



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
 COUNTY OF MAUI

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October 3, 2012

Gary Hooser, Director
 Office of Environmental Quality Control
 235 South Beretania Street, Suite 702
 Honolulu, Hawaii 96813

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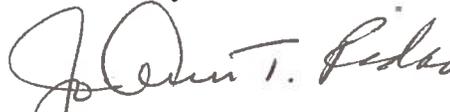
Dear Mr. Hooser:

SUBJECT: Draft Environmental Assessment (EA) For Proposed Kahoma Village Project at TMK (2)4-5-008:001 (Por), Lahaina, Maui, Hawaii OCT 23 2012

The County of Maui Department of Housing and Human Concerns has reviewed the Draft Environmental Assessment (EA) for the subject project, and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish notice of availability for this project in the next available Office of Environmental Quality Control (OEQC) Environmental Notice.

We have enclosed a completed OEQC Publication Form, one (1) hard copy and one (1) pdf copy of the Draft EA. Please call Colleen Suyama of Munekiyo and Hiraga, Inc. at (808) 244-2015 if you have any questions.

Sincerely,


 JO-ANN T. RIDAO
 Director of Housing and Human Concerns

Enclosures

- cc: Stanford Carr, Stanford Carr Development, LLC (w/out enclosures)
- Jay Nakamura, Stanford Carr Development, LLC (w/out enclosures)
- Colleen Suyama, Munekiyo & Hiraga, Inc. (w/out enclosures)

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**AGENCY ACTIONS
SECTION 343-5(B), HRS
PUBLICATION FORM (JULY 2012 REVISION)**

Project Name **Kahoma Village – Draft Environmental Assessment (DEA-AFNSI)**
Island: **Maui**
District: **Lahaina**
TMK: **(2)4-5-008:001 (por.)**
Permits: **201H-38, Hawaii Revised Statutes (HRS) Approval, Special Management Area Permit, Construction Permits**
Proposing/Determination Agency: **Department of Housing and Human Concerns, One Main Plaza, 2200 Main Street, Suite 546, Wailuku, Hawaii 96793, JoAnn T. Ridao, Director, (808) 270-7805**
Consultant: **Munekiyo & Hiraga, Inc., 305 High Street, Wailuku, Hawaii 96793, Colleen Suyama, Senior Associate (808) 244-2015**

Status (check one only):

- DEA-AFNSI** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqc@doh.hawaii.gov); a 30-day comment period ensues upon publication in the periodic bulletin.
- FEA-FONSI** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
- FEA-EISPN** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqc@doh.hawaii.gov); a 30-day consultation period ensues upon publication in the periodic bulletin.
- Act 172-12 EISPN** Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqc@doh.hawaii.gov). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
- DEIS** The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.
- FEIS** The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
- Section 11-200-23 Determination** The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.
- Section 11-200-27 Determination** The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.
- Withdrawal (explain)**

Summary(Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

The proposed Kahoma Village project will consist of 203 units, including 69 single-family dwellings in clusters of two (2) to six (6) dwelling units along a common driveway, 32 single-family dwellings with a rear service alley, and 102 multi-family units located in 17 two-story, six-plexes. The project also includes three (3) private park areas that have a combined area of approximately 1.75 acres. The larger of the three (3) parks areas will also function as a drainage retention/detention basin. There will be landscaping on the exterior boundaries of the project, common areas of the multi-family portion of the project, open area parking lots and parking along internal street frontages. Driveway access into the project will be provided off of Front Street across from Puunoa Place and off of Kenui Street across from Nakeli Place. The proposed project also includes connections to the County's roadways and utilities, road widening and drainage improvements involving work within the County right-of-ways and the use of County lands.

Draft Environmental Assessment

PROPOSED KAHOMA VILLAGE PROJECT

**LAHAINA, MAUI, HAWAII
(TMK (2) 4-5-008:001 (POR.))**

Prepared for:

**Stanford Carr Development, LLC
On behalf of
The Harry and Jeanette Weinberg Foundation, Inc.**

September 2012

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Executive Summary

Project Name: Proposed Kahoma Village

Type of Document: Draft Environmental Assessment

Legal Authority: Chapter 343, Hawaii Revised Statutes

Agency Determination: Anticipated Finding of No Significant Impact

Applicable Environmental Assessment Review "Trigger": Use of County Lands

Location: Island of Maui
Lahaina
TMK (2) 4-5-008:001 (por.)

Landowner: The Harry and Jeanette Weinberg Foundation, Inc.
3660 Waiale Avenue, Suite 400
Honolulu, Hawaii 96816
Contact: Jay Nakamura, Stanford Carr Development, LLC
Phone: (808) 537-5220

Applicant: Stanford Carr Development, LLC on behalf of The Harry and Jeanette Weinberg Foundation, Inc.
Alakea Corporate Tower
1100 Alakea Street, 27th Floor
Honolulu, Hawaii 96813
Contact: Jay Nakamura
Phone: (808) 537-5220

Approving Agency: Department of Housing and Human Concerns
2200 Main Street, Suite 546
Wailuku, Hawaii 96793
Contact: JoAnn Ridao, Director
Phone: (808) 270-7805

Consultant: Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793
Contact: Colleen Suyama
Phone: (808) 244-2015

Project Summary:

The applicant, Stanford Carr Development, LLC on behalf of The Harry and Jeanette Weinberg Foundation, Inc. proposes a mixed housing project on property identified as TMK (2) 4-5-008:001 (por.) in Lahaina, Maui, Hawaii. The project is located on approximately 21.6 acres of the larger 24.354-acre Parcel. The project site is designated as "Urban" by the State Land Use Commission, "Project District 4" and "Open Space" by the West Maui Community Plan, and zoned "A-1, Apartment".

The proposed Kahoma Village project will consist of 203 units, including 69 single-family dwellings in clusters of two (2) to six (6) dwelling units along a common driveway, 32 single-family dwellings with a rear service alley, 102 multi-family units located in 17 two-story, six-plexes. The project site is bordered by Honoapiilani Highway to the east, Front Street to the west, Kenuei Street to the south, and the channelized Kahoma Stream to the north. The Kahoma Stream Flood Control improvements constructed by the U.S. Corps of Engineers occupies approximately 2.8 acres of the Parcel. The project also includes three (3) private park areas that have a combined area of approximately 1.75 acres. The larger of the three (3) park areas will also function as a drainage retention/detention basin. There will be landscaping on the exterior boundaries of the project site, common areas of the multi-family portion of the project, open area parking lots and parking along internal street frontages. Driveway access into the project area will be provided off of Front Street across from Puunoa Place and off of Kenuei Street across from Nakeli Place. The proposed project includes connections to the County's roadways and utilities, road widening and drainage improvements involving work within the County right-of-ways and the use of County lands. The use of County lands is a trigger for Chapter 343, HRS. As such, an Environmental Assessment (EA) has been prepared in accordance with Chapter 343, HRS and Chapter 200 of Title 11, Hawaii Administrative Rules (HAR).

The proposed project is being processed in accordance with Section 201H-38, Hawaii Revised Statutes (HRS). Section 201H-38, HRS promotes the delivery of affordable housing by allowing the exemption of endorsed projects from "*...all statutes, ordinances, charter provisions, and rules of any governmental agency relating to planning, zoning,*

construction standards for subdivisions, development and improvement of land and the construction of units thereon”.

As the subject property is located within the County of Maui's Special Management Area (SMA) a SMA Use Permit application will be submitted.

I. PROJECT OVERVIEW

I. PROJECT OVERVIEW

A. PROPERTY LOCATION, EXISTING USE, AND LAND OWNERSHIP

The applicant, Stanford Carr Development, LLC on behalf of The Harry and Jeanette Weinberg Foundation, Inc. (Foundation), is proposing the 203-unit Kahoma Village Project located in Lahaina, Maui, Hawaii. See **Figure 1**. The project site is bordered by Honoapiilani Highway to the east, Front Street to the west, Kenuei Street to the south, and the channelized Kahoma Stream to the north. The project site is identified by TMK (2) 4-5-008:001 (por.) (hereafter referred to as “project site”), and encompasses approximately 21.6 acres of the 24.354-acre parcel. See **Figure 2**. The project site is owned in fee by the Foundation. The Kahoma Stream Flood Control improvements constructed by the U.S. Army Corps of Engineers occupies approximately 2.8 acres of the parcel and was originally held by HRT, Ltd. then owned by Harry Weinberg when the project site was conveyed to the Foundation. It is unclear if the 2.8 acres were conveyed to the County of Maui.

The project site is located within the State Land Use “Urban” district. The West Maui Community Plan currently designates the project site as “Project District 4” and the Kahoma Channel portion of the parcel as “Open Space”. The subject property is designated “A-1, Apartment” by Maui County zoning. In addition to the aforementioned land use designations, the subject property is within the County of Maui’s Special Management Area (SMA) and is currently vacant.

B. PROPOSED ACTION

The proposed Kahoma Village Project will consist of 203 housing units, as shown in **Table 1**. See **Figure 3**.

