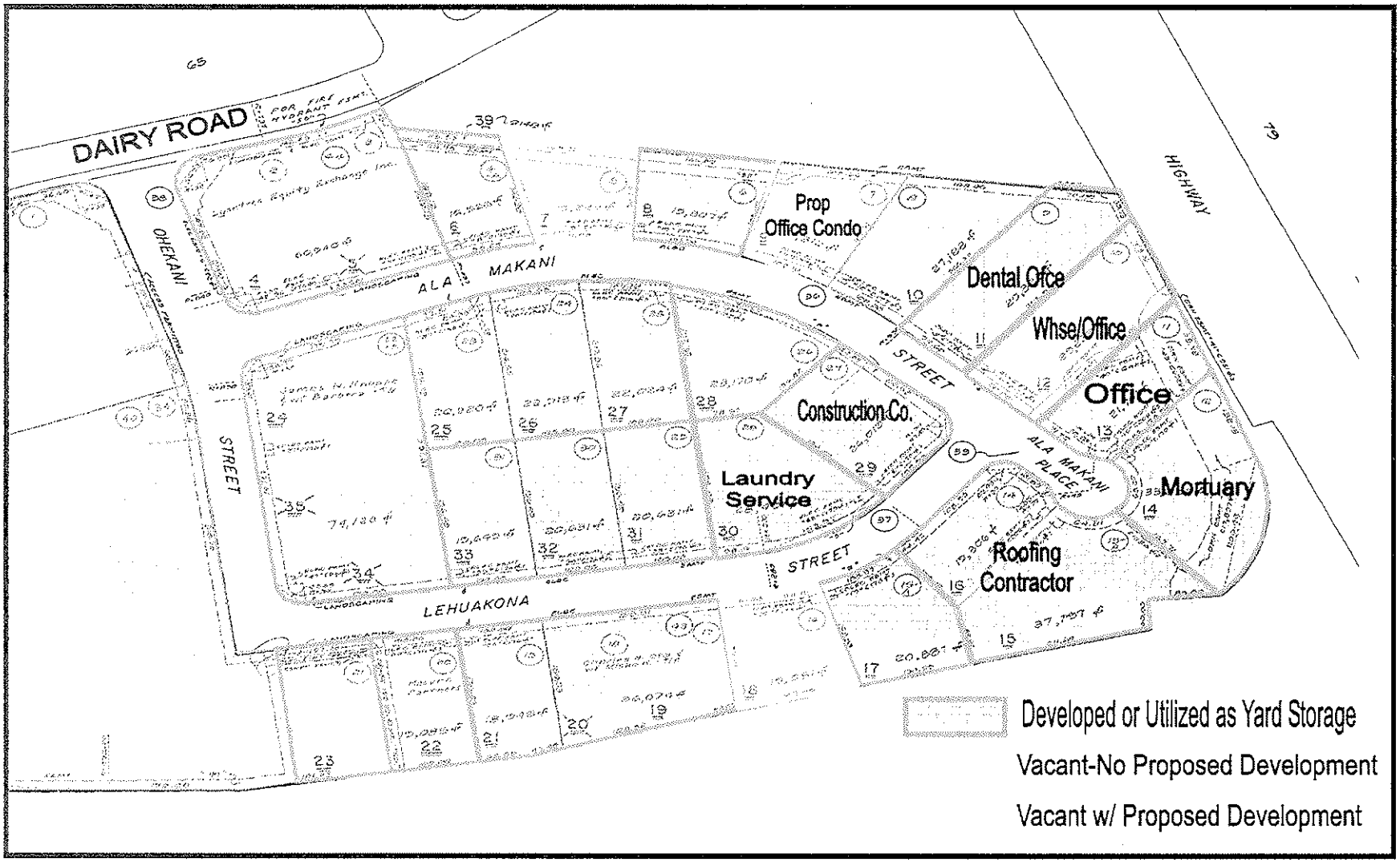
AIRPORT TRIANGLE

TMK: (II) 3-8-Plat 079



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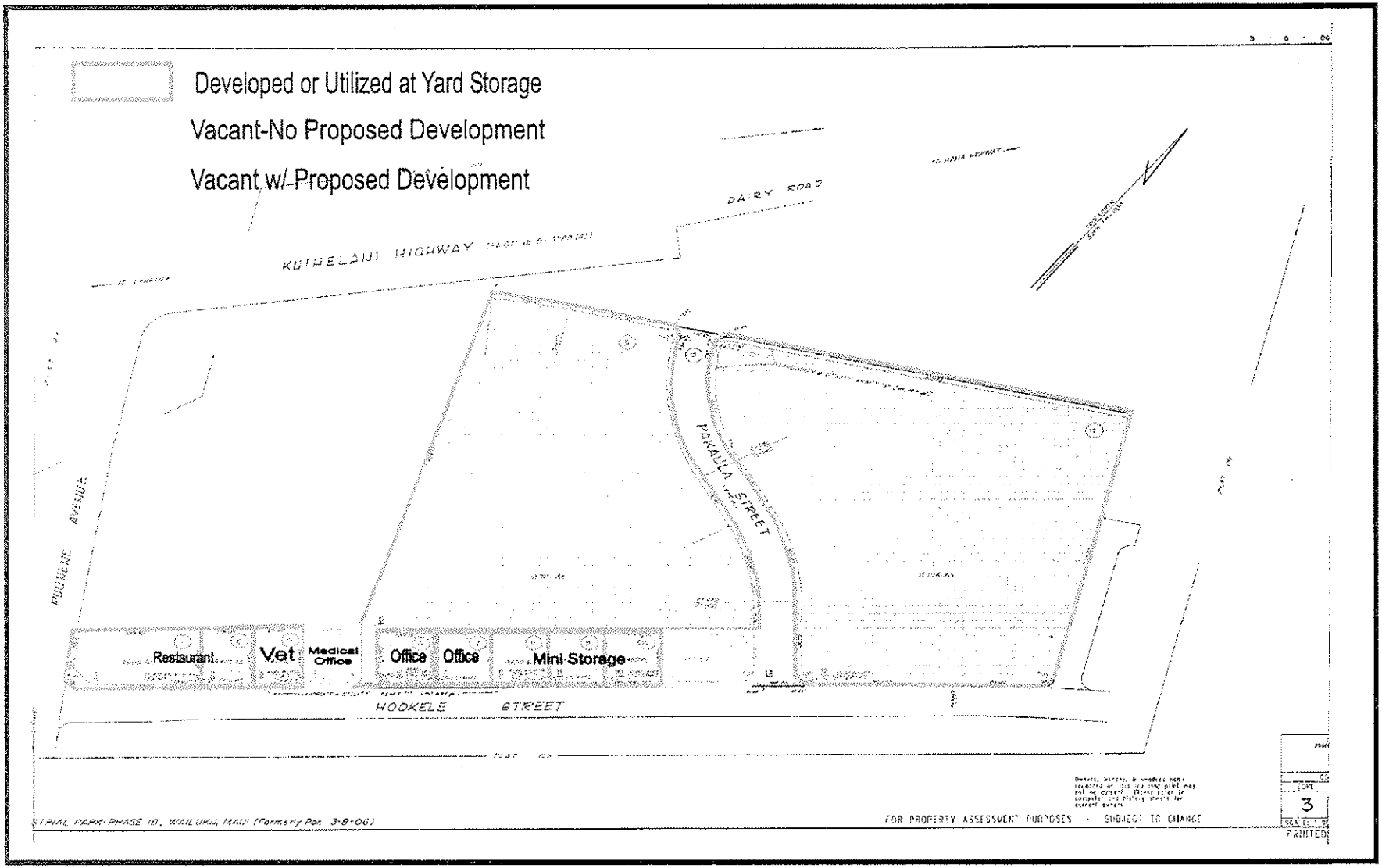
MAUI BUSIINESS PARK, PHASE I-A
TMK: (II) 3-8-Plat 084



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MAUI BUSIINESS PARK, PHASE I-B

TMK: (II) 3-8-Plat 088

ADDENDA

DEFINITIONS

The purpose of this Glossary is to assist the reader in understanding specific terminology used in this report.

Appraisal	(noun) the act or process of developing an opinion of value; an opinion of value (adjective) of or pertaining to appraising and related functions such as appraisal practice or appraisal services.
Cash Equivalent	A price expressed in terms of cash, as distinguished from a price expressed totally or partly in terms of the face amounts of notes or other securities that cannot be sold at their face amounts.
Counseling	Providing competent, disinterested, and unbiased advice and guidance on diverse problems in the broad field of real estate; may involve any or all aspects of the business such as merchandising, leasing, management, acquisition/disposition planning, financing, development, cost-benefit studies, feasibility analysis, and similar services. Counseling services are often associated with evaluation, but they are beyond the scope of appraisal.
Discounting	A procedure used to convert periodic incomes, cash flows, and reversions into present value; based on the assumption that benefits received in the future are worth less than the same benefits received now.
Extraordinary Assumption	An assumption, directly related to a specific assignment, which, if found to be false, could alter the appraiser's opinions or conclusions. Extraordinary assumptions presume as fact otherwise uncertain information about physical, legal, or economic characteristics of the subject property; or about conditions external to the property such as market conditions or trends; or about the integrity of data used in an analysis. An extraordinary assumption may be used in an assignment only if: • It is required to properly develop credible opinions and conclusions; • The appraiser has a reasonable basis for the extraordinary assumption; • Use of the extraordinary assumption results in a credible analysis; and • The appraiser complies with the disclosure requirements set forth in USPAP for extraordinary assumptions.
Fair Value	The cash price that might reasonably be anticipated in a current sale under all conditions requisite to a fair sale. A fair sale means that buyer and seller are each acting prudently, knowledgeably, and under no necessity to buy or sell-, i.e., other than in a forced or liquidation sale. The appraiser should estimate the cash price that might be received upon exposure to the open market for a reasonable time, considering the property type and local market conditions. ***When a current sale is unlikely-i.e., when it is unlikely that the sale can be completed within 12 months-the appraiser must discount all cash flows generated by the property to obtain the estimate of fair value.*** These cash flows include, but are not limited to, those arising from ownership, development, operating, and sale of the property. The discount applied shall reflect the appraiser's judgment of what a prudent, knowledgeable purchase under o necessity to buy would be willing to pay to purchase the property in a current sale.

Fee Simple Estate	Absolute ownership encumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.
Hawaiian Terms	The Hawaiian words "mauka" and "makai" are commonly used in the islands as indicators of direction. The word "mauka" means toward the mountain, and "makai" means toward the ocean.
Highest and Best Use	The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum profitability.
Highest and Best Use of Land or a Site as Though Vacant	Among all reasonable, alternative uses, the use that yields the highest present land value, after payments are made for labor, capital, and coordination. The use of a property based on the assumption that the parcel of land is vacant or can be made vacant by demolishing any improvements.
Highest and Best Use of Property as Improved	The use that should be made of a property as it exists. An existing improvement should be renovated or retained as is so long as it continues to contribute to the total market value of the property, or until the return from a new improvement would more than offset the cost of demolishing the existing building and constructing a new one.
Hypothetical Condition	That which is contrary to what exists, but is supposed for the purpose of analysis. Hypothetical conditions assume conditions contrary to known facts about physical, legal, or economic characteristics of the subject property; or about conditions external to the property, such as market conditions or trends; or about the integrity of data used in an analysis. A hypothetical condition may be used in an assignment only if: • Use of the hypothetical condition is clearly required for legal purposes, for purposes of reasonable analysis, or for purposes of comparison; • Use of the hypothetical condition results in a credible analysis; and • The appraiser complies with the disclosure requirements set forth in USPAP for hypothetical conditions
Leased Fee Interest	An ownership interest held by a landlord with the rights of use and occupancy conveyed by lease to others. The rights of the lessor (the leased fee owner) and the lessee are specified by contract terms contained within the lease.
Leasehold Interest	The interest held by the lessee (the tenant or renter) through a lease transferring the rights of use and occupancy for a stated term under certain conditions.

Market Rent

The most probable rent that a property should bring in a competitive and open market reflecting all conditions and restrictions of the specified lease agreement including term, rental adjustment and revaluation, permitted uses, use restrictions, and expense obligations; the lessee and lessor each acting prudently and knowledgeably, and assuming consummation of a lease contract as of a specified date and the passing of the leasehold from lessor to lessee under conditions whereby:

- Lessee and lessor are typically motivated.
- Both parties are well informed or well advised, and acting in what they consider their best interests.
- A reasonable time is allowed for exposure in the open market.
- The rent payment is made in terms of cash in United States dollars, and is expressed as an amount per time period consistent with the payment schedule of the lease contract.
- The rental amount represents the normal consideration for the property leased unaffected by special fees or concessions granted by anyone associated with the transaction.

Market Value

The major focus of most real property appraisal assignments. Both economic and legal definitions of market value have been developed and refined. Continual refinement is essential to the growth of the appraisal profession.

The most widely accepted components of market value are incorporated in the following definition:

"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress."

Market value is defined in the Uniform Standards of Professional Appraisal Practice (USPAP) as follows:

"A type of value, stated as an opinion, that presumes the transfer of a property (i.e., a right of ownership or a bundle of such rights), as of a certain date, under specific conditions set forth in the definition of the term identified by the appraiser as applicable in an appraisal."

The following definition of market value is used by agencies that regulate federally insured financial institutions in the United States:

"The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:"

- Buyer and seller are typically motivated;

- Both parties are well informed or well advised, and acting in what they consider their best interests;
- A reasonable time is allowed for exposure in the open market;
- Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
- The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

Prospective Market Value Upon Completion of Construction The prospective future value of a property on the date that construction is completed, based upon market conditions forecast to exist as of the completion date.

Prospective Value Opinion A forecast of the value expected at a specified future date. A prospective value opinion is most frequently sought in connection with real estate projects that are proposed, under construction, or under conversion to a new use, or those that have not achieved sellout or a stabilized level of long-term occupancy at the time the appraisal report is written.

Report Any communication, written or oral, of an appraisal, appraisal review, or appraisal consulting service that is transmitted to the client upon completion of an assignment. The types of written reports listed below apply to real property appraisals:

Self-Contained Appraisal Report: A written appraisal report prepared under Standards Rule 2-2(a) of the Uniform Standards of Professional Appraisal Practice. A self-contained appraisal report sets forth the data considered, the appraisal procedures followed, and the reasoning employed in the appraisal, addressing each item in the depth and detail required by its significance to the appraisal and providing sufficient information so that the client and the users of the report will understand the appraisal and not be misled or confused.

Summary Appraisal Report: A written report prepared under Standards Rule 2-2(b) or 8-2(b). A summary appraisal report contains a summary of all information significant to the solution of the appraisal problem. The essential difference between a self-contained appraisal report and a summary appraisal report is the level of detail of presentation.

Restricted Appraisal Report: A written report prepared under Standards Rule 2-2(c), 8-2(c), or 10-2(b). A restricted use appraisal report is for client use only. The restricted use appraisal report should contain a brief statement of information significant to the solution of the appraisal problem.

Uniform Standards of Professional Appraisal Practice Current standards of the appraisal profession, developed for appraisers and the users of appraisal services by the Appraisal Standards Board of The

Appraisal Foundation. The Uniform Standards set forth the procedures to be followed in developing an appraisal, analysis, or opinion and the manner in which an appraisal, analysis, or opinion is communicated. They are endorsed by the Appraisal Institute and by other professional appraisal organizations.

LIMITING AND CONTINGENT CONDITIONS
ACM Consultants, Inc.

1. This is a Counseling Report which is intended to comply with the reporting requirements set forth under Standards Rule 5 of the Uniform Standards of Professional Appraisal Practice for a Counseling Report. The information contained in this report is specific to the needs of the client and for the intended use stated in this report. The Consultant is not responsible for unauthorized use of this report.

   This report has not been prepared for federally-related mortgage financing purposes, and has not been prepared in compliance with the requirements of Title XI of the Federal Financial Institutions Reform, Recovery, and Enforcement Act of 1989.

2. No responsibility is assumed for legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated in this report.

3. The property analyzed is free and clear of any or all liens and encumbrances unless otherwise stated in this report.

4. Responsible ownership and competent property management are assumed unless otherwise stated in this report.

5. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy.

6. All engineering is assumed to be correct. Any plot plans and illustrative material in this report are included only to assist the reader in visualizing the property.

7. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for arranging for engineering studies that may be required to discover them.

8. It is assumed that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless otherwise stated in this report.

9. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a non-conformity has been stated, defined, and considered in this counseling report.

10. It is assumed that all required licenses, certificates of occupancy or other legislative or administrative authority from any local, state, or national governmental or private entity or organization have been or can be obtained or renewed for any use on which the value estimates contained in this report are based.

11. Any sketch in this report may show approximate dimensions and is included to assist the reader in visualizing the property. Maps and exhibits found in this report are provided for reader reference purposes only. No guarantee as to accuracy is expressed or implied unless otherwise stated in this report. No survey has been made for the purpose of this report.

12. It is assumed that the utilization of the land and improvements is within the boundaries or property lines of the property described and that there is no encroachment or trespass unless otherwise stated in this report.

13. The Consultant is not qualified to detect hazardous waste and/or toxic materials. Any comment by the Consultant that might suggest the possibility of the presence of such substances should not be taken as confirmation of the presence of hazardous waste and/or toxic materials. Such determination would require investigation by a qualified expert in the field of environmental assessment. The presence of substances such as asbestos, urea-formaldehyde foam insulation, or other potentially hazardous materials may affect the value of the property. The Consultant's value estimate is predicated on the assumption that there is no such material on or in the property that would cause a loss in value unless otherwise stated in this report. No responsibility is assumed for any environmental conditions, or for any expertise or engineering knowledge required to discover them. The Consultant's descriptions and resulting comments are the result of the routine observations made during the analysis process.

14. Unless otherwise stated in this report, the subject property is evaluated without a specific compliance survey having been conducted to determine if the property is or is not in conformance with the requirements of the Americans with Disabilities Act. The presence of architectural and communications barriers that are structural in nature that would restrict access by disabled individuals may adversely affect the property's value, marketability, or utility.

15. Any proposed improvements are assumed to be completed in a good workmanlike manner in accordance with the submitted plans and specification.

16. The distribution, if any, of the total valuation in this report between land and improvements applies only under the stated program of utilization. The separate allocations for land and buildings must not be used in conjunction with any other appraisal and are invalid if so used.

17. Possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the party to whom it is addressed without the written consent of the consultant, and in any event, only with property written qualification and only in its entirety.

18. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the Consultant, or the firm with which the Consultant is connected) shall be disseminated to the public through advertising, public relations, news sales, or other media without prior written consent and approval of the Consultant.

ACCEPTANCE OF, AND/OR USE OF THIS APPRAISAL REPORT BY CLIENT OR ANY THIRD PARTY CONSTITUTES ACCEPTANCE OF THE ACM CONSULTANTS, INC., CERTIFICATION, LIMITING AND CONTINGENT CONDITIONS. CONSULTANT LIABILITY EXTENDS ONLY TO STATED CLIENT, NOT SUBSEQUENT PARTIES OR USERS OF ANY TYPE, and the total liability of Consultant(s) and firm is limited to the amount of fee received by Consultant.

PROFESSIONAL QUALIFICATIONS

Glenn K. Kunihisa, MAI, CRE

STATE LICENSING

State Certified General Appraiser,
State of Hawaii, License No. CGA 39, July 17, 1991
Expiration: December 31, 2011

PROFESSIONAL AFFILIATIONS

Member, Appraisal Institute, MAI Designation, Hawaii Chapter No. 67
Member, The Counselors of Real Estate, CRE Designation, Hawaii Chapter
Member, International Right of Way Association
Member, National Association of Realtors, Maui Board of Realtors

PROFESSIONAL INVOLVEMENT

Past President – Hawaii Chapter of the Appraisal Institute – 2009
Vice Chairperson – Hawaii Chapter of The Counselors of Real Estate - 2010
Education Chairperson – Hawaii Chapter of the Appraisal Institute – 2004 and 2005
Former Multiple Listing Service (MLS) Committee Member – Realtors Association of Maui

COMMUNITY AFFILIATIONS

St. Anthony Parish School Board
Board Member 1995 to 2008
Board President 1997 and 1998
Alii Community Care, Inc. – A non-profit health care corporation
Board Member 2004 to 2006

EMPLOYMENT

President
ACM Consultants, Inc.
May, 1997 to present

Previously associated with the following:
ACM, Real Estate Appraisers, Inc. - 1986 to 1997
A&B Commercial Company; a division of Alexander & Baldwin, Inc. - 1979 to 1985
Bank of Hawaii - 1976 to 1979

GENERAL EDUCATION

University of Hawaii at Manoa
Master of Business Administration (MBA) - Executive MBA Program V, 1988
Bachelor of Business Administration (BBA), 1976
Iolani School, 1971

LEGAL & CONSULTING

Qualified as an expert witness in the Second Circuit Court of the State of Hawaii
Qualified as an expert in testimony to the State Land Use Commission
Experienced in real estate arbitration assignments in the State of Hawaii

APPRAISAL EDUCATION

Appraisal Institute
Seminar *Appraisal Curriculum Overview (2-day general)*
Honolulu, Hawaii – July 2010

Seminar	*Online Valuation of Green Residential Properties* Chicago, Illinois – July 2010
Seminar	*Hotel Valuation* Honolulu, Hawaii – February 2010
Seminar	*Online Small Hotel/Motel Valuation* Chicago, Illinois – November 2009
Seminar	*Business Practices and Ethics* Honolulu, Hawaii – September 2009
Seminar	*Hawaii Lands, Historical Review* Lihue, Hawaii – August 2009
Seminar	*Appraisal Challenges: Declining Markets and Sales Concessions* Cambria, California – October 2008
Course	*7-Hour National USPAP Update Course* Honolulu, Hawaii – September 2008
Course	*Online 7-Hour National USPAP Equivalent Course* Chicago, Illinois – October 2007
Course	*Valuation of Conservation Easements* Denver, Colorado – October 2007
Seminar	*Uniform Standards for Federal Land Acquisitions ("Yellow Book")* *Practical Applications for Fee Appraisers* Honolulu, Hawaii – December 2006
Seminar	*California Conservation Easements* Sacramento, California – November 2005
Course 400	*7-Hour National USPAP Update Course* Honolulu, Hawaii – October 2005
Seminar	*Case Studies in Limited Partnership and Partial Interest Valuation* Honolulu, Hawaii – May 2005
Seminar	*Appraisal Consulting: A Solutions Approach for Professionals* Honolulu, Hawaii – February 2005
Seminar	*Real Estate Finance, Value and Investment Performance* Honolulu, Hawaii – February 2005
Seminar	*Fannie Mae Residential Presentation* Honolulu, Hawaii - July 2004
Seminar	*Subdivision Analysis* Chicago, Illinois - August 2003
Seminar	*Supporting Capitalization Rates* Chicago, Illinois - August 2003
Seminar	*The Technology Assisted Appraiser* Chicago, Illinois - August 2003
Seminar	*Scope of Work: Expanding Your Range of Services* Chicago, Illinois - August 2003
Course 400	*National Uniform Standards of Professional Practice* Honolulu, Hawaii - May 2003
Course 420	*Business Practices and Ethics* Honolulu, Hawaii - May 2003
Seminar	*The Private Conservation Market* Honolulu, Hawaii - July 2002
Seminar	*Finance Reporting Valuations Parts I and II* Honolulu, Hawaii - July 2002
Seminar	*Future of Appraisal Profession from a Global Perspective* Honolulu, Hawaii - July 2002

Seminar	*Appraisal Office Management* Honolulu, Hawaii - July 2002
Course 540	*Report Writing* Denver, Colorado - December 2000
Seminar	*Partial Interests: Theory and Case Law* Las Vegas, Nevada - July 2000
Seminar	*Easement Valuation* Las Vegas, Nevada - July 2000
Seminar	*Bridging the Gap: Marketability Discounts for Real Estate Interests* Las Vegas, Nevada - July 2000
Course 430	*Standards of Professional Practice, Part C* Honolulu, Hawaii - September 1999
Seminar	*Litigation Skills for the Appraiser: An Overview* Honolulu, Hawaii - May 1998
Seminar	*Special Purpose Properties* Honolulu, Hawaii - September 1997
Seminar	*Highest and Best Use Applications* Honolulu, Hawaii - September 1997
Seminar	*Detrimental Conditions* Honolulu, Hawaii - July 1997
Seminar	*The Appraiser As Expert Witness* Honolulu, Hawaii - August, 1995
Seminar	*How to Appraise FHA-Insured Property* Los Angeles, California - January, 1995
Seminar	*Understanding Limited Appraisals and Reporting Options* Honolulu, Hawaii - August, 1994
Seminar	*Valuation of Leasehold Interests* Honolulu, Hawaii - May, 1993
Seminar	*Valuation of Leased Fee Interests* Honolulu, Hawaii - May, 1993
Seminar	*Valuation Considerations: Appraising Non-Profits* Boston, Massachusetts - July, 1992
Seminar	*Americans With Disabilities Act* Boston, Massachusetts - July, 1992
Seminar	*Valuation in Today's Capital and Financing Markets* Honolulu, Hawaii - June 1992
Seminar	*Arbitration Principles, Procedures and Pitfalls* Honolulu, Hawaii - June, 1992
Seminar	*Institutional Real Estate in the 1990's* Honolulu, Hawaii - June, 1992
Seminar	*FIRREA and its Impact on Appraisers* Honolulu, Hawaii - June, 1992
Course 410/420	*Standards of Professional Practice, Parts A & B* Honolulu, Hawaii - April, 1991

The American Society of Farm Managers and Rural Appraisers, Inc.

Seminar	*Agricultural Lease Valuation* Honolulu, Hawaii -- March 2006

Maui Coastal Land Trust

Seminar	*Understanding the New Tax Incentives: Conservation Easements & Other Charitable Contributions*
	Wailuku, Hawaii – June 2007

Society of Real Estate Appraisers

Course 101	*Introduction to Appraising Real Property*
	Dallas, Texas – 1987
Course 102	*Applied Residential Property Valuation*
	Honolulu, Hawaii - July 1990
Course 201	*Principles of Income Property Appraising*
	Chicago, Illinois, 1987
Course 202	*Applied Income Property Valuation*
	San Diego, California - 1988
Seminar	*Professional Practice and the Society of Real Estate Appraisers*
	Honolulu, Hawaii - 1988
Seminar	*Appraisal Standards Seminar - Federal Home Loan Bank Board Guidelines, Regulations and Policies*
	Honolulu, Hawaii - April, 1988
Seminar	*Appraisal Standards Seminar - Federal Home Loan Bank Board Guidelines, Regulations and Policies*
	Honolulu, Hawaii - April, 1988

American Institute of Real Estate Appraisers

Seminar	*Rates, Ratios and Reasonableness*
	Honolulu, Hawaii - 1989
Seminar	*Discounted Cash Flow Analysis*
	Honolulu, Hawaii - 1989
Seminar	*Highest and Best Use*
	Honolulu, Hawaii - 1989
Seminar	*Capitalization Overview - Part A*
	Honolulu, Hawaii - 1990
Seminar	*Capitalization Overview - Part B*
	Honolulu, Hawaii – 1990
Seminar	*Accrued Depreciation*
	Honolulu, Hawaii - 1990

International Right of Way Association

Course 101	*Appraisal*
	Las Vegas, Nevada - October, 1998
Course 101	*Negotiation*
	Las Vegas, Nevada - October 1998

National Business Institute, Inc.

Seminar	*Commercial Real Estate Leasing In Hawaii*
	Honolulu, Hawaii - 1989

American Arbitration Association

Seminar	*Real Estate Dispute Resolution - Mediation and Arbitration*
	Kahului, Maui, Hawaii - October, 1990

Appendix M

Biological Resources Survey Report

BIOLOGICAL RESOURCES SURVEY

for the

Waiko Industrial Development Project

WAILUKU, MAUI, HAWAII

by

Robert W. Hobdy
Environmental Consultant
Kokomo, Maui
December 2010

Prepared for:
Pacific Rimland, Inc.

BIOLOGICAL RESOURCES SURVEY
Waiko Industrial Development Project

INTRODUCTION

The Waiko Industrial Development Project lies on 31.222 acres of forested agricultural and pasture land, TMK (2) 3-8-07:102, along East Waiko Raod in Waikapu, Maui. It is adjacent on its west side to an existing industrial baseyard complex and East Waiko Road, on its south side by Kuihelani Highway, and on its north and east sides by undeveloped forested pasture lands. This biological study was initiated by the owners in fulfillment of environmental requirements of the planning process.

SITE DESCRIPTION

The terrain within the project area is gently sloping with a few scattered, low, stabilized sand dunes. Vegetation consists of open forest over grasses and shrubs. Soils are entirely of the Puu One Sand series (PZUE) which is a Loose Sandy soil over subsurface lithified sand layers (Foote et al, 1972). Rainfall averages 20 inches to 24 inches per year with most falling during winter storms (Armstrong, 1983). Elevations range between 200 feet and 240 feet above sea level.

BIOLOGICAL HISTORY

In pre-contact times this area would have been an open duneland, sparsely vegetated with low native shrubs and grasses. The diversity of native species was all but eliminated by over a century of browsing and grazing by feral and domesticated herbivores and replaced by aggressive non-native plant species. Charred stumps and fence posts indicate that portions of the area have burned in the recent past. The project area now contains only some of the commoner native species that have proven to be stronger competitors and more resistant to disturbance.

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the proposed Waiko Industrial Development Project which was conducted in December 2010. The objectives of the survey were to:

1. Document what plant and animal species occur on the property or may likely occur in the existing habitat.
2. Document the status and abundance of each species.
3. Determine the presence or likely occurrence of any native flora and fauna, particularly any that are Federally listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential for these species.
4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.
5. Note which aspects of the proposed development pose significant concerns for plants or for wildlife and recommend measures that would mitigate or avoid these problems.

BOTANICAL SURVEY REPORT

SURVEY METHODS

A walk-through botanical survey method was used following routes to ensure complete coverage of this irregularly shaped property. Special focus was made to search for any native plant species that might occur on the property. Notes were made on plant species, distribution and abundance as well as on terrain and substrate.

DESCRIPTION OF THE VEGETATION

The vegetation throughout the project area is fairly uniform. It consists of an almost continuous cover of buffelgrass (*Cenchrus ciliaris*) and guinea grass (*Megathyrsus maximus*) with scattered kiawe trees (*Prosopis pallida*). The grasses were dense and two to three feet deep. The kiawe trees are scattered throughout the whole area but sometimes form a closed canopy in small areas. Some areas where the grass is less dense support a variety of other herbaceous species many of which are ephemeral annuals in this dry locality. Just two common native shrubs were found: ʻilima (*Sida fallax*) and ʻuhaloa (*Waltheria indica*) out of a total of 43 plant species observed. The remaining 41 species were non-native pasture grasses and weeds.

DISCUSSION

The vegetation throughout the project area is totally dominated by just three species, buffelgrass, guinea grass and kiawe that together comprise at least 95% of the biomass. Most of the rest of the forty three plant species found are ephemeral annuals that all but disappear during the hot, dry summer and fall seasons.

A total of two native plant species were found within the project area. Both of these are common lowland species in Maui County and throughout much of the Pacific. No officially Threatened or Endangered plants (USFWS 2009) are found on the site, nor do any plants proposed as candidates for such status occur on the property. No special native plant habitats were identified.

No wetlands occur on the site. Nothing remotely approaching the three essential criteria that define a Federally recognized wetland, namely 1) hydrophytic vegetation 2) hydric soils and 3) wetland hydrology occur within this dry project area.

Because the vegetation on the site is dominated primarily by common non-native plants and because there are no rare or protected native species within the project area, there is little of botanical concern and the proposed project is not expected to have a significant negative impact on the botanical resources in this part of Maui.

RECOMMENDATIONS

No recommendations with reference to the botanical resources are deemed necessary or appropriate.

PLANT SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within two groups: Monocots and Dicots. Taxonomy and nomenclature of the flowering plants are in accordance with Wagner et al. (1999).

For each species, the following information is provided:

1. Scientific name with author citation.

2. Common English or Hawaiian name.

3. Bio-geographical status. The following symbols are used:

   endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.
   indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).
   non-native = all those plants brought to the islands intentionally or accidentally after western contact.

4. Abundance of each species within the project area:

   abundant = forming a major part of the vegetation within the project area.
   common = widely scattered throughout the area or locally abundant within a portion of it.
   uncommon = scattered sparsely throughout the area or occurring in a few small patches.
   rare = only a few isolated individuals within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MONOCOTS			
POACEAE (Grass Family)			
Cenchrus ciliaris L.	buffelgrass	non-native	common
Chloris barbata (L.) Sw.	swollen fingergrass	non-native	rare
Cynodon dactylon (L.) Pers.	Bermuda grass	non-native	uncommon
Dactyloctenium aegyptium (L.) Willd.	beach wiregrass	non-native	uncommon
Digitaria violascens Link	smooth crabgrass	non-native	rare
Eragrostis pectinacea (Michx.) Nees.	Carolina lovegrass	non-native	common
Megathyrsus maximus (Jacq.) Simons & Jacobs	Guinea grass	non-native	abundant
DICOTS			
AMARANTHACEAE (Amaranth Family)			
Amaranthus spinosus L.	spiny amaranth	non-native	uncommon
Chenopodium carinatum R. Br.	keeled goosefoot	non-native	uncommon
Chenopodium murale L.	'aheahea	non-native	uncommon
APOCYNACEAE (Dogbane Family)			
Calotropis procera (Aiton) W.T. Aiton	small crown flower	non-native	rare
ASTERACEAE (Sunflower Family)			
Pluchea carolinensis (Jacq.) G.Don	sourbush	non-native	rare
Pluchea indica (L.) Less.	Indian fleabane	non-native	rare
Verbesina encelioides (Cav.) Benth. & Hook.	golden crown-beard	non-native	common
BORAGINACEAE (Borage Family)			
Heliotropium procumbens Mill.	four-spike heliotrope	non-native	uncommon
CLEOMACEAE (Cleome Family)			
Cleome gynandra L.	wild spider flower	non-native	rare
CONVOLVULACEAE (Morning Glory Family)			
Ipomoea obscura (L.) Ker. Gawl.	----------	non-native	rare
Ipomoea triloba L.	little bell	non-native	rare
CUCURBITACEAE (Gourd Family)			
Momordica charantia L.	bitter melon	non-native	rare
EUPHORBIACEAE (Spurge Family)			
Euphorbia heterophylla L.	kaliko	non-native	rare
Euphoriba hypericifolia (L.) Millsp.	graceful spurge	non-native	rare
Ricinus communis L.	Castor bean	non-native	uncommon
FABACEAE (Pea Family)			
Crotalaria incana L.	fuzzy rattlepod	non-native	rare
Desmanthus pernambucanus (L.) Thellung	slender mimosa	non-native	rare
Desmodium tortuosum (Sw.) DC.	Florida beggarweed	non-native	rare
Indigofera hendecophylla Jacq.	creeping indigo	non-native	rare
Indigofera suffruticosa Mill.	'inikö	non-native	uncommon
Leucaena leucocephala (Lam.) de Wit	koa haole	non-native	common
Macroptilium atropurpureum (DC.) Urb.	siratro	non-native	uncommon
Neonotonia wightii (Wight & Arnott) Lackey	glycine	non-native	uncommon

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
Prosopis pallida (Humb.&Bonpl.ex Willd.) Kunth	kiawe	non-native	abundant
Samanea saman (Jacq.) Merr.	monkeypod	non-native	rare
LAMIACEAE (Mint Family)			
Leonotis nepetifolia (L.) R.Br.	lion's ear	non-native	common
MALVACEAE (Mallow Family)			
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	non-native	rare
Malva parviflora L.	cheese weed	non-native	common
Malvastrum coromandelianum (L.) Garcke	false mallow	non-native	uncommon
Sida fallax Walp.	'ilima	indigenous	uncommon
Sida rhombifolia L.	Cuban jute	non-native	uncommon
Waltheria indica L.	'uhaloa	indigenous	uncommon
NYCTAGINACEAE (Four-o'clock Family)			
Boerhavia coccinea Mill.	scarlet spiderling	non-native	rare
PORTULACACEAE (Purslane Family)			
Portulaca oleracea L.	pigweed	non-native	rare
SOLANACEAE (Nightshade Family)			
Nicotiana glauca R.C. Graham	tree tobacco	non-native	rare
VERBENACEAE (Verbena Family)			
Lantana camara L.	lantana	non-native	uncommon

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through fauna survey method was conducted in conjunction with the botanical survey. All parts of the project area were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species abundance, activities and location as well as observations of trails, tracks, scat and signs of feeding. In addition an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

RESULTS

MAMMALS

Five species of non-native mammals or their signs were observed in the project area during two site visits. These species included: numerous domestic cattle confined in a feedlot, many tracks and antler rubbings of axis deer throughout the property, three feral cats seen hunting around the feedlots, one domestic horse in a fenced pasture and sign of one domestic dog.

Other non-native mammals one could expect to see in this habitat include: species of rats and mice which feed on seeds, fruits, insects and herbaceous vegetation, and mongoose which prey on these rodents and birds.

A special effort was made to look for the native Hawaiian hoary bat by making an evening survey at two sites in the area.. When present in an area these bats can be easily identified as they forage for insects, their distinctive flight patterns clearly visible in the glow of twilight. No evidence of such activity was observed though visibility was excellent and plenty of flying insects were seen. In addition, a bat-detecting device (Batbox IIID) was employed, set to the frequency of 27,000 Hertz which these bats are known to use for echolocation. No bats were detected at either site using this device.

BIRDS

Both the diversity of birds and their numbers were substantial across the project area due to the presence of cattle feedlots with grains and insect populations. Fourteen species of birds were seen during two site visits, including twelve introduced, non-native species, one migratory species the Pacific golden plover (*Pluvialis fulva*), and one indigenous waterbird, auku'u or the black-crowned night-heron (*Nycticorax nycticorax hoactli*) which was seen during the evening survey flying overhead towards a distant roosting tree along Waikapu stream. The non-native birds were: common myna, zebra dove, spotted dove, chicken, house sparrow, northern cardinal, peacock, gray francolin, Guinea fowl, red-crested cardinal, cattle egret and northern mockingbird. A few other non-native birds such as the house finch, Java sparrow, Japanese white-eye, nutmeg mannikin, chestnut mannikin and African silverbill might be expected to occasionally be seen, but the habitat is not suitable for Hawaii's native forest birds that are presently restricted to higher elevations beyond the range of mosquitoes and the deadly avian disease they transmit. None of the Endangered nene goose (*Branta sandvicensis*) were seen either within this kiawe forest habitat.

REPTILES

Just one species of reptile, the non-native mourning gecko, was observed. These geckos were scattered throughout the project area and could be heard making their chipping calls during the evening survey.

INSECTS

A variety of insect species were observed. The onset of the wet season stimulates the emergence of many species from dormancy. Also the presence of the feedlots and an adjacent settling pond attracts many species. A total of sixteen species were recorded including fourteen non-native species and two indigenous dragonflies: the globe skimmer (*Pantala flavescens*) which is also found throughout the tropics worldwide, and the green darner (*Anax junius*) which is also found in North America. The non-native insects included: kiawe moth, two species of droneflies, saddlebags dragonfly, monarch butterfly, Asian swallowtail, long-tail blue, carpenter bee, Argentine ant, short-horned locust, praying mantis, blue-bottle fly, mosquito and garden spider. A number of other non-native insects likely inhabit the project area or cycle through seasonally. One large native moth, Blackburn's hawk moth (*Manduca blackburni*) which is both endemic to Hawaii and listed as an Endangered species (USFWS, 2003) could occur here. One of the host plants of this Endangered moth is the non-native tree tobacco plant (*Nicotiana glauca*) which is in the nightshade family. Six tree tobacco were found during the survey. Each of these plants were carefully examined and no Blackburn's hawk moths or their larve were found.

MOLLUSKS

A few shells of the large, non-native African snail (*Achatina fulica*) were found scattered through the project area. This snail is of no conservation interest or concern. None of Hawaii's native snail species are likely to occur in this habitat and none were seen.

CONCLUSIONS AND RECOMMENDATIONS

The fauna on this project area are strongly dominated by non-native species of mammals, birds, reptiles, insects and mollusks. Just three widespread and common indigenous native animals were found. The auku'u is widespread throughout Hawaii and occurs in the U.S. Mainland and in Mexico. It is considered secure and of lower conservation concern. The two indigenous dragonflies, the globe skimmer and the green darner, are likewise widespread in Hawaii and elsewhere and are of lower conservation concern. No special wildlife habitats were identified within or adjacent to the project.

As a result of the fauna inventory encountered, the disturbed nature of the habitat and that no Endangered, Threatened or candidate animal species were found, it is determined that the proposed project will not have a significant negative impact on the fauna resources in this part of Maui.

No recommendations regarding the fauna resources are deemed necessary or appropriate.

ANIMAL SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within five groups: Mammals, Birds, Reptiles, Insects and Mollusks.. For each species the following information is provided:

1. Common name
2. Scientific name
3. Bio-geographical status. The following symbols are used:

    endemic = native only to Hawaii; not naturally occurring anywhere else in the world.
    indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).
    non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.
    migratory = spending a portion of the year in Hawaii and a portion elsewhere. In Hawaii the migratory birds are usually in the overwintering/non-breeding phase of their life cycle.

4. Abundance of each species within the project area:

    abundant = many flocks or individuals seen throughout the area at all times of day.
    common = a few flocks or well scattered individuals throughout the area.
    uncommon = only one flock or several individuals seen within the project area.
    rare = only one or two seen within the project area.

5. Taxonomy and nomenclature for each of the fauna groups are as follows:

    Mammals – Tomich (1986)
    Birds – American Ornithologists' Union (2009)
    Reptiles – Tinker (1980)
    Insects – Nishida et al (1992)

COMMON NAME	SCIENTIFIC NAME	STATUS	ABUNDANCE
MAMMALS			
Cattle	*Bos taurus*	non-native	common
Axis deer	*Axis axis*	non-native	common
Horse	*Equus caballus*	non-native	uncommon
Cat	*Felis catus*	non-native	uncommon
Dog	*Canis familiaris*	non-native	rare
BIRDS			
Zebra dove	*Geopelia striata*	non-native	common
Spotted dove	*Streptopelia chinensis*	non-native	common
Chicken	*Gallus gallus*	non-native	common
Common myna	*Acridotheres tristis*	non-native	common
House sparrow	*Passer domesticus*	non-native	common
Northern cardinal	*Cardinalis cardinalis*	non-native	uncommon
Peacock	*Pavo cristatus*	non-native	uncommon
Gray francolin	*Francolinus pondicerianus*	non-native	uncommon
Guinea fowl	*Numida meleagris galeata*	non-native	rare
Pacific golden-plover	*Pluvialis fulva*	migratory	rare
Red-crested cardinal	*Paroaria coronata*	non-native	rare
Cattle egret	*Bubulcus ibis*	non-native	rare
Northern mocking bird	*Mimus polyglottos*	non-native	rare
Auku'u	*Nycticorax nycticorax hoactli*	indigenous	rare
REPTILES			
Mourning gecko	*Lepidodactylus lugubris*	Polynesian	common
INSECTS			
Kiawe moth	*Anacamptodes fragilaria*	non-native	common
Drone fly (honey bee mimic)	*Eristalis tenax*	non-native	uncommon
Globe skimmer dragonfly	*Pantala flavescens*	indigenous	uncommon
Drone fly	*Eristalinus aeneus*	non-native	rare
Saddle bags dragonfly	*Tramea lacerata*	non-native	rare
Monarch butterfly	*Danaus plexippus*	non-native	rare
Asian swallowtail	*Papilio xuthus*	non-native	rare
Long-tail blue butterfly	*Lampides boeticus*	non-native	rare
Carpenter bee	*Xylocopa sonorina*	non-native	rare
Argentine ant	*Linepithema humile*	non-native	rare
Short-horned locust	*Oedaleus abruptus*	non-native	rare
Praying mantis	*Tenodera angustipennis*	non-native	rare
Bluebottle fly	*Calliphora vomitoria*	non-native	rare
Green darner dragonfly	*Anax junius*	indigenous	rare
Mosquito	*Aedes quinquefasciatus*	non-native	rare
Garden spider	*Argiope appensa*	non-native	rare
MOLLUSKS			
Giant African snail	*Achatina fulica*	non-native	uncommon

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Appendix N

Cultural Impact Assessment Report

CULTURAL IMPACT ASSESSMENT FOR A 31.222-ACRE PARCEL LOCATED ALONG WAIKO ROAD WAIKAPU *AHUPUA`A*, WAILUKU DISTRICT MAUI ISLAND (TMK (2) 3-8-007:102)

Prepared on behalf of:

Waiko Industrial Development, LLC
Wailuku, Maui

Prepared by

Xamanek Researches, LLC
Pukalani, Maui

Erik M. Fredericksen

20 September 2011

ABSTRACT

Xamanek Researches, LLC was contacted regarding proposed plans for a 31.222-acre parcel of land in Waikapū, Maui. The project area is currently utilized for a variety of purposes, including pasture near Kuihelani Highway, a construction base yard (Consolidated Base Yard), and cattle feed lot. The development project is proposed as a light industrial zoned district with associated infrastructure improvements (roadways, drainage, utilities and grading). Based on Hawai`i Revised Statutes and Chapter 200 of Title 11, Department of Health, Hawai`i Administrative Rules, Environmental Impact Statement rules, in accordance with the provisions of Chapter 343; an Environmental Assessment is required for the planned project since a change in zoning is being sought.

As a result of the foregoing, the compilation of this Cultural Impact Assessment is required. The subject parcel is located along the northern side of Waiko Road within Waikapū *Ahupua`a*, Wailuku District, Island of Maui (TMK: [2] 3-8-007: 102). Sections of a state highway right-of-way are also adjacent to and east of the proposed project area. Mr. Hinano Rodrigues, Cultural Historian, State Historic Preservation Division (SHPD), and Mr. Keola Lindsey of the Office of Hawaiian Affairs (OHA) were contacted. Both individuals provided general recommendations regarding this Cultural Impact Assessment. Mr. Hinano and Mr. Lindsey will be sent copies of this document, because it is part of an Environmental Assessment.

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INTRODUCTION

Xamanek Researches, LLC has previously conducted an Archaeological Assessment Survey on this 31.222 acre parcel in Waikapū *Ahupua`a*, Wailuku District, Maui Island on Tax Map Key (TMK) [2] 3-8-007:102 (Figure 1 and Figure 2). The report (Pickett and Fredericksen, 2011 [Draft]) was prepared following the Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) Hawai`i Administrative Rules (HAR 13-275-276-5); in compliance with Maui County guidelines, rules, and recommendations. The assessment survey report has previously been submitted to the SHPD for review and comment as part of the Environmental Assessment process for this project. The proposed development project consists of a light industrial zoned district with associated infrastructure improvements such as roadways, drainage, utilities and grading.

Portions of the project area have been utilized as pastureland for cattle and horses. Much of the land is currently in use for base yards with various large stockpiles, as well as cattle feed lots and associated settling ponds. The bulk of the subject area has been previously disturbed through grubbing, grading, sand mining and agricultural or pastoral endeavors. An electrical easement in favor of Maui Electric Company, Ltd. connects the western and eastern portions of the parcel. There are a series of fence-lines spread throughout the area and access involves coordination with different leaseholders and avoidance of grazing horses. No historic properties were identified within the perimeters of the subject parcel during the archaeological fieldwork. Subsurface testing included twenty, controlled mechanical Backhoe Trench (BT) excavations. Although no significant material culture remains were identified during subsurface testing, it is possible that subsurface features could be located in the uninvestigated portions of the subject parcel. Isolated, clustered, and scattered human burial features have been discovered at several locations throughout this sand dune region, known as Pu`uone.

Given the presence of sand dune deposits in all test instances, Ms. Morgan Davis, SHPD Lead Archaeologist, Maui Office, has concurred that archaeological monitoring is the appropriate form of mitigation for all future earthmoving actions within the project area. The monitoring plan (E. Fredericksen, 2011) for this project has also been submitted to the SHPD for review and comment.

The following Cultural Impact Assessment study is also a component of the Environmental Assessment process. This document has been prepared on behalf of the landowner, Waiko Industrial Development, LLC, Wailuku, Maui.

Figure 1: Portion of the Wailuku United States Geological Survey Topographic Map Depicting the Project Area Location (red).

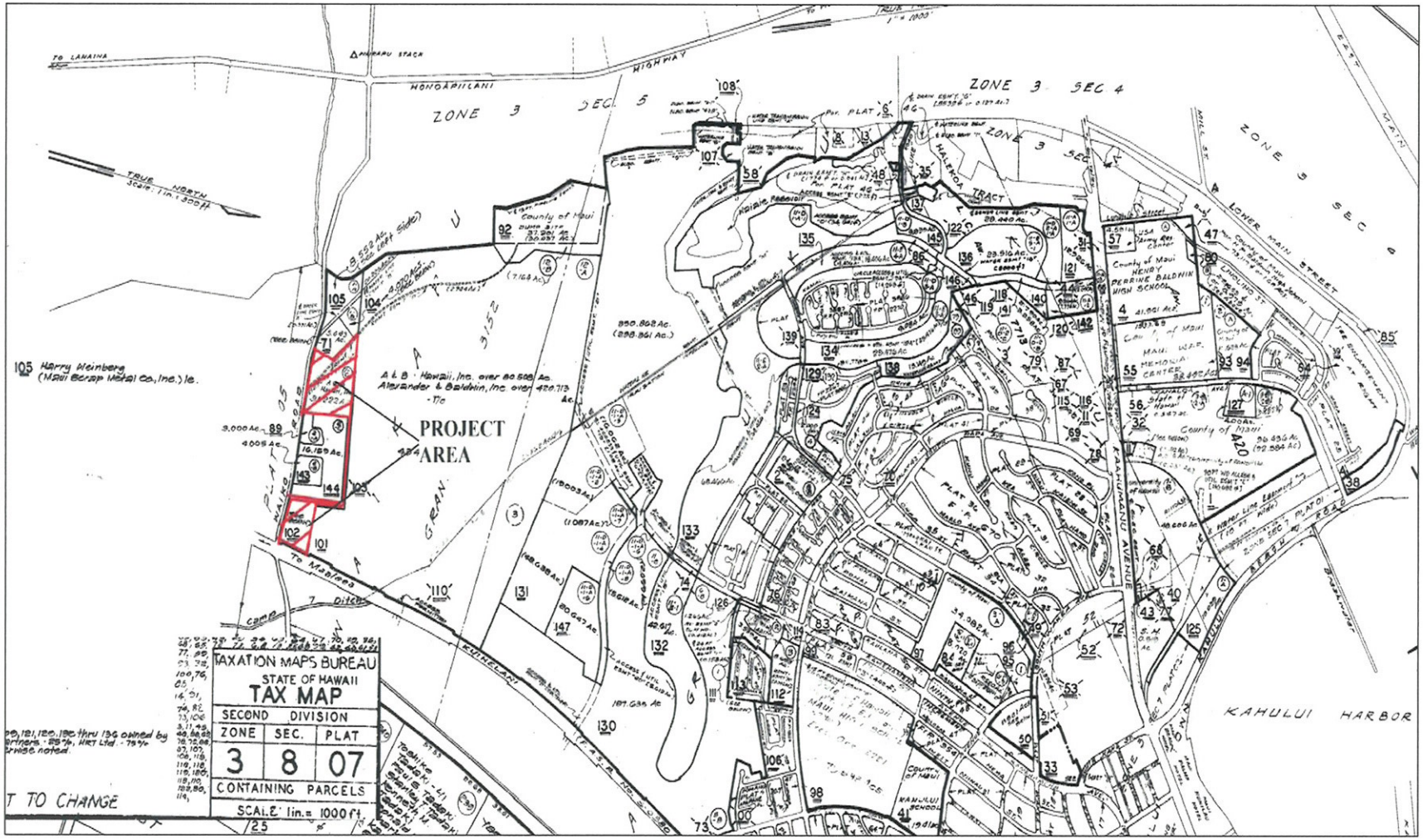

Figure 2: Tax Map Key (TMK) Depicting the Project Area Location at [2] 3-8-007:102.

CULTURAL IMPACT ASSESSMENT

The purpose of this Cultural Impact Assessment (CIA) study is to assess potential impacts of the proposed light industrial subdivision project on traditional cultural practices in the study area. The following components were considered with respect to this CIA:

- Information on cultural sites that may potentially be impacted by the proposed development project;
- Knowledge of any traditional gathering activities in the general project area (past/present);
- Traditional uses within the project area;
- Referrals of community elders who may be willing to share their cultural knowledge of the study area and the surrounding environs.

ACKNOWLEDGEMENTS

We wish to take this opportunity to thank the following individuals with physical ties to Waikapu for participating in this study: Ted and Zelie Harders, Flo Nakama, and Walette Pelegrino. In addition, we also wish to thank Dana Hall, community activist, for providing insight regarding the general area's cultural significance and for sharing some of her past experiences with projects in the Pu'uone region of Maui. (Note: interviews are located in Appendix B of this document.)

STUDY AREA DESCRIPTION

As previously noted, the study area lies within Waikapū *Ahupua'a* in Wailuku District (Photos 1-5). The project area includes 31.222 acres of undulating sand dunes (see Photo 1). Current and prior land use includes pastureland for horses and cows; construction or farming base-yard(s); previously sand mined areas; stockpiles of sand, rock, dirt, gravel; cattle feed lots; settling ponds; and a narrow, enclosed easement behind the relatively recently developed Consolidated Base Yards development (see Photo 2). The narrow easement and power lines delineate the northern boundary of the subject parcel.

Background information

As previously noted, Xamanek Researches LLC carried out an archaeological assessment survey on the subject parcel in the summer of 2011. Archaeological fieldwork took place during the months of May and June 2011. Fieldwork consisted of both surface and subsurface investigations throughout the subject parcel. The survey covered accessible portions of the subject parcel. Subsurface testing included twenty, controlled mechanical Backhoe Trench (BT) excavations. No historic properties were identified within the perimeters of the subject parcel during our archaeological fieldwork.

Given the presence of sand dune deposits in all test instances, Ms. Morgan Davis, State Historic Preservation Division Lead Archaeologist, Maui Office, has concurred that archaeological monitoring is the appropriate form of mitigation for all future earthmoving actions within the project area. This form of mitigation is recommended; because there is a possibility that human remains may be present within the project area. A monitoring plan has been prepared, and outlines the steps that will be followed during project earthmoving activities.

Monitoring Plan conventions

As noted above, a monitoring plan has been prepared and submitted to the SHPD for review and comment. This plan presents the steps that will be taken during the course of the proposed project. The 12 steps to be followed during the monitoring program are presented below. Mitigation actions are also proposed within the monitoring plan document (refer to APPENDIX A for the entire monitoring plan document).

Monitoring methodology (excerpt from E. Fredericksen, 2011)

"Topics for discussion shall include, but not necessarily be limited to the following:

1. The contractor shall be responsible for ensuring that the archaeological consultant is aware of all pertinent construction schedules and that the monitor is present for all subsurface excavation activities on this coastal parcel.
2. Both the archaeological consultant and the contractor are responsible for ensuring that on-site work is halted in an area of significant findings and to protect any such find from any further damage (i.e., construction fencing, protective covering, etc.). The State Historic Preservation Division will recommend appropriate mitigation actions. The SHPD Burial Sites Program, the SHPD Maui office, and the regional geographic representative of the Maui/Lana`i Islands Burial Council (MLIBC) will be consulted in the event that human remains are found.
3. In the event of the discovery of human remains, work shall cease in the immediate find area. In situ human remains will be left in place and any previously disturbed human remains will only be removed with written consent from SHPD. If at all possible, previsions for secure on-site storage will be made. The monitoring archaeologist will be responsible for notifying the SHPD Maui office and the Historic Preservation Division Burial Sites Program, which, in consultation with the regional geographic representative of the Maui/Lana`i Islands Burial Council, will determine the appropriate mitigation measures. This notification will include accurate information regarding the context and composition of the find.
4. The archaeological consultant will work in compliance with Hawai`i Revised Statutes Chapter 6E (procedures Relating to Inadvertent Discoveries).
5. The monitoring archaeologist will have the authority to closedown construction activities in areas where potentially significant discoveries have been made until they have been properly evaluated. Normally, construction activities may continue in unaffected portions of the project area.
6. Field procedures to be followed for documentation of discovered cultural features or human skeletal remains: a) standard field methods including recordation of profiles showing stratigraphy, cultural layers, etc.; b) mapping and photographing of finds other than human remains; c) and excavation of cultural materials and/or exposed features.
7. The SHPD Maui cultural historian shall be notified and in consultation with the MLIBC will determine treatment of identified human remains; the SHPD

Maui staff archaeologist will be notified about features such as cultural layers, artifact or midden concentrations, structural remains, etc., considered to be of significance under S13-279-2 (definitions).

8. The contractor should take into account the necessity for machine excavation at a speed slow enough to allow for reasonable visual inspection of the work. The monitoring archaeologist must make a "best effort" to search for significant material culture remains (i.e. artifacts, features, midden, skeletal remains, etc.). Machine excavation speed will need to be slowed in an area where significant material culture remains have been identified.
9. Significant archaeological discoveries, if they occur, shall be protected and identified by construction "caution" tape, fencing, or other reasonable means, until the SHPD Maui office and the archaeological consultant decide appropriate mitigation actions. All recovered material culture remains—with the possible exception of charcoal samples for radiometric analysis—will remain on Maui. Standard laboratory methods shall be utilized by the archaeological consultant in the event that cultural materials are recovered during monitoring and/or mitigation work. The archaeological consultant shall curate recovered significant cultural materials on Maui.
10. One monitor in most instances will carry out the necessary fieldwork. Tasks will include observation of grubbing and earth-moving activities. However, the SHPD and the MLIBC require that one archaeological monitor be assigned to each piece of major earth-moving equipment in sand dune areas or other culturally sensitive locations. (Change work order if more than one piece of machinery is to be utilized)
11. In the event of night work, the general contractor shall supply adequate lighting for the onsite monitor.
12. Chapter 6E-11 (a) specifies the following "It shall be unlawful for any person or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located on the private lands of any owner thereof without the owner's written permission being first obtained. It shall be unlawful for any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property located upon lands owned or controlled by the State or any of its political subdivisions, except as permitted by the department." "

Selected project photographs, current conditions

Photo # 1: General Overview of Sand Dune area (foreground) with Haleakalā (background), View to East.

Photo # 2: Overview of the Narrow Easement (North) Adjacent to the Consolidated Base Yards Development Project; View to West.

Various fence-lines and four-wheel access roadways meander throughout the parcel (see Photo 3). The property is located south of the Maui Lani development and is bounded by Kuihelani Highway as well as Waiko Road. A wide and well-used access road bisects the west section of the project area (see Photo 4). This unpaved road provides access for the landowners, lessees, and trucking firms for hauling mined sand or construction related material (no sand mining activities appear to have occurred on the project area for some).

Photo # 3: Four-wheel Access Roadway within Project Area, View to South.

Photo # 4: Graded Access Road Bisecting the Western Portion of the Project Area, View to Northwest.

Photo # 5: Settling pond overview (near the cattle feed lot) to northeast.