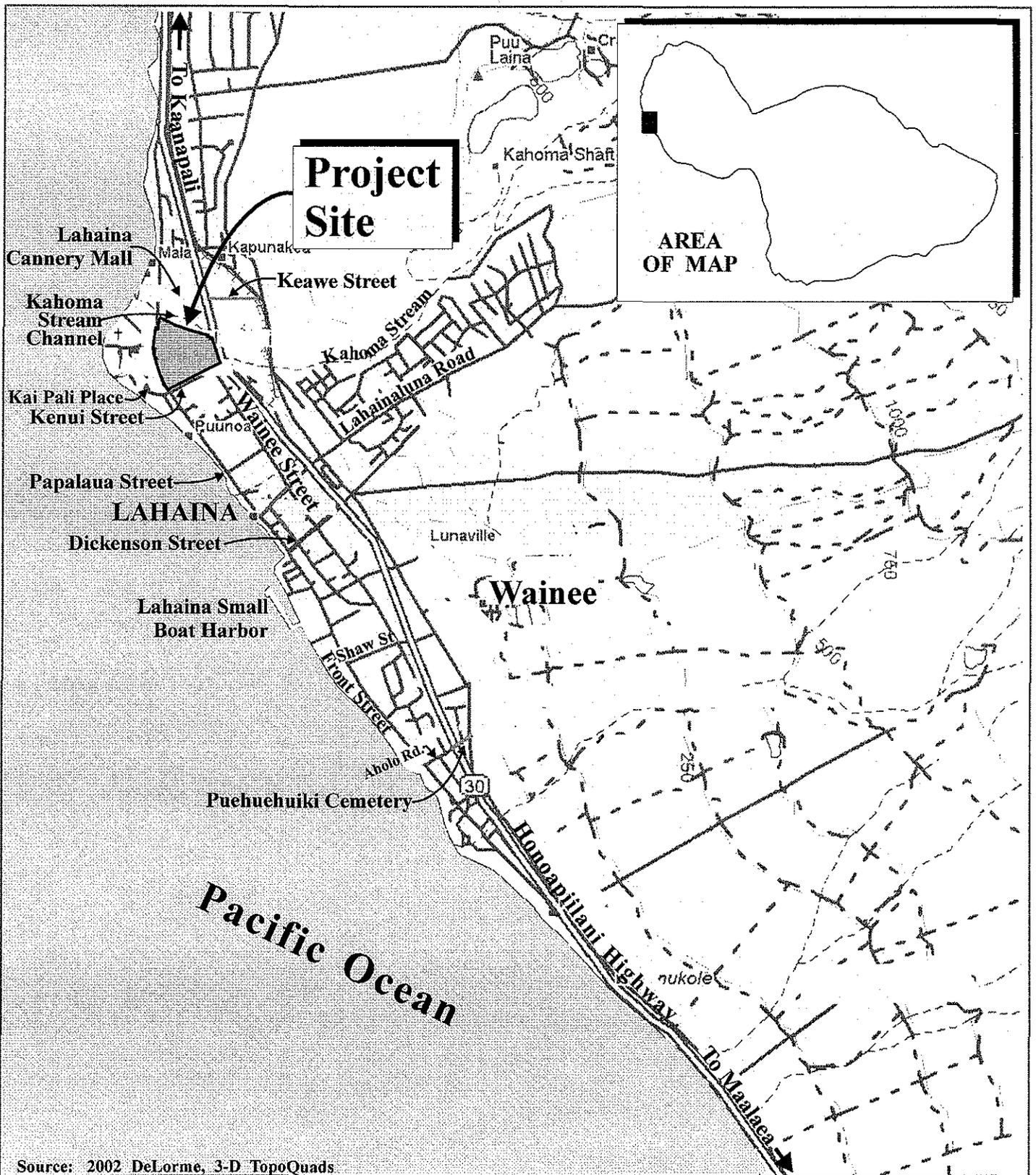


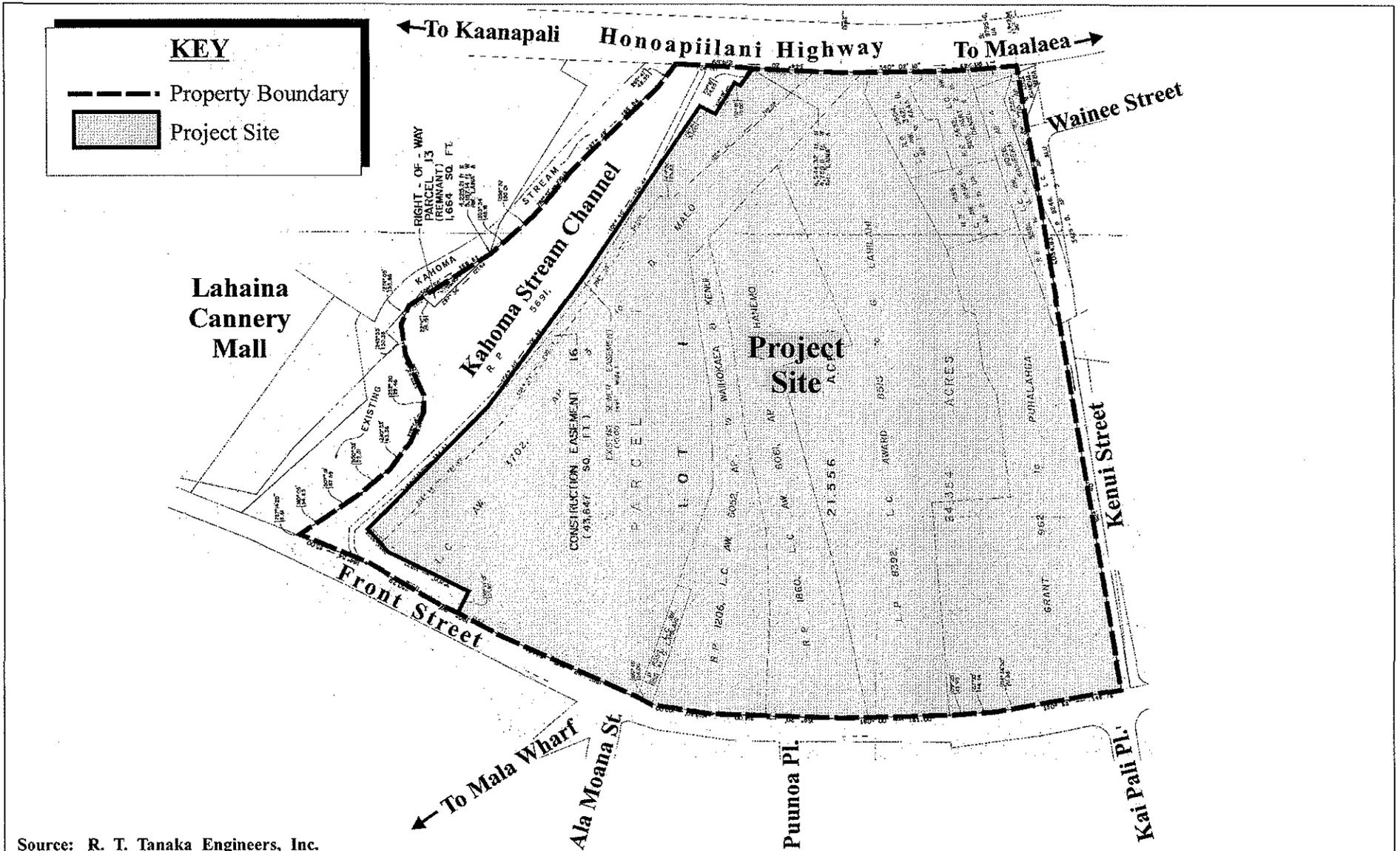
Figure 1 Proposed Kahoma Village Project
Regional Location Map

NOT TO SCALE



Prepared for: Stanford Carr Development LLC, on behalf of
 The Harry and Jeanette Weinberg Foundation, Inc.

MUNEKIYO & HIRAGA, INC.



Source: R. T. Tanaka Engineers, Inc.

Figure 2

Proposed Kahoma Village Project
Parcel Location Map

NOT TO SCALE

Prepared for: Stanford Carr Development, LLC On behalf of
The Harry and Jeanette Weinberg Foundation, Inc.





Figure 3 Proposed Kahoma Village Project
Conceptual Site Plan

NOT TO SCALE



Prepared for: Stanford Carr Development LLC, On behalf of
The Harry and Jeanette Weinberg Foundation, Inc.

MUNEKIYO & HIRAGA, INC.

Table 1. Kahoma Village Units

KAHOMA VILLAGE UNITS			
Unit Type	Square Feet	Number of Bedrooms and Bathrooms	Number of Units
SINGLE FAMILY			
Cluster Units			69
Plan 1	1,545	3 Bed 2 Bath	14
Plan 2	1,691	3 Bed 2-1/2 Bath	12
Plan 3	1,851	3 Bed 2-1/2 Bath	17
Plan 4	2,003	4 Bed 2-1/2 Bath	14
Plan 5	2,068	4 Bed 2-1/2 Bath	12
Alley Units			32
Plan 1	2,013	3 Bed 2-1/2 Bath	11
Plan 2	2,136	3 Bed 2-1/2 Bath	10
Plan 3	2,574	4 Bed 3 bath	11
Subtotal			101
MULTI-FAMILY			
Six-Plex Building			102
Plan 1	1,000	2 Bed 2-1/2 Bath	34
Plan 2	1,223	3 Bed 2-1/2 Bath	34
Plan 3	1,090	3 Bed 2 Bath	34
Total			203

In the cluster single-family units between two (2) to six (6) dwelling units will be clustered along a common driveway. The alley units will have a service alley at the rear of each unit providing access to the parking garage. The parking garages for the single-family units will be visually removed from the streetscape and service alley access to parking garages and will create a pedestrian friendly street frontage in which only one (1) side of the street will be used for vehicular parking. The multi-family units will be located within 17 two-story buildings each containing six (6) units with common trash enclosures. Each building will contain four (4) two-story units and two (2) one-story units at each end of the building so homeowners will have no one living above or below their unit. Open surface parking containing two (2) parking stalls for each unit will be provided in a common parking lot.

Associated improvements will include three (3) park areas that have combined area of approximately 1.75 acres. The larger of the three (3) park areas will also function as a drainage retention/detention basis. Landscaping will also be provided along the exterior boundaries of the project site, common areas of the multi-family portion of the project, open area parking lots and along the internal street frontages. Two (2) access driveways will be provided, one (1) off of Front Street across Puunoa Place and a second access from Kenui Street directly across Nakeli Place. Road widening improvements consisting of pavement widening, curbs, gutters, sidewalks, and street landscaping are also proposed to upgrade Front Street and Kenui Street to County standards, as well as necessary utility connections to County services and upgrades to the County's drainage system.

C. PURPOSE AND NEED FOR PROJECT

According to the Market Study prepared by Data@Work, there are signs that the economy has stabilized with an improved visitor industry and the upward turn in the job market. Continuation of this trend will result in improvements in the local housing market. Historically, the preferred choice of housing by residents has been single-family homes. In light of financial constraints and the growing number of first time buyers who have put their plans to purchase a home on hold until there is economic recovery, the Market Study concludes that market demand will shift from detached single-family products to attached multi-family housing.

Data@Work also foresees there will be a reduced level of competition for the project from other developments since there is a limited supply of housing on the market in the West Maui region that is affordable to residents. Further, the Kahoma Village Project has smaller up-front infrastructure costs and is able to self-finance the project which is an advantage over the larger developments such as Pulelehua and Puukolii Village.

Given the timing of this project within the next five (5) years and the mix of affordable and market units and housing types, this project will address the need for housing as economic recovery occurs and buyers look at purchasing homes, as well as with future population growth. See **Appendix "A"**.

D. REGULATORY CONTEXT

1. Section 201H-38, Hawaii Revised Statutes

The Kahoma Village Project has been developed to meet the criteria for a Section 201H-38, Hawaii Revised Statutes (HRS) project by the applicant. Section 201H-38, HRS promotes the delivery of affordable housing by allowing the exemption of a project from:

... all statutes, ordinances, charter provisions, and rules of any governmental agency relating to planning, zoning, construction standards for subdivisions, development and improvement of land and the construction of units thereon.

As such, a Section 201H-38, HRS application will be filed with the Maui County Council to request exemptions from the Community Plan Amendment process, as well as other County requirements in order to support the timely implementation of the project, without compromising public health, safety, or welfare considerations. The exemptions being proposed as part of this project are presented in **Appendix "B"**.

2. Special Management Area

Inasmuch as the subject property is located within the County of Maui, Special Management Area (SMA), an application for a SMA Use Permit will be filed with the Maui Planning Department for review and action by the Maui Planning Commission.

3. Chapter 343, Hawaii Revised Statutes

The proposed project includes the use of County lands involving interconnections to the County's roadways, road widening improvements, drainage system upgrades and utilities involving work within the County right-of-ways. The use of County lands is a trigger for Chapter 343, Hawaii Revised Statutes (HRS). As such, an Environmental Assessment (EA) has been prepared pursuant to Chapter 343, HRS, and Chapter 200 of Title 11, Hawaii Administrative Rules (HAR), Environmental Impact Statement Rules. Accordingly, this document addresses the project's technical characteristics and environmental impacts and alternatives, advances findings and conclusions relative to the significance of the project. As the project

involves multiple jurisdictions, there was consultation with the Department of Public Works (DPW), Department of Housing and Human Concerns (DHHC) and the Department of Planning (DP) and it was determined that the accepting and approving agency for the EA will be the DHHC. See **Appendix “C”**.

Final design and construction of the proposed improvements will be initiated upon approval of the Section 201H-38 and SMA permitting processes.

E. PROJECT COST AND IMPLEMENTATION SCHEDULE

The cost of the Kahoma Village Project is approximately \$60 million. The project will be initiated upon receipt of the Section 201H-38, HRS approval, SMA Use Permit and applicable construction-related permits. The project is anticipated to take 48 months to complete construction.

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

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

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Use

a. Existing Conditions

The existing vacant project site is situated to the south and adjacent to the channelized Kahoma Stream in the Mala Wharf area of Lahaina Town. Visitor oriented, commercial, and residential land uses are all located in close proximity to the project site.

The channelized Kahoma Stream represents the defining physical feature on the north side of the project site, with the Lahaina Cannery Mall located on the northern side of the channelized Kahoma Stream. The Kahoma Stream Flood Control project completed in 1990 is managed by the U.S. Corps of Engineers and serves a drainage basin of 54 square miles. This Flood Control project is under the jurisdiction of the U.S. Army Corps of Engineers and occupies approximately 2.8 acres of the 24.354 acres of the parcel. The 21.6-acre project site is owned by The Harry and Jeanette Weinberg Foundation, Inc.

A mixture of single-family residential and public uses are located across from the project site along the makai side of Front Street, while the Front Street Apartments are located across Kenui Street to the south. To the east is Honoapiilani Highway as well as commercial and multi-family residential uses consisting of the Lahaina Gateway Shopping Center and Opukea project.

b. Potential Impacts and Mitigation Measures

Land uses surrounding the project site consist of commercial, public/quasi-public, single-family, and multi-family uses. The proposed Kahoma Village housing project is compatible with the adjacent residential uses and is not anticipated to have an adverse impact on other surrounding land uses in the area. The property is located within the limits of an existing urban area and has ready access to infrastructure systems.

2. Climate

a. Existing Conditions

Like most areas of Hawaii, Lahaina's climate is relatively uniform year-round. Lahaina's tropical latitude, its position relative to storm tracts and the Pacific anticyclone, and the surrounding ocean combine to produce this stable climate. Variations in climate among different regions on Maui are, therefore, dictated by the inherent characteristics of local terrain.

Average daily temperatures in Lahaina typically range between 66 degrees and 85 degrees Fahrenheit. August is historically the warmest month, while January and February are the coolest.

Rainfall in West Maui is both low and highly seasonal in nature, with most precipitation occurring between the months of October and April when winter storms hit the area, with January being the wettest month, with 3.15 inches on average, and June being the driest, with 0.08 inch of precipitation. Situated on the leeward side of the West Maui Mountains, this dry region receives most of its rainfall in late afternoon and early evening, after seabreezes take moisture upslope during the day. Annual average rainfall for Lahaina is 14.62 inches as opposed to Kahului, which receives 18.82 inches (County of Maui, 2011).

The winds in the Lahaina area are also seasonal, although northeasterly tradewinds are predominant and occur 90 percent of the time during the summer and just 50 percent of the time in winter with average wind speeds of approximately 16 miles per hour. Wind patterns also vary on a daily basis,

with tradewinds generally being stronger in the afternoon. During the day, winds blow onshore toward the warmer land mass. This process reverses in the evening when breezes blow toward the relatively warm ocean. Between October and March, the southerly winds of Kona storms may be experienced.

b. Potential Impacts and Mitigation Measures

From an environmental standpoint, replacement of vegetative surfaces with hardscapes associated with roadways and housing units may yield a tendency towards slightly increasing ambient air temperatures. To address this so-called “heat island” effect, the proposed resident recreation park and landscaping has been integrated in the Kahoma Village housing project. Landscape design and a planting plan will be employed to provide shading. As such, the proposed project is not anticipated to have an adverse effect on climate.

3. Topography and Soil Characteristics

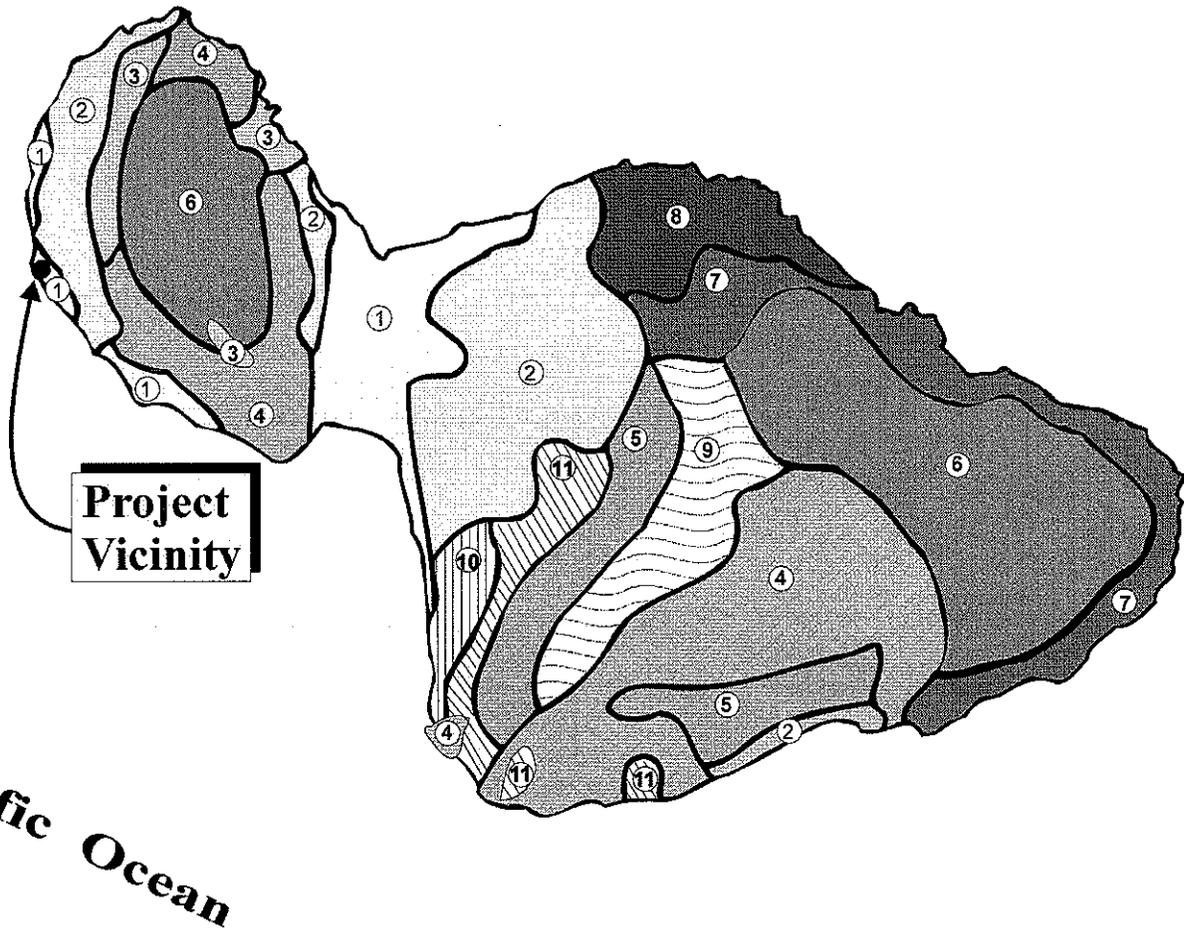
a. Existing Conditions

The property was previously used for sugarcane cultivation until Honoapiilani Highway was constructed and is currently vacant with trees and brush. The ground generally slopes in a westerly direction toward Front Street. The existing elevations range between five (5) feet and 20 feet above mean sea level (msl).

According to the U.S. Department of Agriculture Soil Conservation Service (1972), soils within the subject property belong to the Pulehu-Ewa-Jaucas association. See **Figure 4**. The Pulehu-Ewa-Jaucas association is characterized by deep, nearly level to moderately sloping, well-drained and excessively drained soils that have a moderately fine textured to coarse-textured subsoil or underlying material. The specific soil type underlying the project site is Ewa Silty Clay Loam (EaA) and Pulehu Silt Loam (PpA). See **Figure 5**. EaA (0-3 percent slopes) is characterized by very slow runoff rates and very slight erosion hazard. PpA (0-3 percent slopes) is found on alluvial fans and stream terraces and basins. The soil is characterized as moderate permeability with slow runoff rates and slight erosion hazard. These soil

LEGEND

- | | | | |
|---|--|---|-----------------------------------|
|  | Pulehu-Ewa-Jaucas association |  | Hana-Makaalae-Kailua association |
|  | Waiakoa-Keahua-Molokai association |  | Pauwela-Haiku association |
|  | Honolua-Olelo association |  | Laumaia-Kaipoi-Olinda association |
|  | Rock land-Rough mountainous land association |  | Keawakapu-Makena association |
|  | Puu Pa-Kula-Pane association |  | Kamaole-Oanapuka association |
|  | Hydrandepts-Tropaquods association | | |



Map Source: USDA Soil Conservation Service

Figure 4 Proposed Kahoma Village Project
Soil Association Map

NOT TO SCALE



Prepared for: Stanford Carr Development LLC, On behalf of
The Harry and Jeanette Weinberg Foundation, Inc.

 MUNEKIYO & HIRAGA, INC.

types are typically used for sugarcane, truck crops, and pasture (U.S. Department of Agriculture, 1972).

b. Potential Impacts and Mitigation Measures

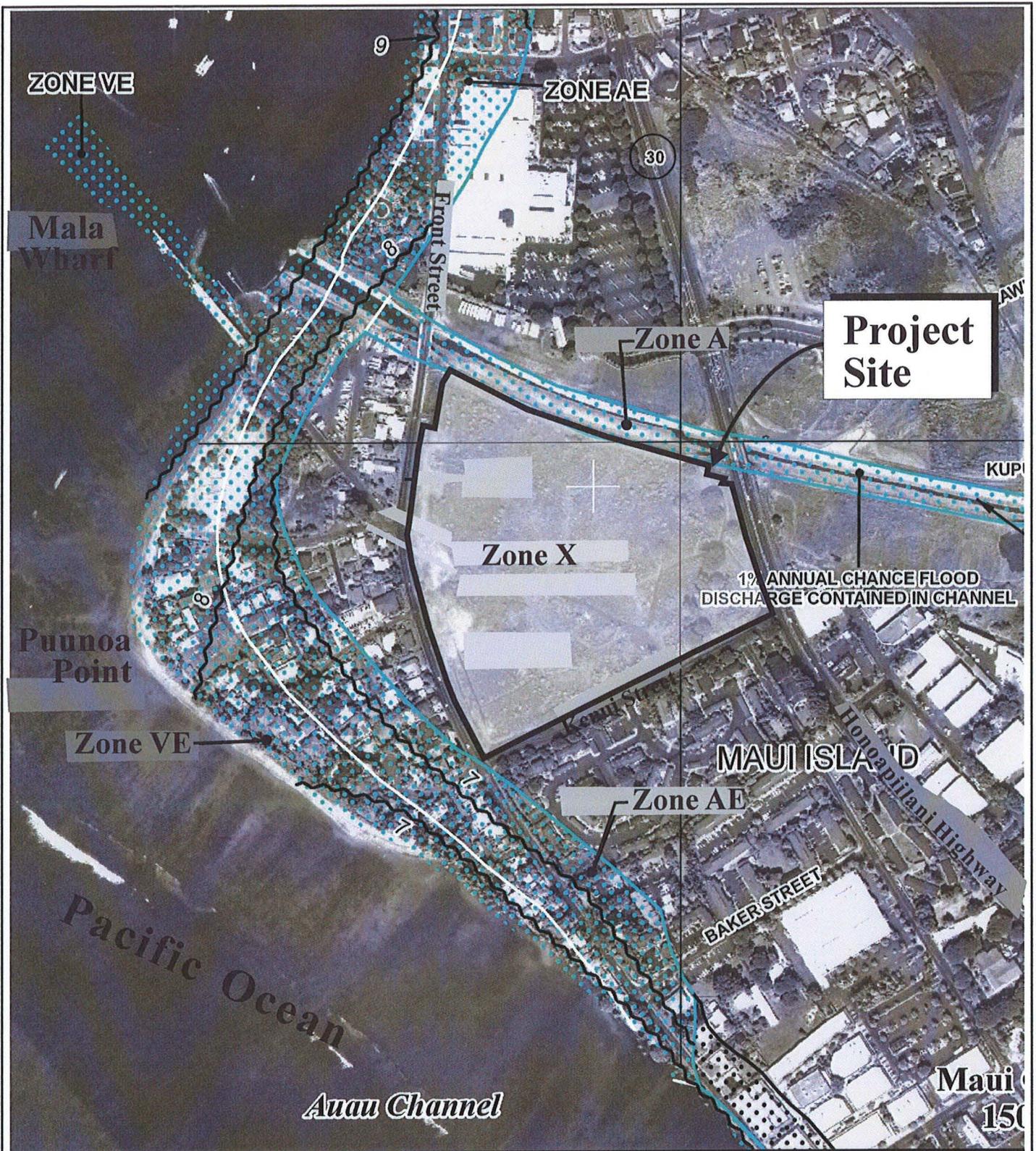
Although the project site was formerly used for sugarcane cultivation, since the construction of Honoapiilani Highway, the land has remained vacant for more than 50 years. Before the 1970s, the most prevalent pesticide used in farming was dichlorodiphenyltrichloroethane (DDT). According to the National Pesticide Information Center, the soil half-life for DDT, which is the time for DDT to degrade, takes between two (2) to 15 years. As an average, it is estimated that it would take approximately 50 years for DDT to degrade in soil. As noted previously, the subject site has been out of cultivation for more than 50 years. As such, any DDT use should have degraded and is no longer a health hazard.

The topographic character of the site is relatively flat and minimal grading will be required to prepare the site for development. Best Management Practices (BMPS) will be implemented to minimize impacts during the construction period. The soil composition of the project site will not be altered and does not contain characteristics that would hinder development of the site. As such, no adverse impacts on topography and soils are anticipated.

4. Flood and Tsunami Hazard

a. Existing Conditions

The Flood Insurance Rate Map (FIRM) for this area of the island designates the project site as being within Zone "X" (unshaded) and is not subject to the Flood Hazard District Ordinance, Chapter 19.62 of the Maui County Code. See **Figure 6**. Zone "X" (unshaded) indicates an area of minimal flooding and has no restrictions placed on development. The FIRM for Maui County is being revised. According to the Preliminary FIRM the project site remains in Zone X.



Source: Federal Emergency Management Agency Map No. 1500030361E

Figure 6 Proposed Kahoma Village Project
Flood Insurance Rate Map

NOT TO SCALE



Prepared for: Stanford Carr Development LLC, On behalf of
The Harry and Jeanette Weinberg Foundation, Inc.


MUNEKIYO & HIRAGA, INC.

Weinberg/LahainaRes/FIRM

The subject property is located within the tsunami inundation zone. Evacuation routes during a tsunami event would be available towards the upper slopes of Lahaina Town mauka of Honoapiilani Highway towards Keawe Street across of the Lahaina Cannery Mall.

b. Potential Impacts and Mitigation Measures

The project site is located within an area of minimal flooding. The channelization of Kahoma Stream north of the project site was completed as a U. S. Army Corps of Engineers-sponsored Flood Control project to mitigate flooding events along the stream. No adverse impacts on the flood and tsunami hazard zones are anticipated during implementation of the project.

5. Flora and Fauna

a. Existing Conditions

Mr. Robert Hobdy conducted a field survey of the project site in May 2011. See **Appendix "D"**. Although the project site was previously farm land and cultivated for sugarcane, over the past 50 years, since Honoapiilani Highway was constructed through Lahaina, the project site has been idle and overgrown with dry-land grasses, shrubs and scattered trees.

Existing vegetation within the project site consists of weed species that is typical on disturbed sites in dry areas such as Lahaina. Species of flora currently present onsite include buffelgrass, salt bush, kiawe, and koa haole. There are no rare, threatened or endangered species of plants found at or in the vicinity of the project site. Of the 47 plant species found, two (2) are indigenous to Hawaii, and are widespread on the mainland and other pacific islands: the uhaloa (*Waltheria indica*) and popolo (*Solanum Americanum*). The remaining 45 species are not native to Hawaii.

Twenty (20) species of mammals, birds and insects were found on the project site, which has been disturbed for over a century and is overwhelmingly inhabited by non-native organisms and surrounded by an urbanized community. One insect, the globe skimmer (*Pantala flavescans*), a dragonfly, was observed as native. No endangered plants or animals are

known to be closer than 2.5 miles from this project area. These endangered species occur on ridges above Lahainaluna High School and will not be affected by this project.

About 20 tobacco tree (*Nicotiana glauca*) plants were seen throughout the property. These trees are a non-native host for Hawaii's endemic and endangered Blackburn's sphinx moth (*Manduca blackburni*). No eggs, larvae or adults of this endangered moth were found during the field inspection.

Animal life which may be found in this area is typical of other urbanized regions around West Maui. Domestic mammals found in the area include dogs and cats. Also, commonly found in this area are the common rats, mice and mongoose. Eight (8) species of non-native birds were observed. Further, no Hawaiian hoary bats were identified during an evening field survey, while using a bat detection device. Refer to **Appendix "D"**.

b. Potential Impacts and Mitigation Measures

There have been no federally endangered or threatened plants or special plant communities/habitats identified within the project site. The proposed project is not anticipated to have significant impacts on botanical resources. Refer to **Appendix "D"**.

Although no endangered Blackburn's sphinx moths were found during the field survey, because of the number of tobacco trees in the project area, which is their non-native host plant, caution is recommended during site preparation. Robert Hobdy recommends that any removal of the approximately 20 tobacco tree plants be done by hand in the fall months after the Blackburn's sphinx moth's breeding cycle is completed. Also, large scale clearing should not occur before at least the passage of another four (4) months in order to allow any potential pupae in the soil to hatch and disperse.

Due to fire safety concerns and homeless problem on the property, a portion of the property has been cleared in coordination with County agencies. The tobacco trees were identified and a 20 to 30 foot buffer established around the trees prior to clearing to ensure the trees and surrounding ground remain undisturbed.

The endangered seabirds, the Hawaiian petrel (*Pterodroma sandwichensis*) and the threatened Newell's shearwater (*Puffinus newelli*) nest high in the mountains in the spring, summer and fall. These seabirds fly over the lowlands on Maui in the late evening to reach their burrows, then fly back to the ocean in the early dawn. Bright lights can confuse these species of seabird, therefore, Mr. Hobdy recommends that any significant outdoor flood lights or pole lights be hooded to direct the light downward to minimize these distractions to the seabirds. Refer to **Appendix "D"**.

These specific recommendations resulting from the Biological Resources Survey will be implemented as part of the project.

6. **Air Quality and Noise**

a. **Existing Conditions**

The project site in general does not experience adverse air quality conditions. Airborne pollutants that do exist can largely be attributed to automobile exhaust from Honoapiilani Highway and other surrounding roadways. These sources, however, are intermittent and prevailing winds quickly disperse the particulates generated by these temporary sources. The cessation of large scale agriculture on the surrounding agricultural lands mauka of Honoapiilani Highway and the slopes of West Maui Mountains may contribute to temporary adverse air quality conditions from airborne dust due to wind erosion.