Natural History

The project area ranges in elevation from c. 150 to 250 feet above mean sea level. The study area lies within a portion of an extensive Aeolian sand dune formation—a large geologic feature that extends at least eight miles from Waiehu through Waikapū. The sandy matrix is underlain by lava flows from Haleakalā and alluvial sediments from the West Maui Mountains (Stearns and Macdonald 1942: 54). Much of the central isthmus is comprised of sand, and is commonly referred to as Pu`uone, which loosely translates as sand dune.

Soil classification consists of *three* types: *Jaucas Sand* with 7-30% slopes commonly used for pasture and home sites, permeability is moderately rapid above the cemented (lithified) layers, runoff is slow and the wind erosion hazard is moderate to severe; *Pulehu Clay Loam* with 0-3% slopes commonly used for sugarcane cultivation, truck crops, and pasture land, permeability is moderate, runoff is slow, and the erosion hazard is no more than slight; and *Pulehu Cobbly Silt Loam* with 3-7% slopes –this type is similar to Pulehu Clay Loam except the texture is silt loam with a cobbly surface layer. This type is commonly used for used for sugarcane cultivation. Permeability is moderate, runoff is slow, and erosion hazard is slight (Foote, et.al 1972).

The color of the sand varies from grayish-brown to light brown and golden that generally forms layers of strongly alkaline, cemented sand hardpan - otherwise known as lithified sand that undulates above and below the surface. Old root molds, or root castings, filled with hard, white alkaline deposits are a common feature in the sand dunes. Pu`uone sands occur on slopes of 7 to 30 degrees, and develop in material derived from coral and seashells (Foote, et.al 1972).

Annual precipitation in this portion of Maui ranges from 20 to 30 inches. The highest monthly rainfall occurs during the winter and spring months. Temperatures range from 60 to 80 degrees Fahrenheit in January to 68 to 90 degrees Fahrenheit in July. Winds are generally trade winds from the northeast, averaging 16 to 18 miles per hour (University of Hawaii, 1983:56).

The project area has been impacted by previous ground altering work. Most of the sand dunes in the immediate area have been developed, or partially developed. Past disturbance actions include grubbing, grading, sand mining, and agricultural and pastoral activities. All of the above activities have substantially impacted the project area.

BACKGROUND RESEARCH

Hawaiian Settlement

Wailuku District is a significant area and was referred to as such in early Hawaiian days. Waikapū *Ahupua`a* contained many *`ili*, or smaller land divisions. Waikapū was one of several *ahupua`a* within the traditional land division called Wailuku *Moku,* or "district" formerly known as Pū`ali Komohana *Moku* (Kame`eleihiwa 1992).

In ancient Hawaiian days, the prime environmental condition of lower `Īao Valley was ideal for agricultural endeavors necessary to support a large population. The area consisted of a wide valley floor, rich alluvial soils, and a constant water supply from `Īao Stream (AKA Wailuku Stream). These conditions combined with immediate access to the wetlands and Kahului Harbor; rich in marine resources, made an ideal setting for a communal political and cultural center. The lower portion of `Īao Valley provided a perfect climate for some of the most productive taro cultivation throughout the islands.

Īao Valley is noted as a place where chiefs were buried and wars were fought. *Wailuku* translated as "water of destruction" (Pukui, et. al., 1974: 225). Wailuku was once known as the political center of Maui that culminated during the time of Chief Pi`ilani (approximately 1600 AD). In the late pre-Contact period, warfare increased as the chiefs of Maui, O`ahu and the Big Island struggled for political and military dominance. High Chief Pi`ilani succeeded in unifying the districts *(Moku)* of Maui through warfare, but following his death, his sons fought amongst each another; each hoping to succeed their father as high chief. Eventually Kiha-a-Pi`ilani was victorious, but the following generation of chiefs struggled through warfare to secure their positions of political domination (Speakman 1978: 9-13).

During the reign of the last powerful paramount chief or king (*Mō`ī*) of Maui Kahekili (1765 to 1790), Wailuku again became the site of intense warfare. Allegedly, Chief Kehekili was Kamehameha I's father. Wailuku was considered to be the capital of Maui and Kahekili's royal residence, Kalanihale, was located in Wailuku, where he was surrounded by his retinue.[1] In the mid-1770s, the royal residence in Wailuku was marched upon by the Big Island chief named Kalani`ōpu`u and his *Alapa* (his warriors). News of Kalaniōpu`u's arrival preceded him, and Kahekili hid his warriors in the sand dunes above Haleki`i *Heiau* to surprise the invading troops. A fierce battle ensued, and

[1] The location is said to be just north of the intersection of High Street and Main Street leading into Iao Valley in Wailuku town.

Kalani`ōpu`u's invading troops were pushed toward the sea and slaughtered (Speakman 1978: 9-13 and 16-17).

For four years Kahekili ruled Maui, Moloka`i, Lāna`i, and O`ahu. With the aid of foreign weapons such as guns and a canon, in 1790, Kamehameha I invaded Kahekili's territory—an action that ended with the notorious battle of Kepaniwai[2] and eventual political control over Maui Island. *Kahului* translates as "the winning", and the nearby town and Bay take the name because Kamehameha I gathered his warriors there before fighting the battle in `Īao Valley (Pukui, et. al. 1974).

The reign of Kamehameha I was intertwined with the increasing presence of foreign arrivals and commercialism. The arrival of Captain Cook offshore at Kahului Bay in 1778 began the steady flow of outside influences that would forever alter the population and environment of the Hawaiian Islands.

The Waikapū wetland field system is a complex system of *lo`i* extending over 700 acres, built around the central Waikapū Stream, with *`auwai* leaving the main stream in the upper reaches on both sides to provide water for the hundreds of taro fields. The upper reaches of the system may date back to the 1100s (Creed, v. I: 74-78).

According to the Supreme Court of the Hawaiian Kingdom (Journal 2006: 198-206), a big part of obtaining the territory divisions:

> ...was that a land should run from the sea to the mountains, thus affording to the chief and his people a fishery residence at the warm seaside, together with the products of the high lands, such as fuel, canoe timber, mountain birds, and the right of way to the same, and all the varied products of the intermediate land as might be suitable to the soil and climate of the different altitudes from sea soil to mountainside or top. But this mode of allotment had numerous exceptions, because some of the lands were for some reasons not always understood, and perhaps arbitrary in the beginning, very wide at the top, cutting off a great number of other lands from the mountain; others in like manner wide in the lowlands, cut off land from the sea. With the Hawaiians, from prehistoric times, every portion of the land constituting these Islands was included in some division, larger or smaller, which had a name, and of which the boundaries were known to the people living thereon or in the neighborhood. Some persons were specially taught and made the repositories of this knowledge, and it was carefully delivered from father to son...

Ancient names have been passed from generation to generation. Native testimonies in the archives and in legal documents associated with land disputes indicate

[2]Kepaniwai means literally "water dam" in reference to Iao Stream, because the stream was choked with human bodies after the slaughter there (Pukui, et. al. 1974: 109).

that *Ka`ōpala* is the name of the place where the waters from the two great mountains of east and west Maui meet. *Ka`ōpala* is described by Pukui (1974) as a coastal area and gulch within the Honolua quad that literally translates as "the rubbish". The former name of the place now called Ka`ōpala, was *Kailinawai* because there the waters of the two mountains joined.

Original Hawaiian settlers may have utilized the area for permanent habitation, ceremony, or agriculture. Ceremonial, agricultural, habitation and human burial features have all been documented throughout the central Maui isthmus. Archaeological information indicates that the Pu`uone sand dune region was an important traditional burial area.

During initial human occupation, Waikapū was a relatively well-populated area, rich with ancient traditional Hawaiian cultural practices. Significant *mo`olelo*, or stories of old, are associated with the area including the adjacent infamous `Īao Valley. The Kahului Isthmus was rich in natural resources. No doubt fishponds were abundant along the nearby fringing coral reefs and throughout the low-lying wetlands or mudflats.

Kealia was purportedly an ancient fishpond fed by water from the meandering Waikapū Stream from the West Maui Mountains through the general current project area, and from Kolaloa Gulch in the East Maui Mountains. The artful skill of fishpond construction involves a system of ditches and sluice gates to let fish into and out of the pond. Various types of fish may have been raised including *awa* (milkfish, *Chanos chanos*) and *ama`ama* (flathead mullet, *Mugil cephalus*). Ashdown (on file) says the pond was attributed to King Umi-a-Liloa after the death of Pi`ilani in Lāhaina.

The Plains of Kama`oma`o

Some areas in the Central Maui Isthmus have been referred to as Kama`oma`o or the Plains of Kama'oma'o. Fornander (1919b: 572) describes *Kama`oma`o* as the region of the central plains of Maui known as a place where the souls of the common people were cast off with hopes of either finding a guiding *`aumakua* (family god) for companionship to the afterlife; or the soul may descend into the underworld realm known as *Milu,* which is also the name of the ruler of the underworld.

Pukui (1974) explains Kama`oma`o as a Plain near Pu`u-nēnē, Maui and that "ghosts are believed to have wandered here". Literally, Kama`oma`o translates to "the greenness." Fornander (1919:554) also refers to the "desolate plains" south of Pu`u-nēnē as a location where the souls of the dead are attracted to the "nether world" entrance.

In the book *Hawaiian Mythology*, Martha Beckwith describes a possible relation to the area of Kama`oma`o, but she refers to the area as *Oma`oma`o*:

> Among the peoples said to have appeared during the fifth period of the Kumulipo, when the hog-man was building up his family line, are the

> dog people... *(Born were the wagging tails; they had no fixed line of decent)*...This seems to mean that they intermarried without regard to class distinction and hence built up no inherited chief class. The reference is to the Ha`a people, according to David Malo Kupihea, the hairless olohe people first discovered on Maui on the plains in Kula called Oma`oma`o...they were still there in Kahekili's time. Some were in his army. They lived in the sand hills and they had mystical power of the demigods (kupua) in the form of big war dogs. These dog people still appear on Maui in the procession of spirits known as 'Marchers of the Night.' They look like other human beings but have tails like a dog...Olohe, or Ha`a people were hence a well recognized class in old days, skilled in wrestling and bone-breaking (lua) and with hairless bodies. It is said that they used to pull out their hair and smear their bodies with oil in order to give no hold to an antagonist (Beckwith 1970: 343).

The general area was known for massive battles that ensued across the land. There were many defeats of Big Island Mō`ī Kalaniopu`u's forces around 1776-1790, by the infamous Maui armies of Kahekili. The retreat took the Big Island army through Kama'oma'o (Fornander 1919:545). An area associated with Kama`oma`o was later referred to as Waikapū Common.

Waikapū Common

There are several accounts referring to a battle in the area that took place in 1776 (Fornander 1996:153-155). The Big Island King Kalaniopu`u gathered his forces and came ashore on Maui without resistance at Honua`ula, from Ke`one`oi`o to Makena. The Big Island regiment is known as *Alapa*, which consisted of several hundred highly skilled and trained men. Chaos and plunder marked the arrival of the *Alapa*. The Maui country people fled into the forest and mountain ravines for shelter. The Big Island forces were split so part of the army landed at Kīheipukoa, near the Kealia salt marsh between Kalepolepo and Ma`alaea. They were after the skilled warrior - King Kahekili in Wailuku.

With great courage the *Alapa* warriors crossed the isthmus of Kama`oma`o, also known as the Waikapū common. The warriors were determined "to drink the waters of Wailuku that day". The Big Island *Alapa* regiment was considered the bravest and best. The warriors were all of equal stature and their spears of equal length. The legend represents their appearance as a gorgeous and magnificent spectacle. The *brilliant feather cloaks reflected the sunshine and the plumes of their helmets tossed in the wind.* Kahekili offered no resistance while the *Alapa* crossed the common. Instead, he distributed his forces in various directions throughout the Wailuku side of the common. Kahekili's army fell upon the *Alapa* as they entered the sandhills -southeast of Kalua, near Wailuku..."the gallant and devoted *Alapa* were literally annihilated; only two out of the eight hundred escaped alive" (ibid).

Perhaps additional insight is portrayed by Kamakau who explains when Kaluli *Heiau* was completed, Kaleopu`upu told Kahekili, "This is the house of your god; open the sluice gate that the fish may enter". Then, in 1776 Kalaniopu`u's army landed at Keoneo`o`i`o with their war canoes extending to Makena at Honua`ula and proceeded to ravage the countryside. Additional forces combined to 800 strong. War canoes landed from Kihepuko`a at Kealia to Kapa`ahu. The warrior's feather cloaks stood out along the plains of Pu`u`ainako (Can-trash-hill) and Kama`oma`o. King Kahekili was at Kalanihale just below Kihahale and above the plateau of Ka`ilipoe at Pohakuaokahi. It was then that Kaleopu'upu'u told Kahekili, "The fish have entered the sluice; draw in the net" (Kamakau 1992:85).

Kahekili had secretly spread his forces among the sand hills southeast of Kalua, near Wailuku. With the advantage of dune elevation providing a bird's eye view from the slopes combined with the element of surprise, Kahekili and his warriors annihilated the invading *Alapa* army. Two survivors were left alive to relay the news of the defeat to Kalaniopu1u's encampment (Fornander 1880:154). The day after the "Slaughter of the Pi`ipi`i at Kakanilua", the remaining forces of Kalaniopu`u were sent to battle Kahekili. Numerous attacks from the Big Island warriors ensued. Several years later, with aide from muskets and cannons, Kamehameha I claimed control, or unified the islands under one rule. Kahekili was said to be Kamehameha's father.

In 1790 Kamehameha I marched with his army across the central Maui isthmus with *Lopaka*—the cannon from the captured American trading vessel, the Fair American. Kamehameha the Greats' conquest of Maui concluded with the well known battle of *Kepaniwai*—a most devastating combat that eventually pushed into `Īao Valley and ended with many dreadful fatalities, allegedly jamming the stream with bodies.

The Māhele

The *Māhele*, or *Division*, defines the development of the mid-1800s land tenure system transformation, which essentially divided all Hawaiian lands into three categories: (1) Crown Land: designated for the occupant of the throne, (2) Government Land, and (3) Konohiki Land: set aside for 245 of the highest ranking *Ali`i*.

The Māhele of 1848-1851 marks a "period of significance" because it is the first extensive written record of how land was utilized (Creed v. I 1993: vii). The Hawaiian leaders had influential foreign powers advising that private ownership of land was desirable and necessary to move forward into the modern world. The Māhele award books as well as the foreign and *kuleana* land claims help document the introduced land tenure system.

Not everyone, particularly older Hawaiians, fully understood the ramifications of the process of filing or not filing a claim for lands on which their families lived and worked for generations. Marion Kelly (Creed, v. I: 42) elaborates that "...many people

who had use rights in the land did not register their claims...chiefs who participated in the division of lands with King Kamehameha III were not required to present claims to the Commissioners ...not all testimonies and awards corresponded with registered claims, and there were often contentions. Many registered claims were rejected, and some lands listed in claims were not awarded..." The process was a complex one that presented a plethora of issues.

The idea of *private property* was introduced to the islands. All of the lands were subject to the *rights of native tenants*. If the common people (*maka`āinana*), or "Native Tenants", met certain criteria and filed land claims under specific guidelines, a Land Commission Award (LCA) was issued. According to the Hawaiian Journal of Law & Politics (Volume 2: 2006):

> ...After the surrender by Kamehameha III, in 1848, of the greater part of the land of the Kingdom to his chiefs and people, the necessity of a speedy distribution of it in accordance with what may be called the feudal rights of the chiefs, required that awards of lands be made by name only without survey. No body of surveyors could have been found in the country or practically could have been brought here, who might have surveyed these large estates within the lifetime of half the grantees, so that every award should have been issued as of a tract defined by metes and bounds, or with even an approximate statement of the acreage. The "Mahele" or division was, therefore, made without survey. Tracts of land known to Hawaiians as an ahupuaa or ili were awarded to those entitled by name of the ahupuaa or ili. By such grant was intended to be assigned whatever was included in such tract according to its boundaries as known and used from ancient times.

Further efforts for native tenant land rights required paying hefty commutation in addition to conducting expensive land surveys -with limited available land surveyors- then finally, a land grant may be awarded. The awarded lands are referred to as *kuleana*.

According to the on-line *Waihona `Āina* database: In 1848, much of Wailuku was designated Crown Land, to be used in support of the royal "state and dignity". In 1872, Kamehameha V died, and his sister Princess Ruth Ke`elikolani inherited the land. She was designated as the owner of the *Ka`a* lands of Wailuku, the southern portion of the *ahupua`a*. The *ili* of *Owa* comprised of 743.40 acres, (LCA 420) and was granted to Kuihelani. The study area is located within a section of LCA 420 to Kuihelani; being a portion of Royal Patent 1996.

The lower portion of `Īao Valley, to the northwest, contained some of the most productive taro lands on the island, reported in historic testimonies and maps related to LCAs in the lower valley. There are 66 LCAs identified between the old Wailuku Mill site and Paukūkalo, on the southern side of `Īao stream, listed primarily as taro patch

kuleana, and 39 *po`alima*. Additionally, thirteen awards were given to individual chiefs by Kamehameha IV.[3]

By 1876, a reciprocity treaty with the United States gave a boost to the sugar industry by increasing prices, and the dry eastern section of Wailuku *Ahupua`a* became more attractive for potential sugar land. Claus Spreckels developed a friendship with King Kalākaua, and through him purchased or leased 40,000 acres of dry lands in 1878. The lease included 16,000 acres within Wailuku *Ahupua`a*. Later in 1882, one-half of the Crown Lands of Hawaii were deeded to sugar producer, Claus Spreckels, allegedly in order to settle debts.

Worried about what Spreckels might do with half of the Crown Lands, King Kalākaua deeded one of the aforementioned grants: Land Grant 3343 to Spreckels. The grant included a 24,000 acre portion of the southeastern section of Wailuku *Ahupua`a,* in return for the surrender of his claim (Adler 1966: 262-263). Much of the land shifted after the Māhele. According to Kame`eleihiwa (1992: 314-315), King Kalākaua's mother received fifty *ahupua`a* as a result of the Māhele and by the time she died, Kalākaua only received two *ahupua`a*...

> ...which meant he was virtually a landless *Ali`i Nui*, equivalent to a mere *konohiki* of twenty years before. But if he were to live and rule as an *Ali`i Nui* in the new capitalist system, he needed money. His attempts to make money via his capitalist friend Spreckels, through shady land deals and auctioning of the sole opium license for the kingdom to various contending Chinese businessmen, gave the missionary faction an excuse to ferment a rebellion that culminated in 1887...The Bayonet Constitution stripped power from the Hawaiian *Mō`ī* [King] and gave it to foreign capitalists. Broken in spirit and disheartened by the betrayal of foreigners whom he thought could be his friends, Kalākaua's health deteriorated. In 1891 he died... Kalākaua had discovered that it was impossible to rule Hawai`i with *pono* for both Natives and foreigners-their worlds were too different.

Disputes were common. The Hawai`i Court Appeal addressed the topic of the Pūlehu-Nui and the Waikapū boundary issue. According to the Commissioner, Pūlehu-Nui includes an area of 16,687 78-100 acres. It extends from Kilohana Peak at the rim of Haleakalā Crater at an altitude of approximately 10,000 feet. Pūlehu-Nui continues westward, down about fifteen miles. The eastern or mountain section is *comparatively narrow, often less than half a mile wide.* The western section meets the low land and becomes wider –from three to four miles wide- until meeting at the west boundary with Waikapū Ahupua`a.

The west boundary was disputed. The claim states that Pūlehu-Nui boundary included c. 5,000 acres that belong to Waikapū. The Commissioner's boundary includes

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[3] This is in contrast to the area south and east of Lower Iao Valley, in which the study parcel lies. Here there were 2 LCAs awarded—one to Victoria Kamamalu (7713), and one to Kuihelani (420). The largest land partition of Central Maui is Grant 3343 to Claus Spreckels.

~2,000 feet along the shore from Kīhei sand spit to a point of rocks called Kalaepohaku. The proposed Waikapū border cut Pūlehu-Nui off from the sea. Pūlehu-Nui extends to a level place where the water ran down and stood still by the ancient name *Kaopala*. The boundary of Pūlehu-Nui ran through Kaopala with the streambed as the boundary. At Kaopala the water turned southward and ran down to the ocean towards Kealia Pond, which belonged to Waikapū. Pohakiikii is within Pūlehu-Nui (ibid).

Pūlehu-Nui borders Waikapū at Waikapū Common. *Waikapū Common* was granted to the Department of Education during the Māhele since there were no claimants named. In 1879 the Supreme Court ruled on the disputed boundary indicating that because the 10 parcels for the Common were returned to the Department of Education, the patents on the Common "cannot be held to have an existence for any purpose" and further "if any inference is to be drawn it should be that the Government, or the Board of Education, did not have an assurance that Waikapū extended as they had sold it" (Judd 1883: 250).

Sugarcane and water

All of Hawai`i, including Wailuku and Waikapū continued to transform under foreign influence. Because sugarcane cultivation requires an immense amount of water, the natural water flow in *Na Wai Eha* drastically shifted. In 1880, Spreckels began the construction of "Spreckels' Ditch", located *makai* of the aforementioned "Hāmākua" Ditch, which was built earlier by Alexander and Baldwin to water *Maui Agricultural Company's* fields in and around Pā`ia. The "Spreckels' Ditch" carried water from Haleakalā farther west onto the arid Kahului isthmus. The ditch was 30 miles long, delivered about 60 million gallons of water a day, and cost $500,000 to construct.

Spreckels spearheaded construction for the Waihe`e ditch in 1882, which tapped the water resources from the West Maui Mountains, thus bringing water to both sides of the *Wailuku Commons* isthmus area (Adler, 1966: 48-49). These endeavors enabled him, in 1882, to establish Hawaiian Commercial and Sugar Company (HC&S). He received a large grant of land in the central Maui area that was utilized for this agricultural development.[4] He continued involvement in HC &S until 1898, when control was wrested from his hands. The parent company still bears the name *Alexander and Baldwin*, the principal participants in the transfer of corporate control. The production of sugarcane continues to be an activity in the isthmus area to this day, although some portions operated by C. Brewer and Company shifted to pineapple production. Most of the earlier plantation agricultural endeavors have ceased or scaled back operations. However, sugarcane is still cultivated adjacent to and east of Kuihelani Highway. This highway borders the project area to the east.

[4] **The current project area is located within another large land grant - Grant 3152.**

CULTURAL RESOURCES IN AREA

The earliest archaeological work in Wailuku and Waikapū was part of the island-wide survey of *heiau* (place of worship) compiled by Winslow Walker during 1928-1931. A number of *heiau* were listed for Wailuku. The infamous - *Pihana Heiau* and *Haleki'i Heiau* - lie on the northern side of `Īao Stream atop the large dune formation. Efforts in the 1970s led to the preservation and designation of a State Monument, under the supervision of the Division of State Parks (DLNR).

Walker reported a number of additional significant *heiau* in Wailuku, which were allegedly consecrated by Liholiho during his visit to Maui in 1801 (Walker 1931: 146-147). At the time of Walker's survey, none of the following Wailuku *heiau* could be located: Keahuku, Olokua, Olopio, Mālena, Pohakuokahi, Lelemākō, Kāwelowelo, Kaulupala, Palamaihiki, and Oloolokalani (ibid: 148).

Walker notes an unnamed *Heiau* and Petroglyphs located 0.25 mile from the village of Ma`alaea at the base of the foothills of the West Maui Mountains. An ancient village with house and shelter sites is also noted. During the Statewide inventory of historic sites project, the Sites were listed as SIHP -1441 (McGregor Point C-shapes) and SIHP -1287 (Ma`alaea Complex). At least 45 house and shelter sites were noted above (*mauka*) the highway during the survey.

At Ma`alaea Harbor, two large basalt boulders with cultural significance were re-located to the grounds of Buzz's Wharf Restaurant. One of the features is a large grindstone, referred to as the "King's Table". The grindstone was allegedly removed from the ocean during the expansion of the Harbor. The second feature was traditionally used to deposit newborn's umbilical cords into boulder, which has been referred to as a *Piko Stone* (SIHP -1286 and -1440]). The *Piko* Stone is most likely the one referred to in the Boundary Commission testimony (Creed v. I: 25). Prior to its' current location next to the grindstone, the *Piko* Stone was positioned at Kapoli Spring[5]

Kennedy conducted an archaeological survey approximately 600-1000 feet above sea level. Several traditional Hawaiian dry-land agricultural features were documented during the survey (Kennedy, 1990). In Waikapū Valley traditional Hawaiian wetland agricultural sites were documented by Theresa Donham (1991). The wetland features were identified approximately 750 feet above sea level, to the west of the current project

[5] The location of Kapoli Spring is offered by a local resident, who wishes to remain anonymous. It is a spring that has partially been sealed off - near Buzz's Wharf restaurant - at the public restroom facility.

area. It is interesting to note that alluvial deposits were located within some backhoe trenches during testing on the current study area.

Human burial finds in the Pu`uone area in vicinity of the project area

In 1994 and 1995, Xamanek Researches conducted a salvage recovery project in response to the inadvertent discovery of human skeletal remains in Waikapū. Human burials were displaced by sand mining activities at Maui Scrap Metal Company. This project was located on a property that is just to the WNW of the current project area. The transported sand contained human skeletal remains and the Maui/Lanai Islands Burial Council and the SHPD recommended mitigation measures including investigation, recovery, and reburial procedures. The skeletal remains represented more than 22 individuals. Ten pieces of a boar tusk anklet (*kupe`e hoaka*) and a hand drilled canine dogtooth pendant was also recovered. The artifacts were treated as burial associated items so the recovered artifacts and human skeletal remains were placed as close to the original burial site as possible (Fredericksen and Fredericksen 1996).

Joseph Kennedy conducted research at a Waikapū sand mining project that resulted in the identification and preservation of a human burial complex (Kennedy 1989). This site, which is recommended for permanent preservation, is located on the parcel adjacent to the project area.

Early archaeological reconnaissance surveys by Barrera (1976) of the approximately 1,000 acre neighboring Maui Lani Project, and of the Hale Laulea Subdivision (Barrera, 1983) in Kahului did not report any sites. However, since then many human burial features have been inadvertently discovered throughout these areas.

Neller (1984) investigated the "sand borrow site" after sand from the dunes was transported to a construction site in Lāhaina, was discovered to contain human remains. Upon investigation, one *in situ* human burial, and skeletal fragments representing at least 3 other individuals were displaced throughout the vicinity. In 1987, Xamanek Researches and the Maui Police Department investigated the discovery of human skeletal remains. This area was also referred to as the "sand borrow site". Archaeologists were sent to determine the nature of additional skeletal material reported by local informants. A well-utilized dirt bike trail had exposed the disturbed, flexed burial of a young female (18 to 25 years of age), and a 4 or 5 year old child nearby, partially exposed in the trail. Maui Police Department recommended the burials be removed. A shattered 4th thoracic rib and lower left scapula blade, suggests a frontal traumatic puncture wound may have caused the death of the young female. The burials were eventually turned over to the State Historic Preservation Division on Maui until permanent replacement.

Under contract to Maui Lani Partners, the Bernice Pauahi Bishop Museum Anthropology Department conducted test excavations at 4 sites identified during a reconnaissance survey (Rotunno and Cleghorn, February 1990). Three of the sites included 2 parallel alignments, 2 adjacent rock mounds, and a single rock mound. The surface features were all determined recent origin related to off-road vehicular traffic.

The fourth Bishop Museum site (Site 50-50-04-2797) is a human burial complex. The burials were identified across a *sand borrow pit* "near the eastern boundary of the Maui Lani Project area". No intact burials were recovered, but the scattered remains from at least 3 individuals were recovered near the surface (Rotunno-Hazuka et. al., May 1994a). Subsequent data recovery methods were employed. Results documented the identification of at least 12 individuals from 10 burial features. Six of the features were preserved *in situ* (Rotunno-Hazuka et. al., May 1994b). The site is nestled in the current Maui Lani golf course and residential development.

Archaeological subsurface sampling of the Maui Lani Development Phases 1 and 1A was conducted by Aki Sinoto Consulting. The objective of the work was to implement a strategy for subsurface sampling to test for the predictability of burials based on topographic features within the unmodified dune areas, and to address the deficiencies in the reconnaissance or inventory survey (Pantaleo and Sinoto, January 1996). A total of 90 backhoe trenches, 2 shovel scrapes and a manual trench were excavated in 58 areas (ibid: iii). Six previously unrecorded burials were identified – 4 associated with the sand borrow site (Site -2797); and one on top of a high dune (Site -4146). "No predictable pattern of traditional interment of the dead based on preference for topographic features was established during the current investigation. Rather, the resultant data indicates only one concentration or complex of multiple burials at Site -2797 and isolated individual burials at the top of dunes in the highest locations in the project area" (ibid.). Subsequent archaeological monitoring of Maui Lani residential and commercial development resulted in the discovery of hundreds of additional human burial features throughout the sand dunes.

Xamanek Researches conducted an archaeological inventory survey along the Maui Lani Parkway, Lot 11-A in 1997. A human burial site was documented and assigned SIHP 50-50-04-4401. Several other burial features are documented along the Maui Lani Parkway Development such as Sites -4368 and -4435 (Xamanek Researches).

A pre-Contact human burial was discovered while road crews were excavating under the Ka`ahumanu Avenue bridge crossing along Wai`ale Road (Site -4126).

Also along Wai`ale Road, which forms the western border of the Wailuku Sand Hills residential neighborhood, human burial features have been documented. Archaeological monitoring occurred for a drainage project (C. Brewer) and archaeologists identified human remains formerly disturbed by an old pipeline trench running perpendicular to the road (Site -4005). Site -3502 contains human burial features including an historic coffin burial and a disturbed burial determined to be ancient Hawaiian. Site -4067 is a habitation site associated with Site -4005, which was identified during the drainage project. Site -4068 is another habitation site with an associated cluster of human burials (Dunn and Spear 1995).

During construction for the Maui Homeless Shelter (Ka Hale A Keola) to the north, in May of 1992, 3 human burials were inadvertently discovered (Site 50-50-04-

2916). These skeletal remains were investigated by Theresa Donham, SHPD. Skeletal remains representing an adult male were documented roughly 2 feet below the original surface (Burial 1), a cranium (Burial 2) was exposed during construction of a de-silting basin located along the lower slope of the dune at the southeastern corner of the project area (Donham, 1992:3). A test unit yielded 280 identifiable elements or human skeletal fragments were recovered, along with 235 non-diagnostic fragments. Two adult individuals were represented in the collection.

General comments regarding the Pu`uone region

As previously noted, the current project area is located within the Pu`uone region of Maui. This extensive sand dune system covers much of the central isthmus area to the north and extends to the south of Waikapū. The Maui/Lana`i Islands Burial Council (MLIBC) has been actively involved in numbers of projects in this area that have encountered human burials over the years. Ms. Dana Hall, community activist and former MLIBC member (including Chair and Vice-Chair positions), has remarked on many occasions that this general area was a traditional burial area (personal communication with Erik Fredericksen, various occasions). The MLIBC has noted its concern for this general physiographic area on several occasions as well. As such, the possibility exists for encountering human burials on all properties that are located within this sand dune region. Consequently, archaeological monitoring is necessary for any project that includes earth disturbance activities that occurs in this area.

SUMMARY AND CONCLUSIONS

As noted previously in this document, an archaeological assessment was carried out on the project area. There were no significant surface or subsurface cultural remains identified during the previous assessment survey. Portions of the project area appear to have been heavily impacted by mechanical grading and/or sand mining activities. Cattle grazing with associated feedlots and large drainage ponds have also reshaped sections of the subject parcel.

The subject parcel is located within the general area that contains isolated and clustered human burials – the Pu`uone sand dune system. Surface and subsurface historic properties have been documented on some of the adjacent parcels. Although no surface or subsurface historic properties were identified during the previous archaeological assessment survey, there is a possibility of the inadvertent discovery of undocumented subsurface cultural properties during any potential future land alteration activities. It is important to note that sand dune deposits were located in all test instances.

Some informants voiced concern for possible human remains that may be located on untested portions of this previously disturbed parcel. While the assessment survey did not locate historic properties, the possibility nevertheless exists that significant material culture remains may be contained within untested portions of the project area. Consequently, archaeological monitoring is the proposed mitigation for all future earth moving activities on the subject parcel.

Based on our research and interviews, we are not aware of any specific traditional Hawaiian cultural uses for the subject parcel at present. Interviewees did not know of any specific cultural uses of the project area as well.

Assessment of Cultural Impacts

The subject parcel and surrounding areas have been heavily impacted by post-contact activities of the 19th and 20th centuries. If traditional Hawaiian cultural sites were present prior to the Plantation Era, they were either destroyed or buried by earth altering activities, or more recent land alterations. The project area is currently utilized for a variety of purposes, including pasture near Kuihelani Highway, a construction base yard (Consolidated Base Yard), and a feedlot for cattle.

Informants were not aware of any traditional cultural practices that occur on the project area at present. However, two individuals remarked that this sand dune area is generally known for containing burials.

Potential Impacts by Future Construction Activities

Given the location of the project area, there is a possibility that traditional Hawaiian burials could be located in untested subsurface portions of the project area. The Pu`uone dune system is known for containing isolated and clustered human burials. In addition, traditional Hawaiian or more recent historical subsurface habitation or agricultural sites could be present in untested subsurface sections of the subject parcel. Traditional Hawaiian cultural deposits may include midden deposits, charcoal, cooking pits, waterworn pebbles, or stone features. More recent post-contact cultural deposits may include discarded bottles, crockery, and other domestic objects. Given that there is a possibility of encountering significant material culture remains, including human burials during subsurface ground disturbance activities on the subject parcel, archaeological monitoring is the recommended mitigation for the proposed development on this 31.222-acre portion of land in Waikapū. To this end, a monitoring plan for the project area has concurrently been submitted to the State Historic Preservation Division for review and comment.

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APPENDIX A: Project archaeological monitoring plan.

An Archaeological Monitoring Plan for a 31.222-acre Parcel Located along Waiko Road Waikapū *Ahupua`a*, Wailuku District Maui Island TMK (2) 3-8-007:102

Prepared on behalf of:

Waiko Industrial Development, LLC
Wailuku, Maui

Prepared by

Xamanek Researches, LLC
Pukalani, Maui

Erik M. Fredericksen

2 September 2011

INTRODUCTION

Xamanek Researches, LLC conducted an Archaeological Assessment Survey for a 31.222 acre parcel in Waikapū *Ahupua`a*, Wailuku District, Maui Island on Tax Map Key (TMK) [2] 3-8-007:102 (Figure 1 and Figure 2). The report (Pickett and Fredericksen, 2011) was prepared following the Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) Hawai`i Administrative Rules (HAR 13-275-276-5); in compliance with Maui County guidelines, rules, and recommendations. This report has been submitted to the SHPD for review and comment.

Archaeological fieldwork took place during the months of May and June 2011. Fieldwork consisted of both surface and subsurface investigations throughout the subject parcel. The survey covered accessible portions of the subject area. The project area has been utilized as pastureland for cattle and horses. Much of the land is currently heavily utilized as base-yards with various large stockpiles, as well as cattle feed lots and associated settling ponds. The bulk of the subject area has been previously disturbed through grubbing, grading, sand mining and agricultural or pastoral endeavors. An electrical easement in favor of Maui Electric Company, Ltd. connects the western and eastern portions of the parcel.

There are a series of fence-lines spread throughout the area and access involved coordination with different leaseholders and avoidance of grazing horses. Cattle feedlots cover sections of the project area. Access was limited in these areas and mechanical backhoe work did not occur in the stockpile areas or the cattle feedlots. Subsurface testing included twenty, controlled mechanical Backhoe Trench (BT) excavations. No historic properties were identified within the perimeters of the subject area during the archaeological fieldwork. However, remnants of traditional Hawaiian occupation, burial features, and/or ceremonial areas may still exist. Historic plantation, ranching, and military features could also be encountered. Although subsurface testing occurred, it is possible that subsurface features could be located in the uninvestigated portions of the subject parcel. Isolated, clustered, and scattered human burial features have been discovered at several locations throughout this sand dune region.

Given the presence of sand dune deposits in all test instances, Ms. Morgan Davis, SHPD Lead Archaeologist, Maui Office, has concurred that monitoring is the appropriate form of mitigation for all future actions on the project area. The following monitoring plan has been prepared on behalf of Waiko Industrial Development, LLC, Wailuku, Maui.

Figure 3: Portion of the Wailuku United States Geological Survey Topographic Map Depicting the Project Area Location (red).

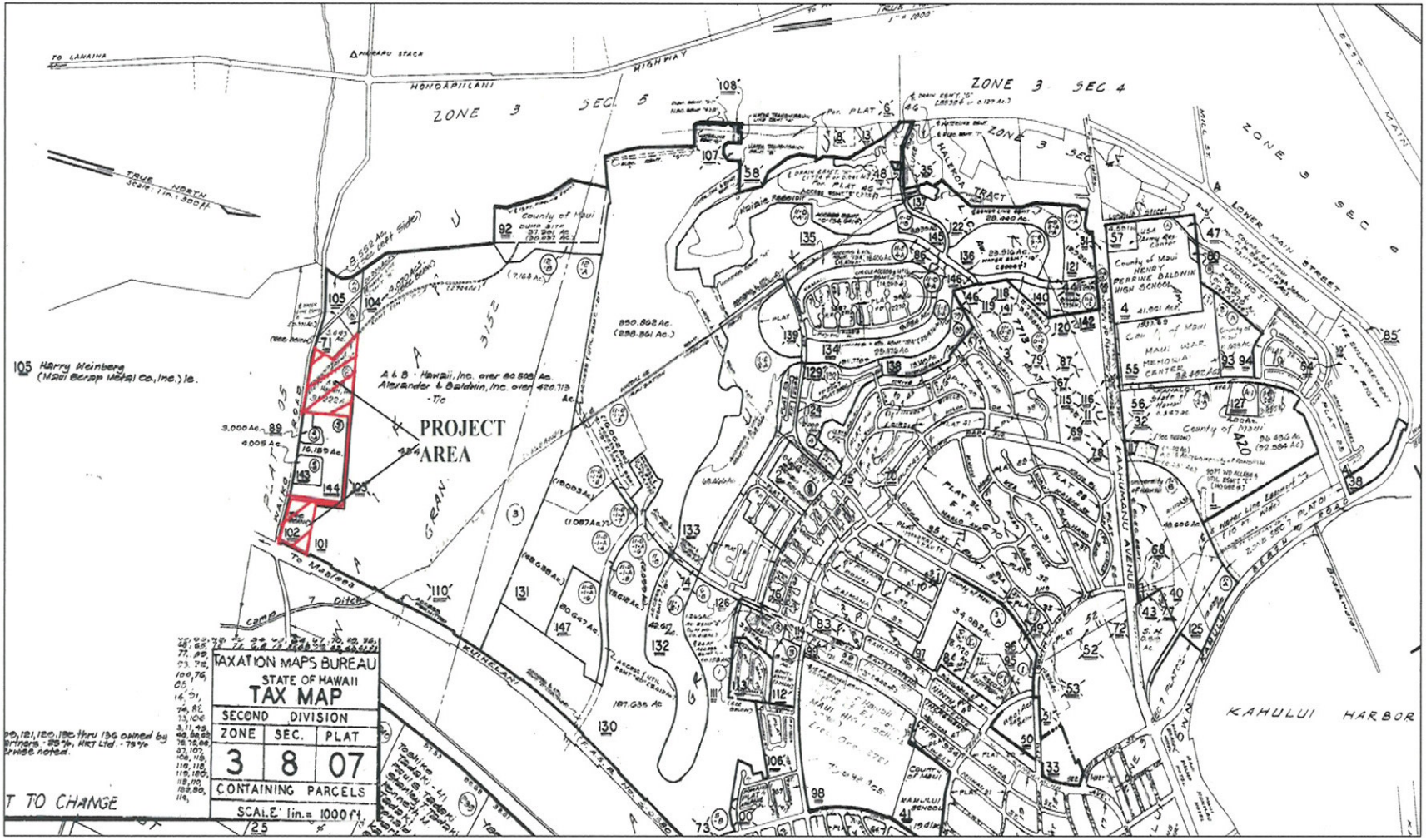

Figure 4: Tax Map Key (TMK) Depicting the Project Area Location at [2] 3-8-007:102.

STUDY AREA DESCRIPTION

The study area lies within Waikapū *Ahupua`a* in Wailuku District. The subject area consists of 31.222 acres of undulating sand dunes. Generally, prior land use includes pastureland for horses and cows; construction or farming base-yard(s); sand-mined areas; stockpiles of sand, rock, dirt, gravel (etc); ponds; cattle feed lots; and a relatively narrow, enclosed easement behind the relatively recently developed Consolidated Base-yard facility. The narrow easement and power lines delineate the northern boundary of the subject area.

Various fence-lines and *jeep* access roadways meander throughout the parcel. The subject parcel is located south of the Maui Lani development and is bounded by Kuihelani Highway as well as Waiko Road. A wide, well-used access road bisects the west section of the project area. The landowner, lessees, and commercial traffic mainly utilize this dirt road for hauling mined sand or construction related material (no sand mining activities are actively occurring on the project area).

Natural History

The project area ranges in elevation from approximately 45 to 75 meters (150-250 feet) above mean sea level. The area lies within a portion of an extensive Aeolian sand dune formation—a large geologic feature that extends at least eight miles from Waiehu through Waikapū. The sandy matrix is underlain by lava flows from Haleakalā and alluvial sediments from the West Maui Mountains (Stearns and Macdonald 1942: 54). Much of the central isthmus is comprised of sand, and is commonly referred to as *Pu`uone,* which loosely translates as sand dune.

Soil classification consists of *three* types: *Jaucas Sand* with 7-30% slopes commonly used for pasture and home sites, permeability is moderately rapid above the cemented (lithified) layers, runoff is slow and the wind erosion hazard is moderate to severe; *Pulehu Clay Loam* with 0-3% slopes commonly used for sugarcane cultivation, truck crops, and pasture land, permeability is moderate, runoff is slow, and the erosion hazard is no more than slight; and *Pulehu Cobbly Silt Loam* with 3-7% slopes –this type is similar to Pulehu Clay Loam except the texture is silt loam with a cobbly surface layer. This type is commonly used for used for sugarcane cultivation. Permeability is moderate, runoff is slow, and erosion hazard is slight (Foote, et.al 1972).

The color of the sand varies from grayish-brown to light brown and golden that generally forms layers of strongly alkaline, cemented sand hardpan - otherwise known as lithified sand that undulates above and below the surface. Old root molds, or root castings, filled with hard, white alkaline deposits are a common feature in the sand dunes.

Pu`uone sands occur on slopes of 7 to 30 degrees, and develop in material derived from coral and seashells (Foote, et.al 1972).

Annual precipitation in this portion of Maui averages between 20 to 30 inches. The highest monthly rainfall occurs during the winter and spring months. Temperatures range from 60 to 80 degrees Fahrenheit in January to 68 to 90 degrees Fahrenheit in July. Winds are generally trade winds from the northeast, averaging 16 to 18 miles per hour (University of Hawaii, 1983:56).

The project area has been impacted by previous groundwork. Most of the sand dunes in the immediate area have been developed, or partially developed. Past disturbance actions include grubbing, grading, sand mining, and agricultural and pastoral activities, which have affected the natural environment.

ARCHAEOLOGICAL MONITORING PLAN

Scope of monitoring

As previously noted, sand dune deposits were located in all test instances. The scope of this monitoring plan includes having an archaeological monitor present during all subsurface earthmoving activities scheduled for the subject parcel. Actual on-site time and specific actions to be followed in the event of inadvertent discoveries will be discussed and agreed upon by the general contractor and the archaeological consultant at a pre-construction meeting held for this purpose. Additional meetings may be called, if either the monitoring archaeologist or contractor believes that other relevant information should be disseminated. As previously mentioned, this plan covers this 31.222-acre portion of land in Waikapū (TMK: (2) 3-8-007:102).

By way of background information, Xamanek Researches conducted a salvage recovery project in 1994 and 1995, in response to the inadvertent discovery of human skeletal remains on a nearby parcel in Waikapū. Human burials were impacted by sand mining activities at a parcel leased by Maui Scrap Metal Company. The transported sand contained human skeletal remains. The Maui/Lanai Islands Burial Council and the SHPD recommended mitigation measures including investigation, recovery, and reburial procedures. The skeletal remains represented more than 22 individuals. In addition, ten pieces of a boar tusk anklet (*kupe`e hoaka*) and a hand drilled canine dogtooth pendant was also recovered. The artifacts were treated as burial associated items. The recovered

artifacts and human skeletal remains were placed as close to the original burial locale as possible, and designated Site 50-50-04-3524 (Fredericksen and Fredericksen 1996). The above site is located within 500 m WNW of the project area.

Monitoring methodology

Given the locale of the project area and the presence of sand dune deposits in all test instances during inventory survey sampling, there is a possibility that significant material culture remains may be inadvertently disturbed during earthmoving activities on this portion of Waikapū, Maui. Possible material culture remains could include precontact and/or post-contact subsurface building, habitation and/or agricultural site remnants. In addition, there is a chance that human remains could be encountered (such as Site -3524).

Close cooperation between the monitoring archaeologist and construction personnel is important to a successful monitoring program. The monitoring program will follow the 12 conditions listed below:

1) The contractor shall be responsible for ensuring that the archaeological consultant is aware of all pertinent construction schedules and that the monitor is present for all subsurface excavation activities on this parcel.

2) Both the archaeological consultant and the contractor are responsible for ensuring that on-site work is halted in an area of significant findings and to protect any such find from any further damage (i.e., construction fencing, protective covering, etc.). The State Historic Preservation Division (SHPD) Maui office will recommend appropriate mitigation actions. The SHPD Burial Sites Program, the SHPD Maui office, and the Maui/Lana`i Islands Burial Council (MLIBC) will be consulted in the event that human remains are found. (Change work order)

3) In the event of the discovery of human remains, work shall cease in the immediate find area. *In situ* human remains will be left in place, and any disturbed human remains will only be removed after written notification from the SHPD. If at all possible, provisions for secure on-site storage of inadvertently disturbed human remains will be made. The monitoring archaeologist will be responsible for notifying the SHPD Maui office (including the Cultural Historian), and the Historic Preservation Division Burial Sites Program, which, in consultation with the Maui/Lana`i Islands Burial Council regional geographic representative, shall determine appropriate mitigation measures. This notification will include accurate information regarding the context and composition of the find. (Change work order)

4) The archaeological consultant will work in compliance with Hawai`i Revised Statutes Chapter 6E (procedures Relating to Inadvertent Discoveries).

5) The monitoring archaeologist will have the authority to closedown construction activities in areas where potentially significant discoveries have been made until they have been properly evaluated. Normally, construction activities may continue in unaffected portions of the project area. (Change work order)

6) Field procedures to be followed for documentation of discovered cultural features or human skeletal remains: a) standard field methods including recordation of profiles showing stratigraphy, cultural layers, etc.; b) mapping and photographing of finds other than human remains; c) and excavation of cultural materials and/or exposed features.

7) The SHPD Maui archaeologist shall be notified and consulted with regarding treatment of identified features such as cultural layers, artifact or midden concentrations, structural remains, etc., considered to be of significance under S13-279-2 (definitions).

8) The contractor should take into account the necessity for machine excavation at a speed slow enough to allow for reasonable visual inspection of the work. The monitoring archaeologist must make a "best effort" to search for significant material culture remains (i.e. artifacts, features, midden, skeletal remains, etc.). Machine excavation speed will need to be slowed in an area where significant material culture remains have been identified. (Change work order)

9) Significant archaeological discoveries, if they occur, shall be protected and identified by construction "caution" tape, fencing, or other reasonable means, until the SHPD Maui office and the archaeological consultant decide appropriate mitigation actions. All recovered material culture remains—with the possible exception of charcoal samples for radiometric analysis—will remain on Maui. Standard laboratory methods shall be utilized by the archaeological consultant in the event that cultural materials are recovered during monitoring and/or mitigation work. The archaeological consultant will curate significant cultural materials on island. (Change work order)

10) One monitor in most instances will carry out the necessary fieldwork. Tasks will include observation of grubbing and earth-moving activities. However, the SHPD and the MLIBC require that one archaeological monitor be assigned to each piece of major earth-moving equipment in sand dune areas or other culturally sensitive locations. (Change work order if more than one piece of machinery is to be utilized)

11) In the event of night work, the general contractor shall supply adequate lighting for the onsite monitor (s).

12) Chapter 6E-11 (a) specifies the following "It shall be unlawful for any person or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located on the private lands of any owner thereof without the owner's written permission being first obtained. It shall be unlawful for any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property located upon lands owned or controlled by the State or any of its political subdivisions, except as permitted by the department."

Field methods utilized shall include photographic recordation (where appropriate), artifact excavation (recovery and recordation), profile documentation of cultural layers and stratigraphy, excavation and recordation of exposed features, and mapping of all pertinent features on an appropriate site map. A daily log (field notes) of activities and findings will also be kept. Gathered information shall be utilized in the preparation of the monitoring report to be submitted to the SHPD.

In the event human skeletal remains are inadvertently disturbed, the SHPD Maui office, the SHPD Burial Sites Program, and the Maui/Lana`i Islands Burial Council shall be notified, and appropriate mitigation actions determined (photographs of human skeletal remains will not be taken).

A supervisory archaeologist may periodically visit the monitoring site as often as is necessitated by the nature of the construction activities and archaeological findings. If significant discoveries are made, appropriate mitigation measures will be discussed with the SHPD Maui office.

The archaeological consultant shall curate all cultural materials recovered from this monitoring project on Maui, with the exception of human remains. When analysis is completed, recovered material culture remains will be turned over to the appropriate parties. Long-term curation arrangements of such materials will be approved by the SHPD.

A draft monitoring report detailing the results of the monitoring program will be prepared. This draft report shall be submitted to the State Historic Preservation Division within 180 days of the completion of fieldwork, for comment and approval. Approved changes and corrections will result in the final monitoring report on the proposed improvements for this 31.222 acre portion of land in Waikapū, Maui (2) 3-8-007:102).

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APPENDIX B: INTERVIEWS

Ted and Zelie Harders (interviewed by Erik Fredericksen on 8 September 2011).

This interview was conducted over the phone, due to scheduling constraints. This pleasant couple first met when they were attending 6th grade at Punahoe School on Oahu.

Zelie (maiden name - Rogers) was born (15 June 1935) in the old Malulani Hospital (this location now houses the Hale Makua facility), and raised in Waikapū Village. Her Hawaiian family has lived in this area for some time. The Cockett line of her family arrived in Hawaii in the mid-1800s, and has lived in Waikapū for about 5 generations. Zelie has one brother who lives in Perth, Australia, and one brother who lives in Waikapū; both siblings are younger than her. Zelie's grandmother raised her father (she was actually her father's aunt). She recalls her grandmother's advice: "never sell the land".

Ted Harders was born (23 June 1934) and raised on Oahu; his parents moved to Oahu in 1924 from the mainland (Wisconsin). Ted's father founded the Harder's Company on Oahu. Ted has lived in Waikapu since his marriage to Zelie. Ted has one sister.

One of Zelie's earliest and fondest memories of Waikapū is of the plantation stables that were located near the former government road (now Honoapi`ilani Highway). Her father used to take her to the stables to look at the horses. Wailuku Sugar Company owned these stables, and the horses were used as pack animals for sugar plantation operations. She believes that the road was paved in the 1950s. She also has fond memories of playing in Waikapū Valley as a child. They swam and built dams in the stream. They also ate guavas.

Zelie recalls that her grandparents maintained several *lo`i* in Waikapū Valley when she was in school. They also operated a poi factory. Her grandmother taught at Waikapū School, which went from 1st-8th grade at this time. Zelie attended Kaunoa School in Spreckelsville, and was in first grade when the Japanese bombed Pearl Harbor. She then transferred to Waikapū School. Her mother taught at the old Kihei School in north Kihei, which is now used for a variety of purposes, including a paramedic station. Zelie recalls that the Kihei School students would go out to the beach to view the *akule* catch when it was hauled ashore by local fishermen.

Zelie also remembers the old open-air theater that used to operate in Waikapū. She recalls that children often went there in their pajamas to watch movies. There were two stores in town at the time – Sakamoto and Furukawa Stores. Both shut down numbers of years ago.

She also recalls that Bon dances took place in Waikapū before WWII. Zelie remembers hearing about the old Cromwell Sugar Mill that was in the area, and seeing its old stack. She remembers hearing that people used to come by horse and buggy to wait for the ships that landed at Olowalu and Lahaina. When they could see the ships from Waikapū they would load up and head out to meet the vessels and go to O`ahu. She remembered hearing her father talk about when the Valley still was populated and the people lived on

the land and raised *kalo*. She also recalls hearing that a relative on her father's side (a Duvauchelle) was a cook for King Kamehameha III.

She recalls that many Waikapū residents maintained Victory gardens during World War II, because supply ships could not always deliver food on a regular basis. Ethnic fruit and vegetables were typically grown. There were two plantation camps in Waikapū that she remembers – Filipino Camp and Hiyashi Camp. Both were connected with Wailuku Sugar Company. Residents of these camps kept gardens at other times as well. Zelie's maternal grandfather, Joseph Cockett, was a black smith at the plantation. Her father had a contract with the military during WWII to collect pig slop. At the height of his pig farm operation, he kept about 1,000 pigs. Some of her father's land was used during the war to house a hospital. The Hawaiian Protestant Church building in Waikapū was utilized as a surgery. Her father rented cottages out to military personnel during the war.

Both Zelie and Ted attended Punahoe School on O`ahu and met when she was in 6$^{th}$ grade. Ted recalls flying into the old Kahului Airport on a DC3 when he was in high school, and catching a ride through Wailuku to visit Zelie and her family. He recounted that Ka`ahumanu Church was a landmark at the time, because there were no other tall buildings in Wailuku. The road to Waikapū was narrower than it is today.

They were married on 23 June 1956. They have three children – Cindy, Zelie (KK), and Carl. Cindy (1 daughter) lives in Zelie's grandmother's old home, and Carl (3 sons) lives in the area as well. Their daughter Zelie (KK) lives on the mainland in the San Francisco Bay area with her family (4 children). Ted and Zelie remember the tsunami in the 1960s and Hurricane Ewa in 1980. Ted recalls that volleyball tournaments were popular in the town in the 1950s. He speculates that the advent and popularity of television took interest away from this sport activity.

In regards to the current project area, both Ted and Zelie recall that it has always had pasture and *kiawe* trees on portions of it. They remember cattle being raised there over the years; Ted remembers it being vacant at times as well. While, they do not recall that this particular portion of Waikapū was used for traditional gathering purposes, they noted that they typically did not take much notice of it, because it was in an out of the way location.

Flo Nakama (interviewed by Marco P. Molina on 13 September 2011).

This interview was conducted over the phone, due to scheduling constraints.

Flo Nakama wars born 14 April 1939. She was born and raised in Waikapū, Maui. She lived in the same household until she attended college in 1956 to 1961. She has two younger siblings, a brother who lives in Napili, Maui and a sister who lives in O`ahu.

Father- Chuyu Nakama immigrated from Okinawa.

Mother- Haruko Kaneshiro born in O'ahu, grew up in Okinawa.

Ms. Nakama recalls that the general project area contained *kiawe* trees, pasture land, and some pig fences by an area (to the west) now known as Spencer Homes.

Her family lived in East Waiko with the rest of the sugarcane field workers. All of her relatives lived in the same area, too - cousins, aunties, and uncles. Cultivated sugarcane fields surrounded this area.

As a child she recalled that they would play marbles, kick the can, steal the base, and they would fill a tea bag with hibiscus leaves and hit each other with it, this was done in teams. There is another game the name of which she cannot recall. She thinks that it may have been called peewee. It used two sticks, one long and the other short.

Another fun activity that they passed the time with was swimming in the "river", though they were told not to play there. She mentioned that the parents didn't have to worry about the kids as long as they came home when it got dark.

The area has not changed too much, many of the old houses are still standing but are now renovated, and some of the old-time families are still there. The population of the plantation camp did decline. She recalls going to the outdoor theater in Waikapū; the back section contained bleachers with a wooden roof, the middle section contained benches with backs, and the front area was just open air where people who smoked would be. She remembers that people from all over Maui would come to this place. This open theater was located near where the existing County of Maui Bus Stop that is along Honoapi`ilani Highway. The biggest changes in the area in her opinion are the new housing subdivisions.

Flo recalls going to school in Waikapū School from first grade to third grade, and beyond third grade you attended Wailuku elementary. The school had two separate locations, one was behind the existing Waikapū on 30 store, and the other was where the Hawaiian Protestant Church was located. This church location now contains a house.

Like everyone in the area people grew their own vegetables and fruit trees. There were people who farmed vegetables where the existing Spencer Homes development is located. They called it truck farming; these were the people who grew vegetables and

sold their produce in the market. Another family by the river also did truck farming. By the Waikapū graveyard on the Wailuku side people leased land from Wailuku Sugar Company to raise pigs. Also, the Vida family from the Waiolani area to the northwest raised pigs too; they did this until the existing Waiolani sub-division was developed, and the new residents started to complain about the smell.

Some families moved away from Waikapū, some renovated their homes and stayed just like her. Her house was renovated 30 years ago. Flo recalled that with the plantation houses, they were built on "stilts", and you would always see fruit trees, especially the common mangos, and plumeria trees. She also recalls plumeria flower leis being placed on graves on Memorial Day.

Flo mentioned that she heard of old Japanese movies being shown next to the Sakamoto Service Station. This station was across from the existing Waikapū on 30 convenience store. Also, she has heard of people doing the Bon Dance by the cemetery to the west of the project area.

Flo did enjoy the outside *furo* (bathhouses separated from main house, which is heated with firewood). What she liked about the outside *furo* is that when she and her friends would go to each other's houses and relax on the outside *furo*, just like sleep over. The outside *furo* was widely used before showers were installed in the houses. Some residents continued using the *furo* because they enjoyed the relaxing experience, especially after working hard in the fields. Flo added that it was fun playing by the river, climbing the trees, particularly the Tamarind and the Java Plum. Flo explained that they would carry a glass jar with some salt, pepper, and a little bit of sugar in it, and they would put Java Plums inside a jar and shake the mixture really well. Then it was ready to eat.

The plantation cane fire was her least favorite periodic event that occurred in the area. As a kid she recalls that it wasn't that bad. But the chore of cleaning up after the mess that the cane fire left behind was not fun.[6]

Flo mentioned that the Waikapū Community Association is trying to bring the community together by sponsoring some gatherings. She particularly noted that a community picnic is happening on Saturday, September 17th at the Waikapū Community Center. This event is basically about sharing and educating the people who live in the area, especially the new residents who may not know the history of Waikapū and what can be done to protect the river.

[6] This black soot/ash was referred to as "black snow" in Lahaina in the 1960s when Pioneer Mill burned sugarcane (personal communication, Erik Fredericksen).

Wallette Pellegrino (interviewed by Marco P. Molina on 14 by phone, and in-person on 17 September 2011 at the annual Waikapū Community Association picnic)

Note: Ms. Pellegrino requested that we not include a full interview with her, because she did not feel that she had much knowledge about the cultural importance of the area around the project area. She did give us permission to include a brief summary of her opinion/recollection of the project area and the area around it.