Existing background noise in the vicinity of the project site is principally attributed to traffic movements along the adjoining stretch of Honoapiilani Highway as well as the other local roadways surrounding the site.

b. **Potential Impacts and Mitigation Measures**

In the short term, construction related activities will be the primary source of airborne pollutants and ambient noise. Site work involving clearing, grubbing and grading operations will generate fugitive dust. Emissions and noise from construction equipment and other vehicles involved in construction activities may temporarily affect the ambient air quality and

noise within the immediate vicinity. These effects, however, can be mitigated by proper maintenance of construction equipment and vehicles. Equipment mufflers or other noise attenuating equipment may also be utilized.

In addition, dust generated during construction, especially from earth-moving operations, such as excavating, trenching, and filling, may also result in a temporary decrease in ambient air quality. A program of BMPs will be implemented during construction to mitigate potential for dust-related impacts, including but not limited to, utilizing dust barriers, water wagons and/or sprinklers to control dust, and watering graded areas upon the completion of daily construction activities. On a long-term basis, the proposed project is not anticipated to generate any adverse air quality impacts.

An application for a Community Noise Permit for construction activities will be submitted to the State Department of Health for review and approval as necessary.

Upon completion, the proposed project is not expected to be a source of long-term adverse air or noise conditions.

7. Historical and Archaeological Resources

a. Existing Conditions

An Archaeological Assessment Survey (AAS) was completed for the project site in October 2011 by Xamanek Researches, LLC. See **Appendix "E"**.

The project site is located in the Alamihi *Ahupuaa* outside of the Lahaina National Historic Landmark District. The project site is currently vacant but has been previously impacted by land altering activities. Disturbance activities in the past include sugarcane cultivation, heavy equipment clearing, construction of informal homeless shelters and camps, and piles of construction related debris.

The AAS consisted of 100 percent surface survey and 30 mechanically excavated backhoe test trenches within a portion of the site that is not currently heavily vegetated. The stratigraphic layers were mostly consistent throughout the project area with Layers I and II indicating previous disturbance.

Since the 1970's there have been archaeological studies and inventory surveys and monitoring conducted around the project site. Based on literature research, it is likely that a portion of the project site is located within the former Alamihi Pond, which was filled in the first half of the 20th Century, during the Mala Wharf construction in 1922 when an access road was installed.

b. Potential Impacts and Mitigation Measures

No material remains or evidence of intact cultural deposits were encountered during the backhoe trench excavations completed during the AAS. There was no evidence of traditional or pre-contact surface features at the project site. The area, including the project site, has been heavily impacted by post-contact activities associated with the filling of Alamihi Pond, nearby agricultural cultivation, residential development, road construction and similar activities. However, because of the location of the project site, pre-contact and/or post-contact human burials and/or previously disturbed human remains may lie in those portions of the project site that were not tested.

As such, the AAS recommends archaeological monitoring for all future earth disturbance activities on the project site as human burials have been previously documented on nearby parcels, including the Lahaina Cannery Mall property. Refer to **Appendix "E"**.

8. Cultural Impact Assessment

a. Historical Context

The Lahaina District was a favored place to live by chiefs and commoners alike, because of its natural resources and favorable weather. The valleys of Kahoma, Kanaha, Kauaula and Olowalu among others were filled with *lo`i*

wherever there was water to sustain the flood-style irrigation of wetland *lo`i*. In other areas dryland taro, sugarcane, sweet potato, coconut, banana and breadfruit were grown. Lahaina is well known for its cultivation of the breadfruit tree (*`ulu*). The original name for the Lahaina area was Lele and the famous saying of the area was “Ka Malu Ulu o Lele”, the shade of the breadfruit trees at Lele (Handy, 190). Also, in the time of Piilani the area was called Honoapiilani, meaning “the bays belonging to Piilani” (Sterling, 37).

The name Lahaina is a relatively recent name for the land and stems from the time of the chief Hua. During Hua’s reign, when his kahuna Luaho`omoe was condemned to death he cursed the lands of Hua, which resulted in a drought and famine that spread through the lands. The name Lahaina means La (sun) and Haina (cruel or merciless).

Lahaina was an agriculturally productive area utilizing the then perennial watercourses of Kahoma, Kanaha and Kauaula with miles upon miles of aqueducts spanning the lowlands, watering a quilt-work pattern of wet and dryland taro, sweet potato, bananas, breadfruit and other crops. Handy relates that the majority of Lahaina was watered by two streams, Kahoma and Kanaha (Handy, 492).

Towards the ocean and across Front Street was the inland fishpond of Alamihi, for which the area is named. The fishpond traditionally was used for mullet but was nearly defunct by the time of Western contact and was filled in to make the road to Mala wharf in the early 1900’s.

After consolidating his rule over the islands, Kamehameha returned to Lahaina to set up his seat of government for the Kingdom of Hawaii. Mokuula was the home of royalty until the capital was transferred to Honolulu under King Kamehameha III.

Also, with the reign of Kamehameha and an increase in foreign ships Lahaina became a port of call for the sandalwood trade and whaling era. The Lahaina whaling industry ended in 1860 with the onset of petroleum and kerosene fuel, and finally the development of San Francisco as a full-service port (Proposal for the Historical Restoration and Preservation of Lahaina, 1961).

With the decline of the whaling industry, which brought a new populace to Lahaina, the sugar industry began to evolve. The sugar industry was developed in the mid-1800's and over the next few years, further developed with the eventual consolidation of multiple smaller mills into what is known today as Pioneer Mill Company, Ltd. (Pioneer Mill). As with other sugar plantation communities, the late 1800's and early 1900's saw the rapid expansion and growth of the Pioneer Mill. A 1919 map by W.E. Wall further reveals that approximately 15,000 acres were under sugarcane cultivation by Pioneer Mill (Rosendahl, 1989.) Sugar cultivation areas extended from Ukumehame to Honokowai.

In addition to sugar, pineapple was established as a viable commercial crop in West Maui. Baldwin Packers opened a cannery in Lahaina in 1919 at the site of the Lahaina Cannery Mall to provide the product processing component of the pineapple industry. Pineapple cultivation lands were delineated from Honokowai, north to Honokohau.

A Cultural Impact Assessment (CIA) was completed by Hana Pono, LLC, in November 2011. See **Appendix "F"**.

The CIA included interviews with persons familiar with the area. The following is a summary of these interviews conducted during July and August, 2011:

1. **George Kahumoku**

Although George Kahumoku is not a lineal descendant of the project area, he has been a cultural practitioner on the lands surrounding the project area for many years. Considered knowledgeable about Lahaina, he was a teacher at Lahainaluna High School and used to take his students to an area mauka of the Kahoma area to farm. Known in the community, he has lived all his life in the Lahaina area and is well respected among the elders of the Kahoma community.

George remembers going into the valley and visiting with the families who were raising donkeys and goats and cultivating *loi*. The *auwai*

(canal) used to run to Lahainaluna, but when the plantation closed the *auwai* stopped running.

He talked about stone walls in Kahoma and believed that people used to live there. There were terraces for dry-land taro or sweet potato and walls for the mala (gardens). Later those walls were destroyed.

2. **Malihini Keahi**

Malihini, a life long Lahaina resident, is a lineal descendant of larger Kahoma area, not specific to the project area. Her ties to the area are from her grandfather, Kapaliueloa Haiakekai and her grandmother Meleana Maka`aha Pu`upu`u. She practices the Hawaiian lifestyle of sharing Aloha at Kaanapali Beach Hotel where she works.

Malihini recalls the Kahoma area as being plentiful with orchard trees in the valley. Amongst the orchard trees (lemon, orange, apple and mango) was medicine (mamaki and ti). An old donkey trail from Lahainaluna ran down the side of the mountain and into the Kahoma area. She tried to access that trail about ten years ago and found it had degraded.

Malihini spoke of a few ahu (altars) mauka (upland) from the Kahoma area that are cared for by families such as Kelepa Ohana, Uncle David Sharp and her family. Malihini moved back to her family land in the late 70's with a thought to making a learning place for the Hawaiian children and even the kupuna. She wanted people to see how the *auwai* gives water to Lahaina. Her grandfather was brought from Kahikinui to Lahaina to care for the watershed and she wanted to restore it for educational purposes.

She expressed concern that the proposed affordable housing will not be available to those in the lower income category. She believes the County's income guidelines are too high for those who are in the lower income.

3. George Makekau

George is a lineal descendant of land about two (2) miles from the project area and his family are long-time Kahoma residents. George's great-grandparents, the Pukahia's, owned land in the mauka Kahoma area and their family had several lo'i there.

George traveled from the family land to the Kahoma area about 2.5 miles away. The lower part of Kahoma used to flood a lot, so that land wasn't used as much. He recalls his family talking about the *loi* because his family used to order the *loi* and that is what everyone used to talk about the most.

The family grew sugarcane from Lahainaluna all the way down to Front Street. The proper name for the area was Kahoma, but it was easier for them to call it Lahainaluna. George recalls the locomotive that ran through the area bringing sugarcane down to Mala Wharf. He also recalled the arrivals of the passenger ships.

b. Potential Impacts and Mitigation Measures

None of the interviewees noted any cultural practices or uses directly on the project site. However, the interviewees noted that they themselves and family members still access the mauka Kahoma lands. These mauka sites, the agricultural complex known as the Kahoma complex, and the Haia cemetery among others are approximately two (2) miles inland from the project site.

The CIA report also noted the finding of the flora and fauna survey and the concern that the presence of the tobacco plant may indicate the presence of the endangered Blackburn Sphinx moth. It is also noted that the channelization of Kahoma Stream has drastically altered the natural habitat in the project area and surrounding vicinities.

There has been no active taro or other traditional agricultural cultivation on the project area for upwards of 100 years due to the sugar plantation's use of the land and diversion of water from Kahoma and Kanaha streams. This has

left the project area devoid of previously available natural resources or native flora and fauna.

Although the interviewees did not directly identify any known family burials in the project site, previous archaeological work in the general area would indicate the possibility of isolated or grouped pre- and post-contact remains being present.

The CIA recommends that care be taken during any grading, grubbing or other ground disturbing activities due to the possible presence of subsurface cultural features. All workers should have some cultural knowledge of the history of the Lahaina region, the Alamihi region, and the possibility of finding subsurface cultural features. In order to assure the cultural integrity of the project, a qualified cultural specialist should participate in various cultural-related activities, such as the development and implementation of the cultural orientation for construction personnel, advice and protocol concerning inadvertent finds, and any other cultural concerns during the construction of the project.

9. **Scenic and Open Space Resources**

a. **Existing Conditions**

The project site is located along Front Street in the Mala Wharf area of Lahaina. The site is also bordered to the east by the Honoapiilani Highway. This highway represents West Maui's principal access route to the central and southern areas of Wailuku, Kahului and Kihei. Due to the urbanized nature of the surrounding area, scenic resources in the vicinity of the project site are limited. See **Appendix "G"**. Views through the project site are obstructed by the existing vegetation. Views east towards the mountains have been affected by the development of the Lahaina Gateway Shopping Center and the Opukea Housing project. Other open space resources in the region include the vast expanse of vacant agricultural lands that lie between the mountains and the existing urbanized areas.

b. Potential Impacts and Mitigation Measures

The proposed Kahoma Village Project will be a low-rise development consisting of two-story structures compatible with the surrounding residential character of the Lahaina Town area. Building design and massing will be similar to the surrounding single-family residential and multi-family developments. The project site is not part of a designated scenic corridor and as such, there are no significant adverse impacts on scenic and open space resources.

The project site is approximately three (3) to five (5) feet below Honoapiilani Highway and gradually slopes to approximately 17 feet below the highway near Front Street. Once constructed, views from Honoapiilani Highway are not anticipated to be adversely impacted since there are no existing view corridors to the ocean due to the existing built environment and vegetation.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Land Use and Community Character

a. Existing Conditions

Urbanized lands occupying the lower elevations of the West Maui Mountains along the coast include the communities of Lahaina, Kaanapali, Honokowai, Kahana, Napili, and Kapalua. The resort communities north of Lahaina include hotels and visitor-oriented condominiums. Lahaina, meanwhile, is the commercial center of the West Maui region. The town contains several shopping centers and retail business areas, and serves as a core for the region's residential housing.

Part of West Maui's attraction can be attributed to its year-round dry and warm climate, complemented by its many white-sand beaches and scenic landscape. Visitor accommodation can be found in Lahaina as well as the resort communities of Kaanapali, Honokowai, Kahana, Napili and Kapalua.

The Kapalua-West Maui Airport at Mahinahina, owned by the State of Hawaii, Department of Transportation, conveniently links West Maui to Oahu and other neighbor islands.

Diversified agriculture occupies a portion of the land in the West Maui region. Pioneer Mill's and Maui Land & Pineapple Company's vacant agricultural fields span along the slopes of the West Maui Mountains.

b. Potential Impacts and Mitigation Measures

The proposed Kahoma Village Project is an urban in-fill project located adjacent to existing residential and commercial uses and designated for future housing in the West Maui Community Plan and draft Maui Island Plan. It is consistent with existing land uses and is not at a scale to significantly impact the regional setting of the area. This project provides an efficient use of vacant land within the urban area, utilizing existing infrastructure.

2. Population

a. Existing Conditions

The population of the County of Maui has exhibited relatively strong growth over the past decade. According to the U.S. Census, the resident population of the County of Maui in 2000 was estimated to be 128,094 and was estimated to be 158,834 in 2010. This represents a 20.9 percent increase over the past decade (U.S. Census Bureau, 2010). By 2020, the population of the County of Maui is projected to reach 174,450 and 199,550 by 2030 (SMS, 2006).

The project site is located in the midst of Lahaina Town, within the West Maui Community Plan region. Just as the County's population has grown, the resident population of the West Maui region has also increased. The estimated population of Lahaina in 2000 was approximately 18,000 and approximately 22,200 in 2010 (U.S. Census Bureau, 2010), comprising 14 percent of the island's population. The resident population for this region in 2010 increased by 23 percent since 2000. By 2020, the population for the

region is projected to reach approximately 25,100 and 29,000 by 2030 (SMS, 2006).

b. Potential Impacts and Mitigation Measures

The Kahoma Village Project is an urban in-fill project intended to satisfy a portion of the region's residential demand for housing which may result in a slight increase in the population (i.e., buyers/renters may relocate from other areas of Maui). As noted previously, the population for the region is projected to reach approximately 25,100 by 2020 and 29,000 by 2030 (SMS, 2006). Kahoma Village will accommodate this anticipated population growth which will occur with or without the project. Aside from the slight increase in population, no significant impacts to population are anticipated.

3. Economy

a. Existing Conditions

The economy of Maui is heavily dependent upon the visitor industry. The dependency on the visitor industry is especially evident in West Maui, which is one of the State's major resort destination areas. Major hotels in this region include the Hyatt Regency Maui, Maui Marriott Resort and Ocean Club, Westin Maui, the Sheraton Maui, Westin Kaanapali Ocean Resort, Honua Kai, the Kapalua Bay Hotel & Villas, and the Ritz-Carlton.

West Maui's visitor orientation is reflected in the unique character and history of Lahaina Town, which serves as a center for retail outlets, as well as tourism activities. The 137,000 sq. ft. Lahaina Gateway Shopping Center located nearby on the mauka side of Honoapiilani Highway on Keawe Street, currently represents the largest retail shopping center in Lahaina. The 120,000 sq. ft. Lahaina Cannery Mall is located immediately north of the project site and is easily accessible to the future residents of Kahoma Village.

The closure of the Pioneer Mill in 1999 marked the end of sugarcane cultivation in West Maui. In December 2009, Maui Land & Pineapple Company ceased larger scale pineapple cultivation. The cessation of these two (2) major plantation crops ended large scale plantation-style agriculture

in the West Maui region. The largest agriculture operation in West Maui is the 300-acre Kaanapali Coffee Farm.

b. Potential Impacts and Mitigation Measures

The Kahoma Village Project will provide short-term construction-related employment and services. In the long term, these housing units will generate real property taxes which will contribute to the County's tax revenue base to support any increase in regional public service demand over time. Those services include fire and police protection, street maintenance, water, sewer, refuse collection and recreational activities. New homeowners moving into this area will also support the local economy with new consumers of services and goods from local business owners.

4. Housing

a. Existing Conditions

As reported by the Realtors Association of Maui, Inc., in July 2012 the median sales prices for a single-family home on Maui was \$491,000.00 and \$320,000.00 for a condominium. While in the West Maui Region for a single-family home it was \$875,000.00 in Lahaina, \$1.5 million in Kaanapali and \$2.0 million in Kapalua (June 2012). In July 2012, the median sales prices for condominiums in West Maui was \$324,000.00 in Lahaina, \$612,750.00 in Kaanapali, and \$500,000.00 in Kapalua.

Lahaina continues to experience a shortage of affordable housing with the year to date (YTD) (comparison of January to July 2012 to January to July 2011) median sales price of a single-family home ranging from \$722,500.00 to \$477,500.00 and a condominium ranging from \$350,000.00 to \$348,338.00. Although prices fluctuate by sub-region and are dependent on economic conditions and have decreased in certain areas or remained flat, price levels are still high in West Maui and beyond the purchasing power of many island residents (Realtors Association of Maui, July 2012).

Socio-economic forecast data prepared for the County of Maui's General Plan Update process reflect a continuing increase in housing demand. In the West

Maui region in 2000 there was a resident housing demand for 6,348 units. The resident housing demand increased by 773 units in 2005 to 7,121 units and by 1,003 units in 2010 to 8,124 units. By the year 2020, the demand for resident housing units is projected to increase to 9,687 units and by 2030 to 11,369 units (Planning Department, 2006).

b. Potential Impacts and Mitigation Measures

As contained in the Market Study, housing demand is a function of the economy, demographics and social trends. In the short term, residential housing demand is driven by the economics of job creation/income growth and interest rate trends. Job creation in Maui was steady until 2009 when the global financial impacts affected Maui.

There are signs that the economy has stabilized and the visitor industry is recovering. The job market is turning upward as the visitor industry continues to grow. The upward turn in the job market is expected to generate gradual improvements in the local housing market. There is concern that with a general improvement in economic conditions, new housing production will recover as well.

It is, therefore, anticipated that the demand for housing will increase while the supply of new housing units will remain flat. Although there will be competition from the resale market, those units will not be competitive with the quality of new housing units in the proposed Kahoma Village development. In addition, many of the re-sales in the West Maui area will not be as well located as the proposed project which is located in the midst of Lahaina Town within walking distance of shops and the beach.

Within Lahaina Town, new housing units marketed to residents are the Opukea project and proposed 68-lot Kahoma Residential Subdivision. As such, the proposed development with its unit counts, type of housing product and pricing is expected to be absorbed by the demand for housing by residents within three (3) to four (4) years from commencement of the development. Refer to **Appendix "A"**.

The construction of the Kahoma Village Project will accommodate a small portion of the projected housing units needed to accommodate population growth in the West Maui region. As such, project implementation is expected to generate positive impacts on housing conditions within Lahaina Town.

C. PUBLIC SERVICES

1. Solid Waste Disposal

a. Existing Conditions

Single-family residential automated solid waste collection service is provided by the County of Maui on a twice-a-week basis. Residential solid waste collected by County crews is disposed at the County's 55-acre Central Maui Landfill, located four (4) miles southeast of the Kahului Airport. In addition to County-collected residential refuse, the Central Maui Landfill also accepts residential and commercial waste from private collection companies.

A recycling and refuse convenience center located about six (6) miles south of the project site at Olowalu serves West Maui residents and accommodates household refuse and green waste, as well as used oil and recyclable materials. No commercial waste is accepted at this facility. A private waste disposal service has been contracted by the County to transport waste from this facility to the Central Maui Landfill.

b. Potential Impacts and Mitigation Measures

During construction, solid waste will consist mainly of vegetation removal during grading and left-over building materials. Prior to the initiation of construction, a solid waste management plan will be coordinated with the Department of Environmental Management.

The single- and multi-family residential units in this proposed project will be served by a private solid waste disposal company. The proposed project is not anticipated to affect the service capabilities of County or private waste collection operations and disposal facilities. According to the County of

Maui's Integrated Solid Waste Management Plan (2009) there is available capacity at the Central Maui Landfill to accommodate population growth until 2026.

2. Medical Facilities

a. Existing Conditions

The only major medical facility on the island is Maui Memorial Medical Center, located approximately 25 miles from Lahaina, midway between Wailuku and Kahului. The 231-bed facility provides general, acute, and emergency care services (Maui Memorial Medical Center, December, 2011). Emergency ambulance services are located at the Lahaina Comprehensive Health Center at the Lahaina Civic Center Complex and in Napili at the Napili Fire Station.

In addition, medical services are offered by the Maui Medical Group, Lahaina Physicians, West Maui Healthcare Center, Kaiser Permanente's Lahaina Clinic, and other private medical and dental offices.

b. Potential Impacts and Mitigation Measures

Given that the proposed project is an urban infill project, it will not extend or affect the existing service area for emergency medical services. Further, a new West Maui Medical Facility is proposed in north Kaanapali, off of Kakaalaneo Drive. As such, the proposed project is not anticipated to present impacts on existing medical facilities and services.

3. Police and Fire Protection

a. Existing Conditions

The project site is within the Maui Police Department's service area, which services the Lahaina district. The Department's Lahaina Station is located in the Lahaina Civic Center complex at Wahikuli, approximately one (1) mile east of the project site. The Lahaina Patrol includes 54 full-time personnel,

including management-level officers and field officers. Additional personnel consist of public safety aides and administrative support staff.

Fire prevention, suppression and protection services for the Lahaina District are provided by the Department of Fire and Public Safety's Lahaina Fire Station, in the Lahaina Civic Center and the Napili Fire Station, located about nine (9) miles north of the project site in Napili. The Lahaina Fire Station includes an engine and a ladder company, and is staffed by approximately 30 full-time personnel. The Napili Fire Station consists of an engine company including 15 full-time firefighting personnel. All firefighting personnel are first-responders trained to provide emergency medical care.

b. Potential Impacts and Mitigation Measures

The proposed project is an urban in-fill project within Lahaina Town currently within existing service areas for fire and police. As such, it is not anticipated to present significant adverse impacts on the capabilities of existing police and fire services in the West Maui region. Also, in accordance with fire protection requirements of the Fire Code, an internal fire line will be designed to supplement existing fire hydrants along Front Street.

4. Educational Facilities

a. Existing Conditions

The West Maui area is served by four (4) public schools operated by the State of Hawaii, Department of Education (DOE): Lahainaluna High School, Lahaina Intermediate School, Princess Nahienaena Elementary School and King Kamehameha Elementary III School. The region is also served by privately operated pre-elementary and elementary schools, such as Sacred Hearts Elementary School and Maui Preparatory Academy.

The enrollments in the four (4) public schools have grown significantly in concert with the growth of residential development in the area. Currently, all four (4) public schools are over capacity. See **Table 2**.

Table 2. Enrollments at Department of Education Schools

School	Actual Enrollment						Projected Enrollment 2015-16	*Capacity
	2007-08	2008-09	2009-10	2010-11	2011-12			
Lahaina Complex								
Lahainaluna High	996	977	969	1,027	1,057	1,081	969	
Lahaina Intermediate	615	683	693	653	651	672	571	
Princess Nahienaena Elementary	624	643	610	607	643	675	612	
Kamehameha III Elementary	701	689	713	733	760	788	646	

Source: Department of Education, 2012.
 *DOE Analysis of the West Maui School Impact District, 2010.

University of Hawaii-Maui College (UH-Maui), which is located in Kahului, is a part of the University of Hawaii system. In addition, there is a UH-Maui Lahaina Education Center that opened in Fall 2007. UH-Maui is the primary higher education institution serving Maui.

b. Potential Impacts and Mitigation Measures

The Kahoma Village Project is located within the recently adopted West Maui Impact Fee District (Fee). In accordance with the Fee, the DOE will assess the single-family and multi-family units based on the projected number of students to be generated from the Kahoma Village Project, as identified in **Table 3.**

Table 3. Projected Students

School	Student/Single-Family Ratio	Students 101 Single-Family Units	Student/Multi-Family Ratio	Students 102 Multi-Family Units
Elementary	0.22/unit	22	0.09/unit	9
Middle	0.12/unit	12	0.04/unit	4
High	0.16/unit	16	0.05/unit	5
Total		50		18

Source: DOE West Maui Impact Fee District, 2010.

Fifty-one percent of the proposed housing units will meet the affordable housing requirements of the County of Maui. As such, the applicant will work with the DOE to comply with the applicable impact fee requirements for the Kahoma Village Project.

5. Recreational Facilities

a. Existing Conditions

West Maui has numerous recreational facilities offering diverse opportunities for the region's residents. These facilities include several County and State parks and beach parks. Approximately one-third of the County parks are situated along the shoreline and offer excellent swimming, diving, and snorkeling areas. In addition, Kaanapali and Kapalua Resorts operate world-class golf courses available for public use.

Recreational facilities in Lahaina town include the Lahaina Aquatic Center, the West Maui Youth Center, the Lahaina Recreation Center, and the Lahaina Civic Center. The Lahaina Aquatic Center contains an Olympic-size swimming pool, a children's wading pool, a paved parking lot, and office and storage space, as well as shower, restroom, and changing room facilities. The 15-acre addition to the Lahaina Recreation Center includes fields, parking, and washroom facilities. The West Maui Youth Center has a building for youth activities, as well as paved parking, an outdoor playground, and a basketball court. The Lahaina Recreation Center has baseball fields and other playfields for soccer and football, as well as restrooms and paved parking facilities. The Lahaina Civic Center includes a gymnasium, amphitheater, and tennis courts complex, as well as restrooms and paved parking facilities.

The clear ocean waters and well-developed reef systems along the Lahaina and Kaanapali coastlines offer many recreational opportunities for residents and visitors. Fishing, by shorecasting and netting, is practiced in the waters near the outlet of Kauaula Stream and Makila Point. Edible seaweed collecting, octopus diving, and spearfishing occur on the adjacent reef flat fronting Kaanapali. During periods of wave activity, the West Maui coastline is a good location for surfing.

b. Potential Impacts and Mitigation Measures

Pursuant to Section 18.16.320, Parks and Playgrounds, of the Maui County Code (MCC), the proposed project is subject to parks assessment. The project includes three (3) privately owned and maintained park areas that have a combined area of approximately 1.75 acres. These landscaped common areas are for residents and will be open to the public. These park areas will be graded, grassed landscaped and include a tot lot and open space for passive recreational use. The larger of the three (3) park areas will be used as a retention/detention basin.

An exemption from Section 18.16.320, MCC will be requested as part of the Section 201H-38 application process to allow the approximate 1.75 acres of landscaped park areas to satisfy the park assessment requirement and to waive the requirement for parking and a comfort station. The residents who will utilize the park are in walking distance of the park as well as in close proximity of their homes such that parking and a comfort station are not necessary.

The larger of the three (3) park areas will also function as a drainage retention/detention basin. The basin design allows the dissipation of captured storm water, and containment will be for as short a time as is feasible. The drainage retention/detention basin will be designed to accommodate a 50-year storm event, it will also accommodate the stormwater runoff from the more frequent 10-year storm event. As such, during a 10-year storm event standing water is not expected to last beyond several days.

Residents in the area expressed concerns that the residents from the Kahoma Village project would impact shoreline recreation at "Baby Beach" located at the end of Mala Wharf Street near the Lahaina Jodo Mission. There are existing adverse parking impacts from vehicles parking at the end of Mala Wharf in order to access the beach. The Kahoma Village project is within walking distance of the beach and as such residents would most likely walk to the beach instead of driving and should not increase the demand for beach access parking.

D. INFRASTRUCTURE

1. Roadways

a. Existing Conditions

A Preliminary Traffic Impact Analysis Report (TIAR) was prepared for the project by SSFM International. See **Appendix "I"**. Honoapiilani Highway is a State four-lane primary urban arterial roadway on the east boundary of the project site. The speed limit along this section of the highway is 40 miles per hour (mph). On the west and south boundaries of the project site are two (2) County roadways that provide access to the property. Front Street is located along the western boundary and is a two-lane minor arterial running parallel to Honoapiilani Highway with a speed limit of 20 mph. Kenui Street is located along the southern boundary connecting Honoapiilani Highway and Front Street with a speed limit of 20 mph. Kenui Street is a two-lane minor street that also intersects with Wainee Street at a T-intersection located approximately 100 feet from the intersection of Kenui Street at Honoapiilani Highway. At the intersection with Honoapiilani Highway, the intersection is limited to right-turn in and right-turn out.