Wallette Pellegrino was born and raised in Wailuku, but has lived in Waikapū with her husband Victor for many years. She did not feel comfortable being interviewed more fully, because she did not live in this community as a child. She is currently a member of the Waikapū Community Association.

In regards to the area around the Waiko project area, she has heard that burials are located in this general sand dune area. She recalls that the project area in general has been used for ranching for numbers of years.

Waikapū plantation village

In 1919, the main camp at Waikapū was enlarged when six houses were brought in from Pu'uhele camp.[7] Prior to this time, the area was focused more around traditional habitation patterns in the valley.

[7] Source: Waikapū Community Association Annual Picnic, 17 September 2011.

Dana Hall (interviewed in Wailuku by Jenny L. Pickett on 13 September 2011).

(Editor's note: the following interview was conducted outside on a windy day with a fair amount of background noise. The first portion of the interview was not recorded, because it contains culturally sensitive information about burials located in this area. The recorded portion of the interview begins with Dana Hall speaking about the general cultural significance of the area).

We had the standing exhibitions of the different peoples and it had maps of where they came from so you could locate them in some way. But they had their their feathered collars and feathered head-dresses. But the one exhibit that really got to me was a big black and white photograph of the Pueblo people standing about 5 feet tall in a semi-circle. And so you're standing there as a person, you know, in you're own contemporary time looking at this photograph, and it's a ceremonial dance that's going on. Then you see all the faces and the participants and people looking in intently while this religious ceremony is being conducted. I looked at this and realized what it was and started crying because they had done it in such a way that as you stood in the open part of where this photograph was displayed on this semi-circular wall, that you were part of the ceremony, a part of what was going on. And who knows when that photograph was taken; probably in the 19th century. And then the caption was something about tradition..."*The continuity of tradition: Sometimes it disappears and goes underground and is not seen for a long time. And then it emerges again. But you will always emerge when you are a part of the circle.*" It was so neat!

And that's what I mean about being a student...there's these places evoke in us some kind of emotion, some kind of caring that connect us to these places. It's the resurfacing of some kind of ancient feeling that forms the basis of tradition. And tradition is not something that's dead and gone and buried. Tradition is something that revives and becomes alive again in living people when they can make that connection again to a particular place, or a particular object or a particular structure. And that's why I say, the only way to reach that is through your spiritual, imaginative self. We can make that leap, yeah?

I'll tell you another story about a sand dune. When I was going out every week to check on the archaeologists at the Waihe`e sand dune, I can remember walking up a slope real slow and looking down and seeing a brown paper bag with artifacts, (?) and for some reason I just picked up this one paper bag and saw the convenience information and I looked in the bag, and there was a shell ornament with a drilled hole in it. I realized it was a lei-opu, a broken piece of lei-opu with a drilled end but the top end of it was still there. And I looked at that and I immediately felt this connection...I was the first Hawaiian looking at this ornament since it was lost or dissociated from the person to whom it had belonged. And I just like, some spark traveled back to that time, in the past. And while all this was happening non-verbally, the person who was in charge of me said, "Put that down Dana. You're not allowed to look at that." And the tears just flowed. Bitter tears flowed from my eyes. Not everybody is called to want to protect us. Because I know you and some other people, who knows, you don't have to be Hawaiian to

experience. Yeah, so neat. To me, that's why archeology is very interesting. Because archaeology can help us make those connections. You know, the connective part. That's what you want to talk to people about. Otherwise, it doesn't make any difference. Does that person feel a particular connection? Can they articulate what that connection's about? What it means? Otherwise, it's all...you know, bull----. When we don't know things just through....especially when you're dealing with pre-contact, pre-western culture, we're not dealing with empirical data. It's how you access.

It's gotta be through your imaginative process, spiritual happenings. We're not gonna do it through science.

Q. Did you ever notice any plants?

A. I think we used to some degree. `Ilima, Kulikuli, and the trees (inaudible—lots of background noise throughout interview). It's a travesty to try, it doesn't really help how CIA---. You know, these dunes that we're talking about in this specific area of the project--the project area—there're not habitation features.

Imagine the waters of Waikapu Stream, going all the way to Kealia, and then along the ways of ---------. I think to myself, how I wish I could see how things were. Kamehameha Kahekilii's son,....Wailuku's home....those four streams were really important, yeah? Those four rivers. Waihe`e maybe that's an older name. And we can't really source the age of those (inaudible). Kepaniwai is probably the most well known story for the area. It's so close to being the time to document this historical period. Ho, can you imagine Kahekili, what a formidable person he was. How he commanded Iao Valley.

Appendix O

Archaeological Assessment Report

Archaeological Assessment Survey of a 31.222-acre Parcel Located along Waiko Road Waikapū *Ahupua`a*, Wailuku District Maui Island TMK (2) 3-8-007:102

Prepared on behalf of:

Waiko Industrial Development, LLC
Wailuku, Maui

Prepared by

Xamanek Researches, LLC
Pukalani, Maui

Jenny Lyn Pickett
Erik M. Fredericksen

23 August 2011

ABSTRACT

Xamanek Researches, LLC conducted an Archaeological Assessment Survey for 31.222 acres of land on Tax Map Key [(2) 3-8-007:102]. The subject area is located in Waikapū *Ahupua`a*, Wailuku District, Maui Island.

Archaeological fieldwork took place during the months of May and June 2011. Fieldwork consisted of both surface and subsurface investigations throughout the subject area. Subsurface testing included twenty mechanical Backhoe test Trench (BT) excavations. Although significant archaeological sites are documented on immediately adjacent lands, no historic properties were identified within the boundaries during the archaeological assessment survey. Historic properties in the surrounding area consist of mainly of traditional Hawaiian grave sites as well as some plantation or historic ranch era and World War II military sites. The subject area is comprised of Aeolian sand dunes with meandering alluvial stream deposits.

This archaeological assessment survey report was prepared following the Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) Hawai`i Administrative Rules (HAR 13-275-276); in compliance with Maui County guidelines, rules, and recommendations. This report records and synthesizes data gathered from a combination of background research and fieldwork results.

Because of the cultural sensitivity of the area, archaeological monitoring is warranted for any potential future clearing, grubbing, or grading activities on the subject parcel. An archaeological monitoring program is recommended; in order to mitigate potential inadvertent discoveries that could be uncovered in the future.

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Natural History

The subject area ranges in elevation from approximately 45-75 meters (150-250 feet) above mean sea level. The area consists of an extensive Aeolian sand dune formation—a large geologic feature that extends at least eight miles from Waiehu through Waikapū. The sandy matrix is underlain by lava flows from Haleakalā and alluvial sediments from the West Maui Mountains (Stearns and Macdonald 1942: 54). The central isthmus comprised by sand is commonly referred to as *Pu`uone,* which loosely translates as sand dune.

Soil classification consists of *three* types: *Jaucas Sand* with 7-30% slopes commonly used for pasture and home sites, permeability is moderately rapid above the cemented (lithified) layers, runoff is slow and the wind erosion hazard is moderate to severe; *Pulehu Clay Loam* with 0-3% slopes commonly used for sugarcane cultivation, truck crops, and pasture land, permeability is moderate, runoff is slow, and the erosion hazard is no more than slight; and *Pulehu Cobbly Silt Loam* with 3-7% slopes –this type is similar to Pulehu Clay Loam except the texture is silt loam with a cobbly surface layer. This type is commonly used for used for sugarcane cultivation. Permeability is moderate, runoff is slow, and erosion hazard is slight (Foote, et.al 1972).

The color of the sand varies from grayish-brown to light brown and golden that generally forms layers of strongly alkaline cemented sand hard pan otherwise known as lithified sand that undulates above and below the surface. Old root molds, or root castings, filled with hard, white alkaline deposits are a common feature in the sand dunes. Pu`uone sands occur on slopes of 7 to 30 degrees, and develop in material derived from coral and seashells (Foote, et.al 1972).

Annual precipitation in this portion of Maui averages between 20 to 30 inches. The highest monthly rainfall occurs during the winter and spring months. Temperatures range from 60 to 80 degrees Fahrenheit in January to 68 to 90 degrees Fahrenheit in July. Winds are generally trade winds from the northeast, averaging 16 to 18 miles per hour (University of Hawaii, 1983:56).

The project area has been impacted by previous groundwork. Most of the sand dunes in the immediate area have been developed, or partially developed. Previous grubbing, grading, mining, agricultural and pastoral activities have affected the natural environment. Base-yard(s) with various equipment and stockpiles as well as active cattle feed lots with associated settling ponds prevented 100% coverage of surface and subsurface investigation (see *Field Methods* section).

Flora

Vegetation in the project area consists of drought tolerant native and alien plant species. The dry subject area is dominated by alien plant species such as *kiawe* trees (Prosopis pallida), *buffel grass* (Cenchrus ciliaris), *guinea grass*, *koa-haole*, and other introduced dry-land grasses and weeds.

Indigenous plant species in the project area include *`ilima* (Sida fallax), *`uhaloa* (Waltheria indica), *kou*, and *pōpolo (*Solanum americanum). The Hawaiian Ethnobotany online database (www2.bishopmuseum.org) describes *`ilima* as a shrub traditionally used for making lei and was also utilized medicinally. *`Ilima* stems were used for building house frames and also used around taro planting mounds in swamplands. *`Ilima* vines were used for basketry, floor coverings under sleeping mats, and at Hula altars. *`Uhaloa* was also traditionally medicinally utilized.

The database further describes *kou* as a strong wood traditionally used for making *bowls (`umeke) & utensils, does not give off flavor (Krauss 1993:22), special `umeke mana`ai for first-born children made sometimes of kou that had been planted over afterbirths of grandparents (Krauss 1993:23); leaves for dye (Krauss 1993:65). Planted as shade trees near homes and the flowers used for lei (Handy et al. 1972:232), seeds eaten (Wagner et al 1990:394).*

Further, *pōpolo* is described by the website as an annual herb and *a very important medicinal plant. For problems in the respiratory system and skin eruptions the sap of the leaves and juice of the berries is used by itself or mixed with other ingredients. For treating cuts or wounds or as a general prophylactic, it is mixed with salt. To "tone up" the digestive tract the leaf buds are steaped with salt (Handy, Pukui, and Livermore 1934:18). For sore muscles, tendons, and joints, the juice from pōpolo leaves was sometimes applied to the affected area while it was sunned (Abbott 1992:98).* Pōpolo is described as *an ancillary ingredient in many other medicines.*

Fauna

Only non-native animals were noted on the project area. Observed animals included horses, cows, chickens, peacocks, cats, dogs, mongoose, rats, mice, birds, and axis deer (only droppings noted). Local informants report an influx in axis deer sightings in recent years. Non-native animal bones were noted throughout the surface areas of the parcel, and in some subsurface test locations.

Kealia Pond and Wildlife Refuge

Kealia Pond and Wildlife Refuge is a coastal salt marsh located c. 4.5 km south of the subject parcel across Kuihelani Highway towards the Kihei shoreline. It is contained within Waikapu *ahupua`a.* Public information (website and signs) describes this 691 acre (2.80 km^2) wetland area as a bird sanctuary; home to many native endangered species of waterfowl, shorebirds, and migratory ducks. Water levels vary drastically depending on the season. The pond consists of over 400 acres during the winter. Thick encrusted salt deposits cover the dried portions of the pond during the summer. Mudflats and shallow ponds are dispersed westward throughout the area north adjacent to Sugar Beach between Kīhei boat ramp and Ma`alaea. The federally supported boardwalk with informational signage was recently constructed along the pond- between Kīhei and Ma`alaea.

Kealia Pond is home to 30 species of waterfowl, shorebirds, and migratory ducks including the *`auku`u,* and the endangered Hawaiian Stilt and the Hawaiian Coot. Kealia Pond was selected as a wildlife refuge in 1953 that protected approximately 300 acres (1.2 km^2) of land. The refuge joined the National Wildlife Refuge System in 1992. The protected area consists of a coastal salt marsh between Kīhei and Ma`alaea, on both sides of North Kīhei Road. The wetland is now a 691-acre (2.80 km^2) bird sanctuary. During rainy season, high water levels increase the freshwater portion of the pond to over 400 acres (1.6 km^2). By spring, water levels decrease and by summer, the pond shrinks to half the size, leaving behind salty residue. *Kealia* can translate as "salt encrusted place" (ibid).

BACKGROUND RESEARCH

Hawaiian Settlement

Wailuku District is a significant area and was referred to as such in early Hawaiian days. Waikapū *Ahupua`a* contained many *`ili*, or smaller land divisions. Waikapū was one of several *ahupua`a* within the traditional land division called Wailuku *Moku,* or "district" formerly known as Pū`ali Komohana *Moku* (Kame`eleihiwa 1992).

In ancient Hawaiian days, the prime environmental condition of lower `Īao Valley was ideal for agricultural endeavors necessary to support a large population. The area consisted of a wide valley floor, rich alluvial soils, and a constant water supply from `Īao Stream (AKA Wailuku Stream). These conditions combined with immediate access to the wetlands and Kahului Harbor; rich in marine resources, made an ideal setting for a communal political and cultural center. The lower portion of `Īao Valley provided a perfect climate for some of the most productive taro cultivation throughout the islands.

Īao Valley is noted as a place where chiefs were buried and wars were fought. *Wailuku* translated as "water of destruction" (Pukui, et. al., 1974: 225). Wailuku was once known as the political center of Maui that culminated during the time of Chief Pi`ilani (approximately 1600 AD). In the late pre-Contact period, warfare increased as the chiefs of Maui, O`ahu and the Big Island struggled for political and military dominance. High Chief Pi`ilani succeeded in unifying the districts (*Moku)* of Maui through warfare, but following his death, his sons fought amongst each another; each hoping to succeed their father as high chief. Eventually Kiha-a-Pi`ilani was victorious, but the following generation of chiefs struggled through warfare to secure their positions of political domination (Speakman 1978: 9-13).

During the reign of the last powerful paramount chief or king (*Mō`ī*) of Maui Kahekili (1765 to 1790), Wailuku again became the site of intense warfare. Allegedly, Chief Kehekili was Kamehameha I's father. Wailuku was considered to be the capital of Maui and Kahekili's royal residence, Kalanihale, was located in Wailuku, where he was surrounded by his retinue.[1] In the mid-1770s, the royal residence in Wailuku was marched upon by the Big Island chief named Kalani`ōpu`u and his *Alapa* (his warriors). News of Kalaniōpu`u's arrival preceded him, and Kahekili hid his warriors in the sand dunes above Haleki`i *Heiau* to surprise the invading troops. A fierce battle ensued, and

[1] The location is said to be located just north of the intersection of High Street and Main Street leading into Iao Valley in Wailuku town.

Kalani`ōpu`u's invading troops were pushed toward the sea and slaughtered (Speakman 1978: 9-13 and 16-17).

For four years Kahekili ruled Maui, Moloka`i, Lāna`i, and O`ahu. With the aid of foreign weapons such as guns and a canon, in 1790, Kamehameha I invaded Kahekili's territory—an action that ended with the notorious battle of Kepaniwai[2] and eventual political control over Maui Island. *Kahului* translates as "the winning", and the nearby town and Bay take the name because Kamehameha I gathered his warriors there before fighting the battle in `Īao Valley (Pukui, et. al. 1974).

The reign of Kamehameha I was intertwined with the increasing presence of foreign arrivals and commercialism. The arrival of Captain Cook offshore at Kahului Bay in 1778 began the steady flow of outside influences that would forever alter the population and environment of the Hawaiian Islands.

The Waikapū wetland field system is a complex system of *lo`i* extending over 700 acres, built around the central stream, with *`auwai* leaving the main stream in the upper reaches on both sides to provide water for the hundreds of taro fields. The upper reaches of the system may date back to the 1100s (Creed, v. I: 74-78).

According to the Supreme Court of the Hawaiian Kingdom (Journal 2006: 198-206), a big part of obtaining the territory divisions:

> ...was that a land should run from the sea to the mountains, thus affording to the chief and his people a fishery residence at the warm seaside, together with the products of the high lands, such as fuel, canoe timber, mountain birds, and the right of way to the same, and all the varied products of the intermediate land as might be suitable to the soil and climate of the different altitudes from sea soil to mountainside or top. But this mode of allotment had numerous exceptions, because some of the lands were for some reasons not always understood, and perhaps arbitrary in the beginning, very wide at the top, cutting off a great number of other lands from the mountain; others in like manner wide in the lowlands, cut off land from the sea. With the Hawaiians, from prehistoric times, every portion of the land constituting these Islands was included in some division, larger or smaller, which had a name, and of which the boundaries were known to the people living thereon or in the neighborhood. Some persons were specially taught and made the repositories of this knowledge, and it was carefully delivered from father to son...

Ancient names have been passed from generation to generation. Native testimonies in the archives and in legal documents associated with land disputes indicate

[2]Kepaniwai means literally "water dam" in reference to Iao Stream, because the stream was choked with human bodies after the slaughter there (Pukui, et. al. 1974: 109).

that *Ka`ōpala* is the name of the place where the waters from the two great mountains of east and west Maui meet. *Ka`ōpala* is described by Pukui (1974) as a coastal area and gulch within the Honolua quad that literally translates as "the rubbish". The former name of the place now called Ka`ōpala, was *Kailinawai* because there the waters of the two mountains joined.

Original Hawaiian settlers may have utilized the area for permanent habitation, ceremony, or agriculture. Ceremonial, agricultural, habitation and human burial features have all been documented throughout the central Maui isthmus.

During initial human occupation, Waikapū was a relatively well populated area, rich with ancient traditional Hawaiian cultural practices. Significant *mo`olelo*, or stories of old, are associated with the area including the adjacent infamous `Īao Valley. The Kahului Isthmus was rich in natural resources. No doubt fishponds were abundant along the nearby fringing coral reefs and throughout the low-lying wetlands or mudflats.

Kealia was allegedly an ancient fishpond fed by water from the meandering Waikapū Stream from the West Maui Mountains through the general current project area, and from Kolaloa Gulch in the East Maui Mountains. The artful skill of fishpond construction involves a system of ditches and sluice gates to let fish into and out of the pond. Various types of fish may have been raised including *awa* (milkfish, *Chanos chanos*) and *ama`ama* (flathead mullet, *Mugil cephalus*). Ashdown (on file) says the pond was attributed to King Umi-a-Liloa after the death of Pi`ilani in Lāhaina .

The Plains of Kama`oma`o

Some areas in the Central Maui Isthmus have been referred to as Kama`oma`o or the Plains of Kama'oma'o. Fornander (1919b:572) describes *Kama`oma`o* as the region of the central plains of Maui known as a place where the souls of the common people were cast off with hopes of either finding a guiding *`aumakua* (family god) for companionship to the afterlife; or the soul may descend into the underworld realm known as *Milu,* which is also the name of the ruler of the underworld.

Pukui (1974) explains Kama`oma`o as a Plain near Pu`u-nēnē, Maui and that "ghosts are believed to have wandered here". Literally, Kama`oma`o translates to "the greenness." Fornander (1919:554) also refers to the "desolate plains" south of Pu`u-nēnē as a location where the souls of the dead are attracted to the "nether world" entrance.

In the book *Hawaiian Mythology*, Martha Beckwith describes a possible relation to the area of Kama`oma`o, but she refers to the area as *Oma`oma`o*:

> Among the peoples said to have appeared during the fifth period of the Kumulipo, when the hog-man was building up his family line, are the dog people... *(Born were the wagging tails; they had no fixed line of decent)*...This seems to mean that they intermarried without regard to

> class distinction and hence built up no inherited chief class. The reference is to the Ha`a people, according to David Malo Kupihea, the hairless olohe people first discovered on Maui on the plains in Kula called Oma`oma`o...they were still there in Kahekili's time. Some were in his army. They lived in the sand hills and they had mystical power of the demigods (kupua) in the form of big war dogs. These dog people still appear on Maui in the procession of spirits known as 'Marchers of the Night.' They look like other human beings but have tails like a dog...Olohe, or Ha`a people were hence a well recognized class in old days, skilled in wrestling and bone-breaking (lua) and with hairless bodies. It is said that they used to pull out their hair and smear their bodies with oil in order to give no hold to an antagonist (Beckwith 1970: 343).

The general area was known for massive battles that ensued across the land. There were many defeats of Big Island Mō`ī Kalaniopu`u's forces around 1776-1790, by the infamous Maui armies of Kahekili. The retreat took the Big Island army through Kama'oma'o (Fornander 1919:545). An area associated with Kama`oma`o was later referred to as Waikapū Common.

Waikapū Common

There are several accounts referring to a battle in the area that took place in 1776 (Fornander 1996:153-155). The Big Island King Kalaniopu`u gathered his forces and came ashore on Maui without resistance at Honua`ula, from Ke`one`oi`o to Makena. The Big Island regiment is known as *Alapa*, which consisted of several hundred highly skilled and trained men. Chaos and plunder marked the arrival of the *Alapa*. The Maui country people fled into the forest and mountain ravines for shelter. The Big Island forces were split so part of the army landed at Kīheipukoa, near the Kealia salt marsh between Kalepolepo and Ma`alaea. They were after the skilled warrior -King Kahekili in Wailuku.

With great courage the *Alapa* warriors crossed the isthmus of Kama`oma`o, also known as the Waikapū common. The warriors were determined "to drink the waters of Wailuku that day". The Big Island *Alapa* regiment was considered the bravest and best. The warriors were all of equal stature and their spears of equal length. The legend represents their appearance as a gorgeous and magnificent spectacle. The *brilliant feather cloaks reflected the sunshine and the plumes of their helmets tossed in the wind.* Kahekili offered no resistance while the *Alapa* crossed the common. Instead, he distributed his forces in various directions throughout the Wailuku side of the common. Kahekili's army fell upon the *Alapa* as they entered the sandhills -southeast of Kalua, near Wailuku..."the gallant and devoted *Alapa* were literally annihilated; only two out of the eight hundred escaped alive" (ibid).

Perhaps additional insight is portrayed by Kamakau who explains when Kaluli Heiau was completed, Kaleopu`upu told Kahekili, "This is the house of your god; open

the sluice gate that the fish may enter". Then, in 1776 Kalaniopu`u's army landed at Keoneo`o`i`o with their war canoes extending to Makena at Honua`ula and proceeded to ravage the countryside. Additional forces combined to 800 strong. War canoes landed from Kihepuko`a at Kealia to Kapa`ahu. The warrior's feather cloaks stood out along the plains of Pu`u`ainako (Can-trash-hill) and Kama`oma`o. King Kahekili was at Kalanihale just below Kihahale and above the plateau of Ka`ilipoe at Pohakuaokahi. It was then that Kaleopu'upu'u told Kahekili, "The fish have entered the sluice; draw in the net" (Kamakau 1992:85).

Kahekili had secretly spread his forces among the sand hills southeast of Kalua, near Wailuku. With the advantage of dune elevation providing a bird's eye view from the slopes combined with the element of surprise, Kahekili and his warriors annihilated the invading *Alapa* army. Two survivors were left alive to relay the news of the defeat to Kalaniopu1u's encampment (Fornander 1880:154). The day after the "Slaughter of the Pi`ipi`i at Kakanilua", the remaining forces of Kalaniopu`u were sent to battle Kahekili. Numerous attacks from the Big Island warriors ensued. Several years later, with aide from muskets and cannons, Kamehameha I claimed control, or unified the islands under one rule. Kahekili was said to be Kamehameha's father.

In 1790 Kamehameha I marched with his army across the central Maui isthmus with *Lopaka*—the cannon from the captured American trading vessel, the Fair American. Kamehameha the Greats' conquest of Maui concluded with the well known battle of *Kepaniwai*—a most devastating combat that eventually pushed into `Īao Valley and ended with many dreadful fatalities, allegedly jamming the stream with bodies.

Whaling

By the 1840s, the increased number of whaling ships anchoring off Maui shores created a substantial market for produce such as sweet and white, or Irish potatoes, which grew well in Kula along the slopes of Haleakalā. Because of the historic potato blight, Irish potatoes were more highly coveted, and became principal for trade. Potatoes were transported from the fields to the shore, where they were often sold directly to the ships that stopped at Kalepolepo in north Kīhei. The ships would then move to the Lāhaina for trade, where the bulk of the whaling fleet moored.

Kuykendall (1938:313) refers to a November 1849 article in the Polynesian:

> The call for [potatoes] is loud and pressing, as some vessels bound for California have taken as many as 1,000 barrels each. The price is high, and the probability is that the market cannot be supplied this autumn. Kula, however, is full of people...preparing the ground for planting, so that if the demand from California shall be urgent next spring as it is now the people will reap a rich harvest.

Aside from transport trading activities, Waikapū appear to have been relatively unaffected by the upland "potato boom", which lasted only a few years.

Gold Rush

The California Gold Rush began in 1848, which resulted in a potato boom on Maui that commenced in the fall of 1849. A man called Captain John Halstead established a trading post[3] in 1849 at Kalepolepo Village, in order to take advantage of the commercial venture. He built a large Pennsylvania Dutch-style, 3-story residence next to the south wall of Kalepolepo Fishpond. The trading station was located on the first floor of this structure, which was locally known as the *Koa* House. Halstead's large prominent house stood as a landmark for nearly one hundred years[4] —and was frequently visited by King Kamehamehas III, IV and V between 1850 and 1870.

Missionaries

An early outside influence that eventually changed every day life in the islands-came with the arrival of missionaries, who wanted to save "heathen" souls. The first missionaries arrived in Wailuku around the 1830s. The population of Wailuku was listed during an 1831-32 missionary census as 2,256; with most of it being in the northern portion, presumably in ʻĪao Valley (Cordy 1978: 59). In 1836, Reverend Jonathan Green established a girls' seminary known as the *Central Female Boarding School*, where young Hawaiian women were taught the foreign language, customs and religion. The school is still located in Wailuku.

Reverend Dwight and Charlotte Fowler Baldwin arrived as missionaries in 1831 as part of the fourth group from the Congregational Church. Mr. Henry Perrine Baldwin was born as their son. The early missionaries severely influenced Hawaiian communities including customs and culture. Reading and writing were among those social changes.

By as early as 1845 in Central Maui, on the southern and eastern side of the *Puʻuone* Dunes, cattle were roaming the Kahului Isthmus and a sizable area was utilized for pasturage. Cows were first introduced on the Big Island by Vancouver in 1793. At the time, cattle were under royal *kapu,* so they were not to be bothered. The cattle were destructive to the environment and Hawaiian landowners protested, but to no avail (Barrere 1975: 52). In addition to the commercial venture of cattle ranching, there were

[3] Captain Halstead arrived in Lāhaina from New York in 1838, and married the chiefess Kauwikikilani Davis, granddaughter of Isaac Davis, Kamehameha I's advisor.

[4] In 1946 it was abandoned and was leased by the Kīhei Yacht Club, the members of which tried to burn it down because it was so unsafe. Several attempts failed, but eventually the Maui Fire Department was called in and succeeded in reducing it to ashes in August of 1946 (Kolb, 1997, p. 70).

other efforts including a brief attempt at cotton production in the 1830s. The cotton endeavor met with little commercial success[5].

By the 1840s, the increased number of whaling ships anchoring off of Maui's shores created a substantial market for produce such as sweet and Irish potatoes. Irish potatoes were coveted and became important in the produce trade, particularly during the California Gold Rush. They were transported from the Kula fields to the shore, where they were often sold directly to ships then shipped to Lāhaina, where the bulk of the whaling fleet moored. The California Gold Rush began in 1848, which resulted in a potato boom on Maui that commenced in the fall of 1849.

The Māhele

The *Māhele*, or *Division*, defines the development of the mid-1800s land tenure system transformation, which essentially divided all Hawaiian lands into three categories: (1) Crown Land: designated for the occupant of the throne, (2) Government Land, and (3) Konohiki Land: set aside for 245 of the highest ranking *Ali`i*.

The Māhele of 1848-1851 marks a "period of significance" because it is the first extensive written record of how land was utilized (Creed v. I 1993: vii). The Hawaiian leaders had influential foreign powers advising that private ownership of land was desirable and necessary to move forward into the modern world. The Māhele awards books as well as the foreign and *kuleana* land claims help document the introduced land tenure system.

Not everyone, particularly older Hawaiians, fully understood the ramifications of the process of filing or not filing a claim for lands on which their families lived and worked for generations. Marion Kelly (Creed, v. I: 42) elaborates that "...many people who had use rights in the land did not register their claims...chiefs who participated in the division of lands with King Kamehameha III were not required to present claims to the Commissioners ...not all testimonies and awards corresponded with registered claims, and there were often contentions. Many registered claims were rejected, and some lands listed in claims were not awarded..." The process was a complex one that presented a plethora of issues.

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[5]The Anglican Church felt that "the Hawaiian people, freed from their service to and dependence on the chiefs should be self-supporting and thought that the encouragement of the manufacture of cloth from the superior cotton which grew luxuriantly in the islands would be a means to that end. They suggested that a manufacturer be sent with sufficient machinery to get the project started. They felt that the people would continue to work with the encouragement and cooperation of the chiefs." (Lemmon et. al 1973:2-B-3). To this end they sent Miss Lydia Brown in 1835 with " 'a quantity of domestic spinning apparatus' (presumably spinning wheels and a loom)" (Ibid.), and "charged with the responsibility of teaching the Hawaiian girls the arts of carding, spinning, weaving and knitting locally grown cotton and wool." (ibid.) As each class grew proficient enough to teach others, a new class was formed (ibid. 2.B.4).

The idea of *private property* was introduced to the islands. All of the lands were subject to the *rights of native tenants*. If the common people (*maka`āinana*), or "Native Tenants", met certain criteria and filed land claims under specific guidelines, a Land Commission Award (LCA) was issued. According to the Hawaiian Journal of Law & Politics (Volume 2: 2006):

> ...After the surrender by Kamehameha III, in 1848, of the greater part of the land of the Kingdom to his chiefs and people, the necessity of a speedy distribution of it in accordance with what may be called the feudal rights of the chiefs, required that awards of lands be made by name only without survey. No body of surveyors could have been found in the country or practically could have been brought here, who might have surveyed these large estates within the lifetime of half the grantees, so that every award should have been issued as of a tract defined by metes and bounds, or with even an approximate statement of the acreage. The "Mahele" or division was, therefore, made without survey. Tracts of land known to Hawaiians as an ahupuaa or ili were awarded to those entitled by name of the ahupuaa or ili. By such grant was intended to be assigned whatever was included in such tract according to its boundaries as known and used from ancient times.

Further efforts for native tenant land rights required paying hefty commutation in addition to conducting expensive land surveys -with limited available land surveyors- then finally, a land grant may be awarded. The awarded lands are referred to as *kuleana.*

According to the on-line *Waihona `Āina* database: In 1848, much of Wailuku was designated Crown Land, to be used in support of the royal "state and dignity". In 1872, Kamehameha V died, and his sister Princess Ruth Ke`elikolani inherited the land. She was designated as the owner of the *Ka`a* lands of Wailuku, the southern portion of the *ahupua`a*. The *ili* of *Owa* comprised of 743.40 acres, (LCA 420) and was granted to Kuihelani. The study area is located within a section of LCA 420 to Kuihelani; being a portion of Royal Patent 1996.

The lower portion of `Īao Valley contained some of the most productive taro lands on the island, reported in historic testimonies and maps related to LCAs in the lower valley. There are 66 LCAs identified between the old Wailuku Mill site and Paukūkalo, on the southern side of `Īao stream, listed primarily as taro patch *kuleana*, and 39 *po`alima.* Additionally, thirteen awards were given to individual chiefs by Kamehameha IV.[6]

By 1876, a reciprocity treaty with the United States gave a boost to the sugar industry by increasing prices, and the dry eastern section of Wailuku *Ahupua`a* became more attractive for potential sugar land. Claus Spreckels developed a friendship with

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[6] This is in contrast to the area south and east of Lower Iao Valley, in which the study parcel lies. Here there were 2 LCAs awarded—one to Victoria Kamamalu (7713), and one to Kuihelani (420). The largest land partition of Central Maui is Grant 3343 to Claus Spreckels.

King Kalākaua, and through him purchased or leased 40,000 acres of dry lands in 1878. The lease included 16,000 acres within Wailuku *Ahupua`a*. Later in 1882, one-half of the Crown Lands of Hawaii were deeded to sugar producer, Claus Spreckels, allegedly in order to settle debts.

Worried about what Spreckels might do with half of the Crown Lands, King Kalākaua deeded one of the aforementioned grants: Land Grant 3343 to Spreckels. The grant included a 24,000 acre portion of the southeastern section of Wailuku *Ahupua`a,* in return for the surrender of his claim (Adler 1966: 262-263). Much of the land shifted after the Māhele. According to Kame`eleihiwa (1992: 314-315), King Kalākaua's mother received fifty *ahupua`a* as a result of the Māhele and by the time she died, Kalākaua only received two *ahupua`a*...

> ...which meant he was virtually a landless *Ali`i Nui*, equivalent to a mere *konohiki* of twenty years before. But if he were to live and rule as an *Ali`i Nui* in the new capitalist system, he needed money. His attempts to make money via his capitalist friend Spreckels, through shady land deals and auctioning of the sole opium license for the kingdom to various contending Chinese businessmen, gave the missionary faction an excuse to ferment a rebellion that culminated in 1887...The Bayonet Constitution stripped power from the Hawaiian *Mō`ī* [King] and gave it to foreign capitalists. Broken in spirit and disheartened by the betrayal of foreigners whom he thought could be his friends, Kalākaua's health deteriorated. In 1891 he died... Kalākaua had discovered that it was impossible to rule Hawai`i with *pono* for both Natives and foreigners-their worlds were too different.

Disputes were common. The Hawai`i Court Appeal addressed the topic of the Pūlehu-Nui and the Waikapū boundary issue. According to the Commissioner, Pūlehu-Nui includes an area of 16,687 78-100 acres. It extends from Kilohana Peak at the rim of Haleakalā Crater at an altitude of approximately 10,000 feet. Pūlehu-Nui continues westward, down about fifteen miles. The eastern or mountain section is *comparatively narrow, often less than half a mile wide.* The western section meets the low land and becomes wider –from three to four miles wide- until meeting at the west boundary with Waikapū Ahupua`a.

The west boundary was disputed. The claim states that Pūlehu-Nui boundary included ~5,000 acres that belong to Waikapū . The Commissioner's boundary includes ~2,000 feet along the shore from Kīhei sand spit to a point of rocks called Kalaepohaku. The proposed Waikapū border cut Pūlehu-Nui off from the sea. Pūlehu-Nui extends to a level place where the water ran down and stood still by the ancient name *Kaopala*. The boundary of Pūlehu-Nui ran through Kaopala with the stream-bed as the boundary. At Kaopala the water turned southward and ran down to the ocean towards Kealia Pond, which belonged to Waikapū . Pohakiikii is within Pūlehu-Nui (ibid).

Pūlehu-Nui borders Waikapū at Waikapū Common. *Waikapū Common* was granted to the Department of Education during the Māhele since there were no claimants

named. In 1879 the Supreme Court ruled on the disputed boundary indicating that because the 10 parcels for the Common were returned to the Department of Education, the patents on the Common "cannot be held to have an existence for any purpose" and further "if any inference is to be drawn it should be that the Government, or the Board of Education, did not have an assurance that Waikapū extended as they had sold it" (Judd 1883: 250).

All of Hawai`i, including Wailuku and Waikapū continued to transform under foreign influence. Because sugar cane cultivation requires an immense amount of water, the natural water flow in *Na Wai Eha* drastically shifted. In 1880, Spreckels began the construction of "Spreckels' Ditch", located *makai* of the aforementioned "Hāmākua" Ditch, which was built earlier by Alexander and Baldwin to water *Maui Agricultural Company's* fields in and around Pā`ia. The "Spreckels' Ditch" carried water from Haleakalā farther west onto the arid Kahului isthmus. The ditch was 30 miles long, delivered about 60 million gallons of water a day, and cost $500,000 to construct.

Spreckels spearheaded construction for the Waihe`e ditch in 1882, which tapped the water resources from the West Maui Mountains, thus bringing water to both sides of the *Wailuku Commons* isthmus area (Adler, 1966: 48-49). These endeavors enabled him, in 1882, to establish Hawaiian Commercial and Sugar Company (HC&S). He continued involvement in that company until 1898, when control was wrested from his hands. The parent company still bears the name *Alexander and Baldwin*, the principal participants in the transfer of corporate control. The production of sugar cane continues to be an activity in the isthmus area to this day, although some portions operated by C. Brewer and Company shifted to pineapple production. Most of the early historic agricultural endeavors have relatively recently ceased operations.

Railroad

During the sugar boom, a railroad network was established throughout Hawai`i. Kahului Railroad paralleled Lower Main Street, and was one of the earliest known commercial projects severely impacting the *natural* sand dune formation. The route of the railroad ran from Kahului Harbor to Wailuku Sugar Mill. Remains of the old railroad bed have been noted in a few places along Lower Main Street, along Kahului Beach Road, and Kā`ahumanu Avenue. Surface (and subsurface) architectural remnants from the railway system include berms and remains from the Makaweli Rock Crushing site.

Five concrete pillars and arches peek out of the shrubs makai of Kahului beach Road (1921). The feature was originally constructed so the train carrying rock from the quarry could off-load from the track-bed into the crusher. The concrete pilings elevated the crusher above ground so trucks could be driven in and filled with crushed rock. This series of pillars (footings for the Makaweli Rock Crusher Mill) still stands near the intersection of Kanaloa Avenue and Kahului Beach Road.

Railroad construction began in the late 1870s and continued for nearly 2 decades, as routes were added and service expanded. The railroad continued operations until after World War II. Then slowly, demands began to change, and segments of the system were phased out. An article in The Maui News of October 15, 1957 bore the headline "Iron Horses Bow Out as Wailuku Sugar Company Discontinues Use of Railroad". The railroad continued to serve other areas until 1966, when it ceased operation.

Military Occupation

In central Maui, modern development occurred later than in Wailuku town. During World War II areas all throughout Maui were utilized by the military. There was a large Marine Base located near the current Maui Community College campus and the Maui Arts and Cultural Center. After the war, several housing developments were built in Kahului (Dream City) and the Wailuku Sand Hills area for housing and modern development. The Army Reserve Maui location is located in Wailuku on the western slopes of the natural sand dune formation.

PREVIOUS ARCHAEOLOGICAL WORK

The earliest archaeological work in Wailuku was part of the island-wide survey of *heiau* (place of worship) compiled by Winslow Walker during 1928-1931. A number of *heiau* were listed for Wailuku. The infamous -*Pihana Heiau* and *Haleki'i Heiau*- lie on the northern side of `Īao Stream atop the large dune formation. Efforts in the 1970s led to the preservation and designation of a State Monument, under the supervision of the Division of State Parks (DLNR).

Walker reported a number of additional significant *heiau* in Wailuku, which were allegedly consecrated by Liholiho during his visit to Maui in 1801 (Walker 1931: 146-147). At the time of Walker's survey, none of the following Wailuku *heiau* could be located: Keahuku, Olokua, Olopio, Mālena, Pohakuokahi, Lelemākō, Kāwelowelo, Kaulupala, Palamaihiki, and Oloolokalani (ibid: 148).

In 2006, Cultural Surveys Hawai`i, Inc. completed an archaeological inventory survey for a 15.2 acre parcel. One historic archaeological feature was identified and listed as SIHP 50-50-10-4800. The site is an intact military structure that was previously investigated by IARII (2000). A buffer zone was recommended for placement around the feature for preservation.

Walker notes an unnamed *Heiau* and Petroglyphs located 0.25 mile from the village of Ma`alaea at the base of the foothills of the West Maui Mountains. An ancient village with house and shelter sites is also noted. During the Statewide inventory of historic sites project, the Sites were listed as SIHP -1441 (McGregor Point C-shapes) and SIHP -1287 (Ma`alaea Complex). At least 45 house and shelter sites were noted above (*mauka*) the highway during the survey.

At Ma`alaea Harbor, two large basalt boulders with cultural significance were re-located to the grounds of Buzz's Wharf Restaurant. One of the features is a large grindstone, referred to as the "King's Table". The grindstone was allegedly removed from the ocean during the expansion of the Harbor. The second feature was traditionally used to deposit newborn's umbilical cords into boulder, which has been referred to as a *Piko Stone* (SIHP -1286 and -1440]). The Piko Stone is most likely the one referred to in the Boundary Commission testimony (Creed v. I: 25). Prior to its' current location next to the grindstone, the Piko Stone was positioned at Kapoli Spring[7]

[7] The location of Kapoli Spring is offered by a local resident. It is a spring that has partially been sealed off -near Buzz's Wharf restaurant- at the public restroom facility.

PHRI conducted an inventory survey of the Waikapū Mauka Partners Golf Resort, which was one of the largest areas surveyed in the vicinity –at the time. It lies at the foot of West Maui (400 to 800 feet elevation), south of Waikapū town. Continuous dry land Hawaiian agricultural and habitation features (~1585-1665 AD) were documented (Brisban, Haun and Jensen 1991).

Numerous significant archaeological sites were recorded, and some preserved. Joseph Kennedy conducted research at a Waikapū sand mining project that resulted in the identification and preservation of a human burial complex (Kennedy 1989). This site recommended for permanent preservation is located on the adjacent parcel.

Kennedy conducted an archaeological survey approximately 600-1000 feet above sea level. Several traditional Hawaiian dry-land agricultural features were documented during the survey (Kennedy, 1990). In Waikapū Valley traditional Hawaiian wet-land agricultural sites were documented by Theresa Donham (1991). The wetland features were identified approximately 750 feet above sea level-- downstream.

An archaeological survey was conducted for C. Brewer Homes' retention basin at TMK 3-5-002: 001. The parcel is located along the east side of Honoapi`ilani Highway and was under sugarcane cultivation for over a century. Thirteen backhoe test trenches were excavated in select areas. No significant remains were found (Tichenel 1996). Likewise, six backhoe test trenches were absent of cultural materials at TMK 3-5-002: 001, as reported by Kennedy in another nearby study (1989).

In 1994 and 1995, Xamanek Researches conducted a salvage recovery project in response to the inadvertent discovery of human skeletal remains in Waikapū. Human burials were destroyed by sand mining activities at Maui Scrap Metal Company. The transported sand contained human skeletal remains and the Maui/Lanai Islands Burial Council and the SHPD recommended mitigation measures including investigation, recovery, and reburial procedures. The skeletal remains represented more than 22 individuals. Ten pieces of a boar tusk anklet (*kupe`e hoaka*) and a hand drilled canine dogtooth pendant was also recovered. The artifacts were treated as burial associated items so the recovered artifacts and human skeletal remains were placed as close to the original burial site as possible (Fredericksen and Fredericksen 1996).

An archaeological assessment survey for the Kaikane Corporation's housing project in Waikapū listed no findings. Subsurface testing indicated the area was impacted by mechanical land altering activities -such as sugarcane and pineapple production (Fredericksen and Fredericksen, 2004). Precautionary monitoring was recommended because of the sand dune deposits and the chance of encountering skeletal remains.

Early archaeological reconnaissance surveys by Barrera (1976) of the approximate 1,000 acre neighboring Maui Lani Project, and of the Hale Laulea Subdivision (Barrera, 1983) in Kahului did not report any sites. However, since then many human burial features have been inadvertently discovered throughout the parcel.

Neller (1984) investigated the "sand borrow site" after sand from the dunes was transported to a construction site in Lāhaina, was discovered to contain human remains. Upon investigation, one *in situ* human burial, and skeletal fragments representing at least 3 other individuals were displaced throughout the vicinity.

In 1987, Xamanek Researches and the Maui Police Department investigated the discovery of human skeletal remains. The area was also referred to as the "sand borrow site". Archaeologists were sent to determine the nature of additional skeletal material reported by local informants. A well-utilized dirt bike trail had exposed the disturbed, flexed burial of a young female (18 to 25 years of age), and a 4 or 5 year old child nearby, partially exposed in the trail. Maui Police Department recommended the burials be removed. A shattered 4th thoracic rib and lower left scapula blade, suggests a frontal traumatic puncture wound may have caused the death of the young female. The burials were eventually turned over to the State Historic Preservation Division on Maui until permanent replacement.

Under contract to Maui Lani Partners, the Bernice Pauahi Bishop Museum Anthropology Department conducted test excavations at 4 sites identified during a reconnaissance survey (Rotunno and Cleghorn, February 1990). Three of the sites included 2 parallel alignments, 2 adjacent rock mounds, and a single rock mound. The surface features were all determined recent origin related to off-road vehicular traffic.

The fourth Bishop Museum site (Site 50-50-04-2797) is a human burial complex. The burials were identified across a *sand borrow pit* "near the eastern boundary of the Maui Lani Project area". No intact burials were recovered, but the scattered remains from at least 3 individuals were recovered near the surface (Rotunno-Hazuka et. al., May 1994a). Subsequent data recovery methods were employed. Results documented the identification of at least 12 individuals from 10 burial features. Six of the features were preserved *in situ* (Rotunno-Hazuka et. al., May 1994b). The site is nestled in the Maui Lani golf course and residential development.

Archaeological subsurface sampling of the Maui Lani Development Phases 1 and 1A was conducted by Aki Sinoto Consulting. The objective of the work was to implement a strategy for subsurface sampling to test for the predictability of burials based on topographic features within the unmodified dune areas, and to address the deficiencies in the reconnaissance or inventory survey (Pantaleo and Sinoto, January 1996).

A total of 90 backhoe trenches, 2 shovel scrapes and a manual trench were excavated in 58 areas (ibid: iii). Six previously unrecorded burials were identified – 4 associated with the sand borrow site (Site -2797); and one on top of a high dune (Site -4146). "No predictable pattern of traditional interment of the dead based on preference for topographic features was established during the current investigation. Rather, the resultant data indicates only one concentration or complex of multiple burials at Site -2797 and isolated individual burials at the top of dunes in the highest locations in the project area" (ibid.). Subsequent archaeological monitoring of Maui Lani residential and

commercial development resulted in the discovery of hundreds of additional human burial features throughout the sand dunes.

Xamanek Researches conducted an archaeological inventory survey along the Maui Lani Parkway, Lot 11-A in 1997. A human burial site was documented and assigned SIHP 50-50-04-4401. Several other burial features are documented along the Maui Lani Parkway Development such as Sites -4368 and -4435 (Xamanek Researches).

A pre-Contact human burial was discovered while road crews were excavating under the Ka`ahumanu Avenue bridge crossing along Wai`ale Road (Site -4126).

Also along Wai`ale Road, which forms the western border of the Wailuku Sand Hills residential neighborhood, human burial features have been documented. Archaeological monitoring occurred for a drainage project (C. Brewer) and archaeologists identified human remains formerly disturbed by an old pipe line trench running perpendicular to the road (Site -4005). Site -3502 contains human burial features including an historic coffin burial and a disturbed burial determined to be ancient Hawaiian. Site -4067 is a habitation site associated with Site -4005, which was identified during the drainage project. Site -4068 is another habitation site with an associated cluster of human burials (Dunn and Spear 1995).

During construction for the Maui Homeless Shelter in May of 1992, 3 human burials were inadvertently discovered (Site 50-50-04-2916). These skeletal remains were investigated by Theresa Donham. Skeletal remains representing an adult male were documented roughly 2 feet below the original surface (Burial 1), a cranium (Burial 2) was exposed during construction of a desilting basin located along the lower slope of the dune at the southeastern corner of the project area (Donham, 1992:3). A test unit measuring 5 by 3 meters was excavated to a depth of 0.50 to 0.75 meters below the surface. 280 identifiable elements or human skeletal fragments were recovered, along with 235 non-diagnostic fragments. Two adult individuals were represented in the collection.

In 1999, Archaeological Services Hawai'i (ASH) conducted archaeological monitoring during the initial construction activities for the Cameron Center Expansion project. Human skeletal remains representing an adult and an infant were identified. The recovered skeletal remains were placed in a previously designated permanent burial preservation area (SIHP 50-50-04-4728).

Table 1: Selected Previous Archaeological Reports

AUTHORS	LOCATION	FINDINGS
Burgett and Spear, 1995	TMK: 3-8-37: 48, Lower Main St., Home Maid Bakery, Sites 3924 and 3925.	Habitation sites; human burials. Dated c. AD 1430 to 1671

Table 1: Previous Archaeology (cont.)

AUTHORS	LOCATION	FINDINGS
Burgett and Spear, 1996	Inventory Survey – TMK: 3-4-39: 77. Lower Main St., Oceanhouse, Inc., Site 4004	Habitation site remnant; human burials. Dated 1429-1640 AD.
Connolly, 1973	Statewide Inventory – TMK: 3-8-36: 94, Lower Main St., Site 1172	Habitation site; burials discovered in 1994 eroding from dune face.
Donham, 1994	TMK: 3-8-37: 49, Lower Main St., Home Maid Bakery, Site 3556	Inadvertent burial discovery, both historic and precontact burials.
Donham, 1992	Letter Report – TMK: 3-8-46: 21, Waiale Road, Maui Homeless Shelter, Site 2916	Human burials
Dunn and Spear, 1995	Monitoring – TMK: 3-4-02: 36, RR bed along Waiale Rd. Sites 4068, 4067; Site 3502 at Waiale Rd. and Kaohu Street	Habitation site and burials (Site 4068); Habitation (Site 4067)
Fredericksen, W. and Fredericksen, D. December 1992a	Inventory Survey – TMK: 3-8-07: 40 and 43; Maui Community College Parking Lot Extension	Historic sites from WWII. No precontact cultural materials
Ibid., September 1995	Inventory Survey – TMK: 3-8-07: por. 1; Keiki Zoo Maui.	No significant findings
Fredericksen, D. and Fredericksen, W. February 1996	Skeletal Recovery Project – TMK: 3-8-07: 104; Maui Scrap Metal Company, Waikapū , Borrow Site 3525	Remains of at least 22 individuals recovered from mined sand
Fredericksen E. and Fredericksen D. September 1996	Data Recovery – TMK: 3-4-39: por. 82	Habitation site (Site 4127); dated c. AD 1450 to 1675
Fredericksen, E. November 1998	Monitoring Report for Baldwin High School TMK: 3-8-07: 4	No significant findings
Fredericksen E. February 1998	Monitoring Report for Kuikahi Drive and Waiale Road, TMK: 3-5-01: por. 65	No significant findings
Fredericksen, E. and D. September 1998	Mitigation Report for Lower Main/Mill Streets Public Utilities Project – MECO TMK: 3-4-39: por. 81	*In Situ* precontact burial associated with Site 4127
Fredericksen, E. 1998	Na Leo Pulama O Maui Monitoring Project	Previously disturbed human remains located (Site 4493)
Fredericksen, E., D., and W. August 1994	Inventory Survey – TMK: 3-8-46: 30; Maui Memorial Park	No significant findings
Ibid., March 1997	Inventory Survey – TMK: 3-4-36: parcel A; Mokuhau Water Storage Tank	No significant findings
Fredericksen, E., W., and D., September 1994	Inventory Survey – TMK: 3-8-07: por. 125; Maui Central Park, 10 acres along Kahului Beach Road	No significant findings

Table 1: Previous Archaeology (cont.)

AUTHORS	LOCATION	FINDINGS
Fredericksen E., and Fredericksen D. June 1995	Inventory Survey – TMK: 3-8-46: 21, Waiale Road; Ka Hale A Ke Ola	No significant findings during inventory survey – monitoring recommended
Fredericksen D. February 1997	Skeletal Recovery Report – TMK: 3-8-46: 21, Waiale Road; Ka Hale Ke Ola	Human burials uncovered during grading – remains of at least four individuals recovered
Fredericksen E., and Fredericksen D., January 1997	Inventory Survey – TMK: 3-4-07: por. 121, Maui Lani Parkway corridor	No precontact finds in corridor – human remains (Site 4368) on Golf Course Hole #10 – monitoring recommended
Fredericksen E. November 1997	Maui Lani Parkway Corridor Monitoring report	*In Situ* burial (Site 4435) and previously disturbed remains (Site 4419) found during monitoring
Fredericksen D. and Fredericksen E. May 1997	Inventory Survey – TMK: 3-8-47: por. 1, 2, 3, 4, 17, 18, 30 and 32; 3-9-07: por. 121, Mahalani Street Extension	No significant findings – monitoring recommended
Fredericksen E., and D. June 1997	Inventory Survey – TMK: 3-4-07: por. 121, Lot 11-A, Maui Lani Project – 20.7 acres	One indigenous *in situ* burial (Site 4401). Monitoring recommended
Fredericksen E. December 1997	Monitoring Report for the Kaiser Permanente Parking Lot Extension Project TMK: 3-8-46: 08	No significant findings during monitoring
Fredericksen E. and D. February 1999	Monitoring Report for 12-inch sewer line along Waiale Road TMK: 3-4-10: 27 & 30	One indigenous cultural layer and *in situ* burial – Site 4683. Further monitoring recommended
Ibid., November 1998	Monitoring Report for Baldwin High School Gymnasium Project	No significant findings
Ibid., April 1999	Monitoring Report of Kahului Barge Terminal Improvements TMK: 3-7-08: por. 4 & 6	One subsurface site with coral and pebble pavement – site 4753
Fredericksen D. and E. April 2000 March 2001	Inventory Survey of TMK: 3-4-13: 96 and 100 – Phase 1 Main Street Promenade Phase 2 - TMK:3-4-13: 76	Adjacent property to the west. Identified 2 historic sites.
Fredericksen D. and Fredericksen, W. December 1992b Fredericksen, et al., October 1997	Inventory Survey: TMK: 3-8-07: 123, at Lower Main and Waiehu Road, Nisei Veterans Memorial Canter Data Recovery Report: TMK: 3-8-07: 123, at Lower Main and Waiehu Road, Nisei Veterans Memorial Center	Historic site, Kahului Railroad (Site 3112); large precontact habitation site, with continuous occupation from c. 1200 AD to c. 1740 (Site 3120); numerous burials to be preserved *in situ.*
Fredericksen D., and Fredericksen E., September 1997	Inventory Survey: TMK: 3-4-39: 82, proposed Maui Texaco Service Station project	Habitation site and burials (Site 4414) dated c. AD 1325 to 1670; data recovery and monitoring recommended.
Fredericksen, E., and D., December 1997	Inventory Survey – TMK: 3-8-07: 47 at Lunalilo and Liholiho Streets, Na Leo Pulama `O Maui Property, Site 4418	Habitation site (Site 4418), dated AD 1400s to 1600s; preservation of site recommended; monitoring of project recommended.

Table 1: Previous Archaeology (cont.)

AUTHORS	LOCATION	FINDINGS
Fredericksen, et al., July 1995	Inventory Survey – TMK: 3-4-39: por. 81, 82, 83 at Lower Main and Mill Streets, Site 4127 Data Recovery – TMK: 3-4-39: por. 82	Habitation site (Site 4127); data recovery recommended. Habitation site (Site 4127); dated c. AD 1450 to 1675.
Fredericksen, D. and E., December 1999	Inventory Survey of Site 1172 – TMK: 3-8-36: 94.	Infant burial; habitation site dated to AD 1400-1640.
Fredericksen, D. and Fredericksen E., September 2002	Inventory Survey- TMK: 3-4-039: 76, Site 4730	Habitation site, burial (Site 4730), monitoring recommended.
Fredericksen, E., and Fredericksen D., March 2002	AIS Puuohala Mauka TMK: 3-3-2: por 1	Site 5195 – plantation era wall/platform Site 5196 – surface scatter of coral and shell
Fredericksen, D., 2005	Kanaloa Avenue Project, TMK: 3-7-001: 02	Site 5495: four Native Hawaiian *in situ* burials; Site 5496: precontact coastal habitation site; Site 5471: Native Hawaiian burial; Site 5472: previously disturbed human remains, Site 5660, habitation site.
Heidel, Pyle and Hammatt, 1997	Inventory Survey – TMK: 3-8-07: 1 and 3-7-01: 2, Maui Central Park	Historic sites – Site 4232 – WW II military camp: Site 3112 – Kahului Railroad Berm; Site 4211 – scattered human remains
Kennedy, 1992	Inventory Survey TMK: 3-8-07; Maui Arts and Cultural Center	No findings
Pantaleo, J. and A. Sinoto, January 1996	TMK: 3-8-07: 2, 110; Phase I and Phase IA, Maui Lani Partners Development, Wailuku	No habitation sites. Human burials in several locations. Monitoring recommended. Additional burials during monitoring
Rotunno and Cleghorn, 1990 Rotunno-Hazuka, et. al. May 1994a	TMK: 3-8-07: 2, 110: Maui Lani Development Property	No precontact sites other than burials (Site 2797)
Spear, 1995	TMK: 3-8-37: 48; Lower Main Street	Human burials and habitation (Site 4066).

SETTLEMENT PATTERN AND EXPECTED FINDINGS

Settlement Pattern Summary

Lower Ĭao Valley within Wailuku *Ahupua'a* was a central political and religious area of West Maui, because of the fertile lands as well as the close proximity to wetlands and the ocean shoreline. A sizable and successful aboriginal Hawaiian settlement was most likely present for over the past eight hundred years. Wherever large population clusters are found, the social framework of chiefly importance and religious expression is also generally present. Aside from numerous examples from oral histories and traditions, concrete archaeological evidence supports the supposition: several habitation sites, agricultural complexes, and the presence of significant *heiau* including two preserved *heiau* (Haleki'i and Pihana) atop the northern dune system, and several others dispersed throughout the area.

Wailuku and upper ʻĬao Valley was traditionally known as a very significant sacred area in history. The middle and upper reaches of the region were once covered with actively cultivated pond fields *(lo'i)* and associated tributaries or complex integrated water transport systems (including *'auwai),* which produced food items to support a large population. No doubt the streams also provided food sources as well as the nearby ocean, which is teeming with aquatic resources.

Coastal habitation and ceremonial sites -such as Site -3120- were occupied since at least AD 1200s (possibly earlier). Although there has not been as many studies conducted in the upper region, patterns emerge from the lower region. In general, permanent habitation and ceremonial or political center sites seem closer to the ocean and yield earlier dates than inland. This suggests early Hawaiian settlement occurred along the shoreline and moved inland as population increased. This hypothetical theory matches many other researchers and scholars. An intensification of usage occurred during the 16th century and may have peaked around the time of Pi`ilani, approximately 1600 AD. .

Foreign influence brought change to the landscape and lifestyle. Cattle ranching occurred in the general area, which reshaped much of the landscape. Commercial agricultural endeavors brought several ethnic groups to work throughout the islands, including to the bustling area of Wailuku. Many plantation camps were scattered about. *Raw Fish Camp* was one of the camps located in central Maui. Remains from historic immigration camps and early historic homes as well as commercial buildings are located throughout the historic Wailuku corridor. World War II era sites have been documented in the region.

Expected Findings

Portions of the subject area have been previously altered through mechanical grubbing and grading activities but there are still many undisturbed sections of the natural Aeolian sand dunes. Based on the results of adjacent surveys and monitoring programs, it is very possible that previously unidentified subsurface cultural deposits may be encountered in the disturbed or undisturbed portions of the subject parcel.

Ancient traditional Hawaiian occupation, burial features, or ceremonial areas may still exist. Historic plantation, ranching, and military features may be encountered. Although subsurface testing occurred, it is possible hidden or subsurface features remain in the uninvestigated areas throughout the subject parcel. Isolated, clustered, and scattered human burial features have been noted at several locations throughout the sand dunes. World War II remains may be encountered.