Vehicles accessing the development are expected to travel through the following study intersections:

1. Honoapiilani Highway and Kapunakea Street
2. Honoapiilani Highway and Kenui Street
3. Honoapiilani Highway and Papalaua Street
4. Front Street and Kenui Street

At the signalized intersection with Kapunakea Street, Honoapiilani Highway has a left-turn lane, a single through lane and a shared through/right-turn lane for the northbound and southbound approaches. The left-turn movements from these approaches have protected traffic signal phasing. There are no acceleration or deceleration lanes for right turning vehicles along Honoapiilani Highway. The west (makai) bound approach on Kapunakea Street has a left-turn and a shared through/right-turn lane while the east

(mauka) bound approach has a shared through/left-turn lane and a right-turn lane. See **Figure 7**.

As stated previously, the T-intersection at Kenui Street and Honoapiilani Highway is unsignalized and is restricted to right-turn in and right-turn out. The eastbound approach is a single channelized turn lane with stop sign control and no acceleration lane. Along Honoapiilani Highway, the northbound approach has two (2) through lanes and the southbound approach has one (1) through lane and one (1) shared through/right-turn lane with no deceleration lane. Refer to **Figure 7**. Pedestrian crosswalks and push-buttons exist for crossings along the north, east and west legs of the intersection.

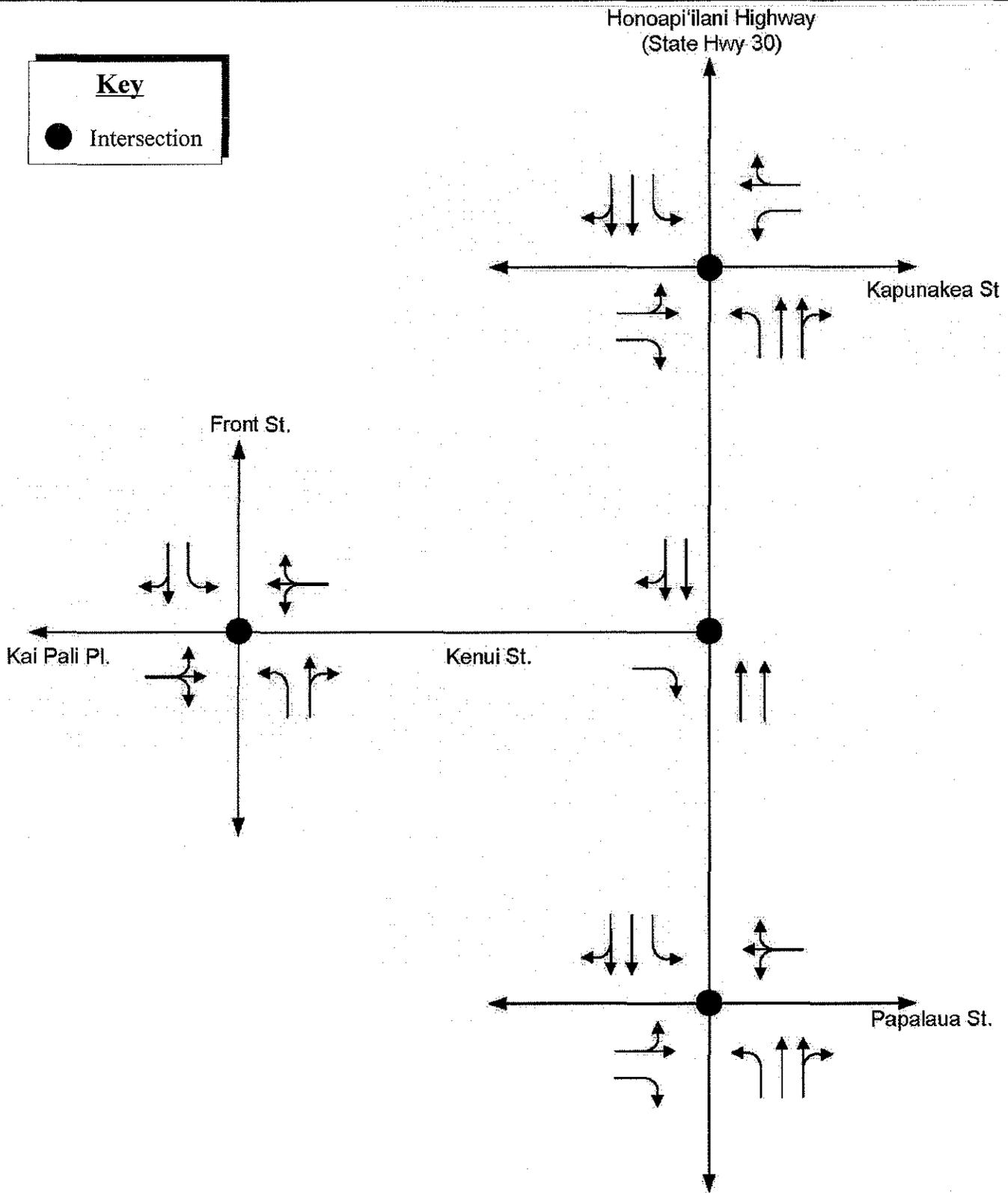
At the signalized intersection with Papalaua Street, Honoapiilani Highway has a left-turn lane, a single through lane and a shared through/right-turn lane for the northbound and southbound approaches. The left-turn movements from these approaches have protected traffic signal phasing. There are no acceleration or deceleration lanes for right turning vehicles along Honoapiilani Highway. The eastbound approach of Papalaua Street has a shared through/left-turn/right-turn lane. On the westbound approach of Papalaua Street there is one (1) lane for all turning movements. Refer to **Figure 7**. Pedestrian crossings are marked, and pedestrian push-buttons exist along the south, west and east legs of the intersection.

At Front Street, Kenui Street and Kai Pali Place intersect as a two-way stop controlled intersection. The makai-bound approach on Kenui Street and the mauka-bound approach on Kai Pali Place are stop controlled, with one (1) lane for all turning movements. The northbound and southbound approaches on Front Street have a left turning lane and a shared through/right-turn lane. Refer to **Figure 7**. A marked pedestrian crosswalk exists on the mauka leg and a raised crosswalk exists on the south leg of the intersection. Sidewalks are present along the mauka side of Front Street and south side of Kenui Street.

Existing level-of-service (LOS) on Honoapiilani Highway at the Kapunakea Street and Papalaua Street intersections is LOS C for both AM and PM traffic

Key

● Intersection



Source: SSFM International, Inc.

Figure 7 Proposed Kahoma Village Project
Existing Lane Configuration

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while the mauka-bound approach at the intersection at Kenui Street operates at LOS B in the AM and LOS C in the PM. At the Front Street intersection at Kenui Street and Kai Pali Place, the LOS for northbound and southbound traffic making left-turn movements is LOS A for both AM and PM traffic and for mauka-bound and makai-bound left-turn movements is LOS B in the AM and LOS C for mauka-bound traffic and LOS B for makai-bound traffic during the PM. The intersections operate at acceptable LOS. The roadway segment of Honoapiilani Highway between Kapunakea Street and Papalaua Street operate at LOS D.

b. Potential Impacts and Proposed Mitigation

During a community meeting held on February 15, 2012, concerns were raised by residents in the area that the proposed access driveway on Front Street across from Mala Wharf Street would conflict with existing traffic exiting the Mala Wharf area, especially boaters and their boat trailers. In response to the community concerns the driveway access was relocated further south across Puunoa Place.

Concerns were also raised regarding the proposed driveway access on Kenui Street across from the Wainee Street T-intersection. Due to limited separation between the Honoapiilani Highway intersection with Kenui Street and the Kenui Street/Wainee Street intersection, as well as an existing driveway access to the southerly apartment project adjacent to the highway, there are existing traffic conflicts from drivers attempting left turns into the apartment's driveway access and Wainee Street. Residents in the area were concerned that the proposed driveway access would aggravate the existing traffic conflicts in the area. As such, the driveway access from Kenui Street was relocated further west toward Front Street directly across Nakuli Place that provides access to the Lahaina Residential project.

The TIAR evaluated future conditions for the Year 2017, the anticipated year Kahoma Village is expected to be built and fully occupied. No additional roadway improvements were anticipated at the study intersections along Honoapiilani Highway or Front Street prior to the Year 2017. Background growth was applied to the existing (2011) volumes to determine the future traffic volumes for 2017 without the project. Anticipated traffic from

Kahoma Village were determined for 2017 and applied to determine future traffic volumes with the project. The LOS without and with the project are, as follows in **Table 4**.

Table 4. Future Level-of-Service (LOS) Year 2017

		Without Project		With Project	
Signalized Intersections		AM	PM	AM	PM
Honoapiilani Highway at Kapunakea Street		C	C	C	C
Honoapiilani Highway at Papalaua Street		C	C	C	C
Unsignalized Intersections					
Honoapiilani Highway at Kenui Street	Mauka-bound Right	B	C	B	C
Front Street at Kenui Street/Kai Pali Place	Northbound Left	A	A	A	A
	Southbound Left	A	A	A	A
	Mauka-bound Left	B	C	B	C
	Makai-bound Left	B	B	B	B
Source: SSFM International, Inc.					

According to the TIAR, the Honoapiilani Highway segment between Kapunakea Street and Papalaua Street in Year 2017 without and with the project is expected to operate at LOS F for northbound traffic between Kapunakea Street and Kenui Street and LOS D between Kenui Street and Papalaua Street. For southbound traffic the LOS is D between Kapunakea Street and Papalaua Street.

According to the TIAR, traffic from Kahoma Village at build-out Year 2017 is expected to have an insignificant impact on the study intersection and roadway network. Existing intersection operations along Honoapiilani Highway and Front Street currently operate at appropriate LOS and are expected to maintain appropriate operations in 2017. Existing road segment LOS along Honoapiilani Highway is undesirable with slightly worsening conditions in 2017 without or with the project.

Opening the first two (2) phases of the Lahaina Bypass is expected to alleviate some of the congestion along Honoapiilani Highway between

Lahainaluna Road and Keawe Street by reducing traffic volumes traveling along this section of the corridor. Opening additional phases of the Lahaina Bypass will serve to alleviate future traffic congestion by providing a more direct bypass in Lahaina. Refer to **Appendix “I”**.

2. **Water System**

a. **Existing Conditions**

A Preliminary Engineering Report was prepared for the project by SSFM International, Inc. See **Appendix “J”**.

The West Maui region is served by the County’s Department of Water Supply (DWS) domestic water system. The County water system services the coastal areas from Launiupoko to Kaanapali and from Honokowai to Napili. The County’s system includes both surface and groundwater sources.

The sources of water for Lahaina are four (4) deepwells located above Alaeloa and referred to as Napili Wells 1, 2, and 3 and Honokohau Well A. These wells are supplemented by water treatment plants above Honokowai and Lahainaluna High School that draws surface water from the Honolua Ditch and Kanaha Valley. Several miles of 12- and 16-inch lines and two (2) in-line booster stations convey water from these sources to consumers in Lahaina. Storage is provided by a 1.5 million gallon (MG) storage tank above Wahikuli and a 1.0 MG and a 0.5 MG tank on Lahainaluna Road.

The project site is currently not served by the DWS domestic water system, however, in the project area, there are existing water lines which serve the adjacent residential subdivisions to the south. The system consists of water mains with sizes ranging from 2-inch to 12-inch pipes. The system is fed by the existing 0.5 and 1.0 MG concrete water reservoirs located east (mauka) of the project site along Lahainaluna Road. There are existing fire hydrants along Front Street. Refer to **Appendix “J”**.

b. **Potential Impacts and Mitigation Measures**

Utilizing the 2002 DWS Water System Standards, the proposed development average daily water use demand is 120,000 gallons per day (gpd) and the maximum daily demand is estimated as 180,000 gpd. The Kahoma Village project proposes to connect to the County of Maui, DWS's Lahaina-Alaaloa water system. The project will connect to a 12-inch main line along Front Street. During the design phase water meter requirements will be determined. Preliminary projections indicate a 4-inch master meter is needed for domestic service.

As part of the building permit process, domestic water and fire flow calculations will be provided to determine the adequacy of the existing water system in accordance with the rules of the DWS. All water system improvements will be designed in accordance with applicable regulatory design standards. Also, an internal fire line will be designed in accordance with requirements of the Fire Code, in order to supplement existing fire hydrants along Front Street. Refer to **Appendix "J"**.

The Kahoma Village project will be subject to Chapter 14.12, Water Availability. Prior to issuance of building permits the applicant will be required to show that the project has a reliable water source. To this end, the applicant is in ongoing discussions with the DWS on possible participation with the DWS in developing new sources. Consideration is being given to either participating in system upgrades that provide additional source through water efficiencies or source development such as new wells and transmission systems.

To conserve water resources during construction, non-potable water from the Lahaina Wastewater Reclamation Facility's (LWRF) R-1, Recycled water will be used.

3. Wastewater System

a. Existing Conditions

The County of Maui, Department of Environmental Management's Wastewater Reclamation Division provides wastewater service for the West Maui region.

Wastewater from the Kaanapali and Lahaina areas is treated at the County's LWRF located approximately five (5) miles north of the project site on the east (mauka) side of Honoapiilani Highway. The LWRF's total treatment capacity is 9.0 million gallons per day (mgd). The average daily flow is approximately 4.1 mgd.

A portion of the treated effluent is used to irrigate the Kaanapali Golf Courses. The remaining treated effluent is disposed into four (4) injection wells located within the facility. Under the conditions of its Environmental Protection Agency (EPA) permit, the County is allowed to dispose a maximum flow of 6.7 mgd into the injection wells. Refer to **Appendix "J"**.

There are 12-inch and 18-inch gravity collection mains on Front Street that can provide service to the project site. A 14-inch force main from Lahaina Pump Station No. 4 traverses, along the Kahoma Stream Channel, adjacent to the north boundary of the subject project to Honoapiilani Highway.

b. Potential Impacts and Mitigation Measures

The proposed project is not anticipated to impact existing County wastewater collection and treatment facilities. Wastewater generation for the proposed project is estimated at 71,400 gallons per day (gpd) or 0.07 million gallons per day (mgd). The project system will be serviced by the 12-inch and 18-inch gravity collection mains on Front Street. The County is in the process of replacing a 14-inch force main from Lahaina pump station along the Kahoma Stream Channel to the north of the project site.

All wastewater system improvements will be designed in accordance with appropriate regulatory design criteria. The development schedule for the

project will be coordinated with the Department of Environmental Management's Wastewater Reclamation Division to assure availability of wastewater capacity at the Lahaina Wastewater Reclamation Facility.

4. **Drainage**

a. **Existing Conditions**

A Preliminary Drainage Report was prepared for the project by SSFM International, Inc. See **Appendix "H"**.

The Kahoma Stream drainageway located along the northern boundary of the project site provides storm drainage function for the surrounding area. Kahoma Stream is adjacent to the project site to the north, serving a drainage basin of 5.4 square miles. Improvements to Kahoma Stream were constructed in 1990 on 2.8 acres of the parcel which was provided by HRT, Ltd., then owner of the parcel, before the project site was transferred to The Harry and Jeanette Weinberg Foundation, Inc. This Flood Control project by the U.S. Army Corps of Engineers eliminated flooding in Lahaina due to stream overtopping. This Flood Control improvement is under the jurisdiction of the U.S. Army Corps of Engineers. A drainage system along Front Street, identified as Line W in the Lahaina Town Drainage Master Plan discharges into the ocean.

An 18-inch pipe culvert exists at the southwest corner of the project site, conveying flow from south to north under Kenui Street and discharging into this property. Along Kenui Street an existing drain line with a series of catch basins, discharges runoff towards Front Street.

It is estimated that the existing 50-year, 1-hour storm occurrence from the project site is 17.5 cfs. There are dirt berms surrounding most of the property perimeter limiting downstream runoff. If any discharge were to occur, it would be at the intersection of Front Street and Kenui Street. Refer to **Appendix "H"**.

b. Potential Impacts and Mitigation Measures

It is estimated that due to the increase in impervious areas associated with the proposed improvements, surface runoff discharge for the project site is approximately 53.4 cubic feet per second (cfs), an increase of 35.9 cfs. The net increase in stormwater runoff detention volume is 34,000 cubic feet.

The County of Maui requires peak flow and total volume of stormwater runoff from the project site to have no adverse impact on adjacent or downstream properties and coastal waters. Potential onsite drainage systems include grated inlets, catch basins and swales to detain peak flows through perforated drainage pipes and/or a retention/detention basin. Based on County of Maui Drainage Standards, drainage features will be sized to retain the 50-year, 1-hour storm runoff volume increase that is anticipated to be generated by the project. Underground storage opportunities for stormwater management may be limited due to the elevation of the project site relative to the ground water table. If it is determined that existing drainage systems in the area are inadequate, upgrades to the County system may be required, including the installation of the drainage system along Ala Moana Street as indicated in the Lahaina Town Drainage Master Plan.

All drainage improvements will conform to County standards and will be coordinated with the Department of Public Works to ensure there are no significant adverse effect on existing downstream properties.

Soil loss will be minimized during the construction period through the implementation of appropriate Best Management Practices (BMPs) and erosion control measures, including but not limited to:

1. Minimizing the time of construction.
2. Construction shall be sequenced to minimize exposure time of cleared surface area.
3. Initiating the early construction of drainage features.
4. Stationing a water truck on site during the construction period to provide for immediate sprinkling, as needed, in active construction zones (weekends and holidays included).

5. Stormwater flowing toward the construction area shall be diverted by using temporary berms, filter berms, and cut-off ditches, or other appropriate measures, where needed, for control of erosion and pollution to protect surrounding water resources.
6. Install inlet protection devices around all new catch basins and drain inlets.
7. Ensuring graded areas are thoroughly watered after construction activity has ceased for the day and on weekends and holidays.
8. Permanent soil stabilization with perennial vegetation shall be applied, as soon as practicable, after final grading to ensure all cut and fill slopes are sodded or planted.

Stormwater quality degrades with development and increased impervious surfaces when various pollutants, such as pesticides and petroleum products, are introduced into stormwater runoff. As a mitigative measure, the drainage system will be designed to incorporate permanent BMPs to ensure there are no adverse impacts on downstream properties and coastal resources from stormwater runoff. Examples of permanent BMPs would be scheduled street sweeping to reduce litter and other constituents from collection on pavement and being washed into the storm drain system, detention basins and underground infiltration systems.

5. Electrical, Telephone, and CATV Services

a. Existing Conditions

Electrical, telephone, and CATV service to the West Maui region is provided by Maui Electric Company, Ltd., Hawaiian Telcom, and Oceanic Time Warner Cable, respectively.

b. Potential Impacts and Mitigation Measures

There are existing overhead lines and power poles on the mauka side of Front Street along the project that are available to provide service to the proposed project. The proposed project is not anticipated to have significant impacts to electrical, telephone, or cable TV services.

As the project progresses through the development process, energy saving measures will be considered such as the use of solar water heaters, low flow water fixtures and drought tolerant landscaping.

E. CUMULATIVE AND SECONDARY IMPACTS

1. Cumulative Impacts

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

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

A key element in understanding the requirement for assessing cumulative impacts, therefore, is the need to recognize what constitutes “reasonably foreseeable actions”. Projects having relevance in this regard are other developments that have been approved in the vicinity of the project site, such as the 68-lot Kahoma Residential Subdivision, that will be constructed within the same timeframe as the Kahoma Village project.

Cumulative impacts are defined as the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions.

It is noted that the County of Maui’s ongoing 2030 General Plan update process will involve the formulation of a Maui Island Plan which will delineate future urban and rural growth boundaries. Other landowners in the vicinity may seek to have portions of their respective land holdings placed on the Maui Island Plan for purposes of defining future development potential in the Lahaina region. Should lands other than the proposed Kahoma Village Project be identified as potential future areas for urban and/or rural growth, planning for such areas would need to consider land planning integration opportunities. Upon completion of the General Plan update, including the

approval of the Maui Island Plan by the Maui County Council, the respective community plans, including the West Maui Community Plan, will be updated. The timeframe for the overall completion of the updating of the community plans has not yet been established. However, the overall timeframe for the General Plan covers a planning horizon up to the year 2030.

The TIAR prepared for the project examined and evaluated traffic impacts of the project, as well as other potential projects proposed in the expected timeframe, build-out in 2017. These included the proposed Kahoma Residential, Villages of Leiali'i Phase 1B, Wainee Street Commercial Center and Lahaina Cannery Mall expansion. Traffic from Kahoma Village is not expected to significantly impact study intersections and the roadway network in and around Lahaina. Existing intersections along Honoapiilani Highway and Front Street currently operate at acceptable LOS and are expected to maintain these levels of operations up to 2017. Existing road segment LOS along Honoapiilani Highway is undesirable with slightly worsening conditions in 2017. The opening of the first two (2) phases of the Lahaina Bypass is expected to alleviate some congestion along Honoapiilani Highway between Lahainaluna Road and Keawe Street, reducing traffic volumes in this area. Opening of additional phases of Lahaina Bypass in future years will further serve to alleviate congestion in the area of Lahaina Town. Refer to **Appendix "I"**.

The mitigation of other potential adverse cumulative impacts resulting from infrastructure use and public facilities will be resolved during the course of planning, permitting and development of this project. Potential cumulative impacts will be appropriately addressed and resolved through the provision of additional infrastructure and facilities onsite and offsite (drainage, water, wastewater and parks) and assessment fees (i.e., school impact fee) through coordination with State and County agencies.

In general, processes and mechanisms for coordinating mitigation measures attributed to cumulative impacts are in place. An example of a process which addresses cumulative impacts is the scoping of infrastructure studies (i.e. traffic impact) to include those projects which are anticipated to be implemented within a timeframe similar to that of the proposed action. The 68-lot Kahoma Residential project is such a project proposed in the same timeframe as the proposed project and has been included in the appropriate infrastructure studies.

2. Indirect or Secondary Impacts

Indirect effects are also referred to as secondary impacts. According to the Hawaii Administrative Rules, Chapter 200, Section 11-200-2, entitled Environmental Impact Statement Rules, a secondary impact or indirect effect means:

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

Indirect or secondary impacts can be viewed as actions of others that are taken because of the presence of the project. Secondary impacts from highway projects, for example, can occur because they can induce development by removing one of the impediments to growth – transportation access.

Aside from the direct development impacts discussed in the previous sections of this chapter, secondary impacts may be attributed to project effects on the island's overall housing situation. The provision of new housing units in Lahaina Town targeted toward the local resident especially the 102 units reserved for those within 80 percent to 160 percent of the island median income and not the high end off-shore market may open up housing (for rental or purchase) in other areas of the island, depending on market conditions at the time of project development. In general, however, the proposed action is not considered a generator of significant secondary impacts.

III. RELATIONSHIP TO LAND USE PLANS, POLICIES, AND CONTROLS

III. RELATIONSHIP TO LAND USE PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE DISTRICTS

Pursuant to Chapter 205A, Hawaii Revised Statutes (HRS), all lands in the State have been divided and placed into one (1) of four (4) land use districts by the State Land Use Commission. These land use districts have been designated "Urban", "Rural", "Agricultural", and "Conservation". The project site is located within the State "Urban" district. The proposed action is compatible with, and deemed permissible within, the State "Urban" land use district. See **Figure 8**.

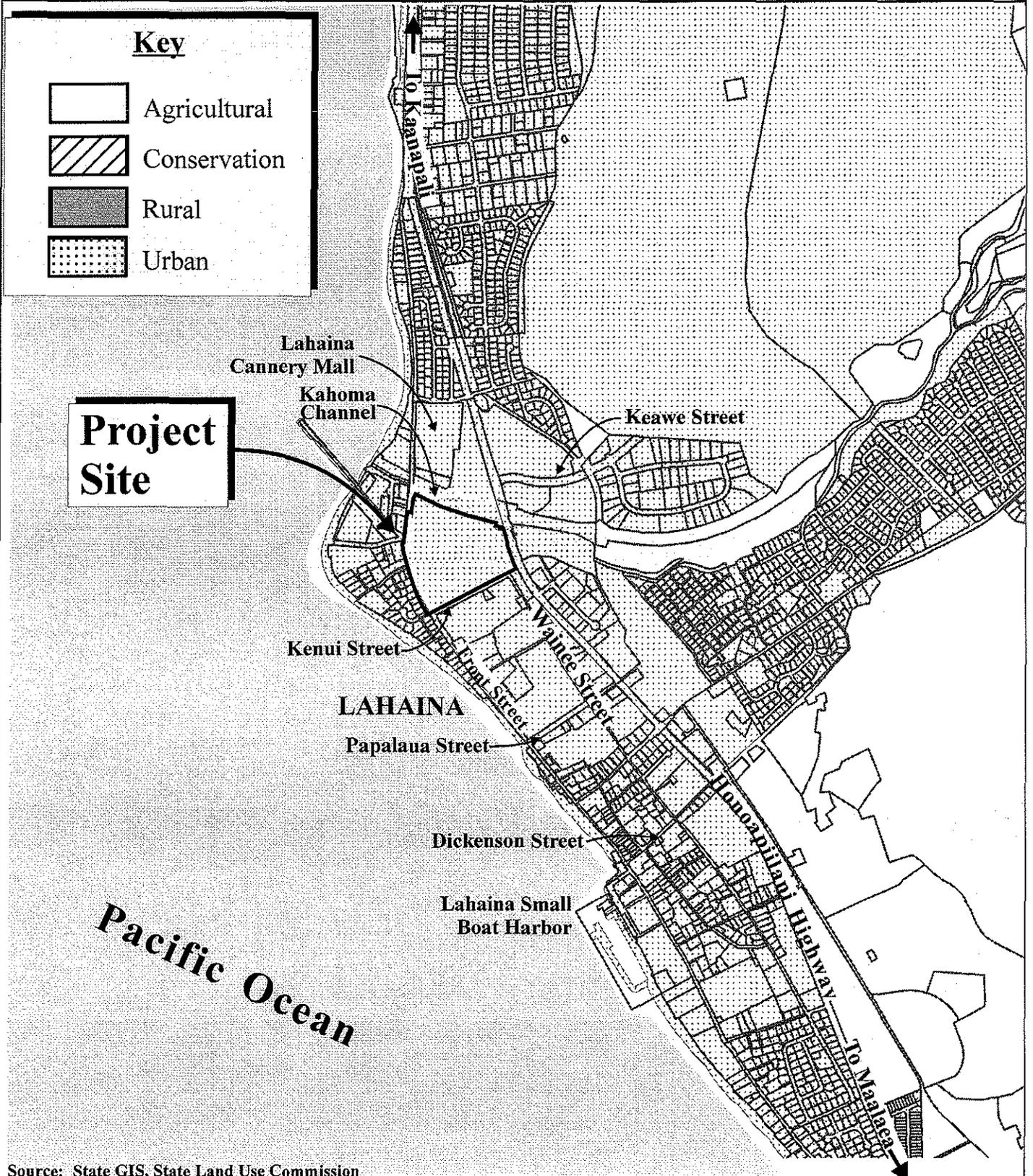
B. HAWAII STATE PLAN

Chapter 226, HRS, also known as the Hawaii State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. State objectives and policies relevant to the proposed project are as follows:

Section 226-19 Objectives and Policies for Socio-Cultural Advancement - Housing

Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:

- (1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low, low- and moderate-income segments of Hawaii's population.*
- (2) The orderly development of residential areas sensitive to community needs and other land uses.*



Source: State GIS, State Land Use Commission

Figure 8 Proposed Kahoma Village Project
State Land Use District Map

NOT TO SCALE



Prepared for: Stanford Carr Development LLC, On behalf of
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- (3) *The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.*

To achieve the housing objectives, it shall be the policy of this State to:

- a. *Effectively accommodate the housing needs of Hawaii's people.*
- b. *Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.*
- c. *Increase home ownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.*

The foregoing State Plan objectives and policies will be advanced through the implementation of the proposed project.