FIELD METHODS

Xamanek Researches LLC, conducted an archaeological assessment survey for this 31.222 acre portion of land at TMK (2) 3-8-007:102. The subject area is located in Waikapū *Ahupua`a*, Wailuku District, Maui Island. Archaeological fieldwork occurred during late May early June 2011. Approximately five days were expended in the field for this project. Supervisory archaeologist Jenny Pickett, B.A., and Marco Molina, B.A., conducted the fieldwork. Erik Fredericksen (SHPD Permit No: 11-07) was the principle investigator and project director.

Subsurface testing included the excavation of a series of twenty mechanical Backhoe test Trench (BT) excavations across accessible areas throughout the subject area. 100% coverage was not possible because of two active cattle feed lots (including ponds), a graded access roadway, and selected areas where pipelines, high voltage, or other inaccessible locations.

All backfill material was visually inspected by the archaeologist- exposed sidewalls examined, and impacted portions consistently spot-checked. Following the mechanical test excavations, a representative wall from the subsurface test trenches was hand scraped with a trowel to aid in documentation. The wall profiles were mapped to scale and described by Munsell soil colors and U.S Soil Conservation Service terminology. The completed excavations were photographed and backfilled. Standard recordation methods were followed in the field and all mapping was performed utilizing a hand held compass and metric survey tape measures. Photographs were taken with a digital camera. All field records and associated research material are stored at the Xamanek Researches LLC laboratory located in Pukalani, Maui.

INTRODUCTION

Xamanek Researches, LLC conducted an Archaeological Assessment Survey for a 31.222 acre parcel in Waikapū *Ahupua`a*, Wailuku District, Maui Island on Tax Map Key (TMK) [2] 3-8-007:102 (Figure 1 and Figure 2). This report was prepared following the Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) Hawai`i Administrative Rules (HAR 13-275-276-5); in compliance with Maui County guidelines, rules, and recommendations. Information was compiled through a combination of background research and archaeological investigative field results.

Archaeological fieldwork took place during the months of May and June 2011. Fieldwork consisted of both surface and subsurface investigations throughout the subject parcel. The survey covered accessible portions of the subject area. The project area has been utilized as pastureland for cattle and horses. Much of the land is currently heavily utilized as base-yards with various large stockpiles, as well as cattle feed lots and associated settling ponds. The bulk of the subject area has been previously disturbed through grubbing, grading, sand mining and agricultural or pastoral endeavors. An electrical easement in favor of Maui Electric Company, Ltd. connects the western and eastern portions of the parcel.

Surface survey investigations resulted in negative findings. There are a series of fence-lines spread throughout the area and access involved coordination with different leaseholders and avoidance of grazing horses. Cattle feedlots cover sections of the project area. Access was limited in these areas and mechanical backhoe work did not occur in the stockpile areas or the cattle feedlots. Subsurface testing included twenty, controlled mechanical Backhoe test Trench (BT) excavations. No historic properties were identified within the perimeters of the subject area during the archaeological fieldwork.

Figure 1: Portion of the Wailuku United States Geological Survey Topographic Map Depicting the Project Area Location (red).

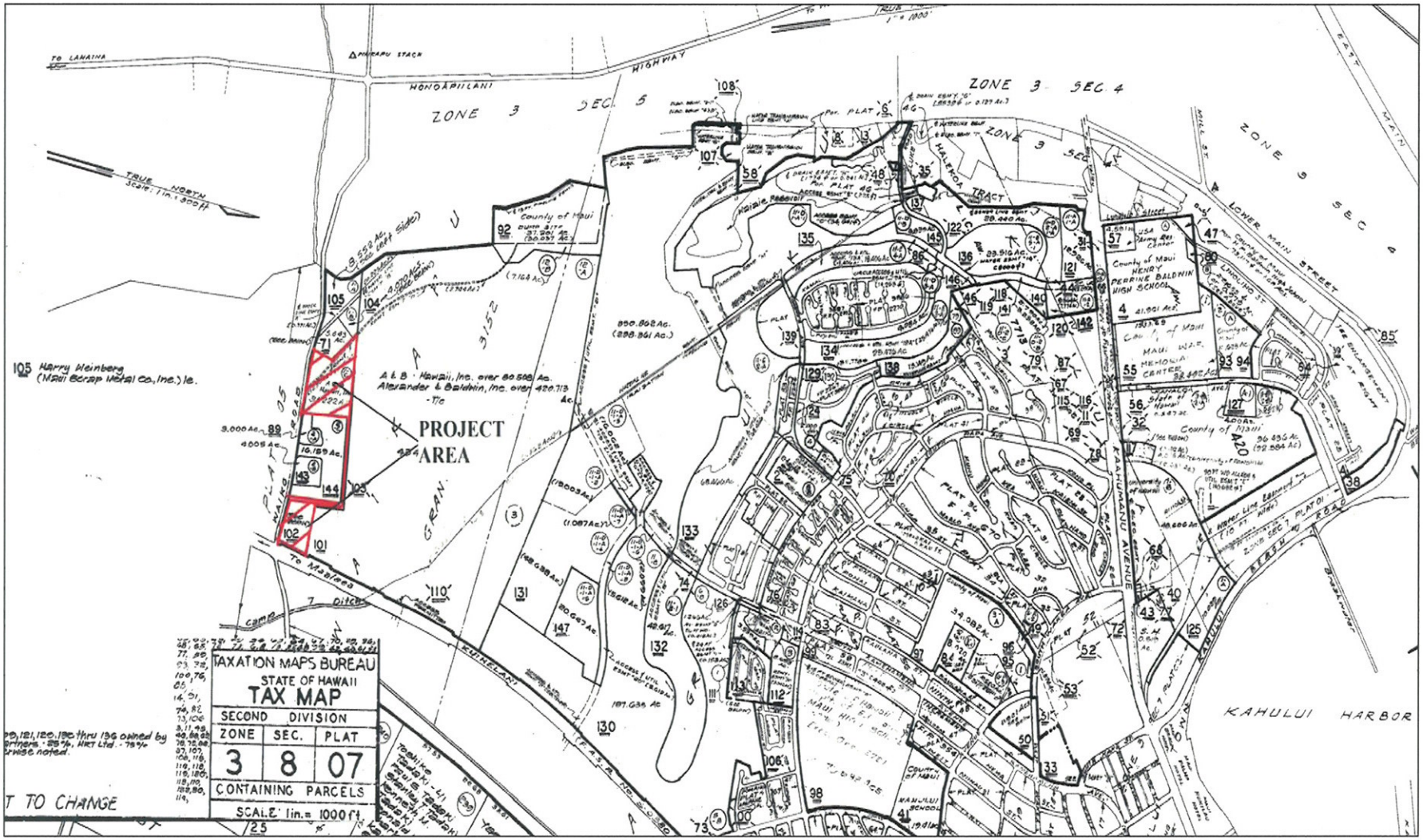

Figure 2: Tax Map Key (TMK) Depicting the Project Area Location at [2] 3-8-007:102.

STUDY AREA DESCRIPTION

The study area lies within Waikapū *Ahupua`a* in Wailuku District. The subject area includes 31.222 acres of undulating sand dunes (Photo 1). Generally, prior land use includes pastureland for horses and cows; construction or farming base-yard(s); sand-mined areas; stockpiles of sand, rock, dirt, gravel (etc); ponds; cattle feed lots; and a relatively narrow, enclosed easement behind the relatively recently developed Consolidated Base-yards development (Photo 2). The narrow easement and power lines delineate the northern boundary of the subject area.

Photo # 1: General Overview of Sand Dune (foreground) with Haleakalā (background), View to East.

Photo # 2: Overview of the Narrow Easement North Adjacent to the Consolidated Baseyards Development Project; View to West.

Various fence-lines and *jeep* access roadways meander throughout the parcel (Photo 3). The odd-shaped parcel is located south of the Maui Lani development and is bounded by Kuihelani Highway as well as Waiko Road. A wide and well-used access road bisects the west section of the project area (Photo 4). The dirt road is mainly utilized by the owners, lessees, and dump trucks for hauling mined sand or construction related material (no sand mining activities are actively occurring on the project area).

Photo # 3: Example of a *Jeep* Access Roadway within Project Area, View to South.

Photo # 4: Graded Access Road Bisecting the Western Portion of the Project Area, View to Northwest.

ARCHAEOLOGICAL FIELD RESULTS

The subsurface testing phase of this archaeological assessment survey consisted of the excavation of twenty backhoe test trench excavations within the accessible areas within the limits of the of the parcel. Maximum backhoe reach was ~4.2 meters. No evidence of significant cultural deposits was encountered. Visual observation of the mechanical excavation and inspection of the backfill did not reveal any significant cultural material.

Backhoe test trenches 1 through 10 were situated on the east half (Figure 3) and Backhoe test trenches 11 through 20 on the west section of the subject parcel, respectively (Figure 4). The subject area is comprised of Aeolian sand dunes with meandering alluvial streambed deposits from the ancient flows of Waikapū Stream. Nearly 100% of the subject area has been reshaped or heavily utilized in the relatively recent past. Note that two human burial features were inadvertently discovered during archaeological monitoring for the Consolidated Baseyards Development section between the east and west section of the subject area.

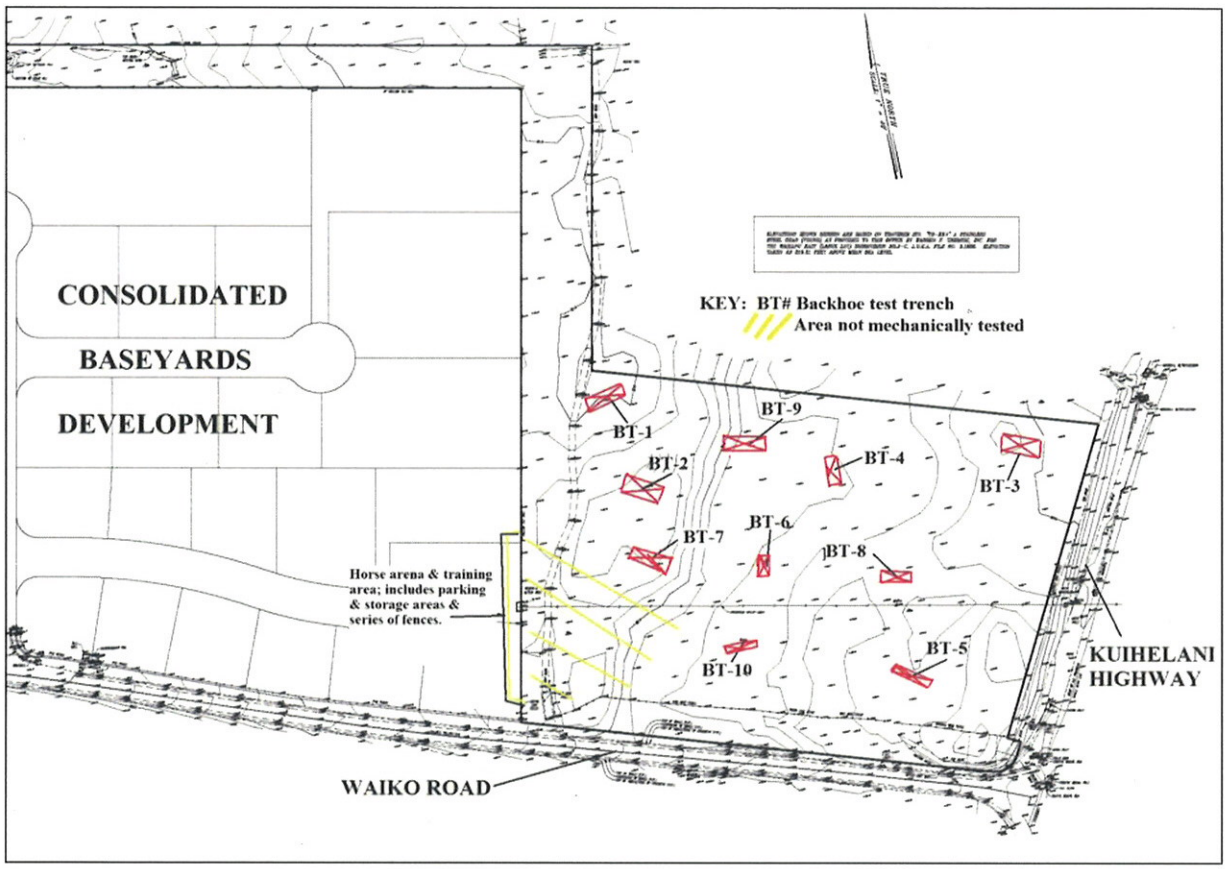

Figure 3: Backhoe Test Trenches 1-10 Location Map- East Section of Subject Area.

The east section of the subject area has been impacted by animal grazing as well as mechanical grubbing and grading. A bulldozed jeep access road bisects a long series of various push-piles mixed with modern trash (Photo 5). Fences delineate the boundaries along this recent development. Stockpiles, pushpiles, berms, and various construction remains were noted surrounding the Consolidated Baseyards Development area. Noted modern debris in the area consists of concrete chunks, plastic, and paper. Additionally, waterworn basalt boulders, cobbles, and pebbles are scattered about. A horse grazing, training, and activity area is located in the southern portion of the east section of the subject area.

Photo # 5: Overview of Access Road between berms or mechanical tailings, adjacent to the Consolidated Baseyards project boundary line, view to North.

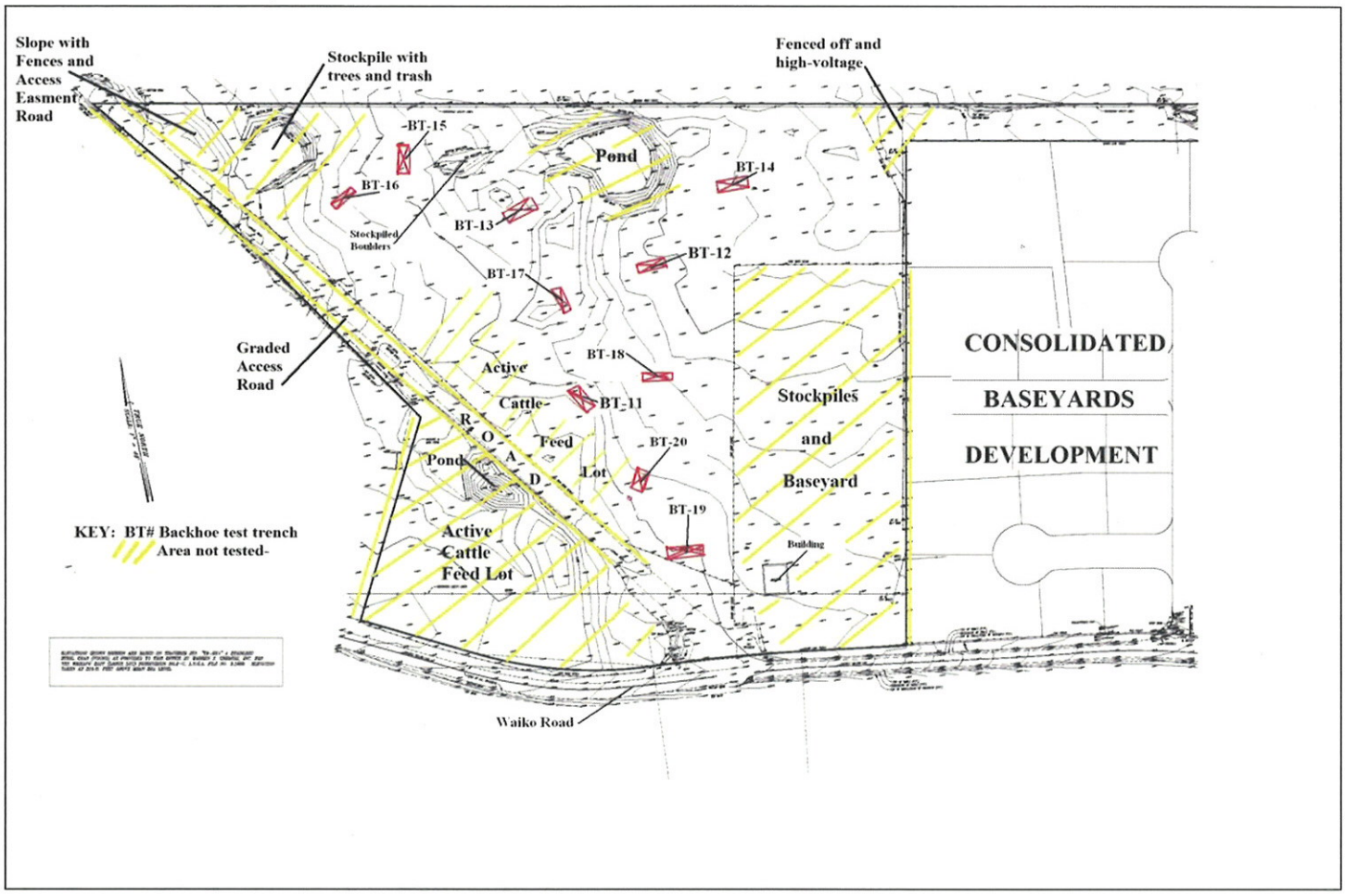

Figure 4: Backhoe Test Trenches 11-20 Location Map-West Section of Subject Area.

Backhoe Test Trench #1 (BT-1)

BT-1 was situated near the northwest property corner pin on the east section of the subject area- east of the recently developed light industrial area. BT-1 was placed adjacent to the recently developed Consolidated Baseyards Development project (see Fig's 3&4). BT-1 was oriented 120/300° and measured 5.8 meters long, 0.80 meters wide x 1.80 meters deep. BT-1 included both Aeolian (Layers I-III) and alluvial (Layer IV) deposits (Figure 5). Three distinct stratigraphic layers were recorded as follows:

Layer I 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include heavy roots and rootlets with additional organic materials (*duff*), and 10% angular concreted sand gravels and/or pebbles; contains no significant cultural material.

Layer II 10YR4/3 brown mottled with 10YR 4/6 dark yellowish brown; fine, silty sand texture (more compact than Layer I); moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no roots and inclusions include little to no rootlets; contains no significant cultural material.

Layer III 7.5YR4/2 brown mottled peds of 7.5YR6/2 pinkish gray & 7.5YR4/1 dark gray; coarse loamy sand texture; (alluvial); strong, dry consistency, loose; moist consistency, friable; wet consistency, non-sticky; non-plastic; boundary, none; topography, none; inclusions includes white alluvial stream deposit indicating old stream bead; ~90% sub-angular porous & smooth basalt boulders/cobbles/pebbles (seem to be larger rocks at greater depth); contains no cultural material.

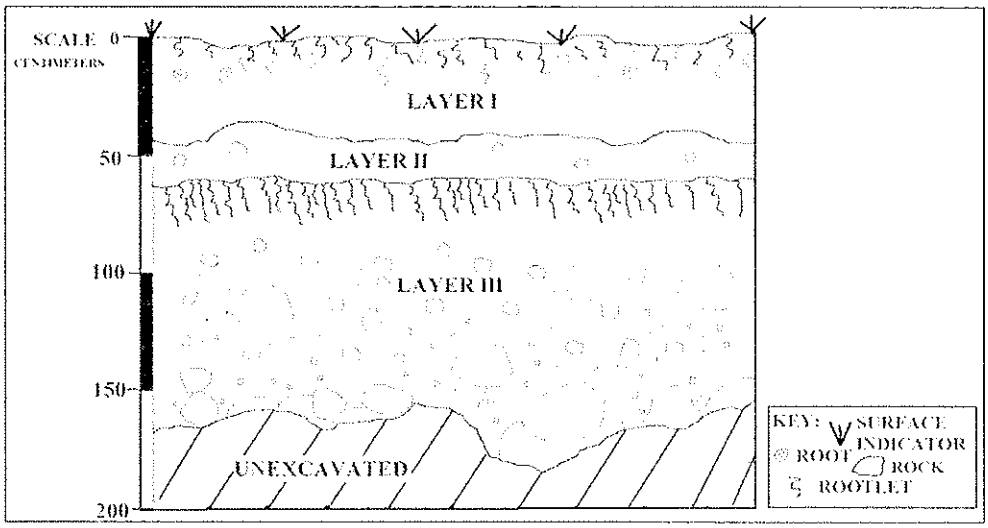

Figure 5: North Profile Drawing of BT-1.

Backhoe Test Trench #2 (BT-2)

BT-2 was also situated along the eastern section of the recently developed Consolidated Baseyards Development project (see Fig. 3). Modern trash was noted along the surface. BT-2 was oriented 114/294° measured 6.5 meters long, 0.80-0.85 meters wide (collapse) x ~3.6 meters maximum depth (Figure 6). Two layers of Aeolian sand dune deposits were documented as Layers I&II. Layer II became more compacted with depth.

Layer I 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few roots & rootlets; contains no significant cultural material.

Layer II 10YR5/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few roots; few river cobbles and pebbles (white) contains no cultural material.

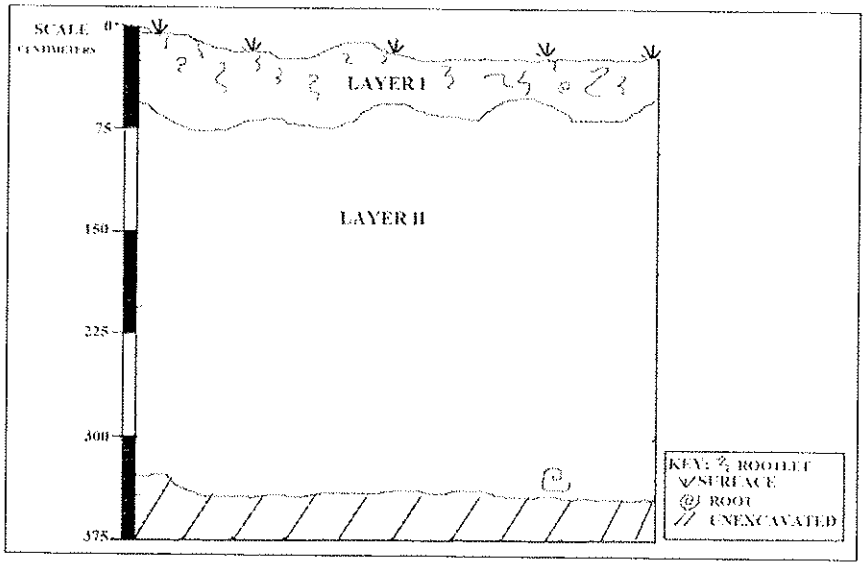

Figure 6: South Profile Drawing of BT-2.

Backhoe Test Trench #3 (BT-3)

BT-3 was placed in the corner of project area near the southeast corner of fenced area, adjacent to Kuihelani Highway along a small natural rise (Photo 6). This test trench resulted in all Aeolian sand deposits with no water worn rocks, and no alluvial or evidence of stream deposits.

Photo # 6: Pre-Excavation Overview of BT-3, View to Southwest.

Generally, small water-worn cobbles and pebbles were common. Few roots or rootlets within sandy silt that consists of fine soft small peds ("Grade B"). There were also small concreted sand pebbles noted. The intrusions of golden Aeolian forms semi-concreted peds, also concentrated at the base of trench Aeolian golden more coarse sand (less silt) soft Aeolian sand to base of excavation that terminated at the maximum reach of the hop-toe arm. The three stratigraphic layers were recorded as follows:

Layer I — 10YR4/4, dark yellowish brown mottled with 10YR4/3 brown and 10YR6/4 light yellowish brown with intrusions of golden 7.5YR5/6 strong brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include roots and rootlets; no significant cultural material.

Layer II — 10YR5/3 and 10YR4/3 brown fine silty sand with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few roots and rootlets; common small water worn cobbles and pebbles; no significant cultural material. Intrusions of 7.5YR5/6 strong brown at base.

Layer III — 10YR4/3 brown; fine, silty sand mottled with **7.5**YR 7/2 pinkish gray medium-coarse, sand and 10 R 4/3 weak red silty clay, texture; strong, fine, wet clump, structure; dry consistency, loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions include 45% of

sub-angular basalt boulders/cobbles and some sand stone cobbles; contains no cultural material.

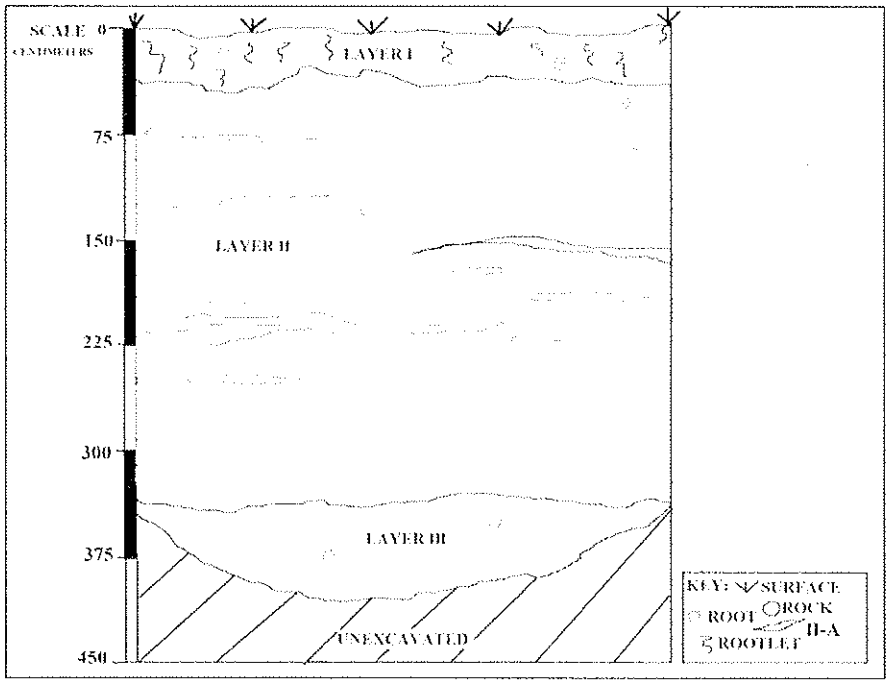

Figure 7: South Profile Drawing of BT-3.

Backhoe Test Trench #4 (BT-4)

BT-4 was placed near the crossing of 2 animal containment fence-lines (within corner area). In general, the trench was located on a gentle gradual eastern rise. There is a significant amount of bleached animal bones scatted along the surface. Matrix consists of soft golden Aeolian sand. There is a series of animal fences in this area and a small horse arena (Dixon). Alluvial deposits were noted at the base of excavation. Six stratigraphic layers were encountered as follows:

Layer I — 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include roots & rootlets; contains no significant cultural material.

Layer II — 10YR5/3, brown; sand; moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no rock; inclusions are roots & rootlets; contains no significant cultural material.

Layer III — 10YR6/2 light grayish brown; semi-compact silty sand and sandy loam peds; strong, fine, wet clump, structure; dry consistency,

loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions include sub-angular basalt and sand pebbles; contains no cultural material.

Layer IV 10YR4/3 brown sand; (fine) few white river cobbles and pebbles (random), texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt river cobbles; contains no significant cultural material.

Layer V 7.5YR6/8 reddish yellow sand; compacted with semi-concreted platelets and few pebbles and cobbles (water-worn) within sandy silt, texture; strong, fine, wet clump, structure; dry consistency, loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions include sub-angular sand platelets and cobbles; contains no cultural material.

Layer VI 10YR4/3 brown (dominant color); sandy loam; alluvial deposit; (old stream bed); moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt river cobbles; contains no cultural material.

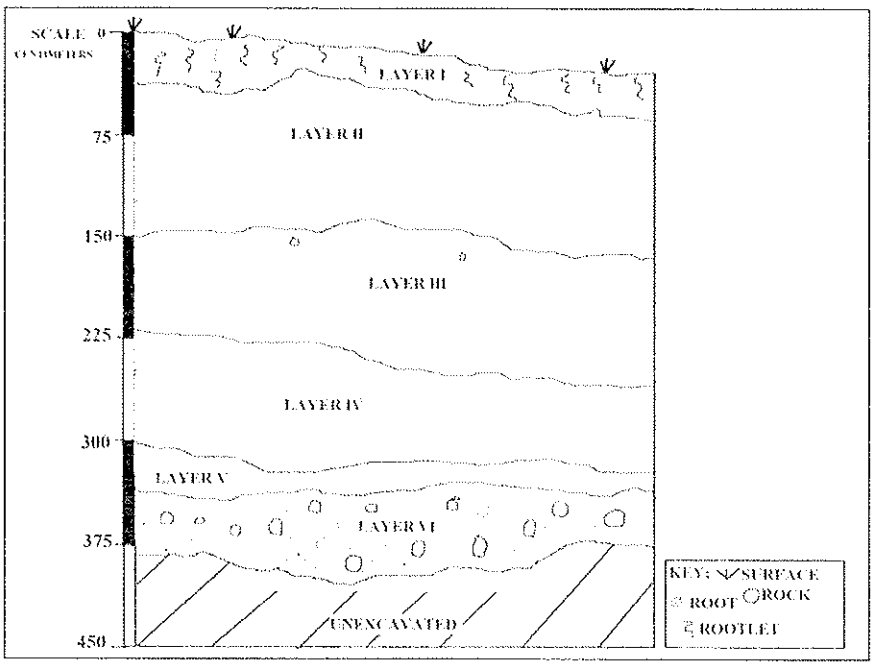

Figure 8: East Profile Drawing of BT-4.

Backhoe Test Trench #5 (BT-5)

BT-5 was placed near Kuihelani Highway on the east side of the subject area. The trench was placed in a relatively flat low lying area and contained very similar surface and subsurface deposition as BT-4 (Photo 7).

Photo # 7: Overview of BT-5 Excavation (sandy surface), view to northwest.

Both Aeolian and alluvial deposits were noted in the subsurface within the four distinctive layers, which were described as the following:

Layer I	10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include roots & rootlets; contains no significant cultural material.
Layer II	10YR5/3, brown; sand; moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no rock; inclusions are roots & rootlets; contains no significant cultural material (Note: Layer II-A contains whitish and black river pebbles).
Layer III	10YR4/3 brown sand; (fine) few white river cobbles and pebbles (random), texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt river cobbles; contains no significant cultural material.

Layer IV 10YR4/3 brown (dominant color); mottled with 10YR4/6 dark yellowish brown; sandy clay loam (hard pan); moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt cobbles and pebbles; contains no cultural material.

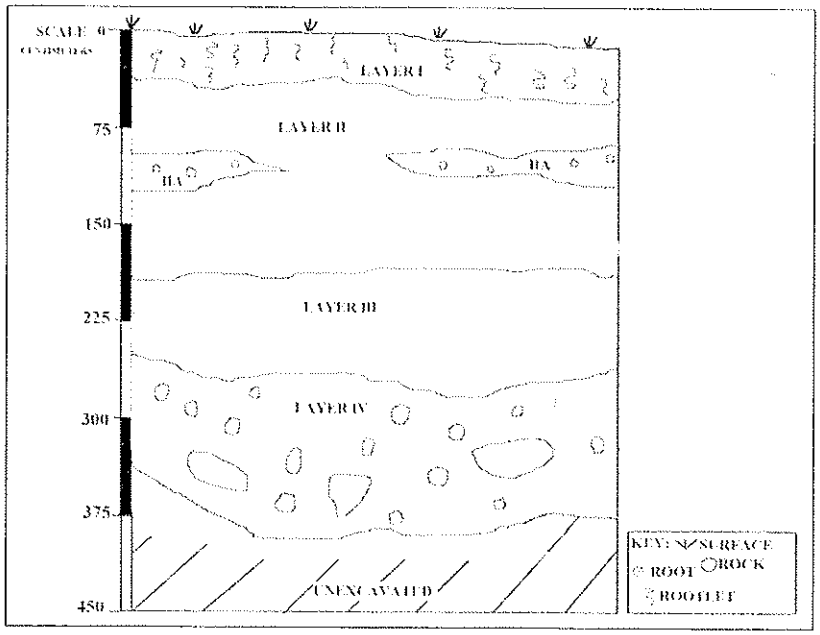

Figure 9: Southwest Profile Drawing of BT-5.

Backhoe Test Trench #6 (BT-6)

BT-6 was located in an area with old overgrown mechanical push-piles across the surface. There are also broken dead kiawe tree clearing piles in the grassy area. BT-6 is adjacent to the parking access area-next to the horse arena and training area (Photo 8).

Photo # 8: Overview of Adjacent Parking Area and Horse Arena/Training Area, view to northwest.

Root castings and partially lithified sand stone with whitish pebbles were noted in the trench. Evidence of an old meandering alluvial stream waterway or drainage deposits are located in the area. There were intrusions of small gravel river sand noted at approximately 1.2 meters below the existing surface. The silty sand is mottled with concreted sand intrusions and the four indistinctive layers were described as follows:

Layer I — 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few roots & rootlets; contains no significant cultural material.

Layer II — 10YR5/3 and 10YR4/3 brown sand with sand platelets; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include concreted and partially concreted sand and root castings; no significant cultural material. (Note Layer II-A is 10YR6/2 light grayish brown and also includes partially plated/concreted sand.

Layer III — 10YR4/3 brown mottled with 10YR 4/6 dark yellowish brown; fine, silty sand texture (more compact than Layer I); moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no roots and

inclusions include little to no rootlets; contains no significant cultural material.

Layer IV 10YR4/3 brown (dominant color); mottled with 10YR4/6 dark yellowish brown; sandy clay loam (hard pan); moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include sandstones, basalt cobbles and pebbles; ~75-80% rock within loam clay silt; no river sand; contains no cultural material.

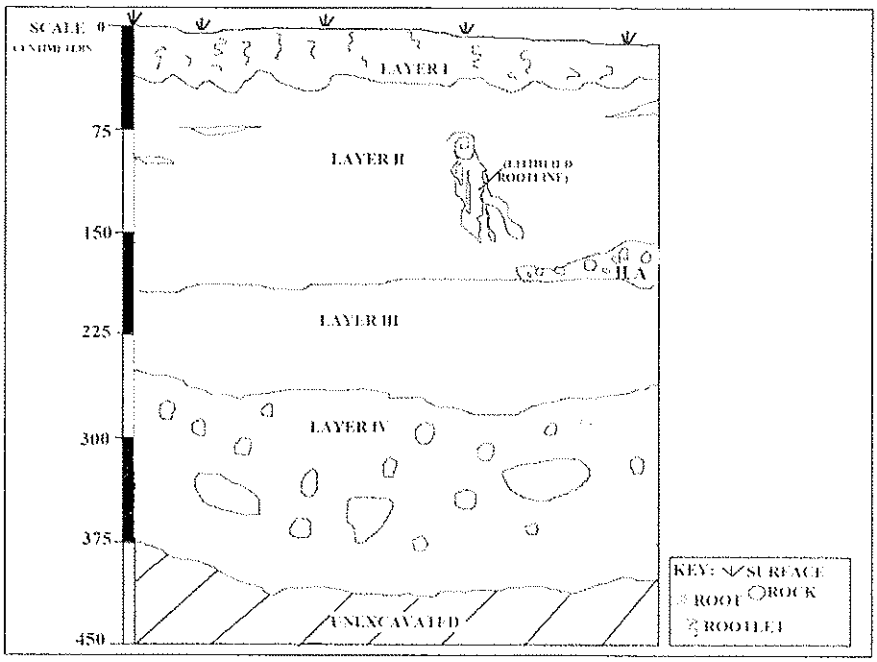

Figure 10: Southeast Profile Drawing of BT-6.

Backhoe Test Trench #7 (BT-7)

BT-7 was placed in the east section of the project area within a vegetated area. BT-7 was located inside a series of fences near overhead power lines (Photo 9 and Figure 11). Both Aeolian and alluvial deposits were noted as described by the following six soil descriptions:

Layer I 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include roots & rootlets; contains no significant cultural material.

Layer II 10YR5/3, brown; sand; moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary,

clear; topography, smooth; no rock; inclusions are roots & rootlets; contains no significant cultural material.

Layer III 10YR4/3 brown sand; (fine) few white river cobbles and pebbles (random), texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt river cobbles; contains no significant cultural material.

Layer IV 7.5YR6/8 reddish yellow sand; compacted with semi-concreted platelets and few pebbles and cobbles (water-worn) within sandy silt, texture; strong, fine, wet clump, structure; dry consistency, loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions include sub-angular sand platelets and cobbles; contains no cultural material.

Layer V 10YR4/3 brown (dominant color); sandy loam; transition layer; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt river cobbles; contains no cultural material.

Layer VI 7.5YR4/2 brown mottled peds of 7.5YR6/2 pinkish gray & 7.5YR4/1 dark gray; coarse loamy sand texture; (alluvial); strong, dry consistency, loose; moist consistency, friable; wet consistency, non-sticky; non-plastic; boundary, none; topography, none; inclusions includes evidence of old alluvial stream deposit; angular porous & smooth basalt boulders/cobbles/pebbles; contains no cultural material

Photo # 9: BT-7 Area (background post-ex) and BT-8 (foreground pre-ex) Overview to northwest.

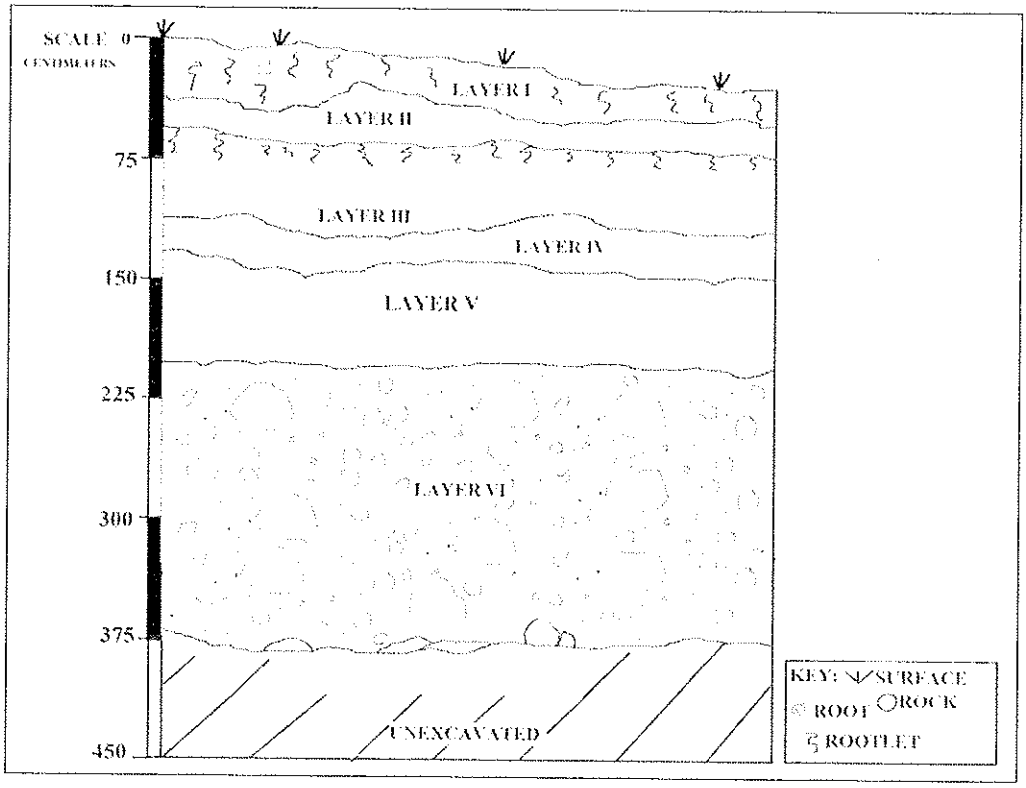

Figure 11: Southeast Profile Drawing of BT-7.

Backhoe Test Trench #8 (BT-8)

BT-8 was placed approximately 15 meters east of BT-7 (see Photo 9). There were sandstone boulders located at the surface and small berm (Photo 10 and Figure 12). Testing proved the surface anomalie was the result of previously mechanical disturbance. Broken branches were noted approximately 0-50/60 centimeters below the surface. Hard sand was atop a sandstone platelet layer with sandstone cobbles. All of the deposits in BT-8 consisted of Aeolian sand (loose and concreted). No alluvial was noted as reported in the following soil descriptions:

Layer I — 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include roots & rootlets; contains no significant cultural material.

Layer II — 10YR5/3, brown; sand; moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no rock; inclusions are roots & rootlets; contains no significant cultural material.

Layer III 10YR4/3 brown sand; texture; moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt river cobbles; contains no cultural material (very soft- collapsing).

Photo # 10: BT-8 Area Overview to northeast.

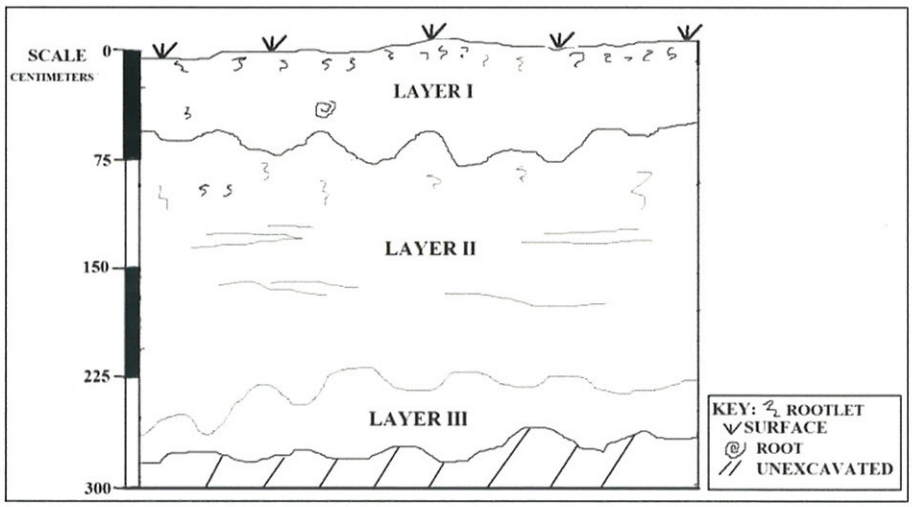

Figure 12: Northwest Profile Drawing of BT-8.

Backhoe Test Trench # (BT-9)

BT-9 was situated inside a fenced area adjacent with and parallel to overhead power lines at the top of a small dune rise. The trench contained very heavy hairy rootlets, very

silty soft sand with no clear color variation. The long rootlets hang down approximately 1meter below the existing surface. There were small roots, no rocks, and no alluvial deposits. There was some diagonal striation of concreted sand banding in the lower section. Extremely soft sand and the trench collapsed incessantly. Only a single layer was identified in this trench described as the following:

Layer I — 10YR4/3, brown; fine silty sand and sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include heavy hairy rootlets and few roots; contains no significant cultural material.

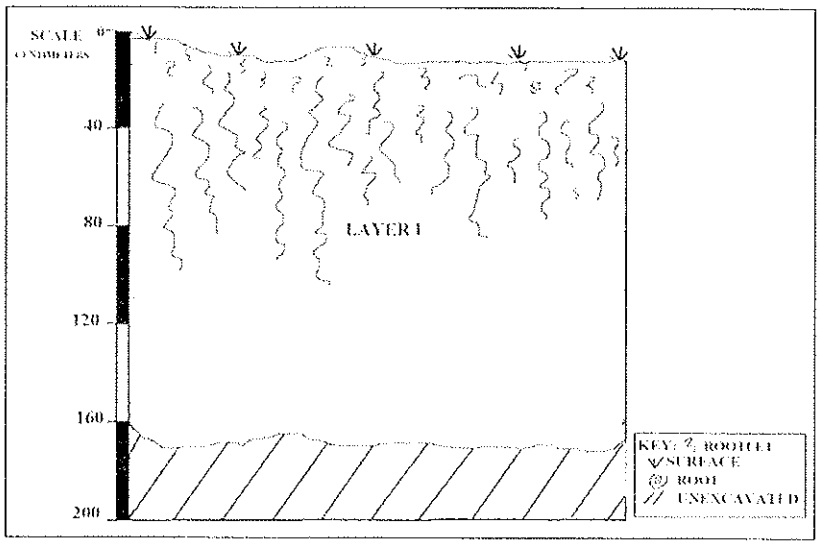

Figure 13: North Wall Profile Drawing of BT- 9.

Backhoe Test Trench #10 (BT-10)

BT-10 was situated in the lower area near the horse arena and paddock area at the access parking area (Photo 11). This trench contained both Aeolian and alluvial deposits. The area is also currently actively used for storage (Photo 12).

Photo # 11: Overview of BT-10, view to east.

Photo # 12: Overview of Storage Area west of BT-10, View to southeast.

The trench was extended to trace the expanding alluvial deposit that got thicker eastward. The loose surface sand (10/12 cmbs) had no roots but few rootlet clumps. The four stratigraphic layers were described as the following:

Layer I 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency,

slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include roots & rootlets; contains no significant cultural material.

Layer II 10YR5/3, brown; sand; moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no rock; inclusions are roots & rootlets; some partially lithified, or concreted sections; contains no cultural material.

Layer III 10YR4/3 brown; fine, silty sand mottled with 7.5YR 7/2 pinkish gray medium-coarse, sand and 10 R 4/3 weak red silty clay, semi-compact; texture; strong, fine, wet clump, structure; dry consistency, loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions include 45% of sub-angular basalt boulders/cobbles and some sand stone cobbles; contains no cultural material.

Layer IV 10YR5/3, brown; sand; moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no rock; inclusions are roots & rootlets; contains no significant cultural material.

Layer V 10YR4/3 brown sand; texture; moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt river cobbles; contains no cultural material (very soft- collapsing- some alluvial).

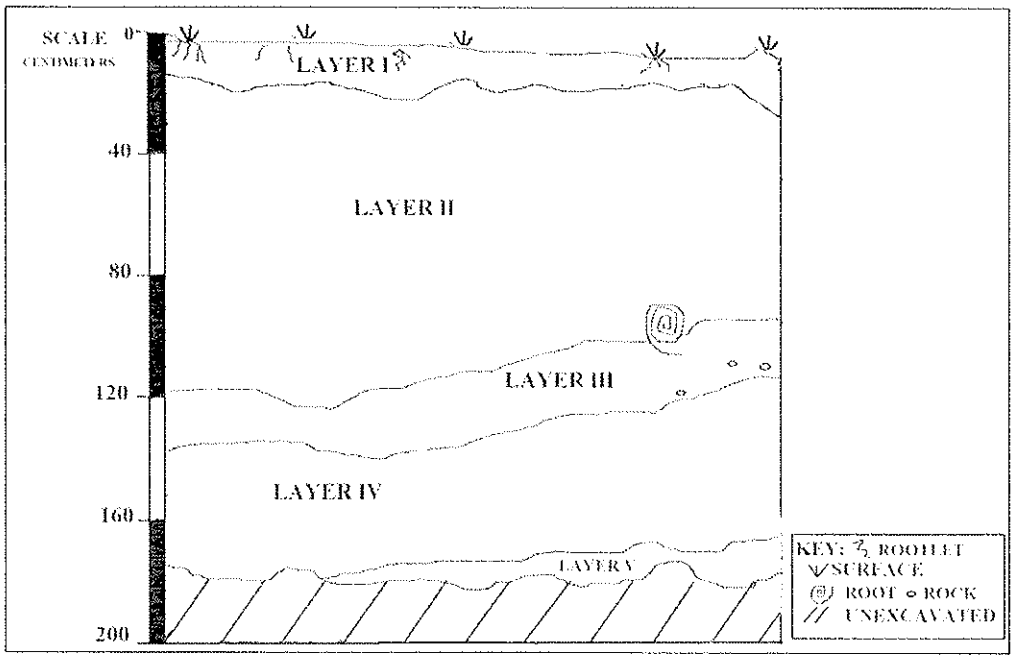

Figure 14: BT-10 Drawing of North Wall Profile.

Backhoe Test Trench #11 (BT-11)

BT-11 was located just inside the cattle feed lot atop a remnant sand dune ridgeline. The trench was placed along a gentle southern slope, with very soft sand (see Fig. 4). There are peacocks in the area. Cattle bones and scattered stones as well as a drainage ditch are across the area, generally. The length of BT-11 was extended because of the soft sandy collapsing walls (Photo 13). Disturbed surface Layer I contained a large amount of cow bones and also a buried cow skeleton with skin attached. Rootlets are undulating (0-20/30) and there was no alluvial deposit noted.

Layer I 10YR4/3 brown sand; (fine) few white river cobbles and pebbles (random), texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt river cobbles; contains no significant cultural material.

Layer II 10YR4/4 dark yellowish brown; fine, silty sand, mottled with 10YR6/4 light yellowish brown; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt river cobbles; contains no cultural material.

Photo # 13: BT-11 Post Excavation Overview to Northeast.

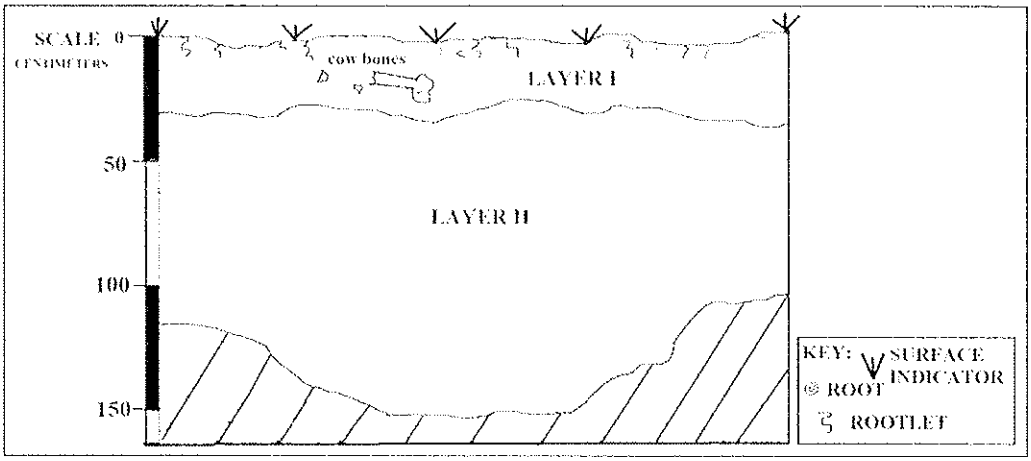

Figure 15: Southeast Profile Drawing of BT-11.

Backhoe Test Trench #12 (BT-12)

BT-12 was positioned along the east base of remnant sand dune ridgeline along the surface where water worn cobbles and small boulders were scattered. The trench was placed south of a recently constructed barbed wire fence. Push piles and dead kiawe trees are piled in the area and a significant amount of cow bones noted across the surface. The sand is very silty in this area that also contains scattered water worn cobbles and boulders (some black some white some smooth some porous). There are sand stone cobbles in the area (white). Four layers were recorded as follows:

Layer I — 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few roots & rootlets; contains no significant cultural material. Note water worn boulders scattered at surface.

Layer II — 5YR6/3 light reddish brown; semi-compact very fine silty sand; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include concreted and partially concreted sand and root castings; no significant cultural material.

Layer III — 10YR4/3 7.5YR6/6 & 6/8 reddish yellow; fine but more coarse than Layer II; whitish hue 5YR6/3 light reddish brown and 5YR7/3 pink banding with root casting intrusions and thin gold sand platelet formations; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no roots and inclusions include little to no rootlets; contains no cultural material.

Layer IV — 10YR4/3 brown (dominant color); mottled with 10YR4/4 dark yellowish brown sandy clay loam (hard pan); moderate, medium,

single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include sandstones, basalt cobbles and pebbles; no cultural material (Note Layer IV-A is 7.5YR6/2 pinkish gray. 2.5Y2.1/1 black and 2.5Y8/1 white alluvial pebbles); base of trench contains river sand and rock; blackish silty sand. white sand stone banding approximately 2 cm thick 7.5YR8/1 white and 7.5YR8/2 pinkish white.

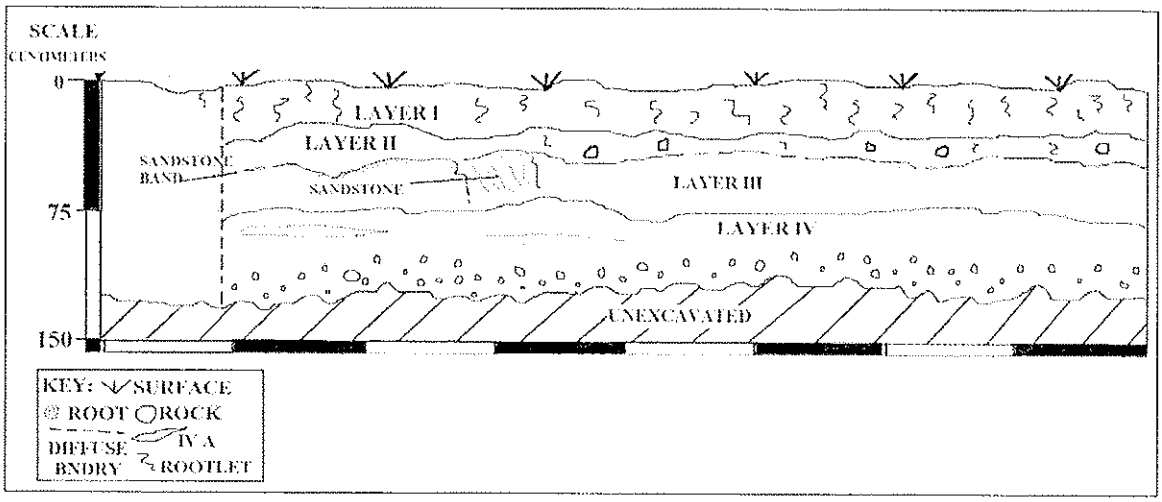

Figure 16: North Profile Drawing of BT-12.

Backhoe Test Trench #13 (BT-13)

Bt-13 was located in a small natural rise between the access road-way within a clump of kiawe trees. The trench is near a large boulder stockpile area (Photo 14). Modern rubbish is located across the surface and water-worn rocks, plastic irrigation pipe, old concrete lined waterway, concrete chunks and slabs at the surface, cow bones, water troughs, and associated farm items.

Photo # 14: BT 13 Area Overview (foreground) with boulder stockpile (background), View to west.

Basalt boulders were located at the surface at the southeast end of the trench (1.10 meters deep). Four stratigraphic layers were recorded as the following:

Layer I 10YR4/3 brown (0-23/25); silty sand roots & rootlets loose overburden brown; fine silty sand, texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include rootlets and other organic materials, contains no significant cultural material.

Layer II 10YR4/4 (23/25-1-1.15) dark yellowish brown; moderate, fine, single grain, structure; dry consistency, slightly hard/ compacted; moist consistency, friable; wet consistency, non-sticky; non-plastic; clear boundary, smooth, no inclusions; contains no cultural material.

Layer III 10YR3/4 dark yellowish brown fine, silty sand texture; strong, fine, wet clump, structure; dry consistency, loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions include 45% of sub-angular basalt boulders/cobbles and ~30 cm thick roots; contains no cultural material.

Layer IV 10YR6/4 light yellowish brown; concreted sandstone (cobbles at base); fine, silty sand texture; strong, fine, wet clump, structure; dry consistency, loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions some cobbles; contains no cultural material.

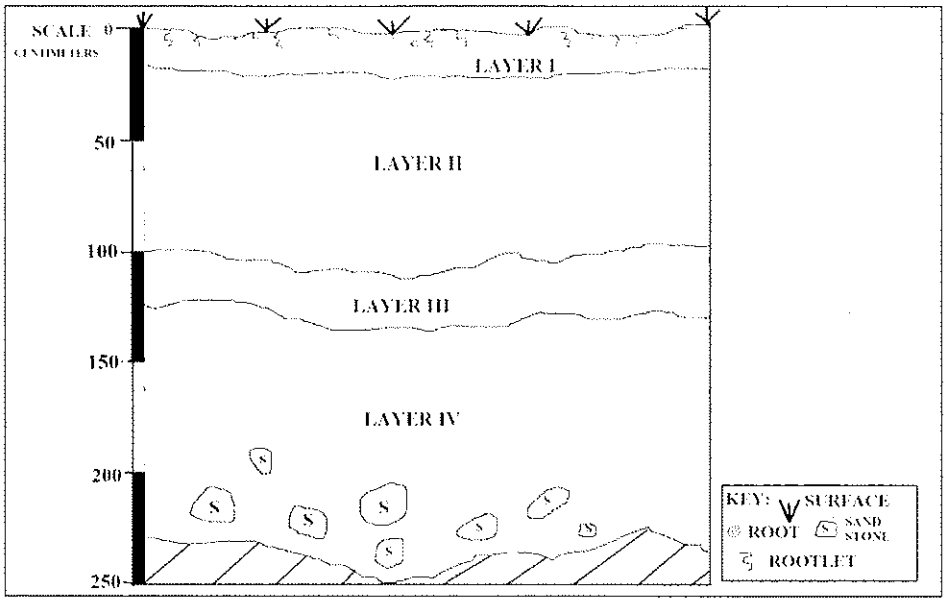

Figure 17: South Profile Drawing of BT-13.

Backhoe Test Trench #14 (BT-14)

BT-14 was excavated along the gentle southwestern slope of a remnant sand dune ridge. The test trench was placed within a fence -adjacent to the large pond. Subsurface matrix consists of very soft collapsing sand intrusions of reddish clay loam. No alluvial deposit all Aeolian (Photo 14 and Figure 18).

Photo # 15: BT-14 Post Ex Overview to northeast.

Layer I 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include roots & rootlets; contains no significant cultural material.

Layer II 10YR5/3, brown; sand; moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no rock; inclusions are roots & rootlets; some partially lithified, or concreted sections; contains no cultural material.

Layer III 10YR3/3 dark brown semi-compacted silty loam; strong, fine, wet clump, structure; dry consistency, loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions include basalt boulders/cobbles and roots; contains no cultural material.

Layer IV 7.5YR 5/4 brown fine, silty sand mottled with 7.5YR 7/2 medium-coarse, sand and 10 R 4/3 weak red silty clay, texture; strong, fine, wet clump, structure; dry consistency, loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions include sub-angular basalt and sand cobbles; contains no cultural material. Note: hardpan encountered at north end of trench.

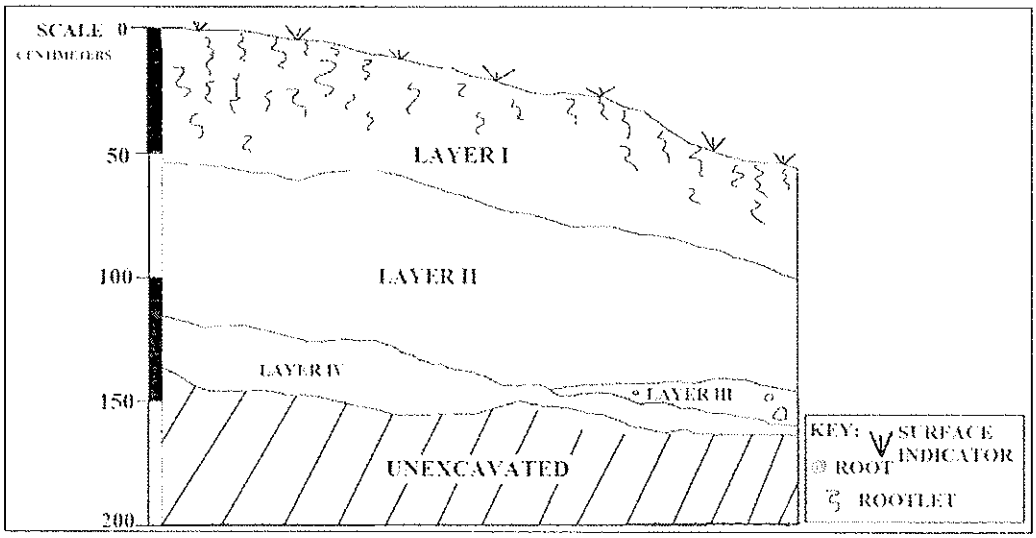

Figure 18: West Profile Drawing of BT-14.

Backhoe Test Trench #15 (BT-15)

BT-15 was placed in the area next to the pond and stockpiles. This area has been heavily impacted by cattle care and mechanically placed imported stockpiles. Sand pushpiles are also in the area and a lot of former land alterations occurred around the pond.

Stockpiles and clean our piles are in the area as well as several old sand stock piles covered by thick grass and stockpiled dead kiawe trees. Two layers were described as follows:

Layer I — 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include roots & rootlets; contains no significant cultural material.

Layer II — 10YR5/3, brown; sand; moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no rock; inclusions are roots & rootlets; some partially lithified, or concreted sections; contains no cultural material.

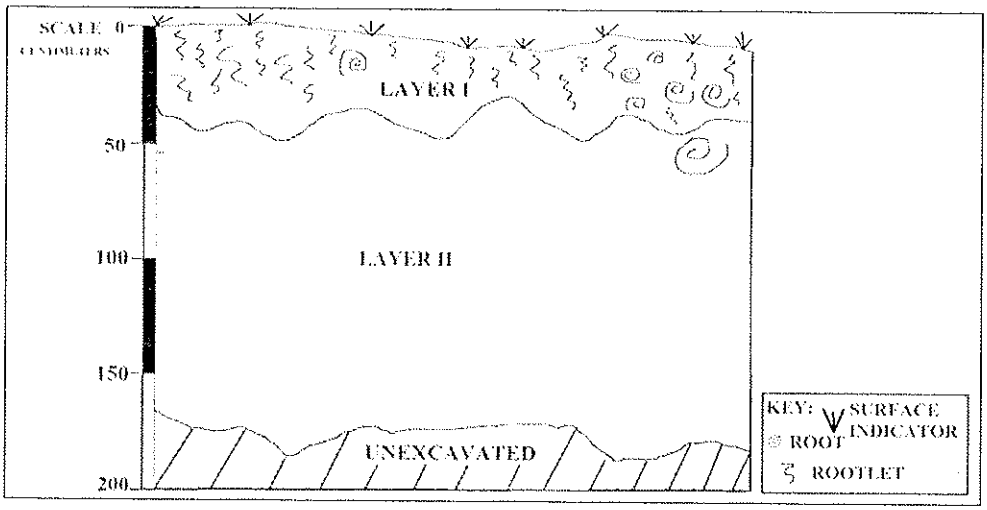

Figure 19: East Profile Drawing of BT-15.

Backhoe Test Trench #16 (BT-16)

BT-16 was located in a relatively flat area with scattered boulders across the surface. The area was in the general area of BT-15. The placement of the existing cattle feedlot has heavily impacted this area (Photo 16). Four layers were recorded (Figure 20) as follows:

Layer I — 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include roots & rootlets; contains no significant cultural material.

Layer II — 7.5YR3/4 dark brown; silty loam (little sand); moderate, medium-large, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity,

non-plastic; boundary, clear; topography, smooth; Note: II-A 10YR3/2 very dark grayish brown; sandy silt blackish staining only observed in south half of trench (both profiles); possibly the remains of old dump or stockpile.

Layer III 10YR4/3 dark brown semi-compacted silty loam; 10YR very dark grayish brown coarse sand loose strong, fine, wet clump, structure; dry consistency, loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions include basalt boulders/cobbles and roots; contains no cultural material.

Layer IV 10YR3/4 & 10YR3/2 dark yellowish brown; silty loam; texture; strong, fine, wet clump, structure; dry consistency, loose; moist consistency, friable; wet consistency, sticky; non-plastic; boundary, none; topography, none; inclusions include sub-angular basalt and sand cobbles; contains no cultural material.

Photo # 16: Pond Overview (near the cattle feed lot) to northeast.

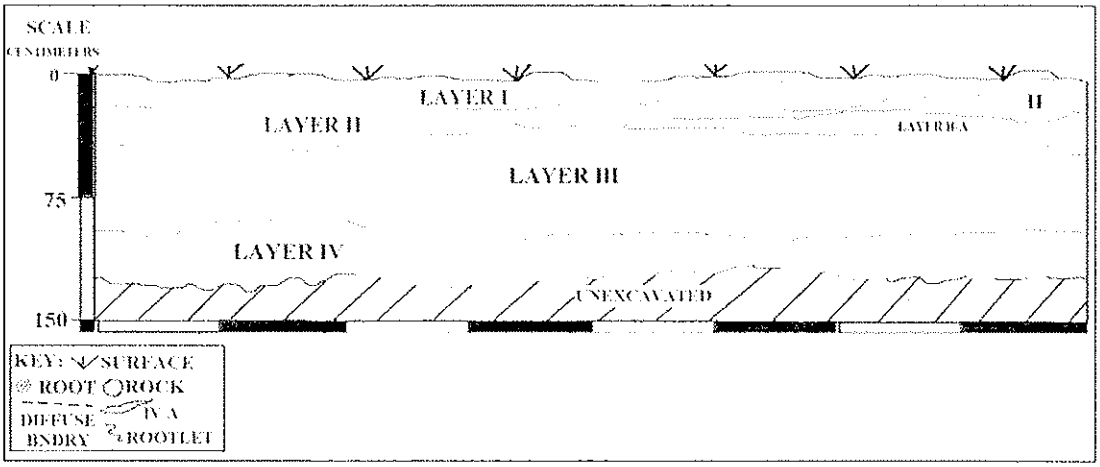

Figure 20: East Profile Drawing of BT-16.

Backhoe Test Trench #17 (BT-17)

BT-17 was situated near a surface boulder rock scatter across an access roadway-adjacent to the feedlot. Subsurface matrix consisted of Aeolian sand on top of alluvial stream deposits. Two layers were encountered and recorded as follows:

Layer V — 10YR4/3 brown (dominant color); sandy loam; transition layer; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few basalt river cobbles; contains no cultural material.

Layer VI — 7.5YR4/2 brown mottled peds of 7.5YR6/2 pinkish gray & 7.5YR4/1 dark gray; coarse loamy sand texture; (alluvial); strong, dry consistency, loose; moist consistency, friable; wet consistency, non-sticky; non-plastic; boundary, none; topography, none; inclusions includes evidence of old alluvial stream deposit; angular porous & smooth basalt boulders/cobbles/pebbles; contains no cultural material

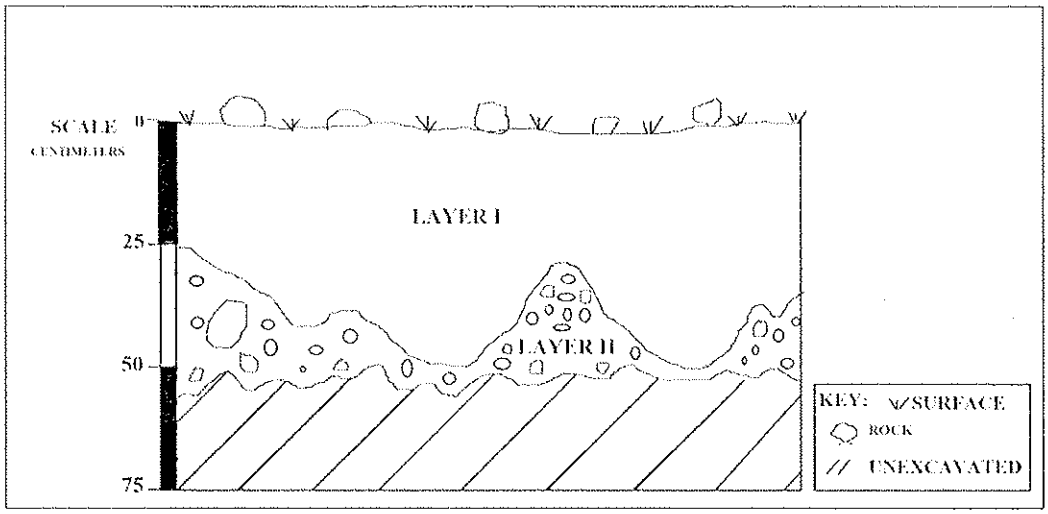

Figure 21: East Profile Drawing of BT- 17.

Backhoe Test Trench #18 (BT-18)

BT-18 was in a low-lying area near the cattle feed lot. This area appears to have previously been utilized as a *sand borrow* site. There is a small indentation in the soft Aeolian sand. The soft sand is overlying rocky dirt as well as small-large water-worn boulders cobbles and pebbles. This was a very shallow trench and the two layers were described as the following:

Layer I 10YR4/3 brown mottled with 10YR 4/6 dark yellowish brown; fine, silty sand texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no roots and inclusions include little to no rootlets; contains no significant cultural material.

Layer II 10YR4/3 brown (dominant color); mottled with 10YR4/6 dark yellowish brown; sandy clay loam (hard pan); moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include sandstones, basalt cobbles and pebbles; no cultural remains.

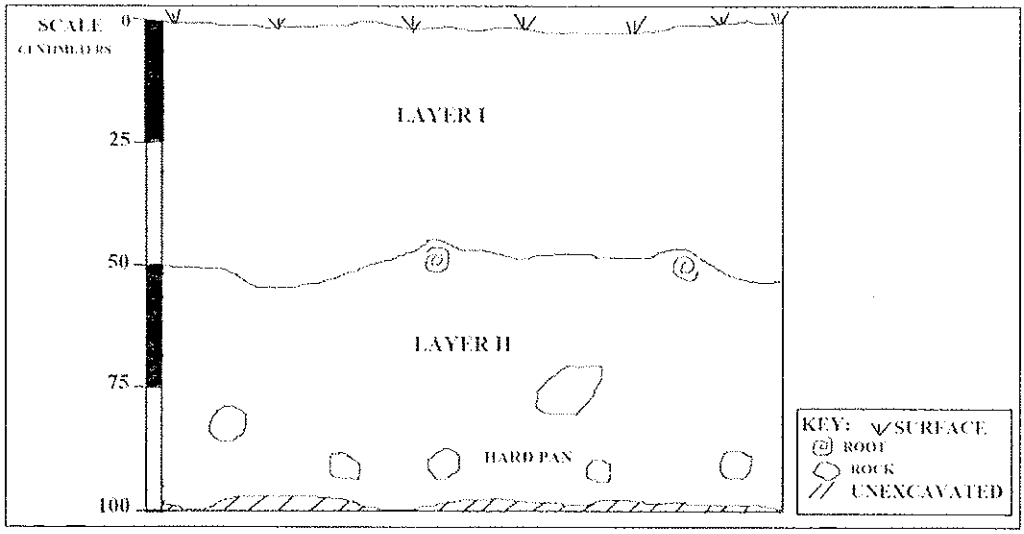

Figure 22: South Profile Drawing of BT-18.

Backhoe Test Trench # (BT-19)

BT-19 was placed along the gentle slope of a small Aeolian dune; adjacent to the graded gravel access road across from tall pu`u (feed lot). A large cow was buried in the area and we shifted the trench slightly to avoid digging up the partially buried and decayed animal lying approximately ~0-75cmbs (roughly N/S). Cow bones were spread throughout the upper two layers (Figure 23). Layers I & II have common random white pebbles. Both Aeolian and alluvial deposits were recorded in the four layers as follows:

Layer I — 10YR4/3, brown; fine silty sand undulating with sandy silt texture; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include few roots & rootlets; contains no significant cultural material.

Layer II — 5YR6/3 light reddish brown; semi-compact very fine silty sand; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include concreted and partially concreted sand and root castings; no significant cultural material.

Layer III — 10YR4/3 7.5YR6/6 reddish yellow; whitish hue 5YR6/3 light reddish brown and 5YR7/3 pink banding with root casting intrusions and thin gold sand platelet formations; moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; no roots and inclusions include little to no rootlets; contains no cultural material.

Layer IV 10YR4/3 brown (dominant color); mottled with 10YR4/4 dark yellowish brown sandy clay loam (hard pan); moderate, medium, single grain, structure; dry consistency, loose; moist consistency, friable; wet consistency, slightly sticky; plasticity, non-plastic; boundary, clear; topography, smooth; inclusions include sandstones, basalt cobbles and pebbles; no cultural material

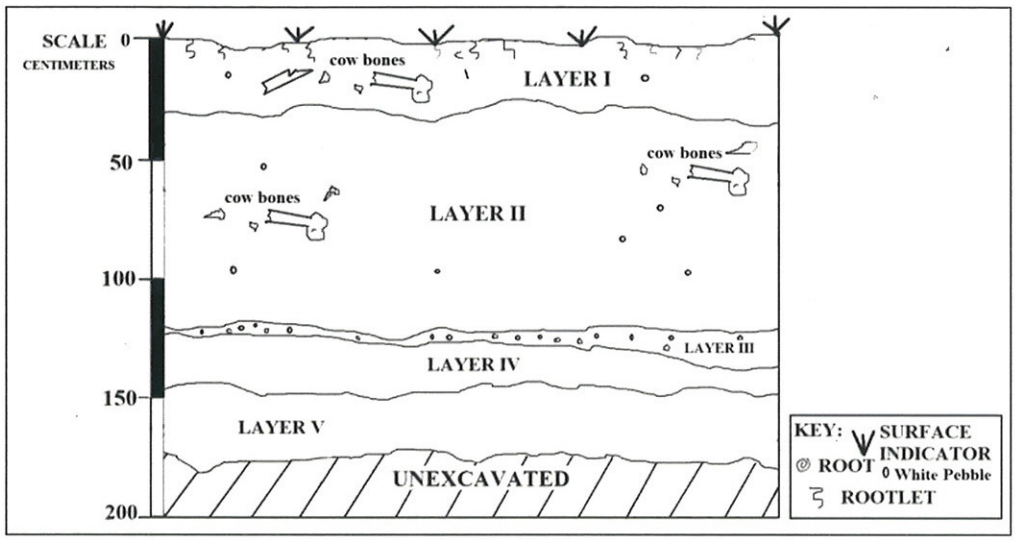

Figure 23: Southwest Profile Drawing of BT-19.

Backhoe Test Trench #20 (BT-20)

BT-20 was located southeast adjacent to the cattle feed lot pen with several grazing cattle. The runoff drains through this area forming a small ditch that is partially concreted more toward the pond (Photo 17).

Photo # 17: Runoff draining through a small ditch (sections partially concreted), view to northeast.

Layer I 5YR 4/3 reddish brown silty loam (loose topsoil); diffuse distinctness, irregular top of boundary; fine, medium, and large prominent contrast clay loam; structureless to strong peds, very fine to very coarse granular and crumb structure; loose, non-coherent when dry and moist; non-sticky; non-plastic; few fine to coarse vesicular roots and pores; contains no cultural material.

Layer II 2.5YR 3/4 dark reddish brown; diffuse distinctness, irregular top of boundary; fine, medium, and large prominent contrast clay loam; structureless to strong peds, very fine to very coarse granular and crumb structure; loose, non-coherent when dry and moist; non-sticky; non-plastic; many fine to coarse vesicular roots and pores; contains no cultural material.

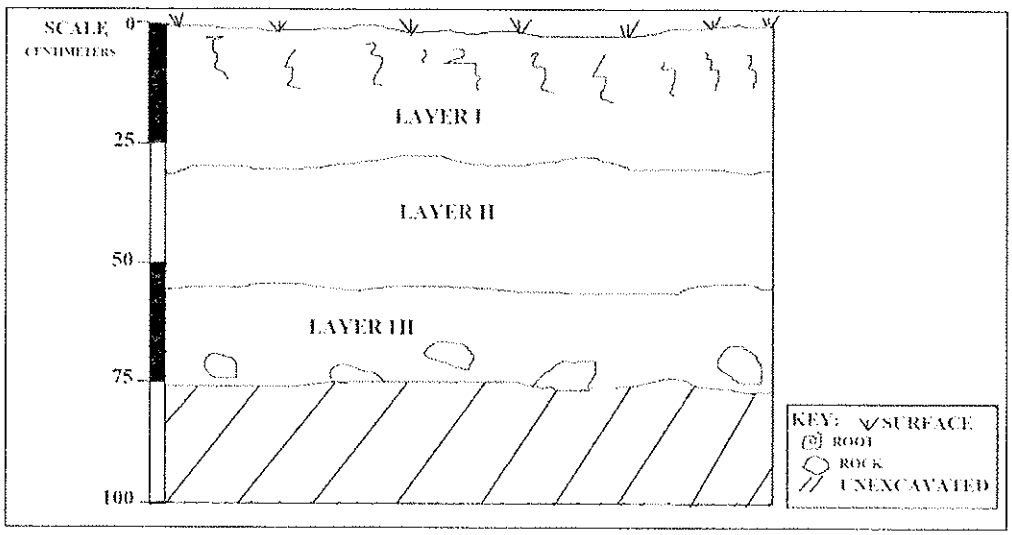

Figure 24: East Profile Drawing of BT-20.

Table 2: Backhoe Test Trench (BT) Summary (note: m=meters).

BT#	Orientation	Length	Width	Depth	Additional Comments
1	120°/300°	5.80 m	0.80 m	1.80 m	Aeolian and alluvial deposits; 4 layers
2	114°/294°	6.50 m	0.80-0.85 m	3.60 m	Aeolian sand; 2 layers
3	120°/300°	5.85 m	0.85-0.95 m	4.2 m	Aeolian sand with pebbles; 3 layers
4	20°/200°	6.1 m	0.90 m	4.12 m	Aeolian and alluvial deposits; 6 layers
5	164°/344°	6.0 m	0.85 m	3.95 m	Aeolian and alluvial deposits; 4 layers
6	40°/220°	6.11 m	0.85 m	4.25 m	Aeolian sand and silt; 4 layers
7	190°/370°	5.75 m	0.85 m	3.85 m	Aeolian sand and alluvial deposits; 6 layers
8	20°/200°	5.5 m	0.83-0.87 m	2.6 m	Aeolian sand; 3 layers
9	38°/218°	6.3 m	0.95 m	1.8 m	Aeolian sand; 1 layer
10	100°/280°	7.5 m	0.85 m	1.8 m	Aeolian and alluvial deposits; 5 layers
11	33°/213°	7.0 m	1.70 m	1.5 m	Aeolian sand; 2 layers
12	90°/270°	6.5 m	0.90 m	1.35 m	Aeolian sand; 4 layers
13	145°/325°	5.8 m	0.92 m	2.5 m	Aeolian sand with sandstone cobbles at base; 4 layers
14	170°/350°	6.2 m	2 m	1.6 m	Aeolian sand with silt loam intrusions; 4 layers
15	70°/250°	5.75 m	1.2 m	2.2 m	Aeolian sand; 2 layers
16	25°/205°	8.02 m	0.85 m	1.35 m	Aeolian sand and silt; 4 layers
17	°165/345°	5.5 m	0.90-1.5 m	1.75 m	Aeolian and alluvial deposits 5 layers
18	100°280/°	5.4 m	1.5 m	1 m	Layer I Sand- overlying hard pan- (Layer II silt with rock); 2 layers
19	140°/320°	5.8 m	1.2 m	0.60 m	Aeolian and alluvial deposits; 2 layers
20	45°/235°	5.8 m	0.85-1 m	0.75 m	Aeolian and alluvial deposits; 2 layers

SUMMARY AND CONCLUSIONS

No significant surface or subsurface cultural remains were identified during the archaeological assessment survey. Complete surface inspection of accessible areas occurred and twenty mechanical backhoe test trenches were excavated in order to help assess the surface and subsurface conditions throughout the subject parcel. Efforts were made to identify the presence or absence of significant cultural deposits. Portions of the project area were previously heavily impacted by mechanical grading or sand-mining activities. Cattle grazing with associated feedlots and large drainage ponds reshaped sections of the subject area.

In general, the subject area is located within an area that contains human burials – the Pu`uone Dune system. Surface and subsurface historic properties have been documented on some of the adjacent parcels. Although no surface or subsurface historic properties were identified during this archaeological assessment survey, there is a possibility of the inadvertent discovery of undocumented subsurface cultural properties during any potential future land alteration activities. Sand dune deposits were located in all test instances.

PROJECT MITIGATION AND RECOMMENDATIONS

Given the results of this archaeological survey, no further archaeological work beyond the assessment level is recommended for the 31.222 acre subject area. However, given the general location of the project area, the occurrence of Aeolian sand dune deposits, and the presence of historic properties on immediately adjacent properties, precautionary archaeological monitoring is recommended for any development or future earthmoving activities on the subject parcel.

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Appendix P

Traffic Impact Analysis Report

TRAFFIC IMPACT ANALYSIS REPORT FOR

WAIKO ROAD LIGHT INDUSTRIAL PARK

IN WAIKAPU, MAUI, HAWAII

Prepared For

WAIKO INDUSTRIAL INVESTMENT
1407 Walla Walla Street
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May 17, 2011

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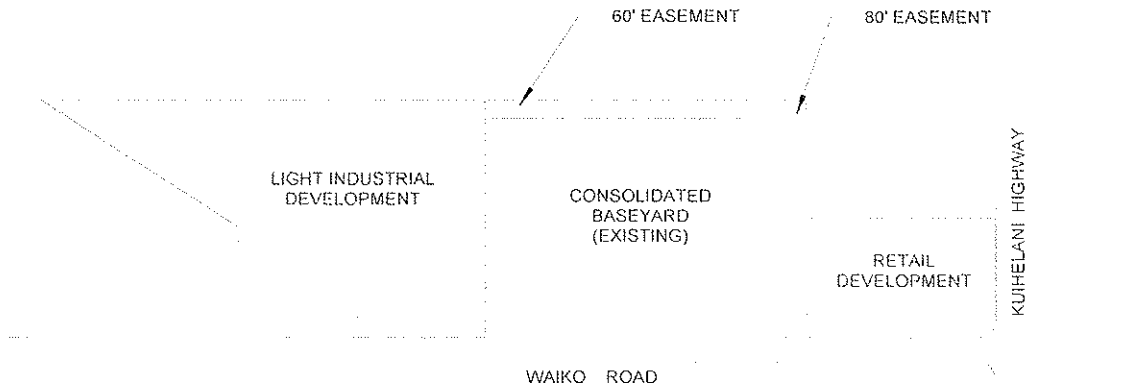
1. INTRODUCTION

Phillip Rowell and Associates has been retained to prepare a traffic impact analysis for a proposed light industrial park along Waiko Road in the Waikapu area of Maui. The approximate location of the project on the Island of Maui is shown in Figure 1.

This introductory chapter discusses the location of the project, the proposed development, and the study methodology.

Purpose and Objectives of Study

1. Determine and describe the traffic characteristics of the proposed project.
2. Quantify and document the traffic related impacts of the proposed project.
3. If required, identify and evaluate traffic related improvements required to provide adequate access to and egress from the proposed project and to mitigate the project's traffic impacts.



SCHEMATIC SITE PLAN

Figure 1
PROJECT LOCATION ON MAUI

Project Location and Description

A preliminary site plan of the project is shown as Appendix A. The total area of the project is 32 acres. The current site plan for the proposed industrial park indicates two separate parcels. The first parcel is located along the north side of Waiko Road between Kuihelani Highway and the east property line of the Consolidated Baseyard. There is an 80 foot wide roadway easement between the parcel and the Consolidated Baseyard. This area of this parcel is 8.4 acres and could accommodate approximately 100,000 square feet of retail and commercial floor space. Access to and egress from this parcel will be provided by a driveway using the 80 foot easement described.

The second parcel is located west of the Consolidated Baseyard and will consist of 19.7 acres of light industrial uses. Access to and egress from this parcel will be provided a one driveway, Drive B. This driveway will be unsignalized and all approaches in be one lane only. following is a summary of the traffic related.

Lastly, there is an 60 foot wide easement along the north boundary of the Consolidated Baseyard connecting the two parcels.

A schematic project site plan is also shown on Figure 1.

Horizon Year

The design horizon year represents a date for which future background traffic projections were estimated. These projections include traffic generated by other planned projects within and adjacent to the study area and background traffic growth.

The year 2015 was used as the horizon year, even though scheduled completion could be earlier. This year was selected to be consistent with the traffic studies for the related projects in the area.

Study Methodology

1. A site reconnaissance was performed to identify existing roadway cross-sections, intersection lane configurations, traffic control devices, and surrounding land uses.

2. Existing peak-hour traffic volumes for the study intersections were obtained and summarized.

3. Existing levels-of-service of the study intersections was determined using the methodology described in the *Highway Capacity Manual*.

4. A list of related development projects within and adjacent to the study area that will impact traffic conditions at the study intersections was compiled.

5. Future background traffic volumes at the study intersections without traffic generated by the study project were estimated.

6. Peak hour traffic that the proposed project will generate was estimated using trip generation analysis procedures recommended by the Institute of Transportation Engineers.

7. A level-of-service analysis for future traffic conditions with traffic generated by the study project was performed.

8. The impacts of traffic generated by the proposed project at the study intersections was quantified and summarized.

9. Locations that project generated traffic significantly impacts traffic operating conditions were identified.

10. Recommendations, improvements or modifications necessary to mitigate the traffic impacts of the project and to provide adequate access to and egress from the site were formulated.

11. A report documenting the conclusions of the analyses performed and recommendations was prepared.

Order of Presentation

Chapter 2 describes existing traffic conditions, the Level-of-Service (LOS) concept and the results of the Level-of-Service analysis of existing conditions.

Chapter 3 describes the process used to estimate 2015 background traffic volumes and the resulting background traffic projections. Background conditions are defined as future background traffic conditions without traffic generation by the study project.

Chapter 4 describes the methodology used to estimate the traffic characteristics of the proposed project, including 2015 background plus project traffic projections.

Chapter 5 describes the traffic impacts of the proposed project, identifies potential mitigation measures and summarizes the traffic impact study.

2. ANALYSIS OF EXISTING CONDITIONS

This chapter presents the existing traffic conditions on the roadways adjacent to the proposed project. The level-of-service (LOS) concept and the results of the Level-of-Service analysis for existing conditions are also presented. The purpose of this analysis is to establish the base conditions for the determination of the impacts of the project which are described in a subsequent chapter.

Description of Existing Streets and Intersection Controls

The following is summary of the major roadways in the study area:

Honoapiilani Highway

Honoapiilani Highway is a State highway connecting Wailuku and Maalaea. In the vicinity of the proposed project, the highway is a two-lane, two-way facility with separate left turn lanes. In the vicinity of Waiko Road, the posted speed limit is 35 miles per hour (mph). The intersection with Waiko Road is signalized. The northbound and southbound left turns from Honoapiilani Highway are protected-permissive.

Kuihelani Highway

Kuihelani Highway is a four-lane divided State highway connecting Kahului and Maalaea. The posted speed limit in the study area is 55 miles per hour. The intersection with Waiko Road is a signalized T-intersection with a separate left turn lanes for northbound to westbound left turns onto Waiko Road. The left turns are protected. There is also a separate right turn deceleration lane for southbound to westbound right turns.

Waiko Road

Waiko Road is a two-lane, two-way roadway intersecting Honoapiilani Highway and Kuihelani Highway. The intersection of Waiko Road at Waiale Road is a STOP sign controlled T-intersection with the STOP sign along the southbound approach of Waiale Road.

Figure 2 is a schematic indicating the lane configurations and right-of-way controls of the study intersections.

Existing Peak Hour Traffic Volumes

The existing peak hour traffic volumes are also shown on Figure 2. The peak hour volumes were determined from traffic counts of the study intersections.

1. The traffic counts were performed during January, 2011.

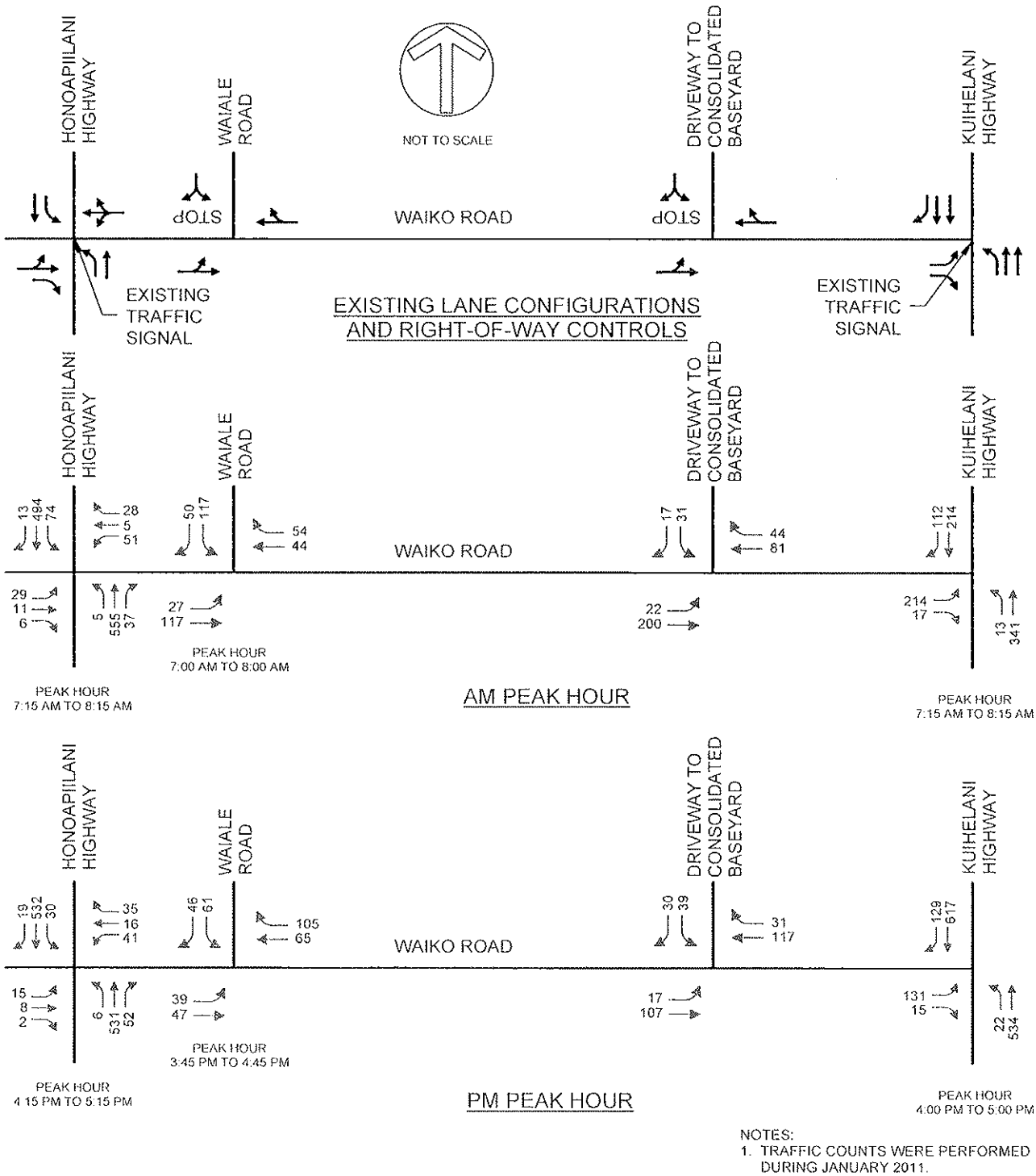
2. The morning counts were performed between 6:30 AM and 9:00 AM. The afternoon counts were performed between 3:30 PM and 6:00 PM.

3. The traffic counts include buses, trucks and other large vehicles. Mopeds and Bicycles were not counted.

4. The traffic volumes of adjacent intersections may not match the volumes shown for an adjacent intersection because the peak hours of the adjacent intersections may not coincide and there are driveways between the intersections.

5. Pedestrian activity was negligible.

The Traffic Count Worksheets are provided as Appendix B.



NOTES:
1. TRAFFIC COUNTS WERE PERFORMED DURING JANUARY 2011.

Figure 2
EXISTING INTERSECTION LANE CONFIGURATIONS, RIGHT-OF-WAY CONTROLS AND 2011 PEAK HOUR TRAFFIC VOLUMES

Level-of-Service Concept

Signalized Intersections

"Level-of-Service" is a term which denotes any of an infinite number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. Level-of-service (Level-of-Service) is a qualitative measure of the effect of a number of factors which include space, speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

There are six levels-of-service, A through F, which relate to the driving conditions from best to worst, respectively. The characteristics of traffic operations for each level-of-service are summarized in Table 1. In general, Level-of-Service A represents free-flow conditions with no congestion. Level-of-Service F, on the other hand, represents severe congestion with stop-and-go conditions. Level-of-service D is typically considered acceptable for peak hour conditions in urban areas.

Corresponding to each level-of-service shown in the table is a volume/capacity ratio. This is the ratio of either existing or projected traffic volumes to the capacity of the intersection. Capacity is defined as the maximum number of vehicles that can be accommodated by the roadway during a specified period of time. The capacity of a particular roadway is dependent upon its physical characteristics such as the number of lanes, the operational characteristics of the roadway (one-way, two-way, turn prohibitions, bus stops, etc.), the type of traffic using the roadway (trucks, buses, etc.) and turning movements.

Table 1 Level-of-Service Definitions for Signalized Intersections[1]

Level of Service	Interpretation	Volume-to-Capacity Ratio[2]	Stopped Delay (Seconds)
A	Uncongested operations; all vehicles clear in a single cycle.	0.00-0.700	≤10.0
B			10.1 - 20.0
C	Light congestion; occasional backups on critical approaches	0.701-0.800	20.1 - 35.0
D	Congestion on critical approaches but intersection functional. Vehicles must wait through more than one cycle during short periods. No long standing lines formed.	0.801-0.900	35.1 - 55.0
E	Severe congestion with some standing lines on critical approaches. Blockage of intersection may occur if signal does not provide protected turning movements.	0.901-1.000	55.1 - 80.0
F	Total breakdown with stop-and-go operation	>1.001	>80.0

Notes:
(1) Source: *Highway Capacity Manual*, 2000.
(2) This is the ratio of the calculated critical volume to Level-of-Service E Capacity.

Unsignalized Intersections

Like signalized intersections, the operating conditions of intersections controlled by stop signs can be classified by a level-of-service from A to F. However, the method for determining level-of-service for unsignalized intersections is based on the use of gaps in traffic on the major street by vehicles crossing or turning through that stream. Specifically, the capacity of the controlled legs of an intersection is based on two factors: 1) the distribution of gaps in the major street traffic stream, and 2) driver judgement in selecting gaps through which to execute a desired maneuver. The criteria for level-of-service at an unsignalized intersection is therefore based on delay of each turning movement. Table 2 summarizes the definitions for level-of-service and the corresponding delay.

Table 2 Level-of-Service Definitions for Unsignalized Intersections(1)

Level-of-Service	Expected Delay to Minor Street Traffic	Delay (Seconds)
A	Little or no delay	<10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	See note (2) below	>50.1

Notes:
(1) Source: *Highway Capacity Manual*, 2000.
(2) When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement of the intersection.

Level-of-Service Analysis of Existing Conditions

The results of the level-of-service analysis of the signalized study intersections are summarized in Table 3. Shown in the table are the volume-to-capacity ratios, delays and levels-of-service of the overall intersection and all the controlled movements. The level-of-service worksheets for existing conditions are provided as Appendix C.

Table 3 Existing (2011) Levels-of-Service - Signalized Intersections

Intersection and Movement	AM Peak Hour			PM Peak Hour		
	V/C[1]	Delay[2]	LOS[3]	V/C[1]	Delay[2]	LOS[3]
Honoapiilani Hwy at Waiko Road	***0.70***	***11.8***	***B***	***0.53***	***9.5***	***A***
Eastbound Left & Thru	0.25	26.2	C	0.21	26.3	C
Eastbound Right	0.01	24.7	C	0.00	25.1	C
Westbound Left, Thru & Right	0.55	30.1	C	0.38	27.6	C
Northbound Left	0.02	4.7	A	0.03	4.2	A
Northbound Thru & Right	0.67	11.7	B	0.54	7.9	A
Southbound Left	0.29	6.3	A	0.10	4.0	A
Southbound Thru & Right	0.45	6.7	A	0.52	7.2	A
Kuihelani Highway at Waiko Road	***0.55***	***11.8***	***B***	***0.37***	***7.8***	***A***
Eastbound Left	0.70	29.2	C	0.50	25.5	C
Eastbound Right	0.03	20.3	C	0.02	22.3	C
Northbound Left	0.60	54.1	D	0.51	35.2	D
Northbound Thru	0.19	4.6	A	0.26	3.5	A
Southbound Thru	0.12	6.6	A	0.33	6.6	A
Southbound Right	0.28	7.9	A	0.11	5.5	A

NOTES:
1. V/C denotes ratio of volume to capacity.
2. Delay is in seconds per vehicle.
3. LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. LOS is based on delay.

Unsignalized Intersections

The results of the Level-of-Service analysis of the unsignalized intersections are summarized in Table 4. Shown are the control delays and Levels-of-Service of each controlled movement. Delays and levels-of-service are not calculated for uncontrolled, or free flow, movements.

Table 4 Existing (2011) Levels-of-Service Analysis for Unsignalized Intersections[1]

Intersection and Movement	AM Peak Hour		PM Peak Hour	
	Delay [1]	LOS [2]	Delay [1]	LOS [2]
Waiko Road at Waiale Road				
Eastbound Left & Thru	2.0	A	4.6	A
Southbound Left & Right	12.4	B	11.7	B

NOTES:
(1) Delay in seconds per vehicle.
(2) LOS denotes Level-of-Service calculated using the operations method described in Highway Capacity Manual. Level-of-Service is based on delay.

Conclusions of the Level-of-Service Analysis

1. The intersection of Honoapiilani Highway at Waiko Road operates at Level-of-Service B during the morning peak hour and Level-of-Service A during the afternoon peak hour. All lane groups operate at Level-of-Service C, or better, during both peak periods.

2. The intersection of Kuihelani Highway at Waiko Road operates at Level-of-Service B during the morning peak hour and Level-of-Service A during the afternoon peak hour. The northbound left turn operates at Level-of-Service D during the afternoon peak hour. All other lane groups operate at Level-of-Service C, or better, during both peak periods.

3. All controlled movements operate at Level-of-Service A or B during the peak periods.

Existing Deficiencies

We have used the Institute of Transportation Engineers standard that Level-of-Service D is the minimum acceptable Level-of-Service. For signalized intersections, this criteria is applicable to the overall intersection rather than each controlled lane group. Minor movements, such as left turns, and minor side street approaches may operate at Level-of-Service E for short periods of time during the peak hours so that the overall intersection and major movements along the major highway will operate at Level-of-Service D, or better. All volume-to-capacity ratios should also be less than 1.00. A volume-to-capacity ratio equal to or greater than 1.00 implies that the intersection or lane group operates at or over capacity.

A standard has not be established for unsignalized intersections. Therefore, we have used a standard that Level-of-Service D is an acceptable level-of-service for any major controlled lane groups, such as left turns from a major street to a minor street. Side street approaches may operate at Level-of-Service E or F for short periods of time. This is determined from the delays of the individual lane groups. If the delay of any of the side street approaches appears to be so long that it will affect the overall level-of-service of the intersection, then mitigation measures should be accessed.

Using this standard, all the intersections operate at an acceptable level-of-service.

3. PROJECTED BACKGROUND TRAFFIC CONDITIONS

The purpose of this chapter is to discuss the assumptions and data used to estimate 2010 background traffic conditions. Background traffic conditions are defined as future traffic volumes without the proposed project.

Future traffic growth consists of two components. The first is ambient background growth that is a result of regional growth and cannot be attributed to a specific project. The second component is estimated traffic that will be generated by other development projects in the vicinity of the proposed project.

Background Traffic Growth

The *Maui Long Range Transportation Plan*[1] concluded that traffic in Maui would increase an average of 1.6% per year from 1990 to 2020. This growth rate was used to estimate the background growth between 2011 and 2015, which is the design year for this project. The growth factor was calculated using the following formula:

$$F = (1 + i)^n$$

where F = Growth Factor
i = Average annual growth rate, or 0.016
n = Growth period, or 4 years

It should be noted that some traffic studies for project in Kihei have used a growth factor of 2.0% rather that 1.6% used in the study. We have checked with the other consultants and verified that this is the result of rounding.

[1] Kaku Associates, *Maui Long Range Land Transportation Plan*, October 1996

This growth factor was applied to the northbound and southbound through traffic movements along Honoapiilani Highway and Kuihelani Highway. All increases of turning movement traffic volumes and side street approach volumes will be the result of traffic generated by related projects, not the result of regional traffic growth.

Related Projects

The second component in estimating future background traffic volumes is traffic resulting from other proposed projects in the vicinity. Related projects are defined as those projects that are likely to be constructed within or adjacent to the study project and would significantly impact traffic in the study area. Related projects may be development projects or roadway improvements. The following related projects were identified and the assumptions used to estimated the amount of traffic that each will generate:

Emmanuel Lutheran Church & School

The proposed Emmauel Lutheran Church and School will be located between Honoapiilani Highway and Waiale Road and south of Kuikahi Drive. The project will consist of a 4,000 square foot sanctuary and a K thru 8 school of approximately 400 students. The estimated peak hour traffic and the trip assignments were obtained from the project's TIAR. Access and egress will be via a proposed driveway along Waiale Road.

Waiolani Mauka

Waiolani Mauka is a 108 single-family residential development located in the northeast quadrant of the intersection of Honoapiilani Highway at Pilikana Street. Access and egress is via intersections along Pilikana Street. A field reconnaissance of the project determined that 47 units were constructed and occupied at the time of the traffic counts. Trip generation estimates and trip assignments were obtained from the TIAR for the project and adjusted to reflect the number of future units to be constricted.

Kehalani Phase 2

Kehalani Phase 2 is residential development located in the northeast quadrant of the intersection of Honoapiilani Highway at Kuikahi Drive. Based on a field reconnaissance of the project, it is estimated that approximately 50% of the project was occupied at the time of the traffic counts. Trip generation estimates and trip assignments were obtained from the TIAR for the project and adjusted to reflect the number of future units to be constricted.

Puunani

Puunani is a residential development located along the west side of Honoapiilani Highway and south of Kuikahi Drive. The project will consist of 278 single-family and 476 multi-family units. Access and egress will be via driveways along the south side of Kuikahi Drive and a new driveway along the west side of Honoapiilani Highway south of Kuikahi Drive. Traffic movements at this new driveway will be restricted to right turns in and right turns out only. Traffic assignments were obtained from the project's TIAR.

Valley Isle Fellowship Church

The proposed Valley Isle Fellowship Church will be located along the east side of Honoapiilani Highway between Emmanuel Lutheran Church described above and the Waikapu Affordable Housing project. The Church will not have a school and therefore will generate negligible traffic during the weekday peak hours. Access and egress will be via Waiale Road.

Maui Lani

Maui Lani is a large multi-use development project between Waiale Road, Kuihelani Highway and Kaahumanu Avenue. Traffic assignments were obtained from the project's TIAR.

Maalaea Mauka Subdivision

Maalaea Mauka is a proposed subdivision along the west side of Honoapiilani Highway in the vicinity of Kuihelani Highway and North Kihei Road. Traffic assignments were obtained from the project's TIAR.

Kehalani Commercial Center

Kehalani Commercail Center will be located between Honoapiilani Highway and Waiale Road north of Kuikahi Drive and will consist of approximately 148,300 square feet of commercial uses. Access and egress will be via a driveway along the north side of Kuikahi Drive and a driveway along the west side of Waiale Road. A TIAR could not be obtained. Therefore, the amount of traffic that project will generate was estimated using Institute of Transportation Engineers trip generation data and distributed to the study intersections using the distribution data of the adjacent related projects.

Consolidated Baseyard

The consolidated baseyard is located along the north side of Waiko Road between Kuihelani Highway and the proposed Waiko Road Light Industrial Park. Based on a field reconnaissance of the baseyard, it is estimated that approximately 50% of the project was occupied at the time of the traffic counts. Access and egress is via an intersection along the north side of Waiko Road. Traffic counts were performed at this intersection and used to estimate additional traffic that the undeveloped portion baseyard will generate.

The projects that were identified as related projects and the estimated number of peak hour trips generated by each are summarized in Table 5.

Table 5 Trip Generation Summary of Related Projects

		AM Peak Hour			PM Peak Hour		
	Related Project	In	Out	Total	In	Out	Total
A	Emmanuel Lutheran Church & School	255	215	470	150	165	315
B	Waiolani Mauka	30	85	115	90	55	145
C	Kehalani Phase 2	210	635	845	720	405	1,125
D	Pu'unani	105	265	370	290	165	455
E	Valley Isle fellowship Church	0	0	0	0	0	0
F	Maui Lani	1,225	1,410	2,635	1,880	1,785	3,665
G	Maalaea Mauka Subdivision	255	215	470	150	165	315
H	Kehalani Commercial Center	115	75	190	205	260	465
I	Consolidated Baseyard	132	96	228	102	138	240
TOTALS		**2,327**	**2,996**	**5,323**	**3,587**	**3,138**	**6,725**

Notes:
(1) All numbers are rounded to nearest five (5).

The approximate locations of the development projects and the approximate alignment of Waiale Road is shown in Figure 3. The peak hour trip assignments are shown as Figure 4.

2015 Background Traffic Projections

2015 background traffic projections were calculated by expanding existing traffic volumes by the appropriate growth rates and then superimposing traffic generated by related projects. The resulting 2015 background peak hour traffic volumes are shown in Figures 5.

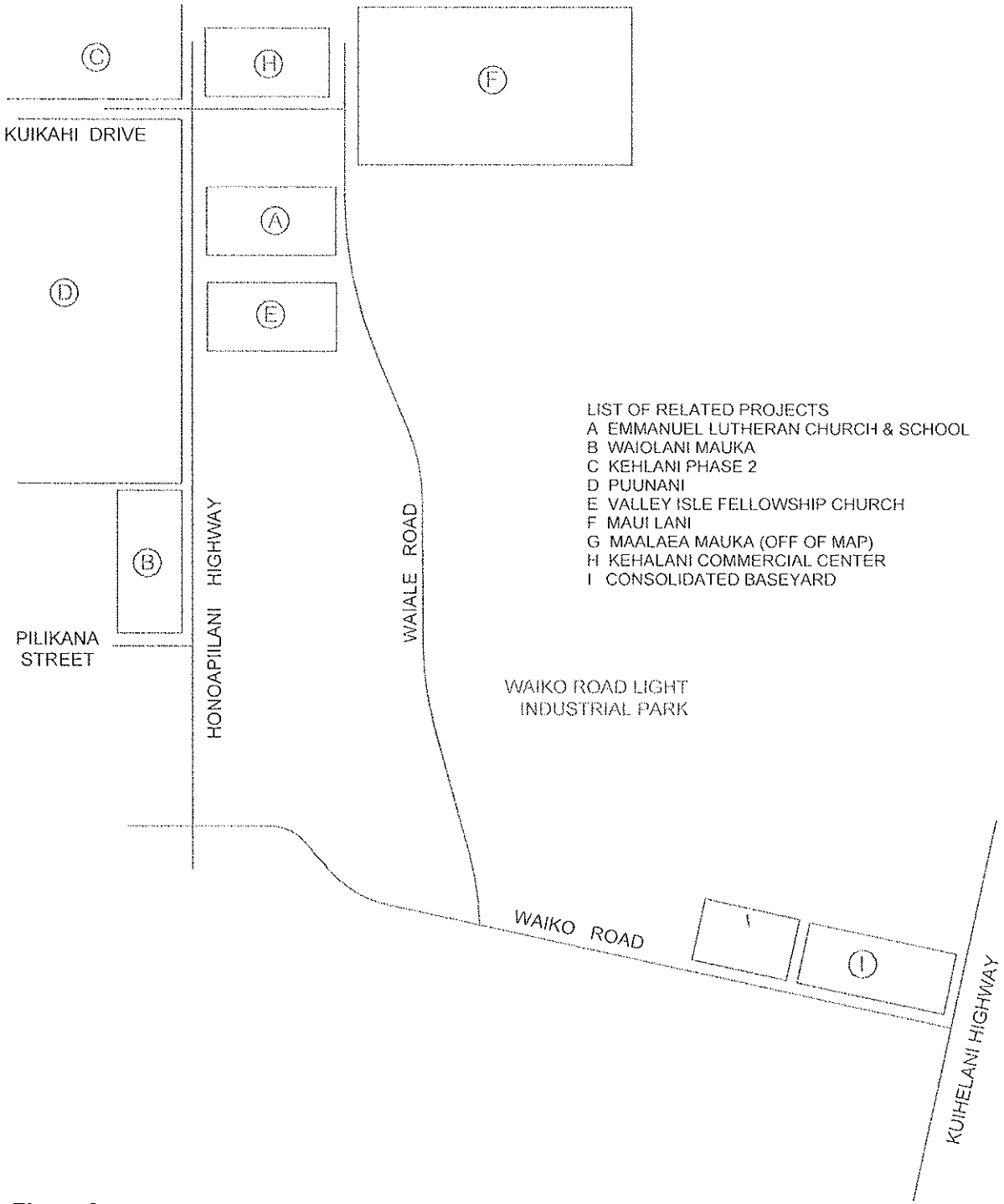
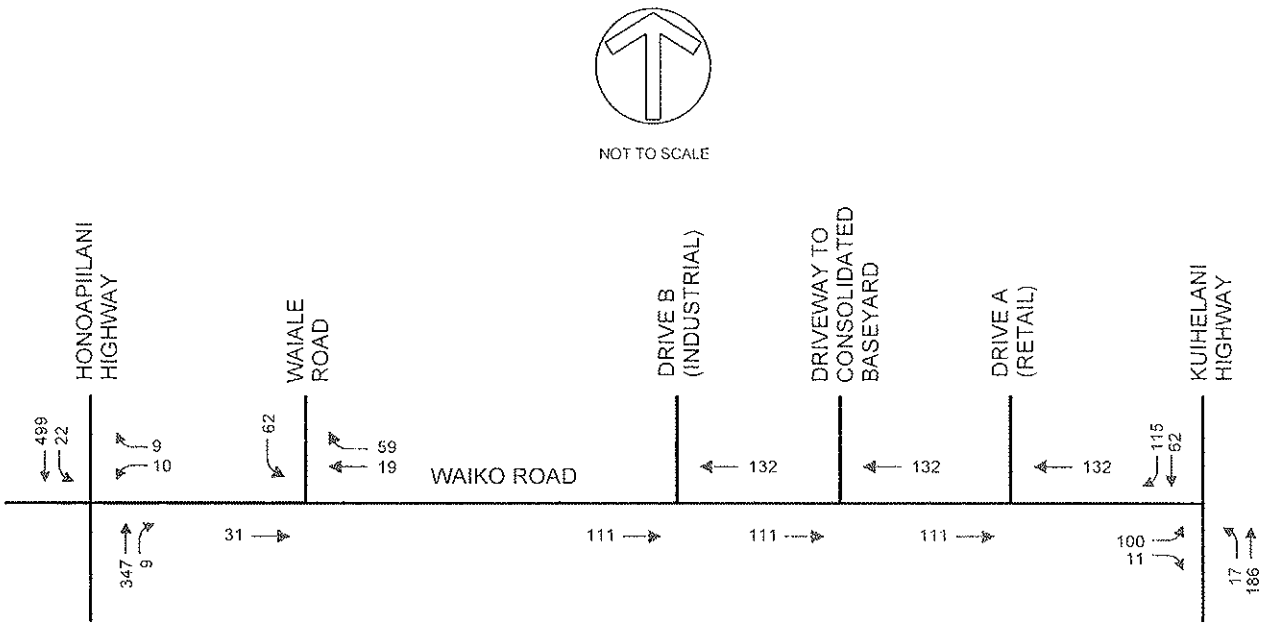
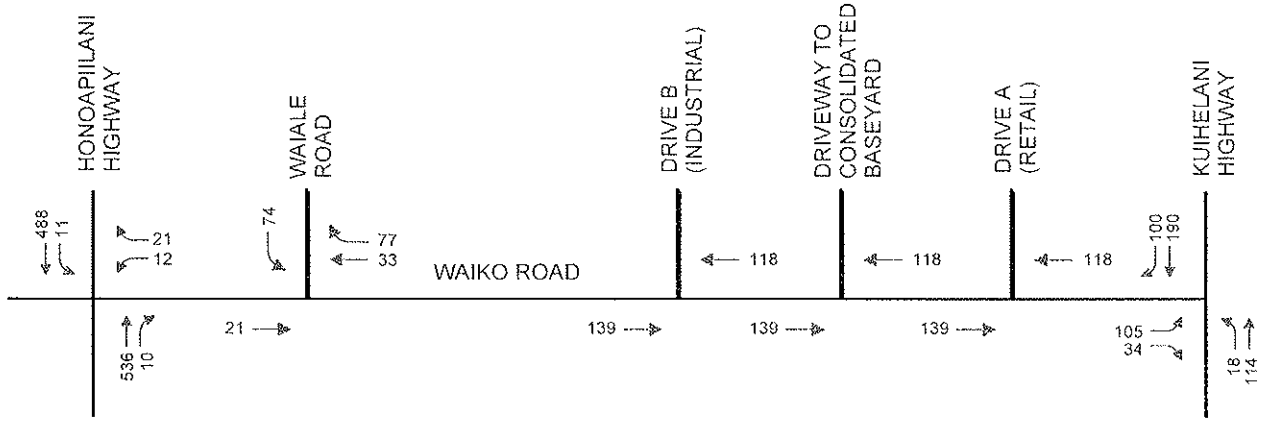


Figure 3
LOCATIONS OF RELATED PROJECTS



AM PEAK HOUR



PM PEAK HOUR

Figure 4
RELATED PROJECTS' TRIP ASSIGNMENTS

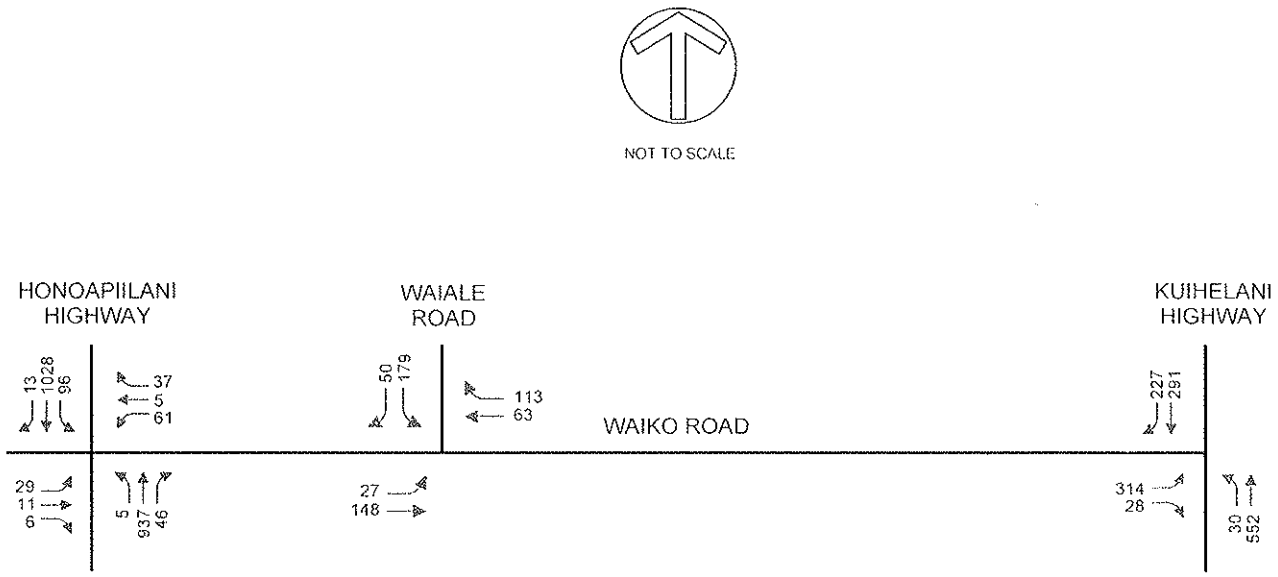


Figure 5
2015 BACKGROUND PEAK HOUR TRAFFIC PROJECTIONS

4. PROJECT-RELATED TRAFFIC CONDITIONS

This chapter presents the generation, distribution and assignment of project generated traffic and the background plus project traffic projections. The result of the level-of-service analysis of background plus project conditions is presented in the following chapter.

Project Trip Generation Calculations

Future traffic volumes generated by a project were typically estimated using the procedures described in the *Trip Generation Handbook,*[2] published by the Institute of Transportation Engineers. This method uses trip generation rates to estimate the number of trips that a proposed project will generate during peak hours. The standard reference for trip generation data is *Trip Generation.*[3]

The total project area is 32 acres. The current site plan for the proposed industrial park indicates two separate parcels. The first parcel is located along the north side of Waiko Road between Kuihelani Highway and the east property line of the Consolidated Baseyard. There is an 80 foot wide roadway easement between the parcel and the Consolidated Baseyard. This area of this parcel is 8.4 acres. Approximately 100,000 leasable square feet of retail and commercial floor space will be provided on this site. Access to and egress from this parcel will be provided by a driveway using the 80 foot easement described.

The second parcel is located west of th Consolidated Baseyard and will consist of 19.7 acres of light industrial uses. Access to and egress from this parcel will be provided a one driveway, Drive B. This driveway will be unsignalized and all approaches in be one lane only.

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[2] Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., 1998, p. 7-12

[3] Institute of Transportation Engineers, *Trip Generation, 7th Edition*, Washington, D.C., 2003

Lastly, there is an 60 foot wide easement along the north boundary of the Consolidated Baseyard connecting the two parcels.

See Table 6 for a breakdown of the areas and proposed uses.

Table 6 Proposed Land Uses

Proposed Use	Description	Acres
Retail	Northeast Quadrant of Kuihelani Highway at Waiko Road	8.4
Light Industrial	West of Consolidated Baseyard	19.7
Roadway Right-of-Way	80 Foot Easement between Retail and Consolidated Baseyard	3.9
	60 Foot Easement Along North Boundary of Consolidated Baseyard	
Total		32.0

The assumptions used for the trip generation analysis are:

1. Trip generation equations for light industrial uses provided in *Trip Generation* were used to estimate the number of peak hour trips that will be generated by the light industrial portion of the project. Light industrial uses are defined by the Institute of Transportation Engineers as follows:

   Light industrial facilities usually employee fewer than 500 persons, they have an emphasis on activities other than manufacturing and typically have minimal office space. [4]

   These rates are based on acres. The trip generation equations for general light industrial uses are summarized in Table 7.

Table 7 Trip Generation Formulas Used for the Industrial Uses

	Weekday AM Peak Hour	Weekday PM Peal Hour
Total	T = 7.51(A)	T = 3.68(A) + 116.82
Inbound	83%	22%
Outbound	17%	78%

Notes:
(1) Source: Institute of Transportation Engineers, *Trip Generation, 7th Edition*
(2) T = Trips, A = 1,000 gross square feet
(3) Formulas shown are for the peak hour of the adjacent street.

2. Trip generation equations for shopping centers were used to estimate the number of peak hour trips generated by the retail uses of the project. These rates are based on the leasable floor area. The trip generation equations for shopping centers are summarized in Table 8. The retail portion of the project will consist of 100,000 square feet of leasable floor space.

Table 8 Trip Generation Formulas Used for the Retail Uses

	Weekday AM Peak Hour	Weekday PM Peal Hour
Total	Ln (T) = 0.60Ln(A)+2.29	Ln (T) = 0.66Ln(A)+3.40
Inbound	61%	48%
Outbound	39%	52%

Notes:
(1) Source: Institute of Transportation Engineers, *Trip Generation, 7th Edition*
(2) T = Trips, A = 1,000 gross leasable square feet
(3) Formulas shown are for the peak hour of the adjacent street.

[4] Institute of Transportation Engineers, *Trip Generation*, Washington, D.C., 2003, page 89

3. The percentage of pass by trips generated by the retail uses were estimated using the data provided in the *Trip Generation Handbook*.[5] The equations for estimating the number of pass by trips are summarized in Table 9. The number of pass by trips diverted from Honoapiilani Highway, Kuihelani Highway and Waiko Road was estimated to be proportional to the peak hour traffic volumes along each roadway. Using this assumption, it was estimated that 45% would be diverted from Honoapiilani Highway, 45% from Kuihelani Highway and 10% from Waiko Road.

Table 9 Formulas For Pass By Trips of Retail Uses

	Weekday AM Peak Hour	Weekday PM Peal Hour
Total	No Formula Provided	Ln (T) = - 0.29 Ln(A)+5.00
Inbound		50%
Outbound		50%

Notes: (1) Source: Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., June 2004, p 47 and 50
(2) T = Percent Pass By Trips, A = 1,000 gross leasable square feet
(3) Formulas shown are for the peak hour of the adjacent street

The trip generation calculations are summarized in Table 10. The trips shown are the peak hourly trips generated by the project, which typically coincide with the peak hour of the adjacent street. As shown, the project will generate 560 trips during the morning peak hour, 2,375 during the afternoon peak hour and 3,253 during the Saturday peak hour. It should be noted that the Saturday peak hour is significantly higher than the weekday peak hours.

Table 10 Summary of Trip Generation Analysis

		Industrial	Retail			Total Project		
Time Period	Direction	Total Trips	Total Trips	Pass By Trips	Net New Trips	Total Trips	Pass By Trips	New Trips
AM Peak Hour	Total	148	157	0	157	305	0	305
	In	123	96	0	96	219	0	219
	Out	25	61	0	61	86	0	86
PM Peak Hour	Total	189	626	244	382	815	244	571
	In	42	300	122	178	342	122	220
	Out	147	326	122	204	473	122	351

[5] Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., June 2004

Trip Distribution and Assignments

Since the proposed project is comparable to the existing Consolidated Baseyard located immediately east of the project, the trip distribution patterns should also be comparable. A manual count of traffic entering and exiting the intersection of Waiko Road at the Consolidated Baseyard was performed to determine the trip distribution patterns. The results were used to distribute the study project's trips. Separate distributions were estimated for the morning and afternoon peak periods. The resulting peak hour trip assignments are shown in Figure 6.

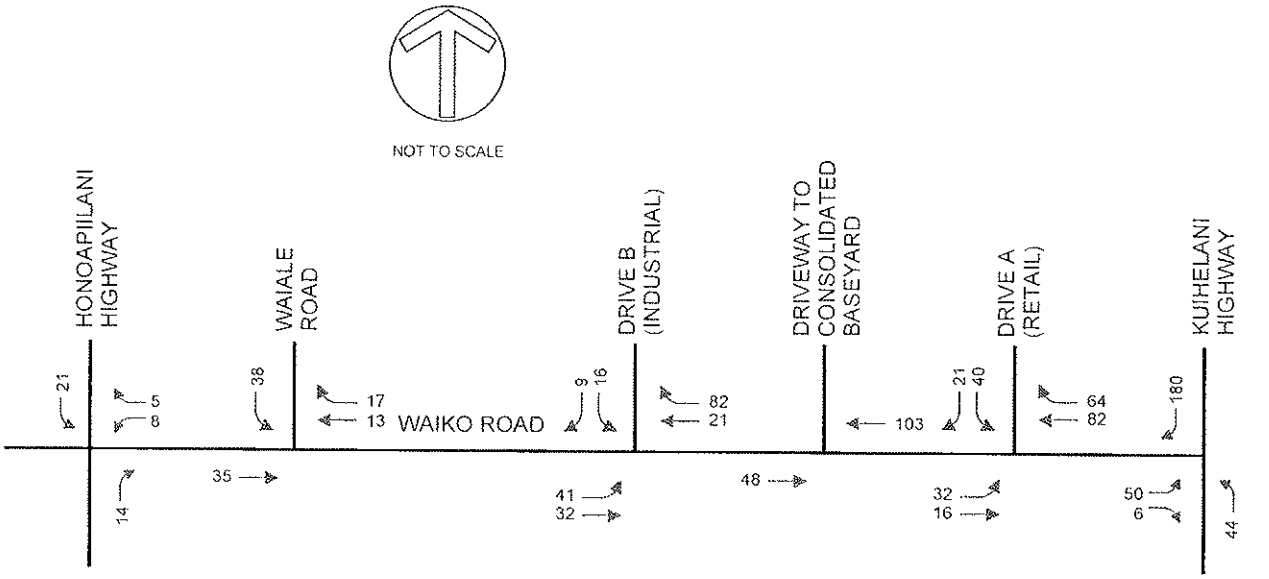
Heavy Vehicles

Based on the previously noted traffic count at the driveway serving the Consolidated Baseyard, it was estimated that 25% of the vehicles into and out of the industrial area will be heavy vehicles. Heavy vehicles are defined in the *Highway Capacity Manual* as vehicles with more than four tires and may be trucks or buses[6]. The percentage of heavy vehicles is input into the capacity calculations to consider the adverse impact of these heavy vehicles on roadway and intersection capacity.

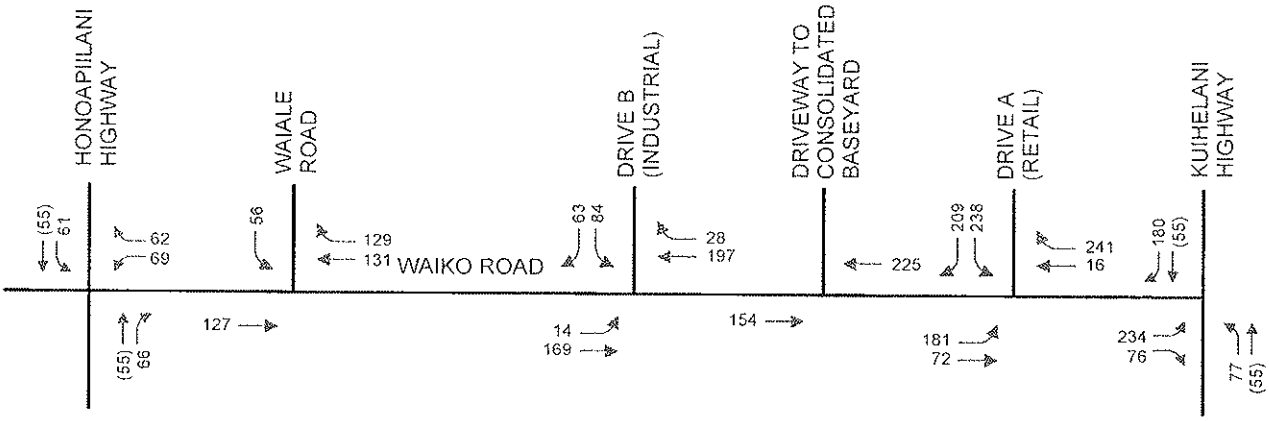
2015 Background Plus Project Projections

Background plus project traffic conditions are defined as 2015 background traffic conditions plus project related traffic. These projections were estimated by superimposing the peak hourly traffic generated by the proposed project on the 2015 background peak hour traffic volumes presented in Chapter 3. The traffic projections for 2015 background plus project conditions are shown on Figure 7.

[6] Transportation Research Board, *Highway Capacity Manual*, 2000, Washington, D.C., page 16-4.

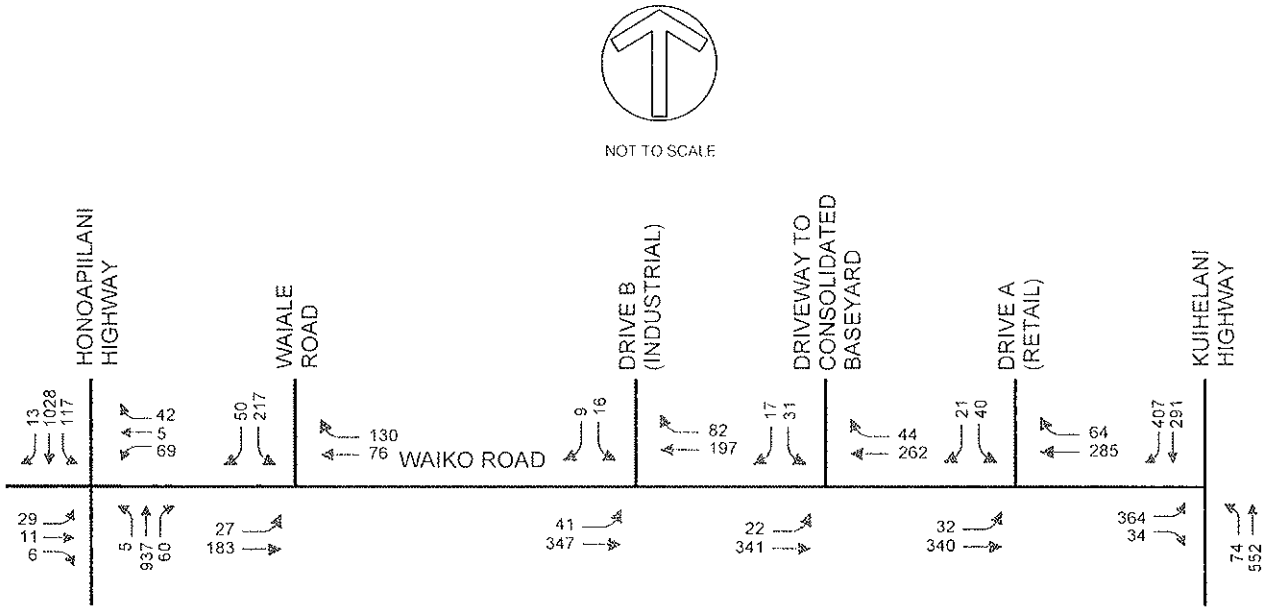


AM PEAK HOUR

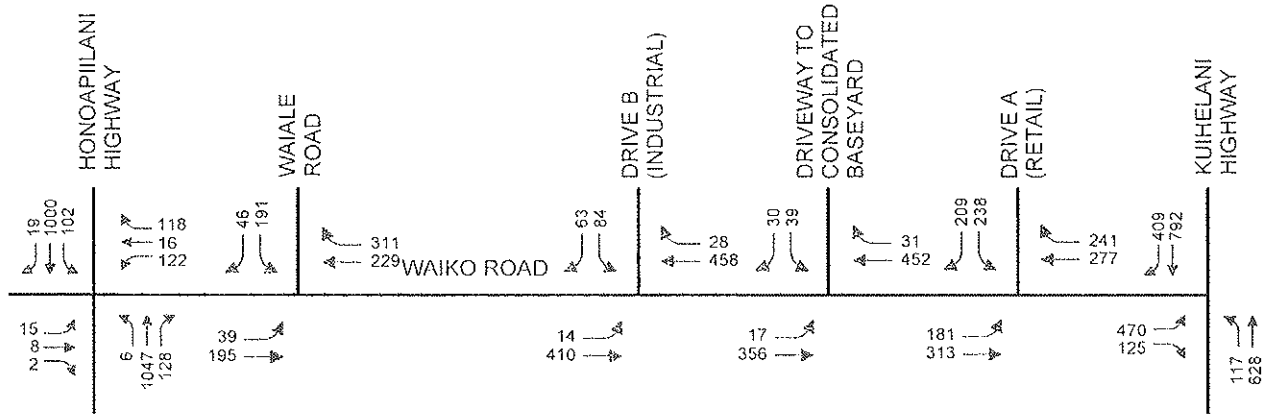


PM PEAK HOUR

Figure 6
PROJECT TRIP ASSIGNMENTS



AM PEAK HOUR



PM PEAK HOUR

Figure 7
2015 BACKGROUND PLUS PROJECT PEAK HOUR TRAFFIC PROJECTIONS

5. TRAFFIC IMPACT ANALYSIS

The purpose of this chapter is to summarize the results of the level-of-service analysis, which identifies the project-related impacts and any mitigation required as a result of project generated traffic. The impact of the project was assessed by analyzing the changes in levels-of-service at the study intersections.

Level-of-Service Analysis

The level-of-service analysis of the study intersections was performed for background and background plus project conditions. The incremental difference of the volume-to-capacity ratios between the two conditions is the impact of the project. It was assumed that the existing intersection configurations will be maintained.

Signalized Intersections

The results of the level-of-service analysis of the signalized intersections are summarized in Table 11. Shown are the volume-to-capacity ratios, average vehicle delays and levels-of-service. The results indicate that the overall intersections and major northbound and southbound through movements operate at Level-of-Service D, or better, and all the volume-to-capacity ratios are less than 1.00.

Table 11 2015 Levels-of-Service - Signalized Intersections

Intersection, Approach and Movement	AM Peak Hour						PM Peak Hour					
	Without Project			With Project			Without Project			With Project		
	V/C[1]	Delay[2]	LOS[3]	V/C	Delay	LOS	V/C[1]	Delay[2]	LOS[3]	V/C	Delay	LOS
Honoapiilani Hwy at Waiko Rd	0.85	23.6	C	0.89	28.3	C	0.88	18.4	B	0.96	41.3	D
Eastbound Left & Thru	0.27	55.1	E	0.25	55.4	E	0.18	54.3	D	0.11	60.6	E
Eastbound Right	0.01	52.4	D	0.01	52.7	D	0.00	52.6	D	0.00	59.2	E
Westbound Left, Thru & Right	0.86	90.0	F	0.91	101.1	F	0.70	70.2	E	0.95	113.3	F
Northbound Left	0.04	12.3	B	0.04	13.5	B	0.02	9.6	A	0.03	15.8	B
Northbound Thru & Right	0.82	21.2	C	0.87	26.8	C	0.87	18.4	B	0.95	41.5	D
Southbound Left	0.50	22.3	C	0.64	34.7	C	0.26	21.1	C	0.81	91.3	F
Southbound Thru & Right	0.78	14.2	B	0.79	15.3	B	0.77	11.4	B	0.76	17.7	B
Kuihelani Hwy at Waiko Road	0.52	19.8	B	0.70	22.0	C	0.54	13.1	B	0.87	26.7	C
Eastbound Left	0.85	50.8	D	0.86	49.6	D	0.75	38.3	D	0.87	41.6	D
Eastbound Right	0.02	27.5	C	0.03	26.5	C	0.04	25.2	C	0.10	19.8	B
Northbound Left	0.44	51.9	D	0.58	52.5	D	0.46	40.1	D	0.74	55.5	E
Northbound Thru	0.30	8.3	A	0.31	9.3	A	0.31	5.6	A	0.36	13.3	B
Southbound Thru	0.16	11.3	B	0.18	14.4	B	0.47	11.3	B	0.65	27.3	C
Southbound Right	0.20	12.0	B	0.31	16.5	B	0.20	9.2	A	0.34	23.2	C

NOTES:
1. V/C denotes ratio of volume to capacity.
2. Delay is in seconds per vehicle.
3. LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. LOS is based on delay.

Unsignalized Intersections

The intersection of Waiko Road at Waiale Road is the only unsignalized study intersection. The results of the level-of-service analysis of this intersection are summarized in Table 12. Shown are the average vehicle delays and levels-of-service of the controlled lane groups. Delays and levels-of-service are not calculated for the overall intersection or the uncontrolled movements of an unsignalized intersection.

The results of the level-of-service analysis indicate that all the controlled movements will operate at Level-of-Service C during the morning peak hour and Level-of-Service F during the afternoon peak hour with project generated traffic. The level-of-service of the southbound left and right turns will decrease from Level-of-Service C to Level-of-Service F, with the addition of project related traffic, during the afternoon peak hour. The average vehicle delay increases from 18.5 seconds per vehicle to 151.0 seconds per vehicle. Since the delay increases to over 3.5 minutes, this implies that project generated traffic will have a significant impact on the level-of-service of the overall intersection.

Table 12 2015 Levels-of-Service - Unsignalized Intersections[1]

Intersection and Movement	AM Peak Hour				PM Peak Hour			
	Without Project		With Project		Without Project		With Project	
	Delay [1]	LOS [2]	Delay	LOS	Delay	LOS	Delay	LOS
Waiale Road at Waiko Rd								
Eastbound Left & Thru	1.9	A	1.7	A	4.3	A	3.1	A
Southbound Left & Right	16.0	C	20.6	C	18.5	C	151.0	F

NOTES:
(1) Delay in seconds per vehicle.
(2) LOS denotes Level-of-Service calculated using the operations method described in Highway Capacity Manual. Level-of-Service is based on delay.

Mitigation

As noted in the Chapter 2, the Institute of Transportation Engineers standard is that Level-of-Service D is the minimum acceptable Level-of-Service. For signalized intersections, this criteria is applicable to the overall intersection rather than each controlled lane group. Minor movements, such as left turns, and minor side street approaches may operate at Level-of-Service E for short periods of time during the peak hours so that the overall intersection and major movements along the major highway will operate at Level-of-Service D, or better. All volume-to-capacity ratios should also be less than 1.00. A volume-to-capacity ratio equal to or greater than 1.00 implies that the intersection or lane group operates at or over capacity.

A comparable standard has not be established for unsignalized intersections. Therefore, we have used a standard that Level-of-Service D is an acceptable level-of-service for any major controlled lane groups, such as left turns from a major street to a minor street. Side street approaches may operate at Level-of-Service E or F for short periods of time. This is determined from the delays of the individual lane groups. If the delay of any of the side street approaches appears to be so long that it will affect the overall level-of-service of the intersection, then mitigation measures should be accessed.

Based on the above criteria, the signalized intersections will operate at Level-of-Service D, or better, and volume-to-capacity ratios are less than 1.00. No mitigation will be required.

The results of the level-of-service analysis implies that project generated traffic will have a significant impact at the intersection of Waiko Road at Waiale Road during the afternoon peak hour. The average vehicle delay increases from 18.5 seconds per vehicle without project related traffic to 151.0 seconds per vehicle with project related traffic. Since the delay increases to over 3.5 minutes, this implies that project generated traffic will have a significant impact of this intersection and mitigation measures should be assessed.

Typically, a left turn refuge lane is an effective mitigation measure in comparable cases. The effectiveness of a left turn refuge lane for left turns from southbound Waiale Road to eastbound Waiko Road was assessed and the results are summarized in Table 13. This will improve the level-of-service of the southbound to eastbound left turn from Level-of-Service F to Level-of-Service D during the afternoon peak hour.

Table 13 Mitigation Analysis - Intersection of Waiko Road at Waiale Road

	With Project Without Mitigation				With Mitigation Left Turn Refuge Lane			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection, Approach and Movement	Delay [1]	LOS [2]	Delay	LOS	Delay	LOS	Delay	LOS
Eastbound Left & Thru	1.7	A	3.1	A	1.7	A	3.1	A
Southbound Left & Right	20.6	C	151.0	F	15.2	C	29.4	D

NOTES.
(1) Delay in seconds per vehicle.
(2) LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. Level-of-Service is based on delay.

Driveway Analysis

A separate level-of-service analysis of anticipated traffic conditions at the project's driveways along Waiko Road was performed to determine the required lane configuration. There will be two driveways. Drive A will serve the retail portion of the development, which is located in along the north side of Waiko Road between Kuihelani Highway and the Consolidated Baseyard. The driveway will be along the west boundary of the parcel adjacent to the Baseyard, which is approximately 580 feet from the right-of-way along Kuihelani Highway. It was assumed that the driveway will not be signalized and the exit from the proposed project will have one left and one right turn lane. It was also assumed that a separate left turn lane would be provided for eastbound to northbound left turns into the project.

The second driveway, Drive B, will serve the industrial portion of the project, which is located west of the Consolidated Baseyard. It was assumed that the driveway is unsignalized and that all intersection approaches are one lane each.

The results of level-of-service analysis of the driveways are summarized in Table14. During the morning peak hour, all movements will operate at acceptable levels-of-service. During the afternoon peak hour, the southbound left turn from Drive A, which serves the retail portion of the project, will have an estimated delay of 301.4 seconds per vehicle, which equates to Level-of-Service F. This also implies that there will be a long queue for left turns from the retail area. Accordingly, additional capacity is required for the driveway to operate acceptably.

After an assessment of various improvements, it was determined that the following improvements will be required for Drive A to operate acceptably:

a. Provide a separate right turn lane along the westbound approach of Waiko Road to Drive A.

b. Provide a left turn refuge lane for left turns from Drive A to eastbound Waiko Road. The refuge lane should provide capacity for three vehicles.

Also shown in the Table 14 are the results of an level-of-service analysis of with these improvements installed. Left turns from Drive A will operate at Level-of-Service D. The average vehicle delay is reduced from 301.4 seconds per vehicle to 33.2 seconds per vehicle. This driveway should be monitored as the retail portion of the project is developed in order to determine if additional improvements should be implemented.

No improvements are required at Drive B.

Figure 8 is a schematic drawing of the recommended driveway configurations.

Table 14 2015 Levels-of-Service at Project Driveway along Waiko Road

	Without Mitigation				With Mitigation (Separate Westbound Right turn Lane & Left Turn Refuge Lane)			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection and Movement	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Waiko Road at Drive A								
Eastbound Left	8.1	A	9.4	A	8.1	A	9.4	A
Southbound Left	16.7	C	301.4	F	11.6	B	33.2	D
Southbound Right	10.3	B	14.0	B	10.1	B	12.0	B
Waiko Road at Drive B								
Eastbound Left & Thru	1.2	A	0.4	A	NO MITIGATION REQUIRED		NO MITIGATION REQUIRED	
Southbound Left & Right	14.0	B	23.9	C				

NOTES:
(1) Delay in seconds per vehicle.
(2) LOS denotes Level-of-Service calculated using the operations method described in Highway Capacity Manual. Level-of-Service is based on delay.

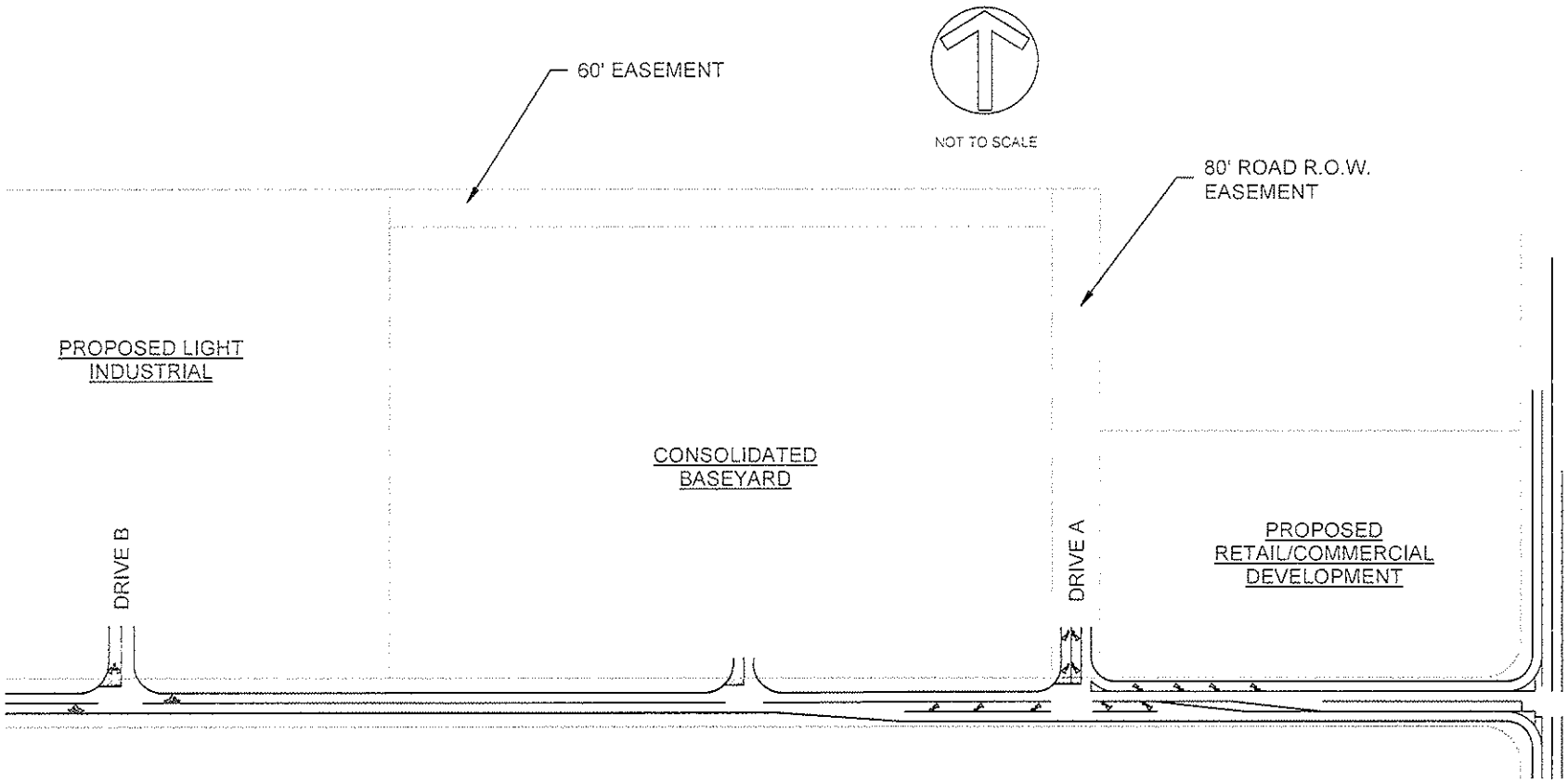


Figure 8
SCHEMATIC DRAWING OF RECOMMENDED DRIVEWAY CONFIGURATIONS

Summary and Recommendations

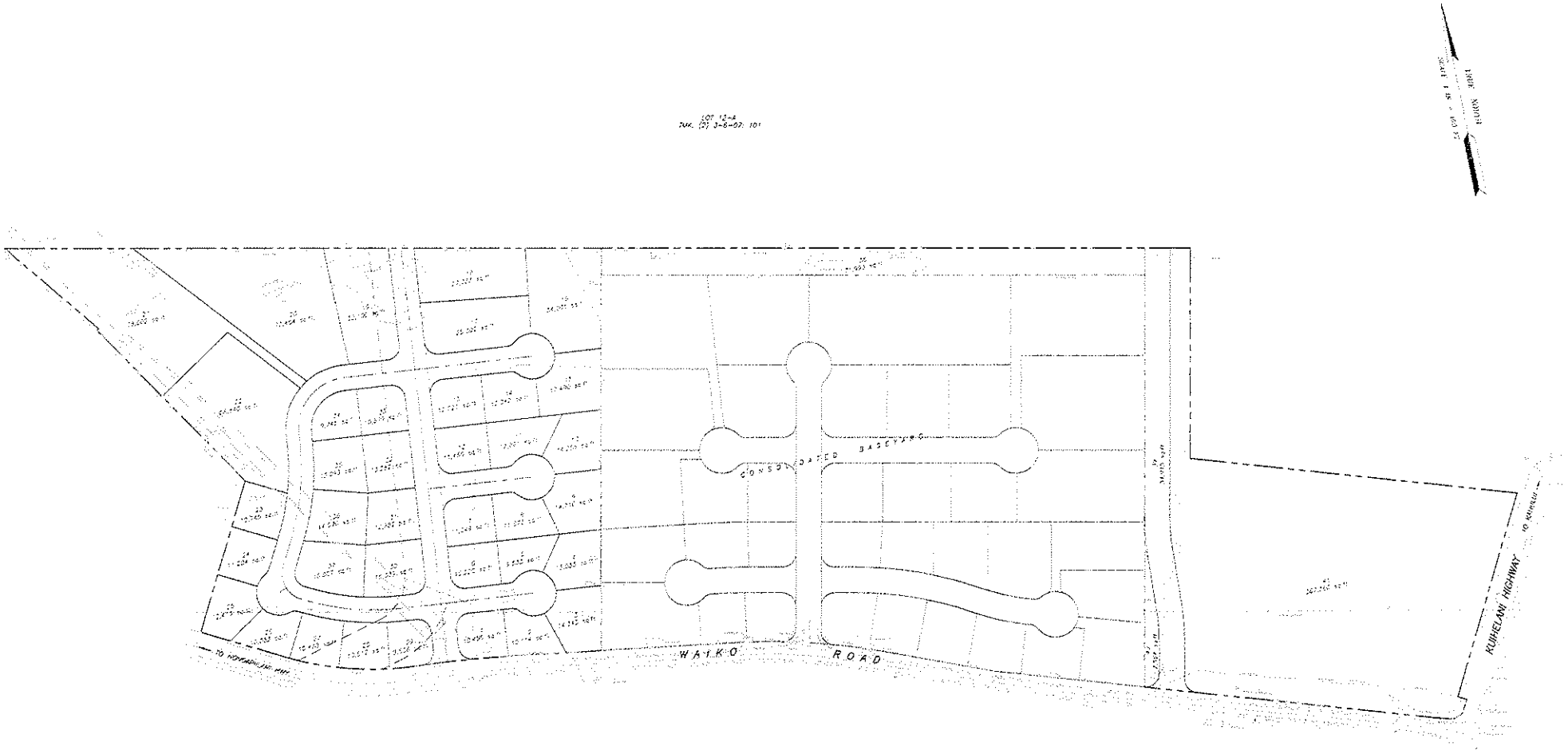
1. The level-of-service analysis concluded that the signalized intersections (Honoapiilani Highway at Waiko Road and Kuihelani Highway at Waiko Road) will operate at acceptable levels-of-service without additional improvements.

2. The southbound approach of Waiale Road at Waiko Road will operate at Level-of-Service C during the morning peak hour and Level-of-Service F during the afternoon peak hour. An assessment of potential improvements concluded that installation of a left turn refuge lane for left turns from southbound Waiale Road to eastbound Waiko Road would result is Level-of-Service D and is therefore recommended. However, since the projected traffic volumes that result in the unacceptable level-of-service reflect full build out of the project, it would be prudent to defer the improvement until the left turn refuge lane is required. It is possible that the traffic projections, which are based on Institute of Transportation Engineers trip generation data, may not be realized. The intersection should be monitored and re-assessed when the proposed industrial park is approximately 50% occupied.

3. The current site plan for the proposed industrial park indicates two separate parcels. The parcel is located along the north side of Waiko Road between Kuihelani Highway and the east property line of the Consolidated Baseyard. Approximately 100,000 square feet of retail and commercial floor space can be constructed on this parcel. The level-of-service analysis determined that access to and egress from the project should be provided by a major driveway (unsignalized) along Waiko Road along the west boundary of the project. The main driveway, Drive A, should have separate turn lanes along each approach and a left turn refuge lane along Waiko Road for left turns from the project. It is recommended that this driveway be monitored as the parcel is developed to determine if additional improvements are required. As with the previous intersection, the reassessment should be performed when the retail portion of the project is approximately 50% occupied.

4. The second parcel is located west of th Consolidated Baseyard and will consist of 19.7 acres of light industrial uses. Access to and egress from this parcel will be provided a one driveway, Drive B. This driveway will be unsignalized and all approaches in be one lane only.

APPENDIX A
SITE PLAN



WAIKO INDUSTRIAL PARK
CONCEPTUAL PLAN

SCALE: 1 IN. = 100 FT.

FEBRUARY 25, 2011

OTOMO
ENGINEERING, INC.
ENGINEERING AND SURVEYING

APPENDIX B
TRAFFIC PROJECTION WORKSHEETS

TRAFFIC COUNT SUMMARY WORKSHEET

PROJECT: Waiko Light Industrial Park
INTERSECTION: Waiko Road at Kuihelani Highway
DAY & DATE: Tuesday, January 18, 2011
START TIME: 6:30 am
END TIME: 9:00 am

15-Minute Volumes Beginning at:

		North Approach			East Approach			South Approach			West Approach			
Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	6:30 am	16	122						39	4	4		21	206
2	6:45 am	21	114						48	6	10		34	233
3	7:00 am	26	114						61	3	4		30	238
4	7:15 am	18	114						58	4	8		56	258
5	7:30 am	33	86						83	5	3		69	279
6	7:45 am	25	127						101	3	3		56	315
7	8:00 am	36	107						99	1	3		33	279
8	8:15 am	30	111						74	5	11		19	250
9	8:30 am	24	93						82	2	6		19	226
10	8:45 am	21	111						110	0	2		25	269
11	9:00 am													0
12	9:15 am													0
13	9:30 am													0
14	9:45 am													0
	Maximum:	36	127						110	6	11		69	315

Hourly Volume of Each Movement

6:30 am	7:30 am	81	464	0	0	0	0	0	206	17	26	0	141	935
6:45 am	7:45 am	98	428	0	0	0	0	0	250	18	25	0	189	1008
7:00 am	8:00 am	102	441	0	0	0	0	0	303	15	18	0	211	1090
7:15 am	**8:15 am**	**112**	**434**	**0**	**0**	**0**	**0**	**0**	**341**	**13**	**17**	**0**	**214**	**1131**
7:30 am	8:30 am	124	431	0	0	0	0	0	357	14	20	0	177	1123
7:45 am	8:45 am	115	438	0	0	0	0	0	356	11	23	0	127	1070
8:00 am	9:00 am	111	422	0	0	0	0	0	365	8	22	0	96	1024
8:15 am	9:15 am													
8:30 am	9:30 am													
8:45 am	9:45 am													
9:00 am	10:00 am													
Peak Hour Volume		112	434	0	0	0	0	0	341	13	17	0	214	1131
Per Cent of Approach		21%	79%	0%	0%	0%	0%	0%	96%	4%	7%	0%	93%	
Peak Hour Factor:		0.78	0.85	0	0	0	0	0	0.78	0.54	0.39	0	0.78	0.9
Total Arrivals			546			0			354			231		
Total Departures			555			0			451			125		
Total			1101			0			805			356		

TRAFFIC COUNT SUMMARY WORKSHEET

PROJECT: Waiko Light Industrial Park
INTERSECTION: Waiko Road at Kuihelani Highway
DAY & DATE: Tuesday, January 18, 2011
START TIME: 3:00 pm
END TIME: 6:00 pm

15-Minute Volumes Beginning at:

		North Approach			East Approach			South Approach			West Approach			
Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	3:00 pm	21	165						103	6	2		26	323
2	3:15 pm	17	160						110	3	0		19	309
3	3:30 pm	30	175						127	10	3		28	373
4	3:45 pm	37	150						134	2	5		25	353
5	4:00 pm	29	157						125	7	3		36	357
6	4:15 pm	27	160						125	5	6		31	354
7	4:30 pm	37	135						123	3	5		33	336
8	4:45 pm	36	165						161	7	1		31	401
9	5:00 pm	27	138						125	2	4		23	319
10	5:15 pm	42	124						133	5	2		28	334
11	5:30 pm	26	114						115	1	3		35	294
12	5:45 pm	30	115						113	2	3		25	288
13	6:00 pm													0
14	6:15 pm													0
	Maximum:	42	175						161	10	6		36	401

Hourly Volume of Each Movement

3:00 pm	4:00 pm	105	650	0	0	0	0	0	474	21	10	0	98	1358
3:15 pm	4:15 pm	113	642	0	0	0	0	0	496	22	11	0	108	1392
3:30 pm	4:30 pm	123	642	0	0	0	0	0	511	24	17	0	120	1437
3:45 pm	4:45 pm	130	602	0	0	0	0	0	507	17	19	0	125	1400
4:00 pm	**5:00 pm**	**129**	**617**	**0**	**0**	**0**	**0**	**0**	**534**	**22**	**15**	**0**	**131**	**1448**
4:15 pm	5:15 pm	127	598	0	0	0	0	0	534	17	16	0	118	1410
4:30 pm	5:30 pm	142	562	0	0	0	0	0	542	17	12	0	115	1390
4:45 pm	5:45 pm	131	541	0	0	0	0	0	534	15	10	0	117	1348
5:00 pm	6:00 pm	125	491	0	0	0	0	0	486	10	12	0	111	1235
5:15 pm	6:15 pm													
5:30 pm	6:30 pm													
Peak Hour Volume		129	617						534	22	15		131	1448
Per Cent of Approach		17%	83%	0%	0%	0%	0%	0%	96%	4%	10%	0%	90%	
Peak Hour Factor:		0.77	0.88	0	0	0	0	0	0.83	0.55	0.63	0	0.91	0.9

Total Arrivals	746	0	556	146
Total Departures	665	0	632	151
Total	1411	0	1188	297

TRAFFIC COUNT SUMMARY WORKSHEET

PROJECT: Waiko Light Industrial Park
INTERSECTION: Waiko Road at Waiale Road
DAY & DATE: Tuesday, January 11, 2011
START TIME: 6:30 am
END TIME: 9:00 am

15-Minute Volumes Beginning at:

		North Approach			East Approach			South Approach			West Approach			
Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	6:30 am	21		23	3	3						19	2	71
2	6:45 am	8		28	6	6						16	2	66
3	7:00 am	15		26	9	10						21	6	87
4	7:15 am	15		35	13	3						28	5	99
5	7:30 am	10		27	18	18						28	12	113
6	7:45 am	10		29	14	13						40	4	110
7	8:00 am	12		21	4	7						12	4	60
8	8:15 am	11		18	13	12						8	6	68
9	8:30 am	4		7	11	9						11	5	47
10	8:45 am	5		22	10	10						10	4	61
11														0
12														0
13														0
14														0
15														0
16														0
	Maximum:	21		35	18	18						40	12	113

Hourly Volume of Each Movement

6:30 am	7:30 am	59	0	112	31	22	0	0	0	0	0	84	15	323
6:45 am	7:45 am	48	0	116	46	37	0	0	0	0	0	93	25	365
7:00 am	**8:00 am**	**50**	**0**	**117**	**54**	**44**	**0**	**0**	**0**	**0**	**0**	**117**	**27**	**409**
7:15 am	8:15 am	47	0	112	49	41	0	0	0	0	0	108	25	382
7:30 am	8:30 am	43	0	95	49	50	0	0	0	0	0	88	26	351
7:45 am	8:45 am	37	0	75	42	41	0	0	0	0	0	71	19	285
8:00 am	9:00 am	32	0	68	38	38	0	0	0	0	0	41	19	236

Peak Hour Volume	50		117	54	44						117	27	409
Per Cent of Approach	30%	0%	70%	55%	45%	0%	0%	0%	0%	0%	81%	19%	
Peak Hour Factor:	0.6	0	0.84	0.75	0.61	0	0	0	0	0	0.73	0.56	

Total Arrivals	167	98	0	144
Total Departures	81	234	0	94
Total	248	332	0	238

TRAFFIC COUNT SUMMARY WORKSHEET

PROJECT: Waiko Light Industrial Park
INTERSECTION: Waiko Road at Waiale Road
DAY & DATE: Tuesday, January 11, 2011
START TIME: 3:00 pm
END TIME: 6:00 pm

15-Minute Volumes Beginning at:

		North Approach			East Approach			South Approach			West Approach			
Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	3:00 pm	9		14	14	11						13	11	72
2	3:15 pm	0		14	11	11						10	4	50
3	3:30 pm	5		16	31	14						6	8	80
4	3:45 pm	6		23	29	20						10	11	99
5	4:00 pm	13		17	21	14						13	7	85
6	4:15 pm	14		11	19	11						15	8	78
7	4:30 pm	13		10	36	20						9	13	101
8	4:45 pm	3		12	12	17						11	13	68
9	5:00 pm	13		12	23	20						12	12	92
10	5:15 pm	7		16	25	19						10	9	86
11	5:30 pm	6		12	25	10						13	11	77
12	5:45 pm	6		9	12	13						14	19	73
13	6:00 pm													0
14	6:15 pm													0
	Maximum:	14		23	36	20						15	19	101

Hourly Volume of Each Movement

3:00 pm	4:00 pm	20	0	67	85	56	0	0	0	0	0	39	34	301
3:15 pm	4:15 pm	24	0	70	92	59	0	0	0	0	0	39	30	314
3:30 pm	4:30 pm	38	0	67	100	59	0	0	0	0	0	44	34	342
3:45 pm	**4:45 pm**	**46**	**0**	**61**	**105**	**65**	**0**	**0**	**0**	**0**	**0**	**47**	**39**	**363**
4:00 pm	5:00 pm	43	0	50	88	62	0	0	0	0	0	48	41	332
4:15 pm	5:15 pm	43	0	45	90	68	0	0	0	0	0	47	46	339
4:30 pm	5:30 pm	36	0	50	96	76	0	0	0	0	0	42	47	347
4:45 pm	5:45 pm	29	0	52	85	66	0	0	0	0	0	46	45	323
5:00 pm	6:00 pm	32	0	49	85	62	0	0	0	0	0	49	51	328
5:15 pm	6:15 pm													
5:30 pm	6:30 pm													
Peak Hour Volume		46		61	105	65						47	39	363
Per Cent of Approach		43%	0%	57%	62%	38%	0%	0%	0%	0%	0%	55%	45%	
Peak Hour Factor:		0.82	0	0.66	0.73	0.81	0	0	0	0	0	0.78	0.51	0.9

Total Arrivals	107	170	0	86
Total Departures	144	108	0	111
Total	251	278	0	197

TRAFFIC COUNT SUMMARY WORKSHEET

PROJECT: Waiko Light Industrial Park
INTERSECTION: Waiko Road at Honoapiilani Highway
DAY & DATE: Thursday, January 6, 2011
START TIME: 6:30 am
END TIME: 9:00 am

15-Minute Volumes Beginning at:

		North Approach			East Approach			South Approach			West Approach			
Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	6:30 am	1	109	13	2	0	12	5	75	0	2	1	6	226
2	6:45 am	0	122	9	4	2	10	3	91	0	2	2	5	250
3	7:00 am	3	121	10	5	1	14	5	91	1	3	5	4	263
4	7:15 am	0	131	22	3	1	15	13	134	1	1	3	9	333
5	7:30 am	2	103	27	3	4	11	8	181	1	4	3	9	356
6	7:45 am	4	132	17	10	0	13	11	144	2	0	2	8	343
7	8:00 am	7	128	8	12	0	12	5	96	1	1	3	3	276
8	8:15 am	2	128	6	3	2	5	8	106	1	0	3	1	265
9	8:30 am	1	83	5	7	1	10	13	121	0	1	0	2	244
10	8:45 am	6	104	9	3	0	7	7	110	1	1	3	4	255
11	9:00 am													0
12	9:15 am													0
13	9:30 am													0
14	9:45 am													0
	Maximum:	7	132	27	12	4	15	13	181	2	4	5	9	356

Hourly Volume of Each Movement

6:30 am	7:30 am	4	483	54	14	4	51	26	391	2	8	11	24	1072
6:45 am	7:45 am	5	477	68	15	8	50	29	497	3	10	13	27	1202
7:00 am	8:00 am	9	487	76	21	6	53	37	550	5	8	13	30	1295
7:15 am	**8:15 am**	**13**	**494**	**74**	**28**	**5**	**51**	**37**	**555**	**5**	**6**	**11**	**29**	**1308**
7:30 am	8:30 am	15	491	58	28	6	41	32	527	5	5	11	21	1240
7:45 am	8:45 am	14	471	36	32	3	40	37	467	4	2	8	14	1128
8:00 am	9:00 am	16	443	28	25	3	34	33	433	3	3	9	10	1040
8:15 am	9:15 am													
8:30 am	9:30 am													
8:45 am	9:45 am													
9:00 am	10:00 am													
Peak Hour Volume		13	494	74	28	5	51	37	555	5	6	11	29	1308
Per Cent of Approach		2%	85%	13%	33%	6%	61%	6%	93%	1%	13%	24%	63%	
Peak Hour Factor:		0.46	0.94	0.69	0.58	0.31	0.85	0.71	0.77	0.63	0.38	0.55	0.81	0.92

Total Arrivals	581	84	597	46
Total Departures	612	122	551	23
Total	1193	206	1148	69

TRAFFIC COUNT SUMMARY WORKSHEET

PROJECT: Waiko Light Industrial Park
INTERSECTION: Waiko Road at Waiale Road
DAY & DATE: Tuesday, January 11, 2011
START TIME: 3:00 pm
END TIME: 6:00 pm

15-Minute Volumes Beginning at:

		North Approach			East Approach			South Approach			West Approach			
Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	3:00 pm	4	116	4	7	2	8	7	119	1	1	1	2	272
2	3:15 pm	5	106	4	4	3	9	11	105	1	1	0	1	250
3	3:30 pm	2	130	3	10	4	10	12	104	3	0	1	4	283
4	3:45 pm	2	117	2	3	3	8	21	128	1	1	1	5	292
5	4:00 pm	6	101	6	8	0	11	11	127	2	1	3	4	280
6	4:15 pm	8	131	7	11	6	10	16	133	2	0	2	5	331
7	4:30 pm	1	123	7	10	3	9	13	131	1	0	4	2	304
8	4:45 pm	7	155	11	6	4	12	10	126	0	1	1	7	340
9	5:00 pm	3	123	5	8	3	10	13	141	3	1	1	1	312
10	5:15 pm	3	116	7	7	2	11	8	126	0	0	3	5	288
11	5:30 pm	2	84	4	10	6	7	18	135	3	0	4	4	277
12	5:45 pm	5	75	5	7	4	10	9	106	1	0	0	2	224
13														
14														
15														
16														
	Maximum:	8	155	11	11	6	12	21	141	3	1	4	7	340

Hourly Volume of Each Movement

3:00 pm	4:00 pm	13	469	13	24	12	35	51	456	6	3	3	12	1097
3:15 pm	4:15 pm	15	454	15	25	10	38	55	464	7	3	5	14	1105
3:30 pm	4:30 pm	18	479	18	32	13	39	60	492	8	2	7	18	1186
3:45 pm	4:45 pm	17	472	22	32	12	38	61	519	6	2	10	16	1207
4:00 pm	5:00 pm	22	510	31	35	13	42	50	517	5	2	10	18	1255
4:15 pm	**5:15 pm**	**19**	**532**	**30**	**35**	**16**	**41**	**52**	**531**	**6**	**2**	**8**	**15**	**1287**
4:30 pm	5:30 pm	14	517	30	31	12	42	44	524	4	2	9	15	1244
4:45 pm	5:45 pm	15	478	27	31	15	40	49	528	6	2	9	17	1217
5:00 pm	6:00 pm	13	398	21	32	15	38	48	508	7	1	8	12	1101
5:15 pm	6:15 pm													
5:30 pm	6:30 pm													
5:45 pm	6:45 pm													
6:00 pm	7:00 pm													
Peak Hour Volume		19	532	30	35	16	41	52	531	6	2	8	15	1287
Per Cent of Approach		3%	92%	5%	38%	17%	45%	9%	90%	1%	8%	32%	60%	
Peak Hour Factor:		0.59	0.86	0.68	0.8	0.67	0.85	0.62	0.94	0.5	0.5	0.5	0.54	0.95
Total Arrivals			581			92			589			25		
Total Departures			581			90			575			41		
Total			1162			182			1164			66		

APPENDIX C
LEVEL-OF-SERVICE WORKSHEETS FOR EXISTING CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.97		1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1583		1746		1770	1844		1770	1849	
Flt Permitted		0.80	1.00		0.77		0.42	1.00		0.22	1.00	
Satd. Flow (perm)		1482	1583		1391		784	1844		410	1849	
Volume (vph)	29	11	6	51	5	28	5	555	37	74	494	13
Peak-hour factor, PHF	0.81	0.55	0.38	0.58	0.31	0.85	0.63	0.77	0.71	0.69	0.94	0.46
Adj. Flow (vph)	36	20	16	88	16	33	8	721	52	107	526	28
RTOR Reduction (vph)	0	0	14	0	22	0	0	3	0	0	2	0
Lane Group Flow (vph)	0	56	2	0	115	0	8	770	0	107	552	0
Turn Type	Perm		Perm	Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		10.1	10.1		10.1		43.0	42.1		48.8	45.0	
Effective Green, g (s)		10.1	10.1		10.1		43.0	42.1		48.8	45.0	
Actuated g/C Ratio		0.15	0.15		0.15		0.63	0.62		0.72	0.66	
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		220	235		207		509	1142		370	1224	
v/s Ratio Prot							0.00	c0.42		c0.02	0.30	
v/s Ratio Perm		0.04	0.01		c0.10		0.01			0.19		
v/c Ratio		0.25	0.01		0.55		0.02	0.67		0.29	0.45	
Uniform Delay, d1		25.6	24.7		26.9		4.7	8.5		5.8	5.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0		3.2		0.0	3.2		0.4	1.2	
Delay (s)		26.2	24.7		30.1		4.7	11.7		6.3	6.7	
Level of Service		C	C		C		A	B		A	A	
Approach Delay (s)		25.9			30.1			11.6			6.7	
Approach LOS		C			C			B			A	

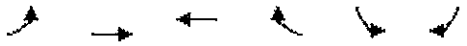
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Volume (vph)	214	17	13	341	214	112
Peak-hour factor, PHF	0.78	0.39	0.54	0.78	0.85	0.25
Adj. Flow (vph)	274	44	24	437	252	448
RTOR Reduction (vph)	0	34	0	0	0	190
Lane Group Flow (vph)	274	10	24	437	252	258
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	14.7	14.7	1.5	43.7	38.2	38.2
Effective Green, g (s)	14.7	14.7	1.5	43.7	38.2	38.2
Actuated g/C Ratio	0.22	0.22	0.02	0.66	0.58	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	350	40	2329	2036	911
v/s Ratio Prot	c0.15		c0.01	0.12	0.07	
v/s Ratio Perm		0.03				0.28
v/c Ratio	0.70	0.03	0.60	0.19	0.12	0.28
Uniform Delay, d1	23.8	20.3	32.2	4.4	6.4	7.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	0.0	21.9	0.2	0.1	0.8
Delay (s)	29.2	20.3	54.1	4.6	6.6	7.9
Level of Service	C	C	D	A	A	A
Approach Delay (s)	28.0			7.2	7.4	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	27	117	44	54	117	50
Peak Hour Factor	0.56	0.73	0.61	0.75	0.84	0.60
Hourly flow rate (vph)	48	160	72	72	139	83
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	144				365	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	144				365	108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				77	91
cM capacity (veh/h)	1438				613	946

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	208	144	223
Volume Left	48	0	139
Volume Right	0	72	83
cSH	1438	1700	706
Volume to Capacity	0.03	0.08	0.32
Queue Length 95th (ft)	3	0	34
Control Delay (s)	2.0	0.0	12.4
Lane LOS	A		B
Approach Delay (s)	2.0	0.0	12.4
Approach LOS			B

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.95		1.00	0.98		1.00	0.99	
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1583		1732		1770	1827		1770	1849	
Flt Permitted		0.82	1.00		0.85		0.35	1.00		0.32	1.00	
Satd. Flow (perm)		1528	1583		1499		644	1827		605	1849	
Volume (vph)	15	8	2	41	16	35	6	531	52	30	532	19
Peak-hour factor, PHF	0.54	0.50	0.50	0.85	0.67	0.80	0.50	0.94	0.62	0.68	0.86	0.59
Adj. Flow (vph)	28	16	4	48	24	44	12	565	84	44	619	32
RTOR Reduction (vph)	0	0	3	0	38	0	0	6	0	0	2	0
Lane Group Flow (vph)	0	44	1	0	78	0	12	643	0	44	649	0
Turn Type	Perm		Perm	Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		9.3	9.3		9.3		45.1	44.2		47.1	45.2	
Effective Green, g (s)		9.3	9.3		9.3		45.1	44.2		47.1	45.2	
Actuated g/C Ratio		0.14	0.14		0.14		0.67	0.66		0.70	0.67	
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		211	218		207		446	1198		456	1240	
v/s Ratio Prot							0.00	c0.36		c0.00	0.35	
v/s Ratio Perm		0.03	0.00		c0.08		0.02			0.06		
v/c Ratio		0.21	0.00		0.38		0.03	0.54		0.10	0.52	
Uniform Delay, d1		25.8	25.1		26.4		4.1	6.2		3.9	5.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		1.2		0.0	1.7		0.1	1.6	
Delay (s)		26.3	25.1		27.6		4.2	7.9		4.0	7.2	
Level of Service		C	C		C		A	A		A	A	
Approach Delay (s)		26.2			27.6			7.8			7.0	
Approach LOS		C			C			A			A	

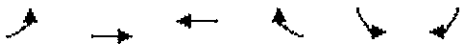
Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Volume (vph)	131	15	22	534	617	129
Peak-hour factor, PHF	0.91	0.63	0.55	0.83	0.88	0.77
Adj. Flow (vph)	144	24	40	643	701	168
RTOR Reduction (vph)	0	20	0	0	0	67
Lane Group Flow (vph)	144	4	40	643	701	101
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	10.3	10.3	2.8	45.0	38.2	38.2
Effective Green, g (s)	10.3	10.3	2.8	45.0	38.2	38.2
Actuated g/C Ratio	0.16	0.16	0.04	0.71	0.60	0.60
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	288	258	78	2516	2136	955
v/s Ratio Prot	c0.08		c0.02	0.18	c0.20	
v/s Ratio Perm		0.02				0.11
v/c Ratio	0.50	0.02	0.51	0.26	0.33	0.11
Uniform Delay, d1	24.2	22.2	29.6	3.2	6.2	5.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0	5.6	0.2	0.4	0.2
Delay (s)	25.5	22.3	35.2	3.5	6.6	5.5
Level of Service	C	C	D	A	A	A
Approach Delay (s)	25.1			5.3	6.4	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	39	47	65	105	61	46
Peak Hour Factor	0.51	0.78	0.81	0.73	0.66	0.82
Hourly flow rate (vph)	76	60	80	144	92	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	224				365	152
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	224				365	152
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				85	94
cM capacity (veh/h)	1345				598	894

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	137	224	149
Volume Left	76	0	92
Volume Right	0	144	56
cSH	1345	1700	684
Volume to Capacity	0.06	0.13	0.22
Queue Length 95th (ft)	5	0	21
Control Delay (s)	4.6	0.0	11.7
Lane LOS	A		B
Approach Delay (s)	4.6	0.0	11.7
Approach LOS			B

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	30.7%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX D
LEVEL-OF-SERVICE WORKSHEETS FOR 2015 BACKGROUND CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1583		1561		1770	1831		1570	1856	
Flt Permitted		0.77	1.00		0.77		0.16	1.00		0.12	1.00	
Satd. Flow (perm)		1425	1583		1246		300	1831		199	1856	
Volume (vph)	29	11	6	61	5	37	5	937	46	96	1028	13
Peak-hour factor, PHF	0.81	0.55	0.38	0.58	0.31	0.85	0.63	0.95	0.71	0.75	0.95	0.46
Adj. Flow (vph)	36	20	16	105	16	44	8	986	65	128	1082	28
RTOR Reduction (vph)	0	0	14	0	9	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	56	2	0	156	0	8	1050	0	128	1110	0
Heavy Vehicles (%)	2%	2%	2%	15%	2%	15%	2%	2%	15%	15%	2%	2%
Turn Type	Perm		Perm	Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		21.1	21.1		21.1		101.2	100.5		114.6	109.9	
Effective Green, g (s)		21.1	21.1		21.1		101.2	100.5		114.6	109.9	
Actuated g/C Ratio		0.15	0.15		0.15		0.70	0.70		0.80	0.76	
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		209	232		183		218	1281		255	1419	
v/s Ratio Prot							0.00	c0.57		c0.04	c0.60	
v/s Ratio Perm		0.04	0.01		c0.13		0.03			0.36		
v/c Ratio		0.27	0.01		0.86		0.04	0.82		0.50	0.78	
Uniform Delay, d1		54.4	52.4		59.8		12.2	15.2		20.7	9.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.0		30.2		0.1	5.9		1.6	4.4	
Delay (s)		55.1	52.4		90.0		12.3	21.2		22.3	14.2	
Level of Service		E	D		F		B	C		C	B	
Approach Delay (s)		54.5			90.0			21.1			15.1	
Approach LOS		D			F			C			B	

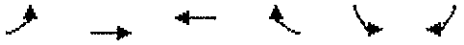
Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	143.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1570	1404	1570	3539	3539	1404
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1570	1404	1570	3539	3539	1404
Volume (vph)	314	28	30	552	291	227
Peak-hour factor, PHF	0.85	0.80	0.85	0.80	0.90	0.80
Adj. Flow (vph)	369	35	35	690	323	284
RTOR Reduction (vph)	0	25	0	0	0	125
Lane Group Flow (vph)	369	10	35	690	323	159
Heavy Vehicles (%)	15%	15%	15%	2%	2%	15%
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	28.6	28.6	5.2	67.4	58.2	58.2
Effective Green, g (s)	28.6	28.6	5.2	67.4	58.2	58.2
Actuated g/C Ratio	0.28	0.28	0.05	0.65	0.56	0.56
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	432	386	79	2294	1980	786
v/s Ratio Prot	c0.24		c0.02	0.19	0.09	
v/s Ratio Perm		0.02				0.20
v/c Ratio	0.85	0.02	0.44	0.30	0.16	0.20
Uniform Delay, d1	35.7	27.5	48.0	8.0	11.1	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.1	0.0	3.9	0.3	0.2	0.6
Delay (s)	50.8	27.5	51.9	8.3	11.3	12.0
Level of Service	D	C	D	A	B	B
Approach Delay (s)	48.8			10.4	11.6	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	104.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	27	148	63	113	179	50
Peak Hour Factor	0.56	0.80	0.80	0.85	0.90	0.60
Hourly flow rate (vph)	48	185	79	133	199	83
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	212				427	145
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	212				427	145
tC, single (s)	4.2				6.5	6.4
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	96				63	90
cM capacity (veh/h)	1285				540	869

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	233	212	282
Volume Left	48	0	199
Volume Right	0	133	83
cSH	1285	1700	608
Volume to Capacity	0.04	0.12	0.46
Queue Length 95th (ft)	3	0	61
Control Delay (s)	1.9	0.0	16.0
Lane LOS	A		C
Approach Delay (s)	1.9	0.0	16.0
Approach LOS			C

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1804	1583		1541		1770	1836		1570	1858	
Flt Permitted		0.74	1.00		0.85		0.16	1.00		0.09	1.00	
Satd. Flow (perm)		1378	1583		1336		302	1836		153	1858	
Volume (vph)	15	8	2	53	16	56	6	1102	62	41	1055	19
Peak-hour factor, PHF	0.80	0.80	0.80	0.97	0.97	0.97	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	10	2	55	16	58	6	1160	65	43	1111	20
RTOR Reduction (vph)	0	0	2	0	22	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	29	0	0	107	0	6	1224	0	43	1131	0
Heavy Vehicles (%)	2%	2%	2%	15%	2%	15%	2%	2%	15%	15%	2%	2%
Turn Type	Perm		Perm	Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		15.3	15.3		15.3		103.5	102.8		109.9	106.0	
Effective Green, g (s)		15.3	15.3		15.3		103.5	102.8		109.9	106.0	
Actuated g/C Ratio		0.11	0.11		0.11		0.77	0.77		0.82	0.79	
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		157	181		153		241	1409		167	1470	
v/s Ratio Prot							0.00	c0.67		c0.01	c0.61	
v/s Ratio Perm		0.02	0.00		c0.10		0.02			0.20		
v/c Ratio		0.18	0.00		0.70		0.02	0.87		0.26	0.77	
Uniform Delay, d1		53.7	52.6		57.1		9.6	10.9		20.2	7.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0		13.0		0.0	7.5		0.8	3.9	
Delay (s)		54.3	52.6		70.2		9.6	18.4		21.1	11.4	
Level of Service		D	D		E		A	B		C	B	
Approach Delay (s)		54.2			70.2			18.3			11.8	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	134.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1570	1404	1570	3539	3539	1404
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1570	1404	1570	3539	3539	1404
Volume (vph)	236	49	40	683	847	229
Peak-hour factor, PHF	0.91	0.85	0.85	0.90	0.90	0.85
Adj. Flow (vph)	259	58	47	759	941	269
RTOR Reduction (vph)	0	45	0	0	0	111
Lane Group Flow (vph)	259	13	47	759	941	158
Heavy Vehicles (%)	15%	15%	15%	2%	2%	15%
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	18.1	18.1	5.4	55.9	46.5	46.5
Effective Green, g (s)	18.1	18.1	5.4	55.9	46.5	46.5
Actuated g/C Ratio	0.22	0.22	0.07	0.68	0.57	0.57
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	347	310	103	2413	2007	796
v/s Ratio Prot	c0.17		c0.03	0.21	c0.27	
v/s Ratio Perm		0.04				0.19
v/c Ratio	0.75	0.04	0.46	0.31	0.47	0.20
Uniform Delay, d1	29.8	25.1	36.9	5.3	10.5	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.5	0.1	3.2	0.3	0.8	0.6
Delay (s)	38.3	25.2	40.1	5.6	11.3	9.2
Level of Service	D	C	D	A	B	A
Approach Delay (s)	35.9			7.6	10.8	
Approach LOS	D			A	B	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	39	68	98	182	135	46
Peak Hour Factor	0.51	0.78	0.81	0.73	0.66	0.82
Hourly flow rate (vph)	76	87	121	249	205	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	370				486	246
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	370				486	246
tC, single (s)	4.2				6.5	6.4
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	93				58	93
cM capacity (veh/h)	1120				482	762

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	164	370	261
Volume Left	76	0	205
Volume Right	0	249	56
cSH	1120	1700	524
Volume to Capacity	0.07	0.22	0.50
Queue Length 95th (ft)	5	0	69
Control Delay (s)	4.3	0.0	18.5
Lane LOS	A		C
Approach Delay (s)	4.3	0.0	18.5
Approach LOS			C

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX E
LEVEL-OF-SERVICE WORKSHEETS FOR 2015 BACKGROUND PLUS PROJECT CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1583		1558		1770	1822		1570	1856	
Flt Permitted		0.77	1.00		0.77		0.16	1.00		0.09	1.00	
Satd. Flow (perm)		1431	1583		1240		295	1822		153	1856	
Volume (vph)	29	11	6	69	5	42	5	937	60	117	1028	13
Peak-hour factor, PHF	0.81	0.55	0.38	0.58	0.31	0.85	0.63	0.95	0.71	0.75	0.95	0.46
Adj. Flow (vph)	36	20	16	119	16	49	8	986	85	156	1082	28
RTOR Reduction (vph)	0	0	14	0	8	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	56	2	0	176	0	8	1069	0	156	1110	0
Heavy Vehicles (%)	2%	2%	2%	15%	2%	15%	2%	2%	15%	15%	2%	2%
Turn Type	Perm		Perm	Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		22.9	22.9		22.9		100.8	100.0		116.6	111.8	
Effective Green, g (s)		22.9	22.9		22.9		100.8	100.0		116.6	111.8	
Actuated g/C Ratio		0.16	0.16		0.16		0.68	0.68		0.79	0.76	
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		222	246		193		210	1235		242	1407	
v/s Ratio Prot							0.00	c0.59		c0.06	c0.60	
v/s Ratio Perm		0.04	0.01		c0.15		0.03			0.45		
v/c Ratio		0.25	0.01		0.91		0.04	0.87		0.64	0.79	
Uniform Delay, d1		54.8	52.7		61.3		13.4	18.5		28.9	10.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0		39.8		0.1	8.3		5.8	4.6	
Delay (s)		55.4	52.7		101.1		13.5	26.8		34.7	15.3	
Level of Service		E	D		F		B	C		C	B	
Approach Delay (s)		54.8			101.1			26.7			17.7	
Approach LOS		D			F			C			B	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	147.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1570	1404	1570	3539	3539	1404
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1570	1404	1570	3539	3539	1404
Volume (vph)	364	34	74	552	291	407
Peak-hour factor, PHF	0.92	0.92	0.92	0.80	0.90	0.92
Adj. Flow (vph)	396	37	80	690	323	442
RTOR Reduction (vph)	0	26	0	0	0	219
Lane Group Flow (vph)	396	11	80	690	323	223
Heavy Vehicles (%)	15%	15%	15%	2%	2%	15%
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	31.0	31.0	9.2	66.4	53.2	53.2
Effective Green, g (s)	31.0	31.0	9.2	66.4	53.2	53.2
Actuated g/C Ratio	0.29	0.29	0.09	0.63	0.50	0.50
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	462	413	137	2230	1786	709
v/s Ratio Prot	c0.25		c0.05	0.19	0.09	
v/s Ratio Perm		0.03				0.31
v/c Ratio	0.86	0.03	0.58	0.31	0.18	0.31
Uniform Delay, d1	35.1	26.5	46.3	9.0	14.2	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.5	0.0	6.2	0.4	0.2	1.2
Delay (s)	49.6	26.5	52.5	9.3	14.4	16.5
Level of Service	D	C	D	A	B	B
Approach Delay (s)	47.6			13.8	15.6	
Approach LOS	D			B	B	

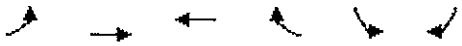
Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	105.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	27	183	76	130	217	50
Peak Hour Factor	0.56	0.80	0.80	0.85	0.90	0.60
Hourly flow rate (vph)	48	229	95	153	241	83
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	248				497	171
vC1, stage 1 conf vol					171	
vC2, stage 2 conf vol					325	
vCu, unblocked vol	248				497	171
tC, single (s)	4.2				6.5	6.4
tC, 2 stage (s)					5.5	
tF (s)	2.3				3.6	3.4
p0 queue free %	96				62	90
cM capacity (veh/h)	1246				631	840

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	277	248	324
Volume Left	48	0	241
Volume Right	0	153	83
cSH	1246	1700	674
Volume to Capacity	0.04	0.15	0.48
Queue Length 95th (ft)	3	0	66
Control Delay (s)	1.7	0.0	15.2
Lane LOS	A		C
Approach Delay (s)	1.7	0.0	15.2
Approach LOS			C

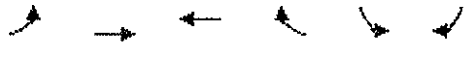
Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	32	340	285	64	40	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	370	310	70	43	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					TWLTL	
Median storage veh)					3	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	379				749	310
vC1, stage 1 conf vol					310	
vC2, stage 2 conf vol					439	
vCu, unblocked vol	379				749	310
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	97				93	97
cM capacity (veh/h)	1179				591	730

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	35	370	310	70	43	23
Volume Left	35	0	0	0	43	0
Volume Right	0	0	0	70	0	23
cSH	1179	1700	1700	1700	591	730
Volume to Capacity	0.03	0.22	0.18	0.04	0.07	0.03
Queue Length 95th (ft)	2	0	0	0	6	2
Control Delay (s)	8.1	0.0	0.0	0.0	11.6	10.1
Lane LOS	A				B	B
Approach Delay (s)	0.7		0.0		11.1	
Approach LOS					B	

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	41	347	197	82	16	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	377	214	89	17	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	303				725	259
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	303				725	259
tC, single (s)	4.3				6.6	6.5
tC, 2 stage (s)						
tF (s)	2.4				3.7	3.5
p0 queue free %	96				95	99
cM capacity (veh/h)	1138				346	727

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	422	303	27
Volume Left	45	0	17
Volume Right	0	89	10
cSH	1138	1700	426
Volume to Capacity	0.04	0.18	0.06
Queue Length 95th (ft)	3	0	5
Control Delay (s)	1.2	0.0	14.0
Lane LOS	A		B
Approach Delay (s)	1.2	0.0	14.0
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.94		1.00	0.98		1.00	1.00	
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1804	1583		1589		1770	1817		1641	1858	
Flt Permitted		0.74	1.00		0.83		0.17	1.00		0.03	1.00	
Satd. Flow (perm)		1376	1583		1356		318	1817		59	1858	
Volume (vph)	15	8	2	122	16	118	6	1047	128	102	1000	19
Peak-hour factor, PHF	0.80	0.80	0.80	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	19	10	2	124	16	120	6	1068	131	104	1020	19
RTOR Reduction (vph)	0	0	2	0	18	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	29	0	0	242	0	6	1197	0	104	1039	0
Heavy Vehicles (%)	2%	2%	2%	10%	2%	10%	2%	2%	10%	10%	2%	2%
Turn Type	Perm		Perm	Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		34.0	34.0		34.0		125.2	124.4		137.9	133.1	
Effective Green, g (s)		34.0	34.0		34.0		125.2	124.4		137.9	133.1	
Actuated g/C Ratio		0.19	0.19		0.19		0.70	0.69		0.77	0.74	
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		260	299		256		228	1256		129	1375	
v/s Ratio Prot							0.00	c0.66		c0.04	0.56	
v/s Ratio Perm		0.02	0.00		c0.19		0.02			0.57		
v/c Ratio		0.11	0.00		0.95		0.03	0.95		0.81	0.76	
Uniform Delay, d1		60.4	59.2		72.0		15.7	25.1		61.8	13.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		41.3		0.0	16.4		29.5	3.9	
Delay (s)		60.6	59.2		113.3		15.8	41.5		91.3	17.7	
Level of Service		E	E		F		B	D		F	B	
Approach Delay (s)		60.5			113.3			41.3			24.4	
Approach LOS		E			F			D			C	

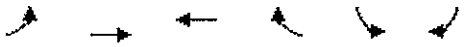
Intersection Summary			
HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	179.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1570	1404	1570	3539	3539	1404
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1570	1404	1570	3539	3539	1404
Volume (vph)	470	125	117	628	792	409
Peak-hour factor, PHF	0.91	0.85	0.85	0.90	0.90	0.85
Adj. Flow (vph)	516	147	138	698	880	481
RTOR Reduction (vph)	0	92	0	0	0	298
Lane Group Flow (vph)	516	55	138	698	880	183
Heavy Vehicles (%)	15%	15%	15%	2%	2%	15%
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	36.6	36.6	11.6	52.7	37.1	37.1
Effective Green, g (s)	36.6	36.6	11.6	52.7	37.1	37.1
Actuated g/C Ratio	0.38	0.38	0.12	0.54	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	591	528	187	1917	1349	535
v/s Ratio Prot	c0.33		c0.09	0.20	0.25	
v/s Ratio Perm		0.10				0.34
v/c Ratio	0.87	0.10	0.74	0.36	0.65	0.34
Uniform Delay, d1	28.2	19.7	41.4	12.7	24.8	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	0.1	14.1	0.5	2.5	1.7
Delay (s)	41.6	19.8	55.5	13.3	27.3	23.2
Level of Service	D	B	E	B	C	C
Approach Delay (s)	36.8			20.2	25.8	
Approach LOS	D			C	C	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	97.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	39	195	229	311	191	46
Peak Hour Factor	0.51	0.78	0.81	0.73	0.66	0.82
Hourly flow rate (vph)	76	250	283	426	289	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	709				899	496
vC1, stage 1 conf vol					496	
vC2, stage 2 conf vol					403	
vCu, unblocked vol	709				899	496
tC, single (s)	4.2				6.5	6.4
tC, 2 stage (s)					5.5	
tF (s)	2.3				3.6	3.4
p0 queue free %	91				38	90
cM capacity (veh/h)	833				469	549

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	326	709	345
Volume Left	76	0	289
Volume Right	0	426	56
cSH	833	1700	480
Volume to Capacity	0.09	0.42	0.72
Queue Length 95th (ft)	8	0	143
Control Delay (s)	3.1	0.0	29.4
Lane LOS	A		D
Approach Delay (s)	3.1	0.0	29.4
Approach LOS			D

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	181	313	277	241	238	209
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	197	340	301	262	259	227
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					TWLTL	
Median storage veh)					3	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	563				1035	301
vC1, stage 1 conf vol					301	
vC2, stage 2 conf vol					734	
vCu, unblocked vol	563				1035	301
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	80				31	69
cM capacity (veh/h)	1008				376	739

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	197	340	301	262	259	227
Volume Left	197	0	0	0	259	0
Volume Right	0	0	0	262	0	227
cSH	1008	1700	1700	1700	376	739
Volume to Capacity	0.20	0.20	0.18	0.15	0.69	0.31
Queue Length 95th (ft)	18	0	0	0	124	33
Control Delay (s)	9.4	0.0	0.0	0.0	33.2	12.0
Lane LOS	A				D	B
Approach Delay (s)	3.5		0.0		23.3	
Approach LOS					C	

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	14	410	458	28	84	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	446	498	30	91	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	528				989	513
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	528				989	513
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				66	88
cM capacity (veh/h)	1039				270	561

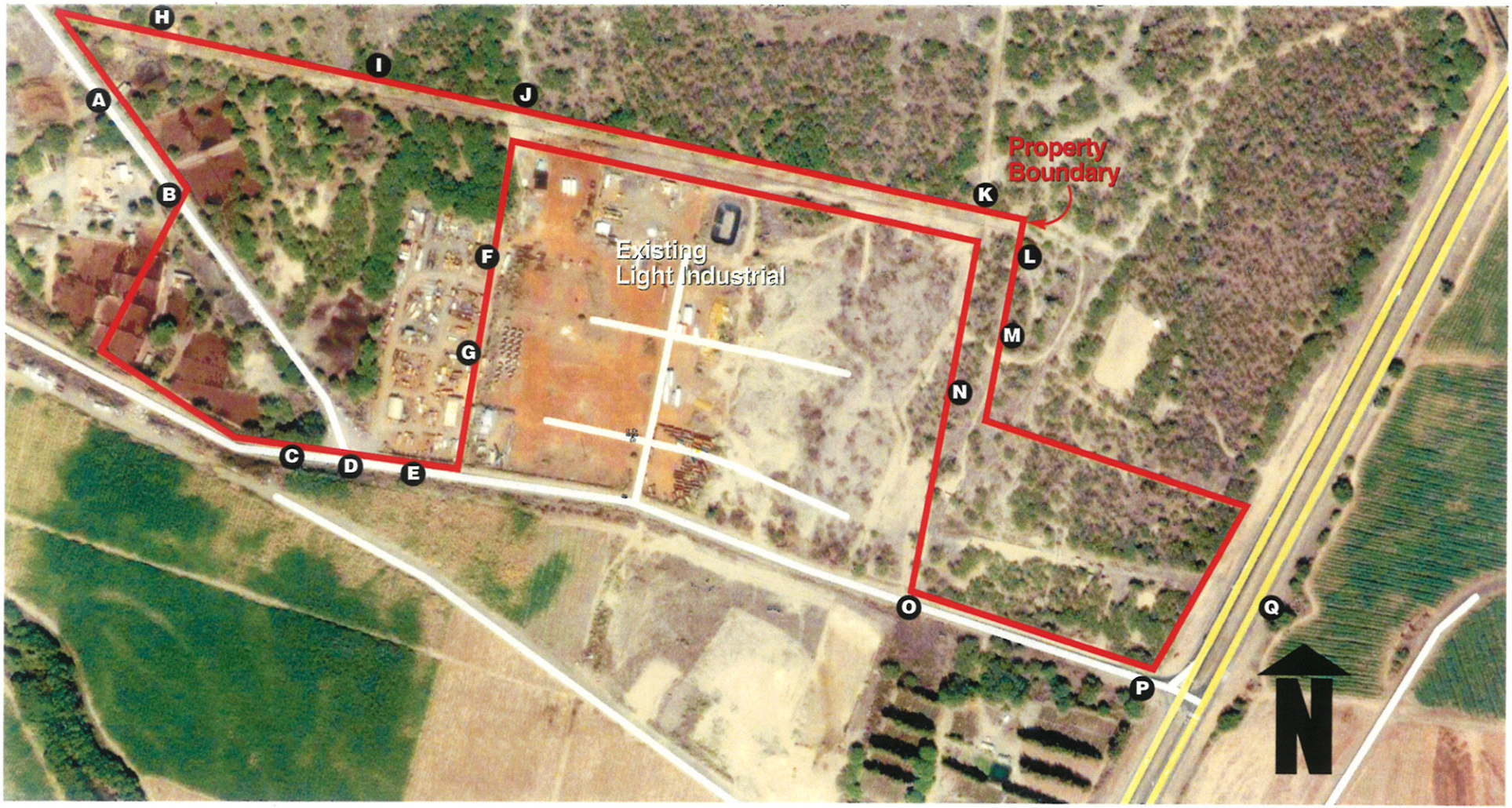
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	461	528	160
Volume Left	15	0	91
Volume Right	0	30	68
cSH	1039	1700	347
Volume to Capacity	0.01	0.31	0.46
Queue Length 95th (ft)	1	0	58
Control Delay (s)	0.4	0.0	23.9
Lane LOS	A		C
Approach Delay (s)	0.4	0.0	23.9
Approach LOS			C

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix Q

Aerial Photo of Project Site

Aerial Photo of Project Site



Appendix R

View Photos of Project Site

Ⓐ View facing Northeast from Western Adjoining Property

Ⓑ View facing Northeast from Western Adjoining Property

C View facing North from Southern Adjoining Property Fronting Waikō Road (Western Boundary of Project Site)

D View facing Northwest from Southern Adjoining Property (Fronting Waikō Road) (Western Boundary of Project Site)

E View facing North from Southern Adjoining Property (Fronting Waikō Road)

F View facing West from Fong Construction Baseyard

G View facing West from Fong Construction Baseyard

H View facing South from Northern Adjoining Property

I View facing South from Northern Adjoining Property

J View facing South from Northern Adjoining Property
(View behind Existing Light Industrial Consolidated Baseyard Lots)

K View facing South from Northern Adjoining Property
(View behind Existing Light Industrial Consolidated Baseyard Lots)

Ⓛ View facing West from Eastern Adjoining Property

Ⓜ View facing West from Eastern Adjoining Property

Ⓝ View facing East from Boundary Opposite Eastern Adjoining Property

O View facing North from Southern Adjoining Property East Boundary of Project Site (Fronting Waikō Road)

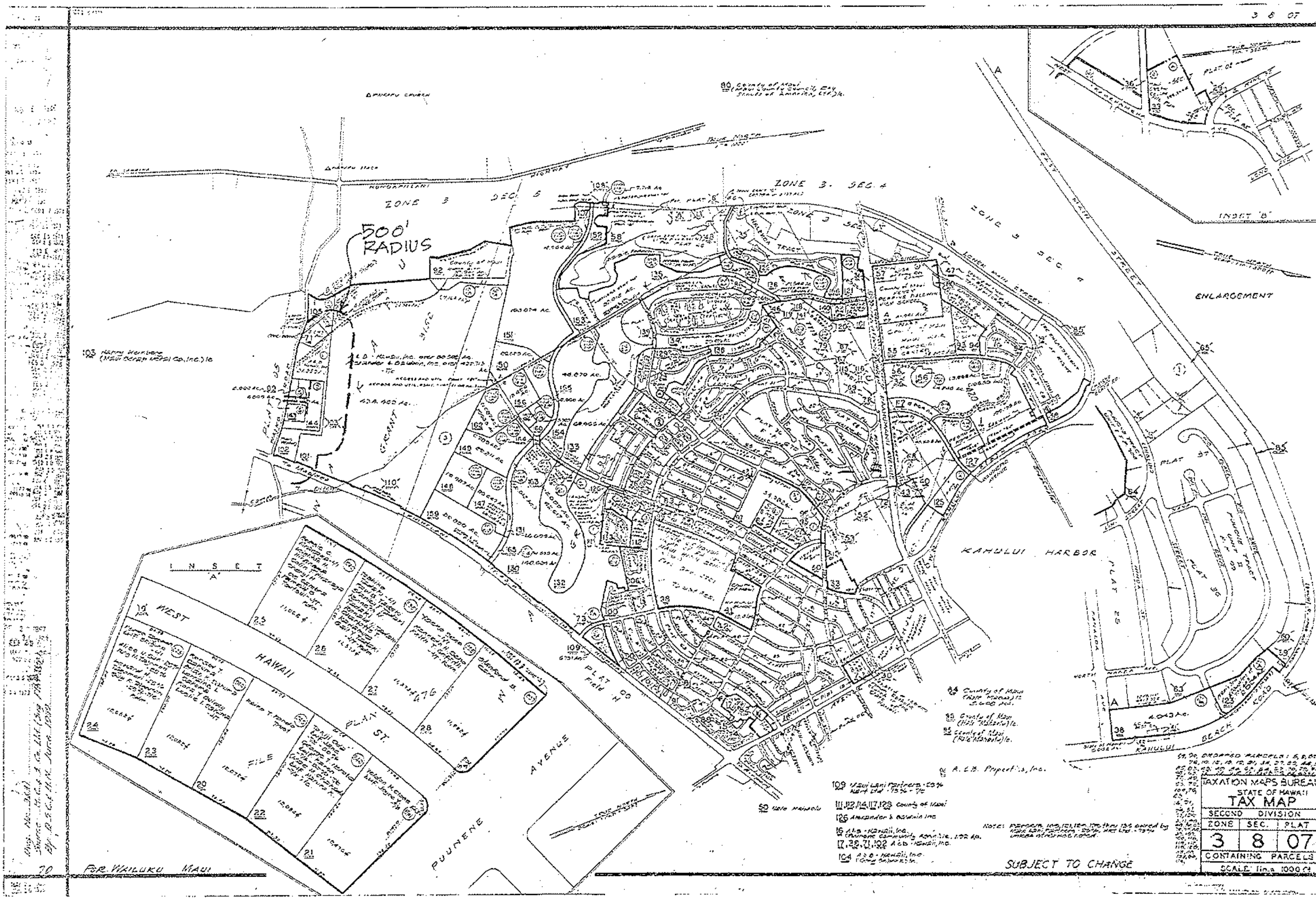
P View facing North from Southern Adjoining Property East End at Corner of Waikō Road and Kūihelani Highway (East Boundary of Project Site)

Q View facing West from Across Kūihelani Highway

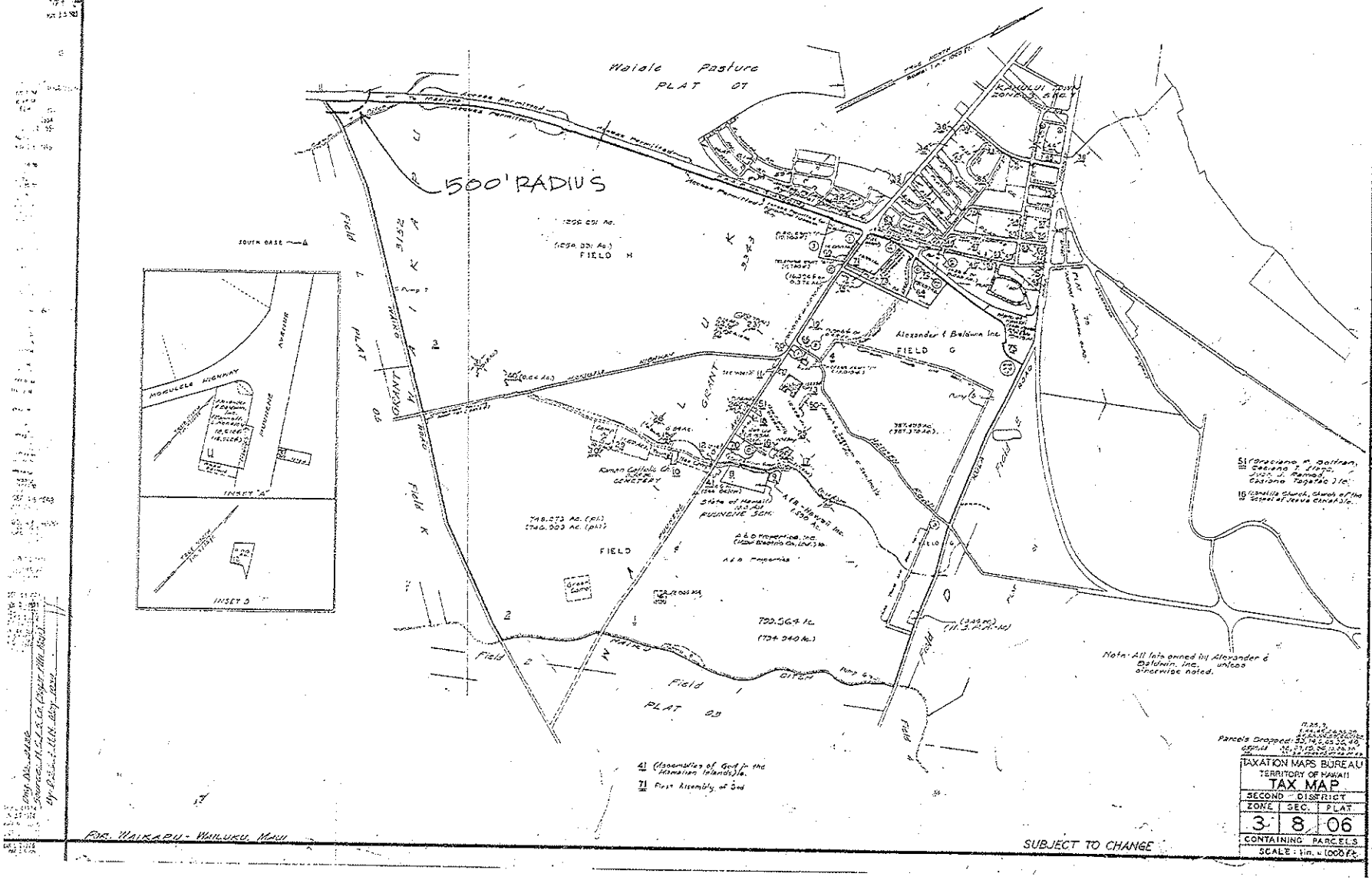
Appendix S

TMK Map Identifying Owners Within 500-Foot Radius

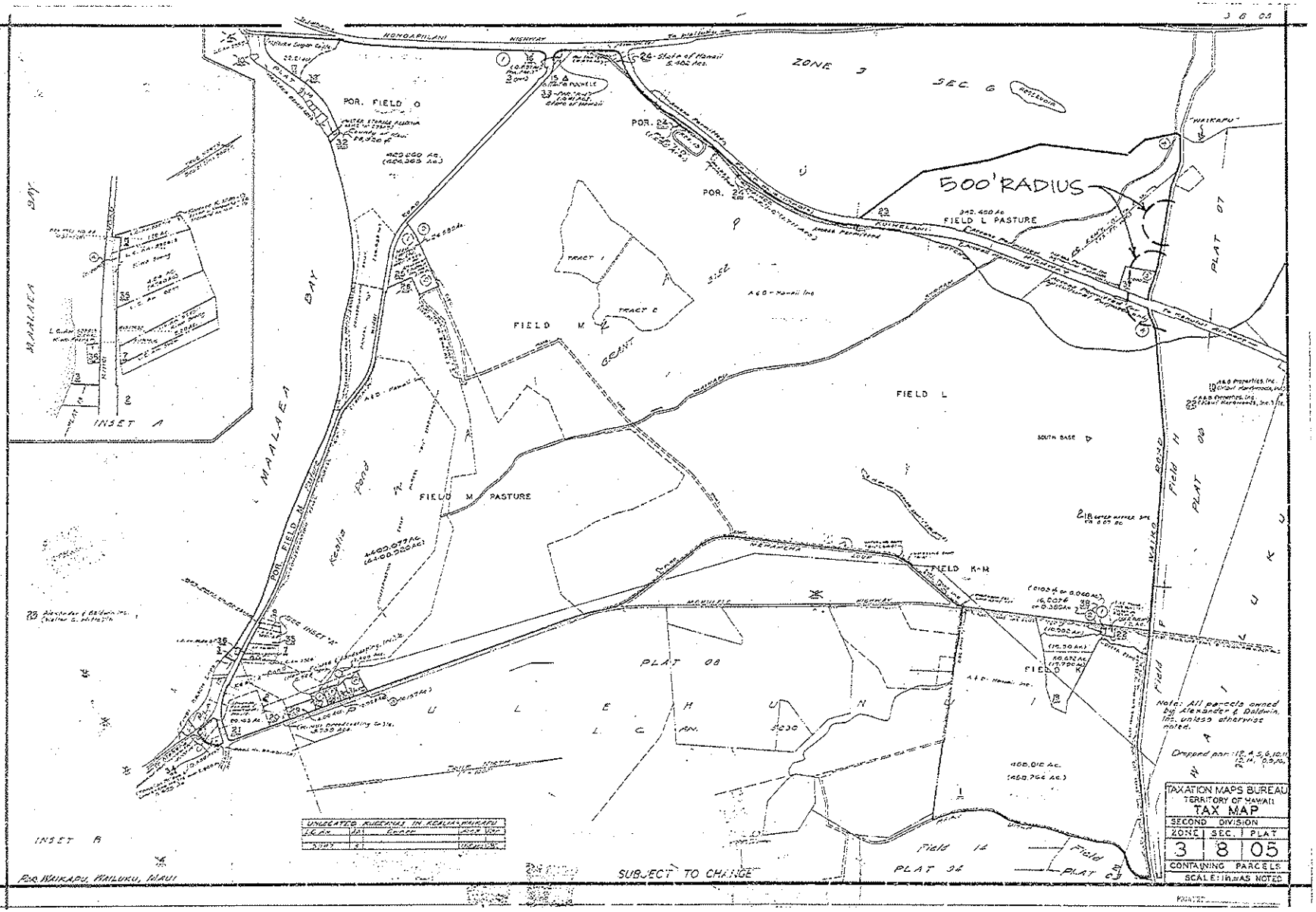
Property Owners Within the 500-Foot Radius of TMK: (2) 3-8-007:102



TAXATION MAPS BUREAU
STATE OF HAWAII
TAX MAP
SECOND DIVISION
ZONE SEC. PLAT
3 8 07
CONTAINING PARCELS
SUBJECT TO CHANGE
500' RADIUS
KAHULUI HARBOR
ZONE 3 SEC. 4
ZONE 3 SEC. 5
ENLARGEMENT
INSET 'B'
INSET 'A'
WEST HAWAII
PUUNENE AVENUE
FOR WAILUKU MAUI



FOR WAIKAPU - WAILUKU, MAUI


500' RADIUS
ZONE 3
SEC. 6
FIELD L PASTURE
FIELD M
FIELD L
FIELD M PASTURE
FIELD K-M
PLAT 07
PLAT 08
PLAT 14
INSET A
INSET B
MAALAEA BAY
SUBJECT TO CHANGE
TAXATION MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP
SECOND DIVISION
ZONE 3 SEC. 8 PLAT 05
CONTAINING PARCELS
SCALE: 1IN.=AS NOTED

Property Owners Within 500 Feet Radius of Waiko Industrial Investment LLC Parcel

TMK: (2) 3-8-007:102

TMK	Owner	Mailing Address
(2) 3-8-005:002	A & B Hawaii Inc.	P.O. Box 156, Kahului, HI 96732
(2) 3-8-005:023	A & B Hawaii Inc.	P.O. Box 156, Kahului, HI 96732
(2) 3-8-005:037	A & B Hawaii Inc.	P.O. Box 156, Kahului, HI 96732
(2) 3-8-006:003	A & B Hawaii Inc.	P.O. Box 156, Kahului, HI 96732
(2) 3-8-007:071	A & B Hawaii Inc.	P.O. Box 156, Kahului, HI 96732
(2) 3-8-007:104	A & B Hawaii Inc.	P.O. Box 156, Kahului, HI 96732
(2) 3-8-007:101	A & B Hawaii Inc.	P.O. Box 156, Kahului, HI 96732
(2) 3-8-094:030	Lane's Development LLC	530 E. Uahi Way, Wailuku, HI 96793
(2) 3-8-007:105	ABC Development Co., LLC	815 Waikamilo Rd., Honolulu, HI 96817
(2) 3-8-094:031	Steven D. Allen	2734 Kalialani St., Pukalani, HI 96868
(2) 3-8-094:032	PFI Realty V LP	30318 Longhorn Dr., Canyon Lake, CA 9258
(2) 3-8-094:033	La'a Kea Properties LLC	4641 Little Uvas Rd., Morgan Hill, CA 95037
(2) 3-8-094:034	HD Maui LLC	2308 Pahounui Dr., Honolulu, HI 96819
(2) 3-8-094:035	KC Commercial LLC	300 E. Uahi Way, Wailuku, HI 96793
(2) 3-8-094:001	Phillip Anthony Feliciano	58 Amala Pl., Kahului, HI 96732
(2) 3-8-094:002	A & D Properties LLC	P.O. Box 880687, Pukalani, HI 96788
(2) 3-8-094:028	Pacific Source Properties Maui LLC	20321 Broadway Ave., Snohomish, WA 982
(2) 3-8-094:027	Aina Maui Holding Co., LLC	10 Kamalei Circle, Kahului, HI 96732
(2) 3-8-094:036	Consolidated Baseyards LLC	2073 Wells St., Suite 101, Wailuku, HI 9679
(2) 3-8-094:026	Dennis C. Franco	P.O. Box 532, Puunene, HI 96784
(2) 3-8-094:003	Michael Robertson	110 W. Uahi Way, Wailuku, HI 96793
(2) 3-8-094:025	KCG Waiko LLC	1258 Kilou Lp., Wailuku, HI 96793
(2) 3-8-094:006	Waikapu Center I - Condo Master	P.O. Box 3124, Kahului, HI 96732
(2) 3-8-094:005	Bert S. Shiroma Trust	77 Waiale Dr., Suite 102, Wailuku, HI 9679
(2) 3-8-094:020	Valley Isle Excursions Inc.	390 Papa Pl., Unit B, kahului, Hi 96732
(2) 3-8-094:021	Maui Petroleum Inc.	385 Hukilike St., Suite 102, Kahului, HI 967
(2) 3-8-094:004	CALROD LLC	495 Hukilike St., Bay #4, Kahului, HI 96732
(2) 3-8-094:022	Pinnacle Consolidated LLC	57 E. Mahi Pua Pl., Lahaina, Hi 96761
(2) 3-8-094:023	Waikapu Center II - Condo Master	P.O. Box 3124, Kahului, HI 96732

(2) 3-8-094:008	Waiko Elua Baseyard LLC	77 Waiale Dr., Suite 102, Wailuku, HI 96793
(2) 3-8-094:009	Alpha Par Partners	951 Kailiu Pl., Honolulu, HI 96825
(2) 3-8-094:017	Commercial Plumbing Properties LLC	1820 Colburn St., Honolulu, HI 96819
(2) 3-8-094:016	CYMK Development LLC	P.O. Box 1181, Haiku, HI 96708
(2) 3-8-094:015	CBY-15 LLC	P.O. Box L, Libertyville, IL 60048
(2) 3-8-094:011	Lite Electric Inc.	50 Kaniela St., Wailuku, Hi 96793
(2) 3-8-094:010	Reef Development Of Hawaii Inc.	99-930 Iwaena St., #106, Aiea, HI 96701
(2) 3-8-094:018	Massdec LLC	19201 Susana Rd., Rancho Dominquesz, CA 90221
(2) 3-8-094:014	Richard N Barreras Trust	860 Eha St., Wailuku, Hi 96793
(2) 3-8-094:013	Baseyards 13 LLC	1132 Bishop St., Suite 1600, Honolulu, HI 96813
(2) 3-8-094:012	Maui Storage Space - Condo Master	12 Kaimau St., Paia, HI 96779

Appendix T

Department of Planning
Zoning and Flood
Confirmation Form

COUNTY OF MAUI
DEPARTMENT OF PLANNING
Kalana Pakui Building
250 South High Street
Wailuku, Hawaii 96793

Zoning Administration and
Enforcement Division (ZAED)
Telephone: (808) 270-7253
Facsimile: (808) 270-7634
E-mail: planning@mauicounty.gov

ZONING AND FLOOD CONFIRMATION FORM

APPLICANT INFORMATION *(To be completed by Applicant)*

APPLICANT NAME Vince G. Bagoyo **TELEPHONE** (808) 357-3842

PROJECT NAME Waiko Industrial Development **E-MAIL** Vbagoyo-devgroup@hawaii.rr.com

ADDRESS/LOCATION Waiko Road, Wailuku, Maui, Hawaii **TAX MAP KEY** (2) 3-8-007:102

☐ Yes ☒ No Will this Zoning and Flood Confirmation Form be used with a Subdivision Application, including four (4) or more dwelling units on a parcel, but NOT including subdivisions listed and processed under the exceptions in Section 18.04.030(B), Maui County Code? **IF YES, LIST THE PROPOSED LAND USES BELOW:**

NOTE: 1) Use a separate Zoning and Flood Confirmation Form for each Tax Map Key (TMK) number.
2) If the above "Yes" box is checked AND if the zoning information for the subject property contains multiple State Land Use Districts, Community Plan Designations, or County Zoning, a signed and dated Land Use Designations (LUD) Map, prepared by a licensed surveyor showing all the various districts, designations, zonings, and any subdistricts, shall be submitted for review and approval.
3) If the above "Yes" box is checked AND if there are multiple State Land Use District designations, the applicant shall procure a District Boundary Interpretation from the State Land Use Commission.

FOR COUNTY USE ONLY *(To be completed by ZAED)*

ZONING INFORMATION

STATE LAND USE DISTRICT(S) **Agricultural**

COMMUNITY PLAN DESIGNATION(S) **Agricultural**

COUNTY ZONING(S) **Agricultural**

OTHER DESIGNATION(S) **N.A.**

☐ Yes ☒ No See Additional Comments On Page Two

☐ Yes ☒ No See The Attached Land Use Designation Map

☐ Yes ☒ No SPECIAL MANAGEMENT AREA (SMA)

☐ Yes ☒ No PLANNED DEVELOPMENT

☐ Yes ☒ No PROJECT DISTRICT

FLOOD INFORMATION

FLOOD HAZARD AREA ZONE(S) **X** For Flood Zone AO, FLOOD DEPTH **N.A.**

BASE FLOOD ELEVATION(S) **N.A.** feet mean sea level, Local Tidal Datum.

*FLOODWAY ☐ Yes ☒ No *FLOOD DEVELOPMENT PERMIT REQUIRED ☐ Yes ☒ No

*For flood hazard area zones X or XS, a flood development permit would be required if any work is done in any drainage facility or stream area that would reduce the capacity of the drainage facility, river, or stream, or adversely affect downstream property.

*For subdivisions in ALL FLOOD HAZARD AREA ZONES (including zones X or XS) that involve streams, gulches, low areas, or any type of drainageway, a designation of the 100 year flood inundation limits or a drainage reserve may be required.

SUBDIVISION CONSISTENCY [*Section 18.04.030(D), Maui County Code*]

☒ N/A (Not Applicable) ☐ **The proposed land uses appear to be consistent _____ a unilateral agreement.

Except as permitted in Section 18.04.030(B) MCC, property containing any Interim Zoning shall NOT be subdivided.

Comments: _____

☐ **The proposed land uses appear to NOT be consistent.

Comments: _____

** All proposed subdivisions will be further reviewed during the subdivision application process to verify subdivision consistency, unilateral agreement requirements, and the conditions associated with a unilateral agreement.

REVIEWED & CONFIRMED BY:

_____ (Signature) 1/20/11 (Date)

For: AARON SHINMOTO, Planning Program Administrator, Zoning Administration and Enforcement Division

Appendix U

Water Resources Report by Tom Nance Water Resources Engineering

TNWRE
Tom Nance Water
Resource Engineering

No. of pages: 11
Email: devgroup@hawaii.rr.com

Original ☑ will ☐ will not be mailed to you.

March 1, 2011
11-062 | 11-08

MEMORANDUM

To: Vince Bagoyo - Waiko Industrial Developments

From: Tom Nance

Subject: Capability of the Two Consolidated Baseyard Wells to Supply the Proposed Waiko Industrial Park

Introduction

This memo and its attachments evaluate the capability of the two Consolidated Baseyard wells (State Nos. 5129-02 and 03) to supply the proposed Waiko Industrial Park in addition to their service of the 35-lot Consolidated Baseyard Subdivision. Waiko Industrial Park would be located on the 31.22-acre parcel identified as TMK 3-8-07:102. Its lots would be adjacent to and on the west and east sides of the Consolidated Baseyard Subdivision (Figure 1).

Required Well Supply for Both Industrial Subdivisions

The "Preliminary Engineering Report for New Potable Water Sources at Consolidated Baseyard Subdivision" prepared in February 2006 by Austin Tsutsumi & Associates, Inc. (ATA) presents design amounts for the subdivision's required supply. ATA's computed average demand consisted of 76,400 gallons per day (GPD) for the 35 lots and 6,600 GPD for common area irrigation, amounting to a total of 83,000 GPD. It should be noted that this design rate is less than Maui County Department of Water Supply (DWS) standards. DWS' standards require 6000 GPD/acre. As a private system, ATA used different design criteria which amounted to an average of 3860 GPD per acre for the lots. This is relatively close to the 4000 GPD/acre standard used by all other municipal water systems in the state.

Assuming 85 percent of the gross area of Waiko Industrial Park is lots (the remainder being roadways), applying 4000 GPD/acre for this net lot area, and adding an allowance of 15,000 GPD for roadway landscape irrigation results in a total average demand of 139,890 GPD:

$$31.2224 \text{ Ac.} \times 4000 \text{ GPD/acre} + 15{,}000 \text{ GPD} = 139{,}890 \text{ GPD}$$

With 139,890 GPD for Waiko Industrial Park, the total average demand for both subdivisions would be 222,890 GPD. The maximum day supply requirement, defined as 1.5 times the average demand (DWS' standard, also used by ATA), amounts to 334,335 GPD. Several different design criteria to size well pumping capacity could be used to meet this maximum day amount. These criteria are:

1. Provide the maximum day demand in a 16-hour pumping day with the largest well out of service. This is a criterion of Maui DWS which was used, in part, by ATA.

2. Provide the maximum day demand in a 24-hour pumping day with the largest well out of service. This criteria is used by the Hawaii and Kauai County municipal systems, as well as by most private water systems in the state.

3. Provide the maximum day demand in a 19-hour pumping day. This is a pragmatically adopted criterion of several private water systems that have very deep wells (pumping lifts of more than 1000 feet). This criterion limits pumping to off-peak hours in order to get a lower rate schedule from the power utility.

For Consolidated Baseyard, ATA applied Criterion 1 to the largest of its two wells (resulting in a required 130 GPM), but not to the smaller well as the standard would require. In other words, the ATA design does not provide full standby capacity. For both subdivisions combined, the three sizing criteria result in the following required well pumping capacities for each of the Consolidated Baseyard wells:

Criterion	Required Pumping Capacity (GPM)
1	348
2	232
3	293

In my opinion, Criterion 1 is overly conservative and Criterion 3 is not necessary as pumping costs are very modest for this system. Criterion 2, requiring 232 GPM from each of the wells to provide full back up capacity, is more than acceptable. For the balance of the assessment herein, a requirement of 235 GPM from each well is used.

Hydraulic Capacities of the Consolidated Baseyard Wells

Figures 2 and 3 are reproductions of the well sections prepared by ATA from the information in the drilling contractor's Well Completion Reports. Their respective performances, based on their original step-drawdown tests, are depicted on Figure 4. Although the hydraulic performance of each well was very good, neither was tested at the 235 GPM pumping rate required to accommodate the addition of Waiko Industrial Park. Well 1, the smaller of the two wells with 8-inch casing, was pumped at just 60 GPM. Well 2, with larger 10-inch casing, was tested at 150 GPM. Figure 5 depicts extrapolations of the step test curves to (and slightly beyond) the 235 GPM pumping requirement. At this required rate, the drawdown in Well 1 would be about 2.0 feet. In Well 2, it would be about 2.3 feet. Both of these drawdowns would primarily be turbulent loss rather than an actual aquifer response. The wells do have adequate hydraulic capacity to supply both subdivisions.

Long-Term Salinity of the Consolidated Baseyard Wells at Increased Pumping Rates

The constant rate pump test of Well 1 in 2001 was at 60 GPM for 12 hours. Its salinity was stable throughout. Well 2 was tested in 2005 at 100 GPM for 24 hours. Its salinity steadily decreased throughout the test. Samples collected from both wells on February 17, 2011 had lower salinities than the original testing of each well. Pump tests of the nearby A&B Waiale Wells 1 and 2 were run at 550 GPM, producing relatively stable salinities. All of these results suggest that a pumping rate of 235 GPM should be sustainable at a stable and acceptable salinity level.

Present (Year 2010) Use of the Consolidated Baseyard Wells

Figure 6 presents the combined well pumpage of the two Consolidated Baseyard wells through 2010. More than 98 percent of the pumpage was from Well 2, as Well 1 is considered a back up and is run only often enough to keep it functional. The subdivision is now more than half occupied, but the water use is far less than half the design use rate. It is obvious that the design use amount on which the well capacities are based is very conservative. It is unlikely that the actual use at full build out will approach the design capacity.

Conclusions, Recommendations, and Other Observations

1. The addition of water service to the Waiko Industrial Park from the Consolidated Baseyard system would require both of its well pumps to be replaced with new pumps capable of delivering 235 GPM to the system's 0.35 MG, 250-foot (spillway elevation) tank. Both well pumps would be driven by 25-horsepower motors. The pumps presently in Wells 1 and 2 are driven by 7.5- and 15-horsepower motors, respectively.

2. Both wells have adequate hydraulic capacity to deliver 235 GPM to the 250-foot storage tank with only modest drawdowns. The 4-inch pipeline from Well 2 to the tank, of about 500-foot length, could accommodate the higher pumping rate.

3. Based on available data, it appears that long-term salinity will be stable at the increased pumping rate. However, neither well has been used to a significant extent or pumped at the required higher rate. As an assurance that both parties need to have, it would be appropriate to install a 235 GPM pump in one of the wells and run a pump test of a minimum of 72 hours duration to monitor the salinity response.

4. Consolidated Baseyard has a 0.35 MG storage tank. Two sizing criteria were applied by ATA to determine the tank's size. As indicated below, applying these two criteria with the addition of Waiko Industrial Park will not require additional storage.

   Criterion 1. Provide the maximum day demand would no credit for well inflow.

	Max. Day Amount (MG)
Consolidated Baseyard	0.1245
Waiko Industrial Park	0.2083
Combined Total	0.3328 (less than 0.35 MG)

Criterion 2. Provide a 2000 GPM fire flowrate for two-hour duration with coincident maximum day demand, the largest well out of service, and the reservoir 3/4 full at the start of the fire.

Consolidated Baseyard:

$$\left[\frac{124{,}500(2)}{24} + (2000)(120) - (60)(120)\right] x \frac{4}{3} = 324{,}233 \text{ Gallons (less than 0.35 MG)}$$

Addition of Waiko Industrial Park:

$$\left[\frac{332{,}800(2)}{24} + (2000)(120) - (235)(120)\right] x \frac{4}{3} = 319{,}378 \text{ Gallons (also less than 0.35 MG)}$$

5. DOH will not allow individual wastewater disposal systems (cesspools or leach fields) within 1000 feet of either of the Consolidated Baseyard drinking water wells. Many of the Waiko Industrial Park lots are inside these 1000-foot set back distances (Figure 7). Consolidated Baseyard dealt with this issue by requiring advanced septic systems for each lot and delivery of the effluent from these septic systems to a common leachfield in the southeast corner of the subdivision. A similar accommodation will be required of the Waiko Industrial Park.

Attachments

Appendix V

Proposal Letter to Consolidated Baseyard to Use Its Private Water System

Letter from Consilidated Baseyards Association Supporting Connection and Use of Existing Source and Storage Systems for Waikō Baseyard

PACIFIC RIM LAND, INC.

July 5, 2011

Mr. David Ward
Consolidated Baseyards
Frampton & Ward
2073 Wells Street, Room 101
Wailuku, HI 96793

Subject: Waiko Baseyard ("WB") Light Industrial Project proposed connection and use of the Existing Consolidated Baseyard ("CB") Water Source & Storage System

Dear Mr. Ward:

I am writing to you on behalf of Waiko Industrial Investments, LLC, the owner of a 31.22 acre parcel located immediately adjacent to the Consolidated Baseyard Subdivision 35 lot Subdivision. On behalf of the owners of WB, we are presently in the process of preparing the land use entitlement applications to develop the WB property as a light industrial/commercial subdivision consisting of approximately 38 developable lots. Please see the attached conceptual site plan of proposed project.

The purpose of this letter is to explore with you the possibility of utilizing the private water source developed for the Consolidated Baseyard as a water source and storage system for the WB project. We believe this proposed arrangement will benefit both parties by allowing the use of an existing system to serve additional light industrial activity and assist the current owners of the CB system by reducing long term maintenance costs and providing improvements to the existing system that will improve its efficiency and utility. Based upon the projection of demand for the CB system, the projected use of water for the WB facility is projected to be 139,000 gpd. Based upon the results of the water source study provide by Mr. Tom Nance discussed below this incremental increase in use is expected to be easily handled by the existing CB water system.

In support of our proposed joint use of the CB water system the WB ownership commissioned Mr. Tom Nance of Tom Nance Water Resource Engineering to conduct a preliminary engineering evaluation of the existing water system with particular attention paid to the ability of the system to adequately and safely provide the water source needed for both the CB and WB projects. The initial findings by Mr. Nance indicate that there is more than adequate capacity to provide water services to both projects subject to the following recommendations:

- As an assurance to ensure long-term stability/quality of the existing wells at the increased pumping rate necessary to serve both projects, it is recommended in Mr. Nance's preliminary engineering analysis to install a temporary 235 GPM pump in one of the wells and run a pump test of a minimum of 72 hours duration to monitor the water quality response to that pumping regimen. Factors to be reviewed will be drawdown, temperature, salinity, etc. and all results will be shared with you. It is

P.O. Box 220 • Kihei, HI • 96753 • 808.874.5263 • Fax 808.879.2557

expected this test will prove the capacity of the resource and assure CB of the ability of the system to serve both projects.

- The addition of water service to the proposed WB subdivision from the CB system would require both of the existing well pumps be replaced with new pumps capable of delivering 235 GPM to the system's 0.35 MG, 250-foot (spillway elevation) tank. Both well pumps will be driven by 25-horsepower motors. The pumps presently in wells 1 and 2 are driven by 7.5- and 15-horsepower motors, respectively. These improvements will be permitted and installed at no cost to the CB owners.

All of the costs associated with the above recommendations and any other improvements necessary to the existing water system that may be required to satisfy the current users or governmental requirements will be borne by the WB ownership and at no expense to the current system ownership.

As part of our analysis of the existing CB system, we have reviewed the system's budget as reported to the CB owners association and find that the current CB owners' water reserve infrastructure replacement and service maintenance fees will be substantially reduced through the additional WB users and after improvements are made to the existing system to accommodate such use. One way to quickly improve the long term financial protection for the system would be to directly contribute funds to the CB water reserve collection as part of the approval to use the system. The actual amount of the contribution and timing of the contribution would need to be discussed and agreed upon.

As noted above, having WB connect to and use CB's existing water source and storage systems will we believe result in a long-term benefit for both parties. We appreciate your consideration of this proposal and look forward to discussing your thoughts and ideas on how WB can assist you in making a decision on this joint use in the near term. Please feel free to contact me as soon as you have had a chance to review this letter and proposed actions provided for herein.

Sincerely,

Charles Jencks
Manager

CONSOLIDATED BASEYARDS ASSOCIATION

August 30, 2011

Mr. Charles Jencks
Pacific Rim Land, Inc.
PO Box 220
Kihei, HI 96753

Re: Waiko Baseyard ("WB") Light Industrial Project proposed connection and use of the Existing Consolidated Baseyard ("CB") Water Source and Storage Systems

Dear Charlie,

Thank you for your letter dated July 5, 2011 outlining the proposed expansion of the Consolidated Baseyards water system. In our meeting of July 14th we met to further discuss your proposed Waiko Light Industrial project and to discuss your proposed joint use of the CB water system. In general, it is appropriate to state that CB supports your proposal for joint use based upon the concept that spreading the overall operational cost over a broader number of users will help all of the users manage their water use fees and the long term support of the private system. With that said, however, there are concerns with regard to the system that must be addressed before any formal agreement can be finalized between CB and the Waiko ownership. The following summarizes those general issues that we discussed and addressed in your letter:

- In our discussion we both agreed that a contribution to the current water system ownership on an agreed to pro-rata basis would be necessary for CB to support use of the system and we also agreed that the basis for the contribution would be the cost to develop the current system. We would appreciate your providing to CB a proposal for such a capital contribution and how and when that contribution would be provided.
- In order to assure CB that the existing system is capable of the proposed joint use, Waiko will initiate testing of the system to include installation of a larger pump with an extended pumping regimen to establish the system's capability in terms of quantity and quality. All of this testing will of course be at Waiko's cost with the results provided to CB for review once completed. Before CB can authorize such testing you will need to provide supporting information on how the current system will be repaired if damaged, when the testing will occur, how any loss of service will be addressed, etc.
- Based upon the test results, a proposal for capital improvements (CIP) to the system at Waiko's sole cost will be provided to CB. The CIP will address all of the improvements

necessary to achieve a successful joint use approval by all relevant government agencies and include a description of the improvements, cost, permitting necessary and timing.

- If indeed the system has the capability to provide for the proposed joint service, a joint service agreement will be drafted by Waiko for review by CB providing for all of the essential terms and conditions for joint use including authorizations, permit processing, entitlement support, capital improvement costs and budget analysis identifying the costs and benefits to CB.

The Board of Directors of Consolidated Baseyards Association has reviewed and approved this letter. As stated in our meeting, we think there are benefits to CB for this proposed joint use as well as the opportunity to assist Waiko in its efforts to add to the inventory of light industrial properties here in central Maui. We look forward to your response to this letter and should you require any assistance in the processing of your entitlement documents as they relate to water system use please do not hesitate to contact CB for support.

Sincerely,
Consolidated Baseyards Association

David Ward
President

Cc: Commercial Properties of Maui Management

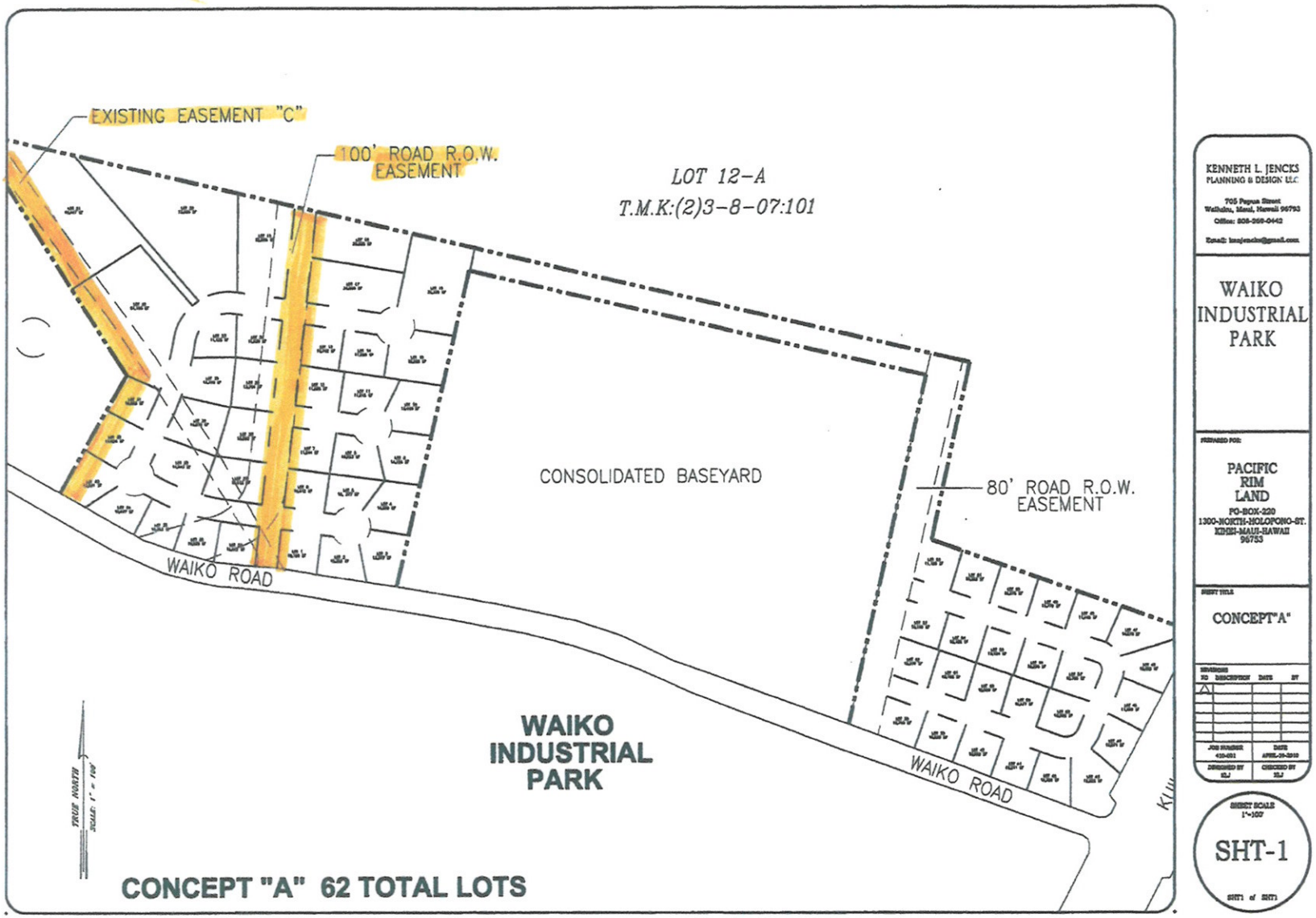


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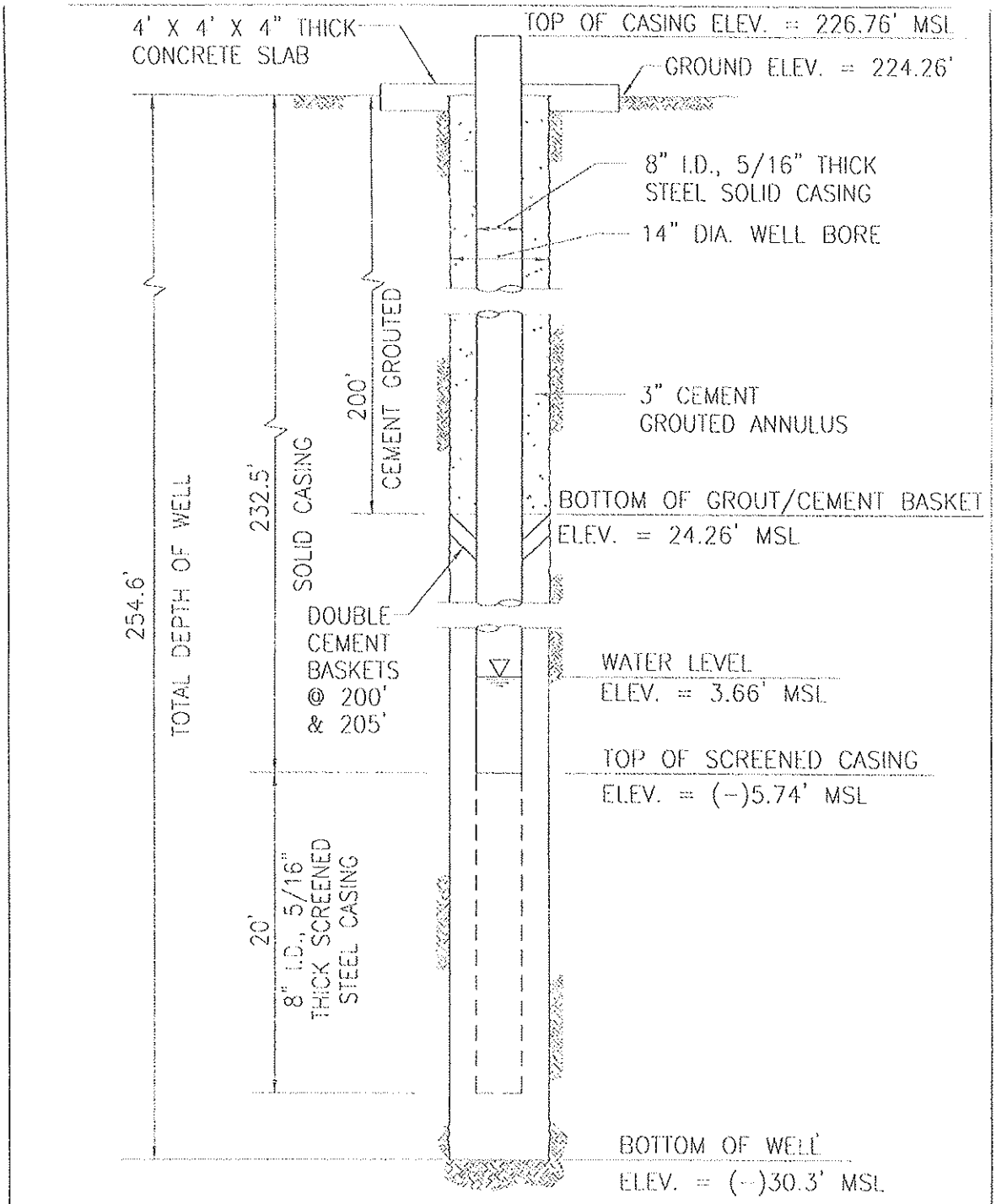
Figure 1
Proximity of Waiko Industrial Park to the
Consolidated Baseyard Subdivision



CONSOLIDATED BASEYARDS, LLC
ENGINEERING REPORT FOR
NEW POTABLE WATER SOURCES
CONSOLIDATED BASEYARD SUBDIVISION
WAIKAPU, MAUI, HAWAII

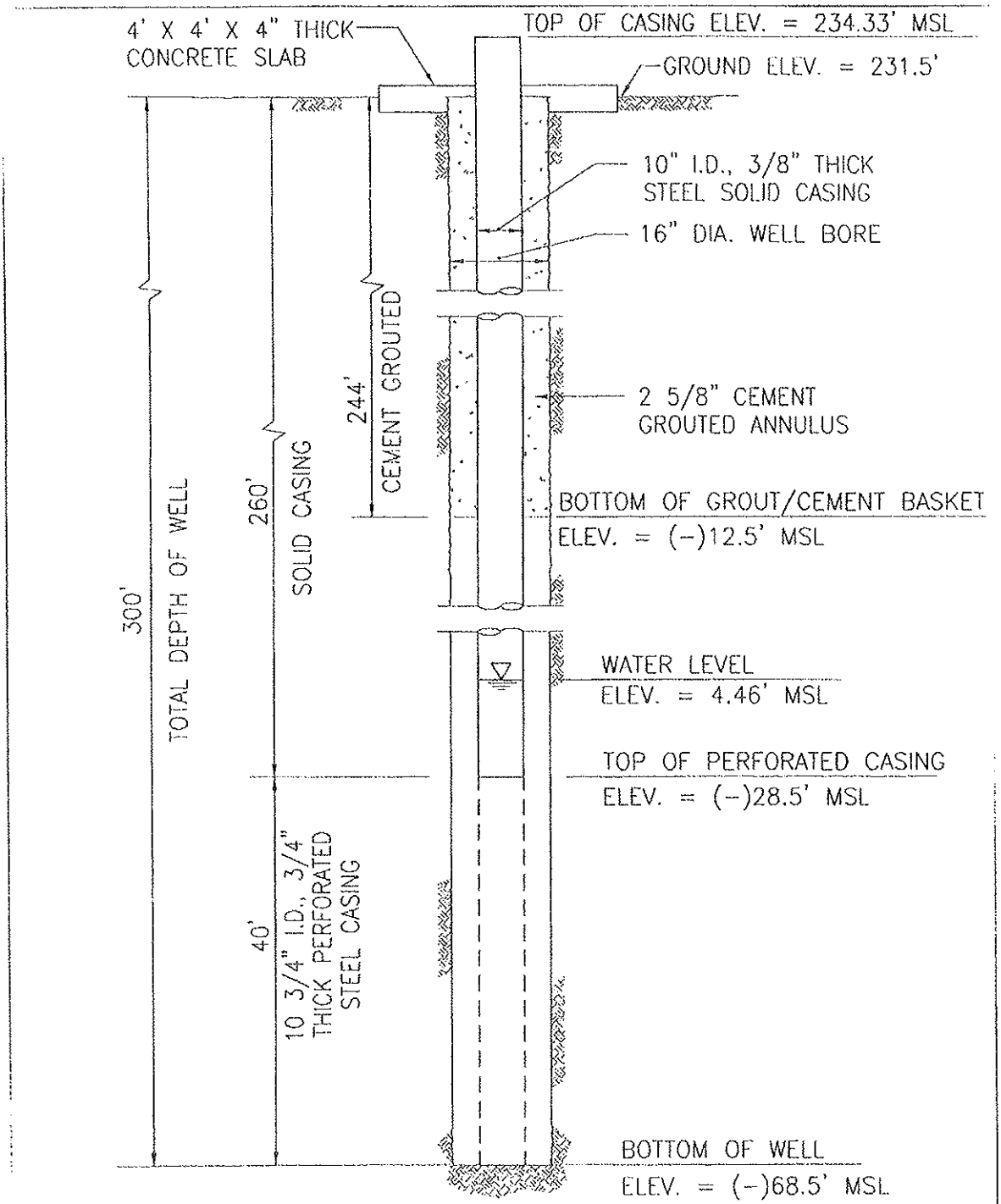
AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS HONOLULU, HAWAII

WELL NO. 1 SECTION

EXHIBIT 8

m_11-062 | 11-08

Figure 2



CONSOLIDATED BASEYARDS, LLC
ENGINEERING REPORT FOR
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CONSOLIDATED BASEYARD SUBDIVISION
WAIKAPU, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

WELL NO. 2 SECTION

EXHIBIT 9

m_11-062 | 11-08

Figure 3

FIGURE 4. HYDRAULIC PERFORMANCE OF CONSOLIDATED BASEYARD WELLS 1 AND 2 BASED ON THEIR STEP-DRAWDOWN PUMP TESTS

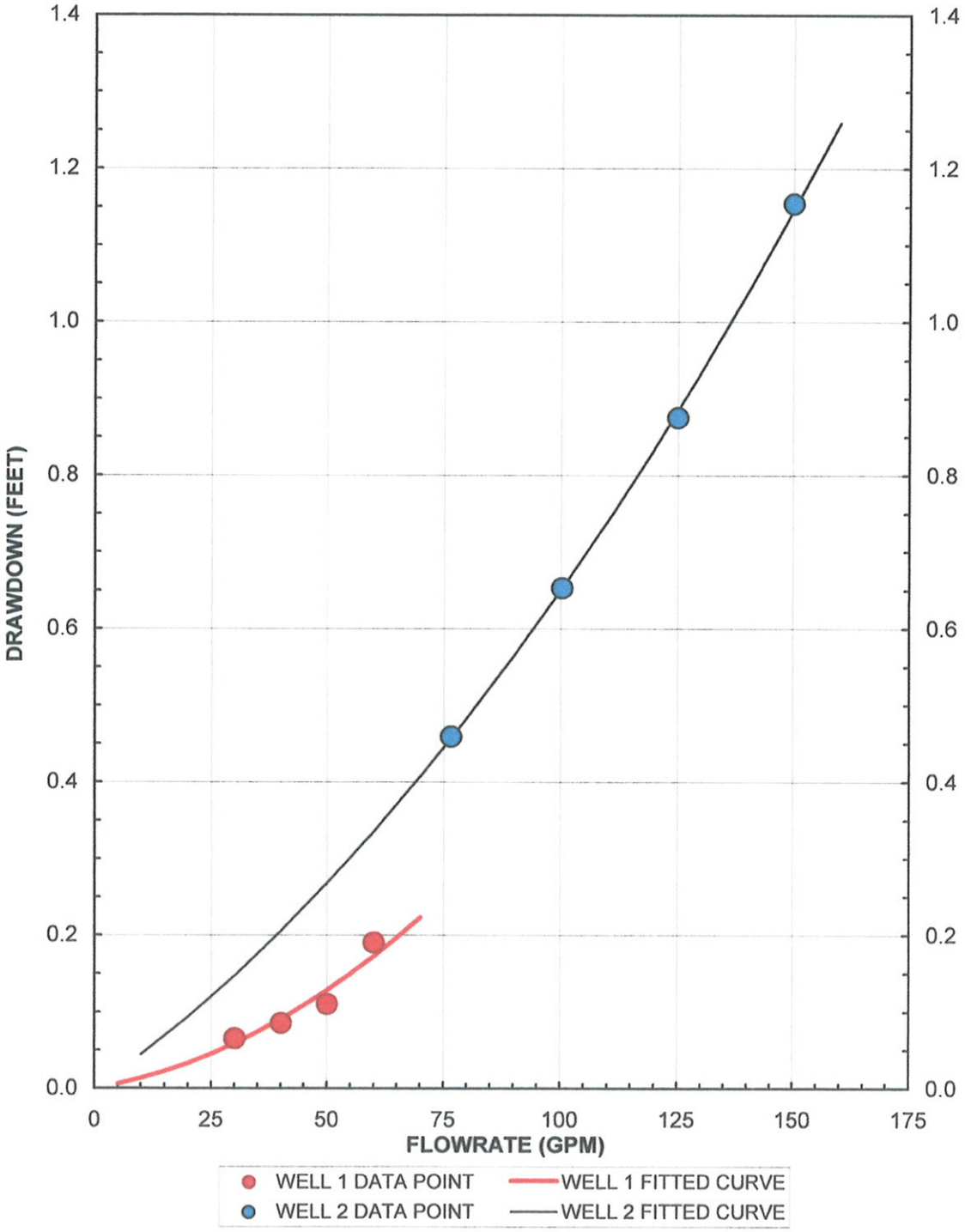


FIGURE 5. EXTRAPOLATED HYDRAULIC PERFORMANCE OF THE CONSOLIDATED BASEYARD WELLS 1 AND 2

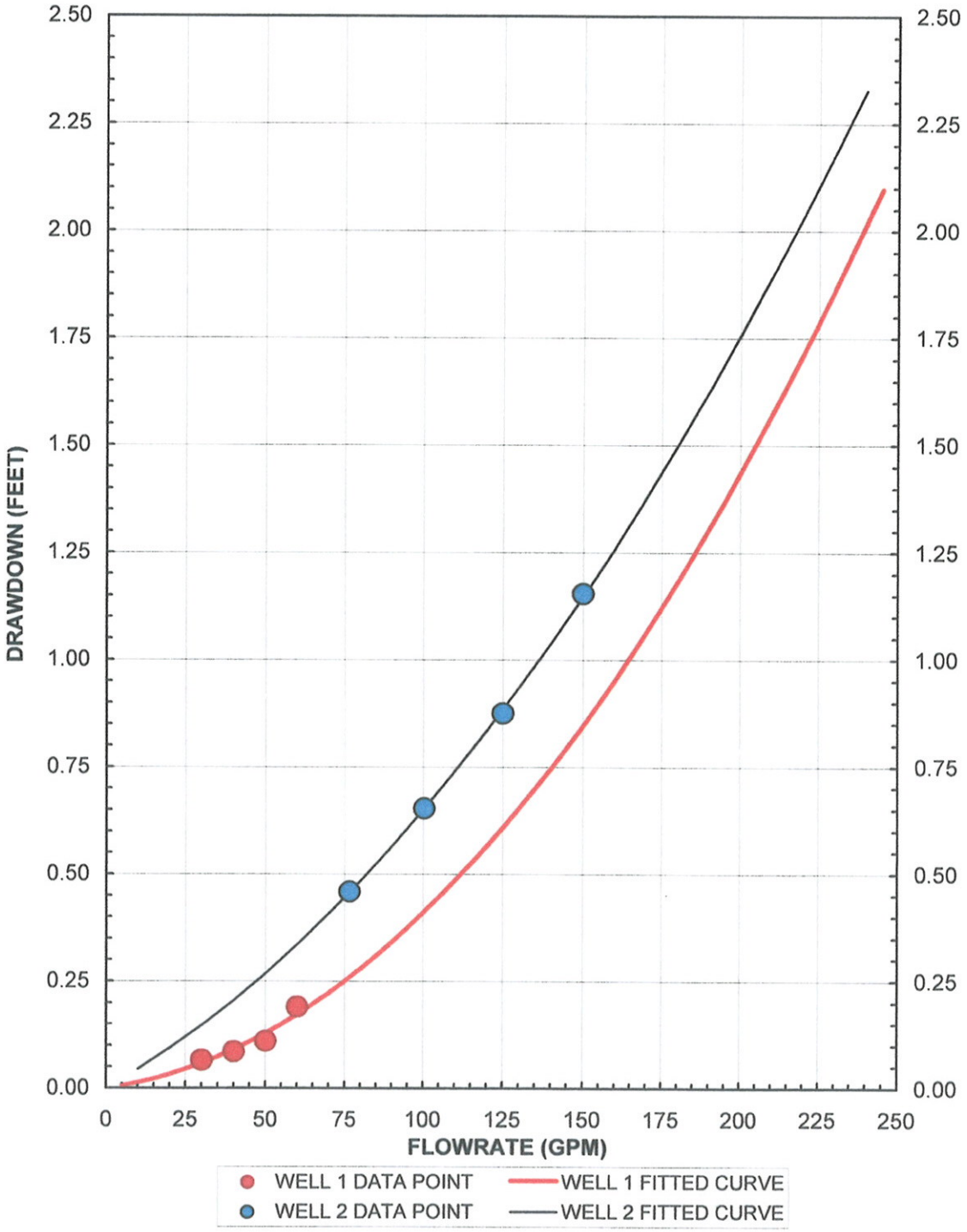
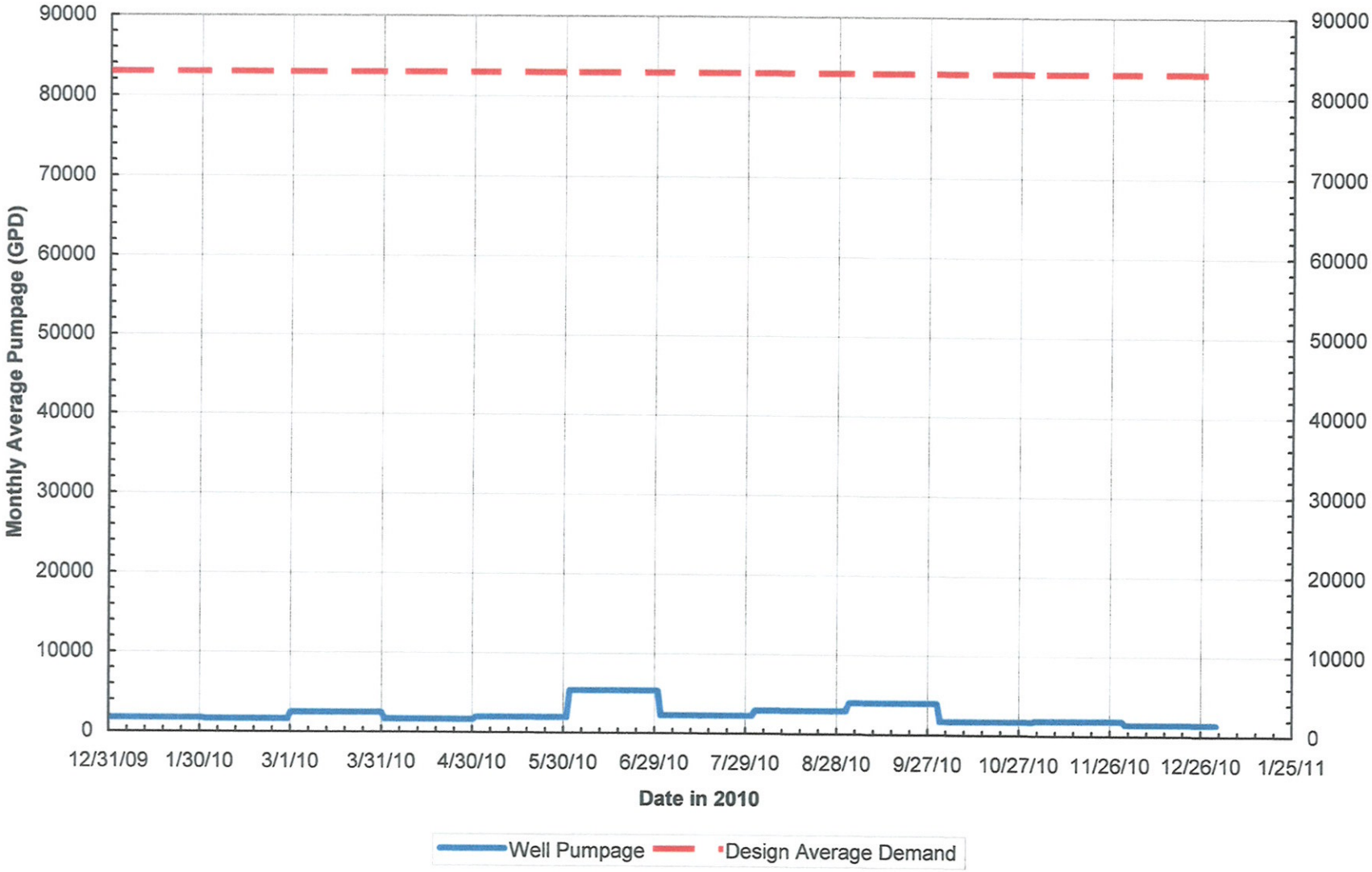


Figure 6. Monthly Average Pumpage of the Consolidated Baseyard Wells in 2010



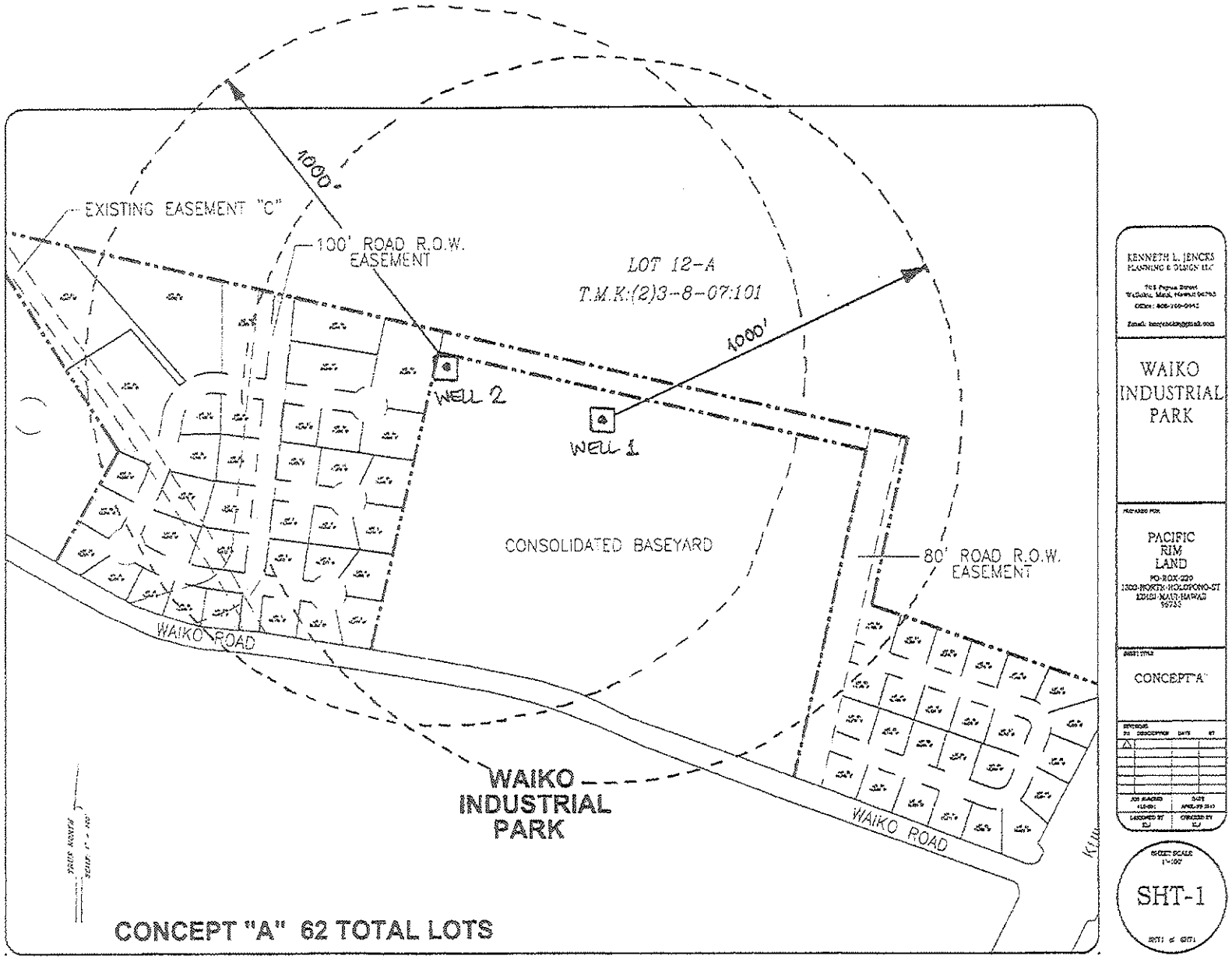


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Figure 7
1000-Foot Setbacks From
Consolidated Baseyard Wells 1 and 2

Appendix W

Conditional Permit

ORDINANCE NO. 3735

BILL NO. 23 (2010)

A BILL FOR AN ORDINANCE AMENDING ORDINANCE NO. 3001 (2001), TO GRANT A CONDITIONAL PERMIT TO FONG CONSTRUCTION COMPANY, LIMITED, IN ORDER TO OPERATE A COMMERCIAL BASEYARD PRIMARILY FOR BUSINESS WITHIN THE CONSTRUCTION INDUSTRY WITHIN THE COUNTY AGRICULTURAL DISTRICT FOR PROPERTY SITUATED AT WAIKAPU, MAUI, HAWAII

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Pursuant to Chapter 19.40, Maui County Code, the Conditional Permit granted by Ordinance No. 3001 (2001), is amended by amending Section 1 to read as follows:

"SECTION 1. Pursuant to Chapter 19.40 , [of the] Maui County Code, a Conditional Permit is hereby granted to [Consolidated Baseyards, LLC,] Fong Construction Company, Limited, subject to the conditions imposed in Section 2 of this ordinance, for the operation of a commercial baseyard within the County Agricultural District. The site is identified for real property tax purposes by TMK: (2) 3-8-007:por. 102, and is comprised of approximately 11.836 acres of land, situated at Waikapu, Maui, Hawaii. The subject property sits astride property identified for real property tax purposes as TMK: (2)3-8-007:089 ("parcel 89") on the north side of Waiko Road, with 7.836 acres of the subject property located at the corner of Waiko Road and Kuihelani Highway and 4.000 acres of the subject property located on the opposite side of parcel 89."

SECTION 2. Ordinance No. 3001 (2001) is amended by amending Section 2 to read as follows:

"SECTION 2. The granting of this Conditional Permit is subject to the following conditions:

1. That full compliance with all applicable governmental requirements shall be rendered.

2. That the Conditional Permit shall be valid [until September 30, 2004] until March 1, 2019; provided, that[,] an extension of this period may be granted pursuant to Section 19.40.090, [of the] Maui County Code.

3. That the Conditional Permit shall be nontransferable[.] unless the Council approves the transfer by ordinance.

4. That [Consolidated Baseyards, LLC,] Fong Construction Company, Limited, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject Conditional Permit and shall procure at its own cost and expense, and shall maintain during the entire period of this Conditional Permit, a policy or policies of comprehensive liability insurance in the minimum amount of ONE MILLION AND NO/100 DOLLARS ($1,000,000) naming the County of Maui as an additional [named] insured, insuring and defending [Consolidated Baseyards, LLC] Fong Construction Company, Limited and County of Maui against any and all claims or demands for property damage, personal injury and/or death arising out of this [permit] Conditional Permit, including but not limited to: (1) claims from any accident in connection with the permitted use, or occasioned by any act or nuisance made or suffered in connection with the permitted use in the exercise by [Consolidated Baseyards, LLC] Fong Construction Company, Limited of said rights; and (2) all actions, suits, damages and claims by whomsoever brought or made by reason of the non-observance or non-performance of any of the terms and conditions of this [permit] Conditional Permit. A copy of [a policy] the certificate of insurance naming County of Maui as an additional [named] insured shall be submitted to the [department] Department of Planning within ninety (90) calendar days from the effective date of this ordinance.

5. That this Conditional Permit shall be limited to the storage of equipment and materials, minor services of said equipment, and offices appurtenant to such uses. No retailing or other sales activities shall be permitted except for limited sales accessory to the principal permitted use. Structures shall be allowed to protect material and equipment as appropriate.

6. That [the permit holder] Fong Construction Company, Limited fully comply with the conditions established under the State Land Use Commission Special Use Permit No. SP94-387.

7. That [the permit holder] Fong Construction Company, Limited shall submit to the [Planning Department] Department of Planning annual reports addressing its compliance with the conditions established with the subject Conditional Permit.

8. That Fong Construction Company, Limited shall develop the property in substantial compliance with the representations made to the Maui County Council in obtaining the Conditional Permit. Failure to so develop the property may result in the revocation of the Conditional Permit pursuant to Section 19.40.080 of the Maui County Code."

SECTION 3. Material to be repealed is bracketed. New material is underscored.

SECTION 4. This ordinance shall take effect upon its approval.

APPROVED AS TO FORM
AND LEGALITY:

JAMES A. GIROUX
Deputy Corporation Counsel
County of Maui
S:\CLERICAL\BK\ORDS\CP\fongconstructionlu23.wpd

WE HEREBY CERTIFY that the foregoing BILL NO. 23 (2010)

1. Passed FINAL READING at the meeting of the Council of the County of Maui, State of Hawaii, held on the 19th day of March, 2010, by the following vote:

Dennis A. MATEO Chair	Michael J. MOLINA Vice-Chair	Gladys C. BAISA	Jo Anne JOHNSON	Solomon P. KAHO'OHALAHALA	William J. MEDEIROS	Wayne K. NISHIKI	Joseph PONTANILLA	Michael P. VICTORINO
Excused	Aye	Aye	Aye	Aye	Aye	Aye	Aye	Aye

2. Was transmitted to the Mayor of the County of Maui, State of Hawaii, on the 22nd day of March, 2010.

DATED AT WAILUKU, MAUI, HAWAII, this 22nd day of March, 2010.

RECEIVED
2010 MAR 22 AM 8:41
OFFICE OF THE MAYOR

MICHAEL J. MOLINA, VICE-CHAIR
Council of the County of Maui

JEFFREY T. KUWADA, COUNTY CLERK
County of Maui

THE FOREGOING BILL IS HEREBY APPROVED THIS 24th DAY OF March, 2010.

CHARMAINE TAVARES, MAYOR
County of Maui

I HEREBY CERTIFY that upon approval of the foregoing BILL by the Mayor of the County of Maui, the said BILL was designated as ORDINANCE NO. 3735 of the County of Maui, State of Hawaii.

JEFFREY T. KUWADA, COUNTY CLERK
County of Maui

Passed First Reading on March 5, 2010.
Effective date of Ordinance March 24, 2010.

RECEIVED
2010 MAR 25 AM 9:31
OFFICE OF THE
COUNTY CLERK

I HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. 3735, the original of which is on file in the Office of the County Clerk, County of Maui, State of Hawaii.

Dated at Wailuku, Hawaii, on

County Clerk, County of Maui

Appendix X

Draft Maui General Plan

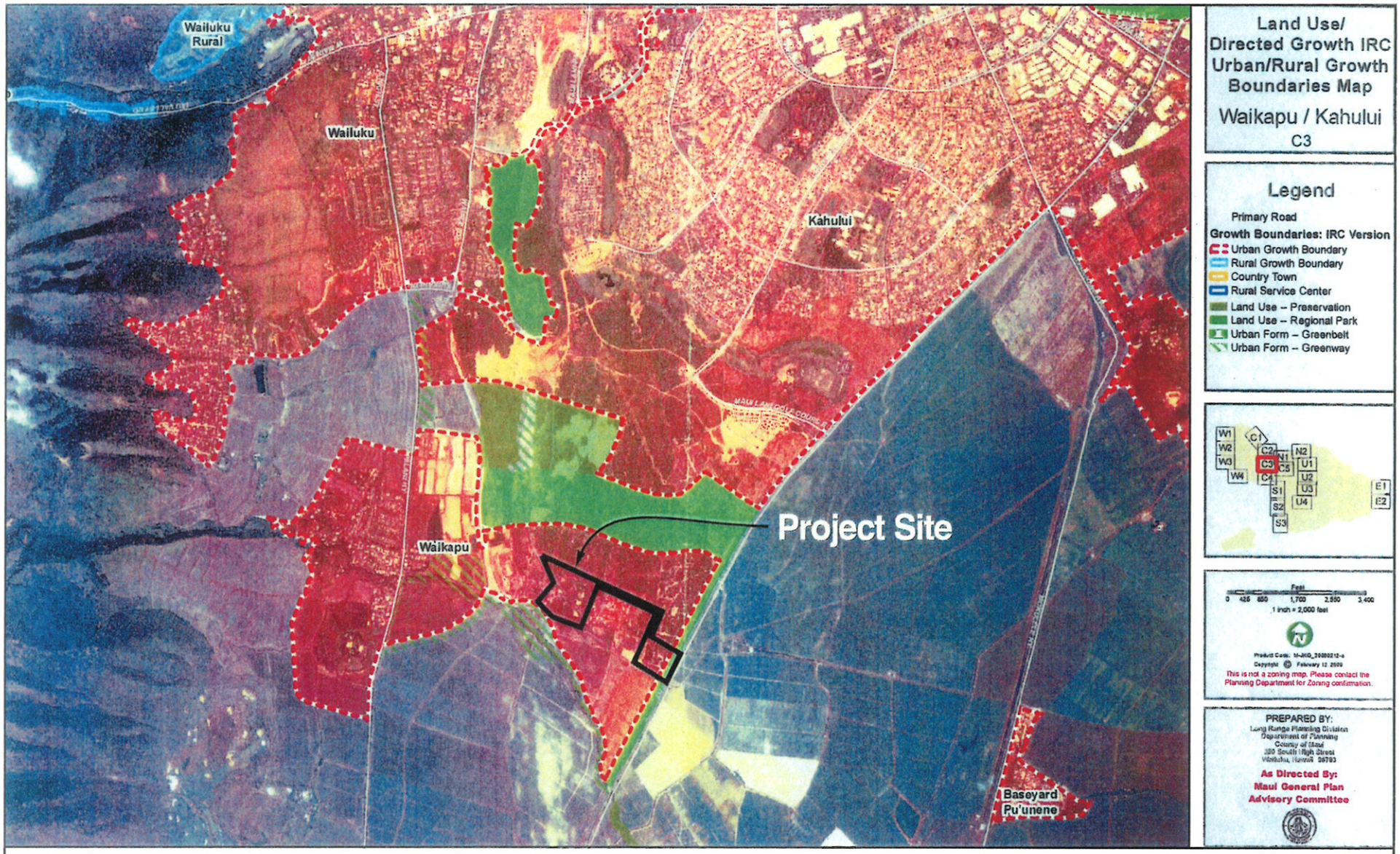


Figure ___

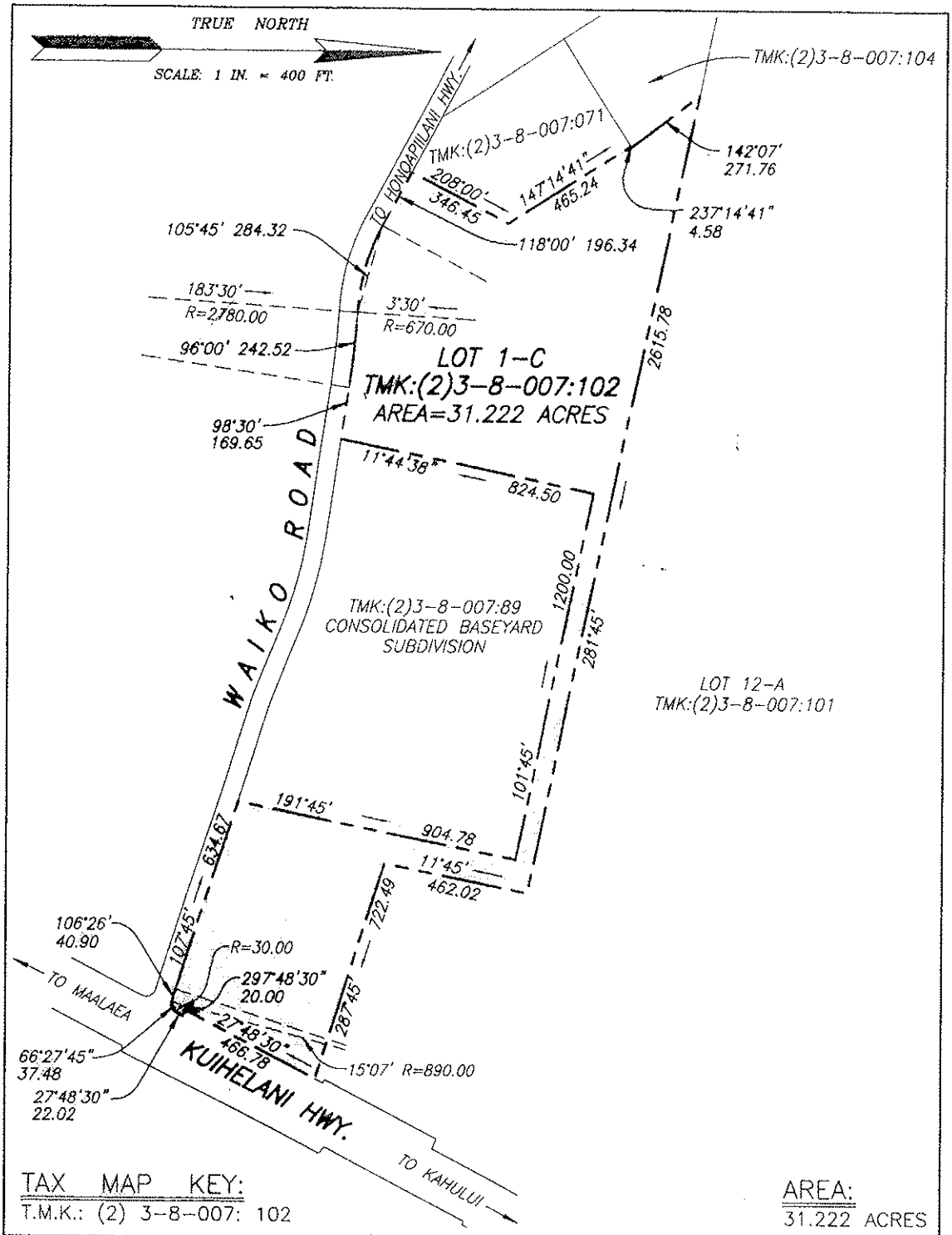
Prepared for:
Waikō Industrial Investment, LLC

Waikō Baseyard Light Industrial Subdivision
TMK (2) 3-8-007-102
Proposed General Plan

BAGOYO
DEVELOPMENT
CONSULTING GROUP

Appendix Y

Mylar Map



TAX MAP KEY:
T.M.K.: (2) 3-8-007: 102

AREA:
31.222 ACRES

COMMUNITY PLAN MAP NO.

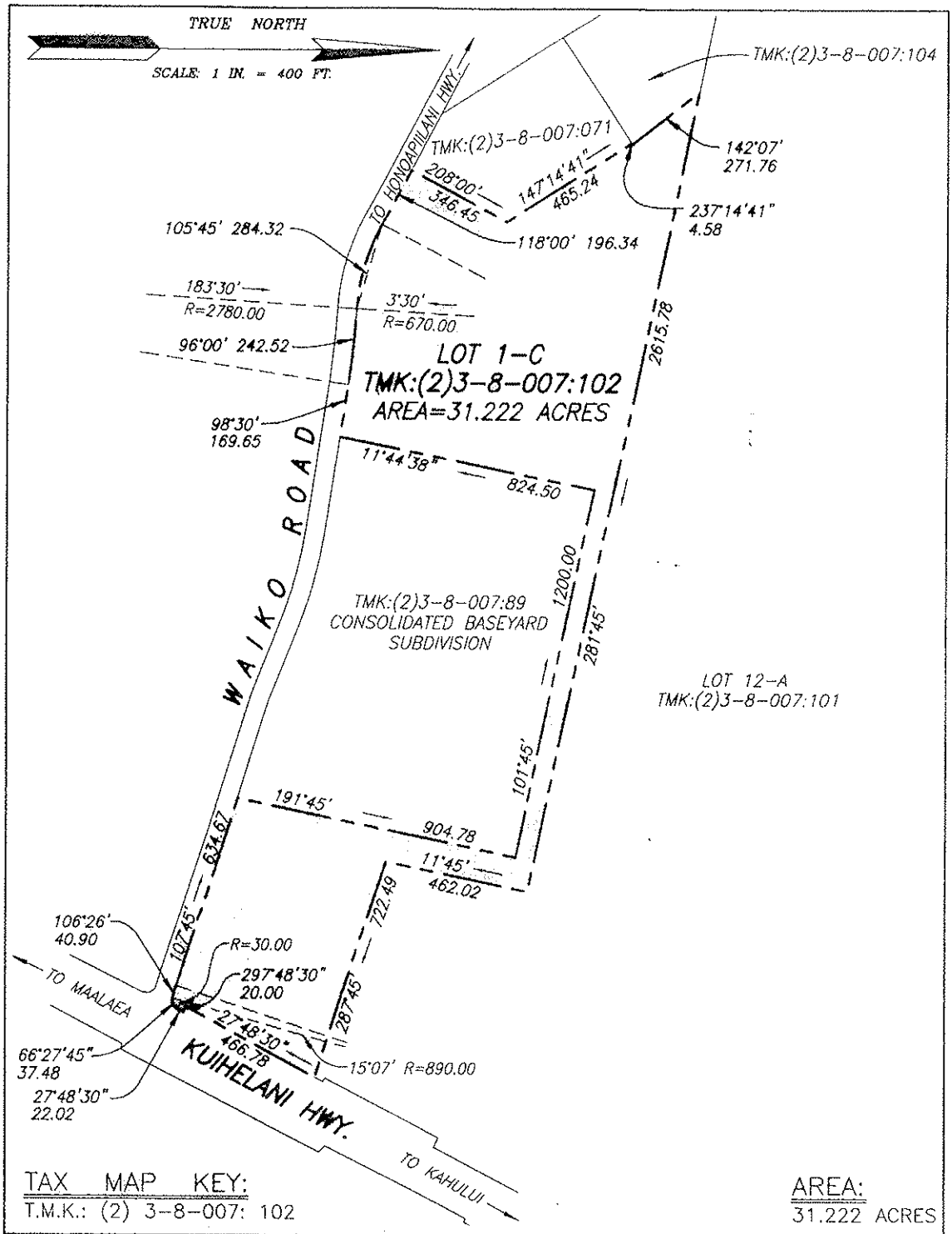
COMMUNITY PLAN AMENDMENT – WAILUKU, MAUI, HAWAII

FROM AGRICULTURE TO LIGHT INDUSTRIAL

APPROVED: _____ COUNTY CLERK	PUBLIC HEARING: ADOPTED – COUNCIL: ADOPTED – MAYOR: ORDINANCE NO.:
APPROVED: _____ PLANNING DIRECTOR	DATE: / SCALE: 1"=400'

OFFICE OF THE COUNTY CLERK

200 S. HIGH STREET, WAILUKU, MAUI, HAWAII 96793 CP–



TAX MAP KEY:
T.M.K.: (2) 3-8-007: 102

AREA:
31.222 ACRES

LAND ZONING MAP NO.

CHANGE IN ZONING – WAILUKU, MAUI, HAWAII

FROM AGRICULTURE TO M-1 LIGHT INDUSTRIAL

APPROVED: _____ COUNTY CLERK	PUBLIC HEARING: ADOPTED – COUNCIL: ADOPTED – MAYOR: ORDINANCE NO.:
APPROVED: _____ PLANNING DIRECTOR	DATE: / SCALE: 1"=400'

OFFICE OF THE COUNTY CLERK

200 S. HIGH STREET, WAILUKU, MAUI, HAWAII 96793

Appendix Z

Topographic Map

Appendix ZZ

Government Agencies and Community Organizations Contacted for this Proposed Project

Government Agencies and Community Organizations Contacted for this Proposed Project

1. Maui Planning Department
2. Maui Department of Water supply
3. Maui Department of Public Works
4. State Historic Preservation Division—
   State Department of Land and Natural Resources
5. State Department of Business,
   Economic Development & Tourism
6. State Department of Health
7. State Department of Transportation,
   Highways Division
8. Waikapū Community Association
9. Office of Hawaiian Affairs (OHA)
10. Human Concerns and Housing Department

Appendix ZZZ

Notice of Applications and Notarized Affidavit of Mailing of Notice of Applications

NOTARIZED AFFIDAVIT OF MAILING OF NOTICE OF APPLICATION

Vince G. Bagoyo, being first duly sworn on oath, deposes and says that:

a. Affiant is the Applicant for a Community Plan Amendment for land situated at: Waiko Road, Wailuku, Hawaii, TMK: (2) 3-8-007:102.

b. Affiant did on April 28, 2011, deposit in the United States mail, post paid, a copy of a *Notice of Application* with the *location map*, a copy of which is attached hereto as "Exhibit A" and made a part hereof, addressed to each of the persons identified in the list of recorded owners and lessees identified as "Exhibit B", attached hereto and made a part hereof.

Further Affiant sayeth naught:

Vince G. Bagoyo

subscribed and sworn to before me this 28th day of Sept, 2011.

KIM MACADANGDANG NOTARY PUBLIC No. 03-189 STATE OF HAWAII

Kim Macadangdang

Notary Public, State of Hawaii

KIM MACADANGDANG
My Commission expires 3/30/2015

My commission expires:

Document Date: 9/28/11 # Pages: 1

Notary Name: KIM MACADANGDANG Second Circuit

Doc. Description: Notarized Affidavit of Mailing of notice of Appl.

Kim Macadangdang 9/28/11
Notary Signature Date

KIM MACADANGDANG NOTARY PUBLIC No. 03-189 STATE OF HAWAII

NOTICE OF APPLICATION

Date: 9-28-11

TO: OWNERS/LESSEES

Please be advised that the undersigned has filed an application for a **Community Plan Amendment** with the County of Maui, Department of Planning to change the Community Plan land use designation(s) for the following parcel(s):

1. Tax Map Key Number: (2) 3-8-007:102 (see attached *location map*)
2. Location (street address): Waiko Road, Wailuku, Hawaii
3. Existing Land Use Designations:

   State Land Use District: Agriculture

   Community Plan: Agriculture

   County Zoning: Agriculture

   Other: None
4. Proposed Community Plan Designation: Light Industrial (M-1)
5. Description of the existing uses on the Property: Agriculture (horse pasture) and approx. 4-acre Conditional and SUP Permits Industrial Use
6. Description of the proposed uses on the Property: 41-Lot Light Industrial Subdivision and commercial Use

The Applicant is responsible for ensuring accuracy of the information.

Waiko Industrial Investment, LLC	V. Bagoyo Development Group
Owner/Applicant	Applicant (if not also Owner)
Signature	Signature
P.O. Box 220	1500 Kilinoe Place
Mailing Address, No. & Street or PO Box	Mailing Address, No. & Street or PO Box
Kihei, Hawaii 96753	Wailuku, Hawaii 96793
City, State, Zip Code	City, State, Zip Code
(808) 874-5263	(808) 357-3842
Telephone	Telephone

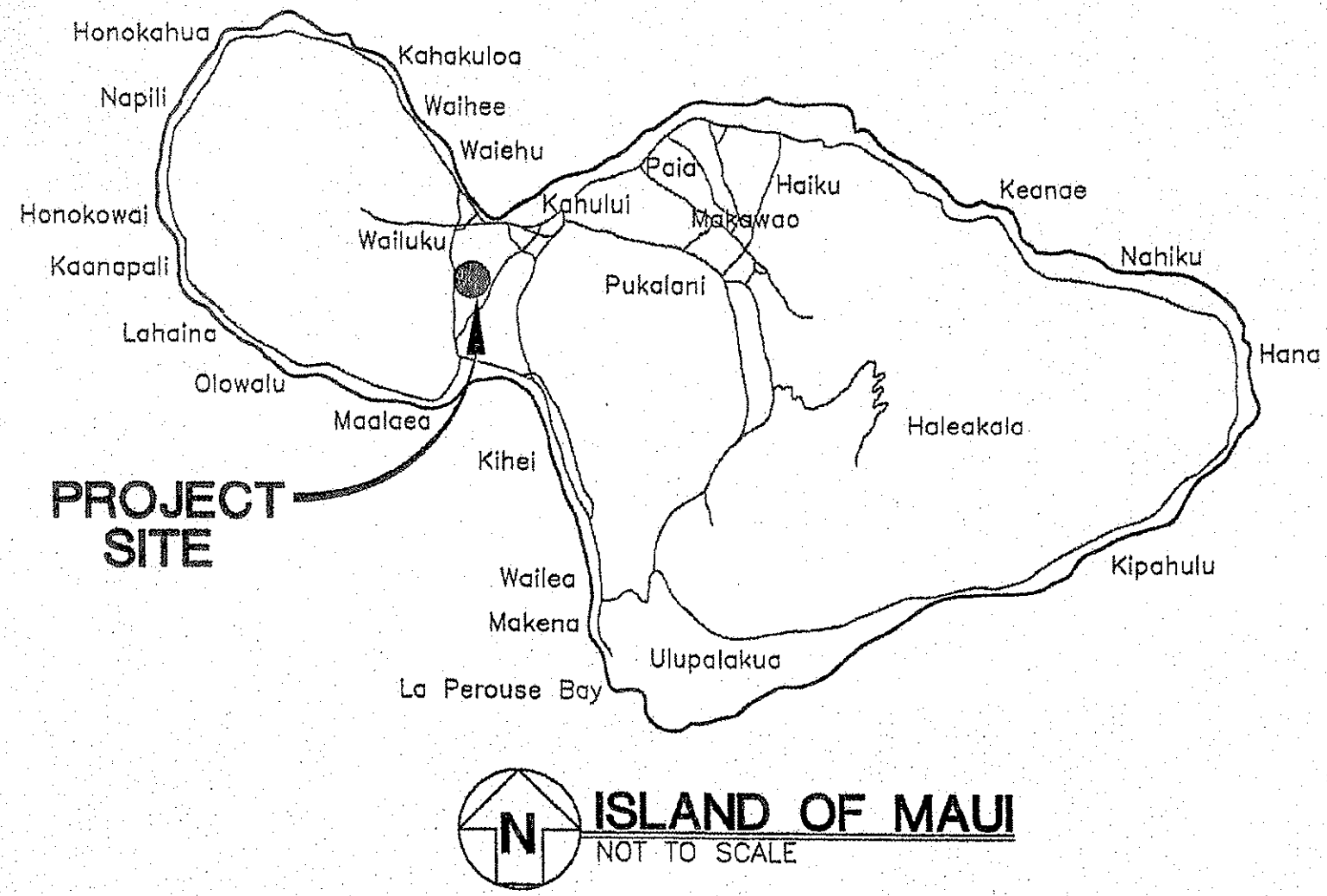


Figure C

Prepared for:
Waikō Industrial Investment, LLC

Waikō Baseyard Light Industrial Subdivision
TMK (2) 3-8-007-102
Location Map

BAGOYO
DEVELOPMENT
CONSULTING GROUP

NAME AND ADDRESS OF SENDER

Indicate type of mail
☐ Registered ☐ Return Receipt For Merchandise
☐ Insured
☐ COD
☐ Certified ☐ Express Mail

Check appropriate block for Registered Mail:
☐ With Postal Insurance
☐ Without Postal Insurance

Affix stamp here if issued as certificate of mailing or for additional copies of this bill.

POSTMARK AND DATE OF RECEIPT

Line	Number of Article	Name of Addressee, Street, and Post-Office Address	Postage	Fee	Handling Charge	Act. Value (If Regis.)	Insured Value	Due Sender If C.O.D.	R. R. Fee	S. D. Fee	S. H. Fee	Rest. Del. Fee / Remarks
1		ICCG Wailea LLC 1258 Kilou Lp Wailuku, Hi 96793										
2		Waikapu Condos I - Condo Master P.O. Box 3124 Kahului, Hi 96732										
3		Bert Shiroma Trust 77 Wiale Dr Ste 102 Wailuku, Hi 96793										
4		Valley Isle Excursions Inc 390 Papa Pl Unit B Kahului Hi 96732										
5		Maui Petroleum Inc 385 Hukilike St. Ste 102 Kahului, Hi 96732										
6		CAIROD LLC 495 Hukilike St #4 Kahului Hi 96732										
7		Pinnacle Consolidated LLC 57 E Makai Pua Pl Lahaina Hi 96761										
8		Waikapu Condos II - Condo Master P.O. Box 3124 Kahului Hi 96732										
9		Waiko Elua Boatyard LLC 77 Wiale Dr. Ste 102 Wailuku Hi 96793										
10		Alpha Par Partners 951 Kailiu Pl Honolulu Hi 96825										
11		Commercial Plumbing Properties LLC 1820 Colburn St Honolulu Hi 96819										
12		CYMK Development LLC P.O. Box 1181 Haiku Hi 96708										
13		CBY-15 LLC P.O. Box L Libertyville IL 60048										
14		Life Electric Inc 50 Kaniela St. Wailuku Hi 96793										
15		Reef Development of Hawaii Inc 98-930 Iwaena St #104 Aiea Hi 96701										

UNITED STATES POSTAL SERVICE

1000

U.S. POSTAGE PAID WAILUKU, HI 96793 SEP 28, '11 AMOUNT

$17.25

00031088-04

WAILUKU HI 96793 SEP 28 PM USPS

WAILUKU HI 96793 SEP 28 PM USPS

Total number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	POSTMASTER, PER *(Name of receiving employee)*
15	15	

The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for nonnegotiable documents under Express Mail document reconstruction insurance is $50,000 per piece subject to a limit of $500,000 per occurrence. The maximum indemnity payable on Express Mail merchandise insurance is $500. The maximum indemnity payable is $25,000 for Registered Mail, $500 for COD and $500 for Insured Mail. Special handling charges apply only to Third- and Fourth-Class parcels.

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*U.S. Government Printing Office: 1988-225-943

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☐ Registered ☐ Return Receipt
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Check appropriate block for Registered Mail:
☐ With Postal Insurance
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POSTMARK AND DATE OF RECEIPT

Line	Number of Article	Name of Addressee, Street, and Post-Office Address	Postage	Fee	Handling Charge	Act. Value (If Regis.)	Insured Value	Due Sender If C.O.D.	R. R. Fee	S. D. Fee	S. H. Fee	Rest. Del. Fee / Remarks
1		Mossdee LLC 19201 Susana Rd. Rancho Dominguez CA 90221										
2		Richard Barreras Trust 860 Elua St. Wailuku Hi 96793										
3		Boatyard 13 LLC 1132 Bishop St. Ste 1600 Honolulu Hi 96813										
4		Maui Storage Space - Condo Mauka 12 Fairway St Paia Hi 96779										
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UNITED STATES POSTAL SERVICE

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U.S. POSTAGE
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96793
SEP 28, 11
AMOUNT
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WAILUKU HI 96793 SEP 28 11 USPS

WAILUKU HI 96793 SEP 28 11 USPS

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4	4	

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Line	Number of Article	Name of Addressee, Street, and Post-Office Address	Postage	Fee	Handling Charge	Act. Value (If Regis.)	Insured Value	Due Sender If C.O.D.	R. R. Fee	S. D. Fee	S. H. Fee	Rest. Del. Fee / Remarks
1		A+B Hawaii Inc P.O. Box 156, Kahului Hi 96732										
2		Lane's Development LLC 530 E Uahi Way, Wailuku, Hi 96793										
3		ABC Development, LLC 815 Waikamilo Rd, Honolulu Hi 96817										
4		Steven Allen 2734 Kaliʻalani St, Pukalani Hi 96768										
5		PFI Realty LP 30315 Longhorn Dr. Canyon Lake, CA 92587										
6		La'a Kea Properties LLC 4444 Little Uwas Rd. Morgan Hill, CA 95037										
7		HD Maui LLC 2308 Pakomaai Dr. Honolulu, Hi 96819										
8		KC Commercial LLC 300 E Uahi Way, Wailuku, Hi 96793										
9		Phillip Feliciano 58 Amala Pl Kahului, Hi 96732										
10		A&D Properties LLC P.O. Box 880687 Pukalani, Hi 96768										
11		Pacific Source Properties Maui LLC 20321 Broadway Ave. Snohomish, WA 98296										
12		Aina Maui Holding Co. LLC 10 Kamalei Ct Kahului Hi 96732										
13		Consolidated Barrgards LLC 2073 Wells St. Ste 101, Wailuku Hi 96793										
14		Dennis Franco P.O. Box 532 Puunene, Hi 96784										
15		Michael Robertson 110 W Uahi Way, Wailuku Hi 96793										

UNITED STATES POSTAL SERVICE

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U.S. POSTAGE PAID WAILUKU, HI 96793 SEP 28, '11 AMOUNT

$17.25

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WAILUKU HI 96793 SEP 28 PM USPS

WAILUKU HI 96793 SEP 28 PM USPS

Total number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	POSTMASTER, PER *(Name of receiving employee)*
15	15	

The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for nonnegotiable documents under Express Mail document reconstruction insurance is $50,000 per piece subject to a limit of $500,000 per occurrence. The maximum indemnity payable on Express Mail merchandise insurance is $500. The maximum indemnity payable is $25,000 for Registered Mail, $500 for COD and $500 for Insured Mail. Special handling charges apply only to Third- and Fourth-Class parcels.

FORM MUST BE COMPLETED BY TYPEWRITER, INK OR BALL POINT PEN

*U.S. Government Printing Office: 1988-225-943

ATTACHMENT A

TO: DATE: 9-28-11

NOTICE OF FILING OF APPLICATION

Check appropriate Line:

x CHANGE IN ZONING (From Ag to M-1 Light Ind.)

___ COUNTY SPECIAL USE

___ PROJECT MASTER PLAN

Please be advised that the undersigned will be applying to the Department of Planning of the County of Maui for the above-referenced application(s) for the following parcel(s):

1. Tax map Key No.: (2) 3-8-007:102
(NOTE: Please attach an 8 ½" x 14" location map)

2. Location (Street Address): Waiko Road, Wailuku, Hawaii

3. Existing Land Use Designations:

a. State Land Use District: Ag
b. Community Plan Designation: Ag
c. County Zoning: Ag

4. Description of the Existing Uses on Property: Ag (horse pasture and approx. 4 acs. on Conditional and SUP permits industrial

5. Description of the Proposed Uses on Property: 41-Lots Light Industrial Subdivision

****

By: Waiko Industrial Investment LLC
(Owner/Applicant)

(Signature)

P.O. Box 220
Kihei, HI 96753
(Address)

(808)874-5263
(Telephone)

Vince G. Bagoyo
(Agent)

(Signature)

1500 Kilinoe Place
Wailuku, HI 96793
(Address)

(808)357-3842
(Telephone)

ATTACHMENT E

NOTARIZED AFFIDAVIT OF MAILING OF
NOTICE OF PUBLIC HEARING

Vince G. Bagoyo, being first duly sworn, on oath, deposes and says:

1. Affiant is the applicant for a CHANGE-IN-ZONING for land situate at WAILUKU, HAWAII, TMK No.: (2) 3-8-007:102

2. Affiant did on APRIL 28, 2011, deposit in the United States mail, postage prepaid, by certified or registered mail, return receipt requested, a copy of a Notice of Hearing with location map, a copy of which is attached hereto as "Exhibit A" and made a part hereof, addressed to each of the persons identified in the list of recorded owners and lessees identified as "Exhibit B," attached hereto and made a part hereof.

3. Thereafter, there was returned to the office of Affiant, the United States Post Office certified or registered mail receipts and return receipts which are attached hereto as "Exhibit C" and made a part hereof.

Further, Affiant sayeth naught.

Subscribed and sworn to before me
this 28 day of Sept, 2011.

KIM MACADANGDANG
My Commission expires 3/30/2015

Notary Public, State of Hawaii
My commission expires: _____

KIM MACADANGDANG
NOTARY PUBLIC
No. 03-189
STATE OF HAWAII