The State Functional Plans define actions for implementation of the Hawaii State Plan through the identification of needs, problems and issues, and recommendations on policies and priority actions which address the identified areas of concern. Twelve (12) State Functional Plans were adopted in the 1980s and updated in 1989 and 1991. The following objectives are identified in the State's Housing Functional Plan:

Objective A: *Home ownership for at least sixty percent, or roughly 248,500 households by the year 2000.*

Objective B: *Acquire and designate land suitable for housing development in sufficient amount to locate the deficit in housing units by the year 2000.*

The proposed project will provide a mix of residential housing types for a variety of income groups, especially those in the low-income, moderate-income and gap-group. As such, the project is consistent with the State's objectives to meet housing demands and promote increased home ownership opportunities for residents.

C. MAUI COUNTY GENERAL PLAN

As indicated by the Maui County Charter, the purpose of the General Plan shall be to:

... indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and

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

Chapter 2.80B of the Maui County Code (MCC), relating to the general plan and community plans, implements the foregoing Charter provision through enabling legislation which calls for a Countywide Policy Plan and a Maui Island Plan. The Countywide Policy Plan was adopted as Ordinance No. 3732 and took effect on March 24, 2010. The Maui Island Plan is currently in the process of review and formulation by the Maui County Council.

With regard to the Countywide Policy Plan, Section 2.80B.030 of the MCC states the following:

The countywide policy plan shall provide broad policies and objectives which portray the desired direction of the County's future. The countywide policy plan shall include:

1. *A vision for the County;*
2. *A Statement of core themes or principles for the county; and*
3. *A list of countywide objectives and policies for population, land use, the environment, the economy, and housing.*

Core principles set forth in the Countywide Policy Plan are listed as follows:

1. *Excellence in the stewardship of the natural environment and cultural resources;*
2. *Compassion for and understanding of others;*
3. *Respect for diversity;*
4. *Engagement and empowerment of Maui County residents;*
5. *Honor for all cultural traditions and histories;*

6. *Consideration of the contributions of past generations as well as the needs of future generations;*
7. *Commitment to self-sufficiency;*
8. *Wisdom and balance in decision making;*
9. *Thoughtful, island-appropriate innovation; and*
10. *Nurturance of the health and well-being of our families and our communities.*

Congruent with these core principles, the Countywide Policy Plan identifies goals, objectives, policies and implementing actions for pertinent functional planning categories, which are identified as follows:

1. *Natural environment*
2. *Local cultures and traditions*
3. *Education*
4. *Social and healthcare services*
5. *Housing opportunities for residents*
6. *Local economy*
7. *Parks and public facilities*
8. *Transportation options*
9. *Physical infrastructure*
10. *Sustainable land use and growth management*
11. *Good governance*

With respect to the Kahoma Village Project the following goals, objectives, policies and implementing actions are illustrative of the project's compliance with the Countywide Policy Plan:

PROTECT THE NATURAL ENVIRONMENT

Goal:

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

Objective:

Improve the stewardship of the natural environment.

EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS

Goal:

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

Objective:

Reduce the affordable housing deficit for residents.

Policies:

- *Ensure that an adequate and permanent supply of affordable housing, both new and existing units, be made available for purchase or rental to our resident and/or workforce population, with special emphasis on providing housing for low- to moderate-income families, and ensure that all affordable housing remains affordable in perpetuity.*
- *Develop neighborhoods with a mixture of accessible and integrated community facilities and services.*

Objective:

Increase the mix of housing types in towns and neighborhoods to promote sustainable land use planning, expand consumer choice, and protect the County's rural and small-town character.

Policies:

- *Design neighborhoods to foster interaction among neighbors.*
- *Encourage a mix of social, economic, and age groups within neighborhoods.*

- *Develop workforce housing in proximity to job centers and transit facilities.*

IMPROVE PARKS AND PUBLIC FACILITIES

Goal:

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

Objective:

Expand access to recreational opportunities and community facilities to meet the present and future needs of residents of all ages and physical abilities.

Policy:

- *Expand and enhance the network of parks, multi-use paths, and bikeways.*

Objective:

Improve the quality and adequacy of community facilities.

Policies:

- *Provide and maintain community facilities that are appropriately designed to reflect the traditions and customs of local cultures.*
- *Maintain, enhance, expand, and provide new active and passive recreational facilities in ways that preserve the natural beauty of their locations.*

DIVERSIFY TRANSPORTATION OPTIONS

Goal:

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

Objective:

Reduce the reliance on the automobile and fossil fuels by encouraging walking, bicycling, and other energy-efficient and safe alternative modes of transportation.

Policies:

- *Make walking and bicycling transportation safe and easy between and within communities.*
- *Require development to be designed with the pedestrian in mind.*

IMPROVE PHYSICAL INFRASTRUCTURE

Goal:

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

Policy:

- *Support green building practices such as the construction of buildings that aim to minimize carbon dioxide production, produce renewable energy, and recycle water.*

PROMOTE SUSTAINABLE LAND USE AND GROWTH MANAGEMENT

Goal:

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

Objective:

Improve land use management and implement a directed-growth strategy.

Policy:

- *Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources.*

In summary, the Kahoma Village Project, as an urban infill development in Lahaina Town close to other support services and available infrastructure, is consistent with the theme and principles of the Countywide Policy Plan.

Further, the draft Maui Island Plan specifically designates the subject property as “Lahaina Infill” in the proposed urban growth boundary for West Maui.

D. WEST MAUI COMMUNITY PLAN

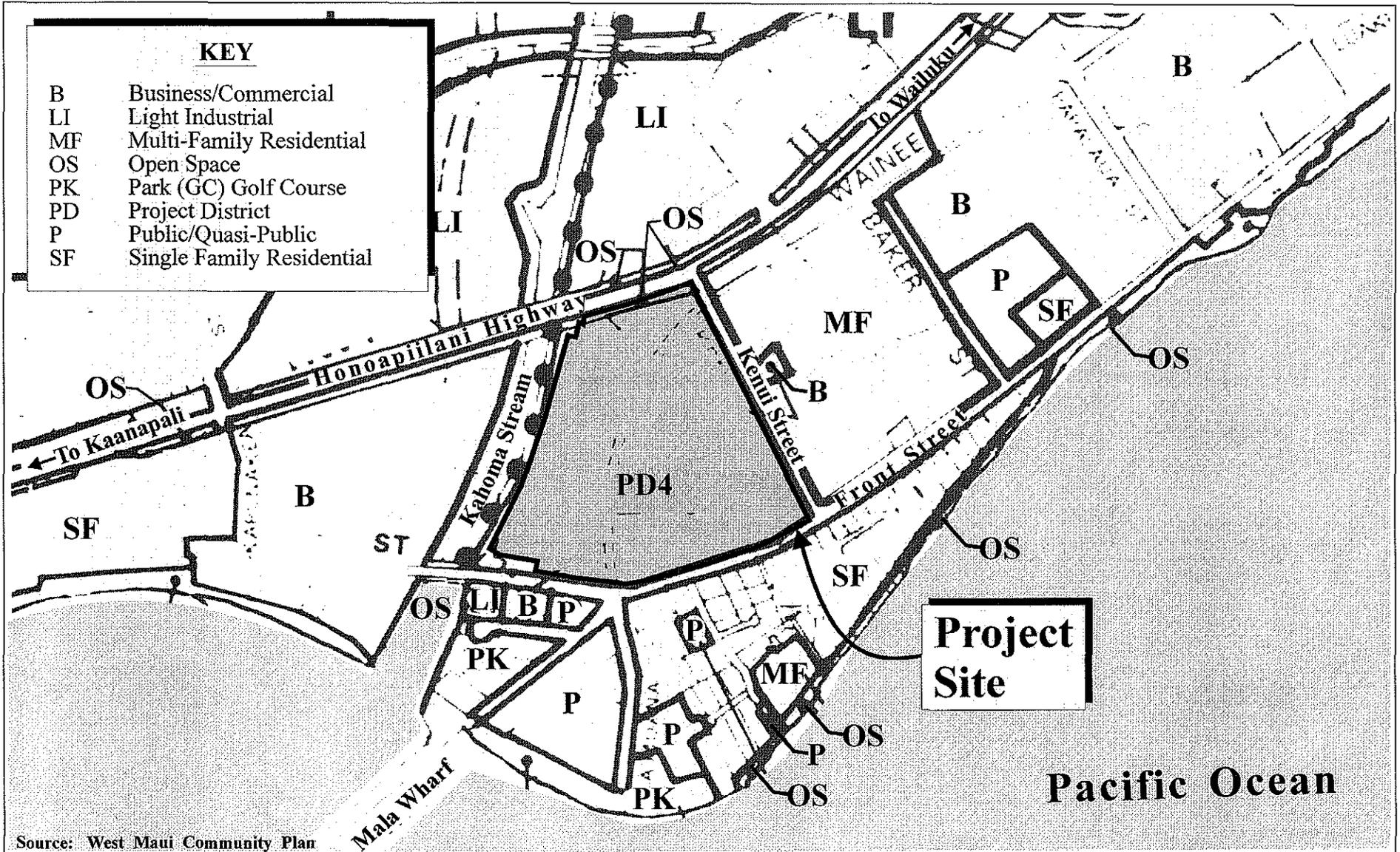
The project site is located in the West Maui Community Plan region, one (1) of the nine (9) Community Plan regions established in the County of Maui. Planning for each region is guided by the respective Community Plans, which are designed to implement the Maui County General Plan. Each Community Plan contains recommendations and standards which guide the sequencing, patterns, and characteristics of development in the region.

Land use guidelines are established by the West Maui Community Plan land use map. The subject property, bounded by Honoapiilani Highway, Kenui Street, Front Street, and the channelized Kahoma Stream, is designated “Project District 4” by the community plan land use map. See **Figure 9**.

The West Maui Community Plan states that this project district is intended to:

...provide a mixture of commercial/business and multi-family and senior citizen residential uses. There shall also be 6 acres of park land within the project district, including a linear park or greenway adjacent to the south bank of Kahoma Stream, from Honoapiilani Highway to Front Street, at least 60 feet wide and approximately 1.5 acres in size. The extension of Wainee Street from its present terminus at Kenui Street to Front Street, as well as the realignment of Kenui Street shall also be considered. Said roadway improvements should be developed and funded in conjunction with appropriate government agencies. The remaining acres in the project district shall be evenly divided between the commercial/business uses, and the multi-family and senior citizen residential uses, to the greatest extent practicable.

The Kahoma Village Project is partially in compliance with the description of Project District 4 in the West Maui Community Plan. The proposed project does not include any commercial uses and consists of single-family and multi-family housing units with a combined park area of approximately 1.75 acres. As the draft Maui Island Plan is currently before the County Council for approval, the Applicant is seeking language to include in the Maui Island



Source: West Maui Community Plan

Figure 9

Proposed Kahoma Village Project
West Maui Community Plan Designation

NOT TO SCALE



Prepared for: Stanford Carr Development LLC, On behalf of
The Harry and Jeanette Weinberg Foundation, Inc.



Plan to reflect this proposed project use. The linear park or greenway adjacent to the south bank of Kahoma Stream is located in the 2.8-acre portion of the parcel and was not implemented by the County of Maui when the service road was constructed. Wainee and Kenai Streets are not proposed by the County of Maui to be realigned. As a Section 201H-38, HRS affordable housing project, an exemption from Chapter 2.80B, MCC, General Plan and Community Plans is being requested in order that the Kahoma Village Project, as described, is deemed compliant with the West Maui Community Plan. Refer to **Appendix "B"**.

E. COUNTY ZONING

The subject property is designated "A-1, Apartment" by Maui County zoning. The property is currently vacant. The proposed single-family and multi-family housing with the proposed park are permitted uses and consistent with the existing zoning of the property. To clarify that the Kahoma Village project will be developed in accordance with the uses and plans presented during the entitlement process and does not conflict with interpretations of Title 19, Comprehensive Zoning, Maui County Code, the following Section 201H-38, HRS exemptions are being requested:

1. Exemption from Section 19.04.040, MCC, Definitions, "Height", shall be granted defining height as the vertical distance as measured from a point on the top of the structure to a corresponding point directly below on the finished grade.
2. Exemption from Section 19.040, MCC, Definitions, "Lot Area", shall be granted defining lot area as the total project site which is 21.6 acres.
3. Exemption from Section 19.04.040, MCC, Permitted Uses, shall be granted to allow the following principal uses: 1) cluster single-family units, 2) rear alley single-family units, 3) multi-family townhouse units, and 4) parks and playgrounds. The following accessory uses and structures shall be permitted: 1) carports and private garages, 2) parking areas, 3) energy systems, small-scale, 4) fences and walls, 5) storage sheds, and 6) park recreational buildings and structures, including but not limited to gazebo, pavilions, courts and pools, and playground equipment.

Refer to **Appendix "B"**.

F. COASTAL ZONE MANAGEMENT AND SPECIAL MANAGEMENT AREA CONSIDERATIONS

The subject property is located within the County of Maui's Special Management Area (SMA). See **Figure 10**. A SMA Permit application will be submitted to the Maui Planning Department for review and action by the Maui Planning Commission. Pursuant to Chapter 205A, HRS, and the Rules and Regulations of the Maui Planning Commission, actions proposed within the SMA are evaluated with respect to the Hawaii Coastal Zone Management Program (HCZMP) and SMA objectives, policies and guidelines. This section addresses the project's relationship to applicable coastal zone management considerations, as set forth in Chapter 205A, HRS and the Rules and Regulations of the Maui Planning Commission.

Chapter 205A, Hawaii Revised Statutes

1. Recreational Resources

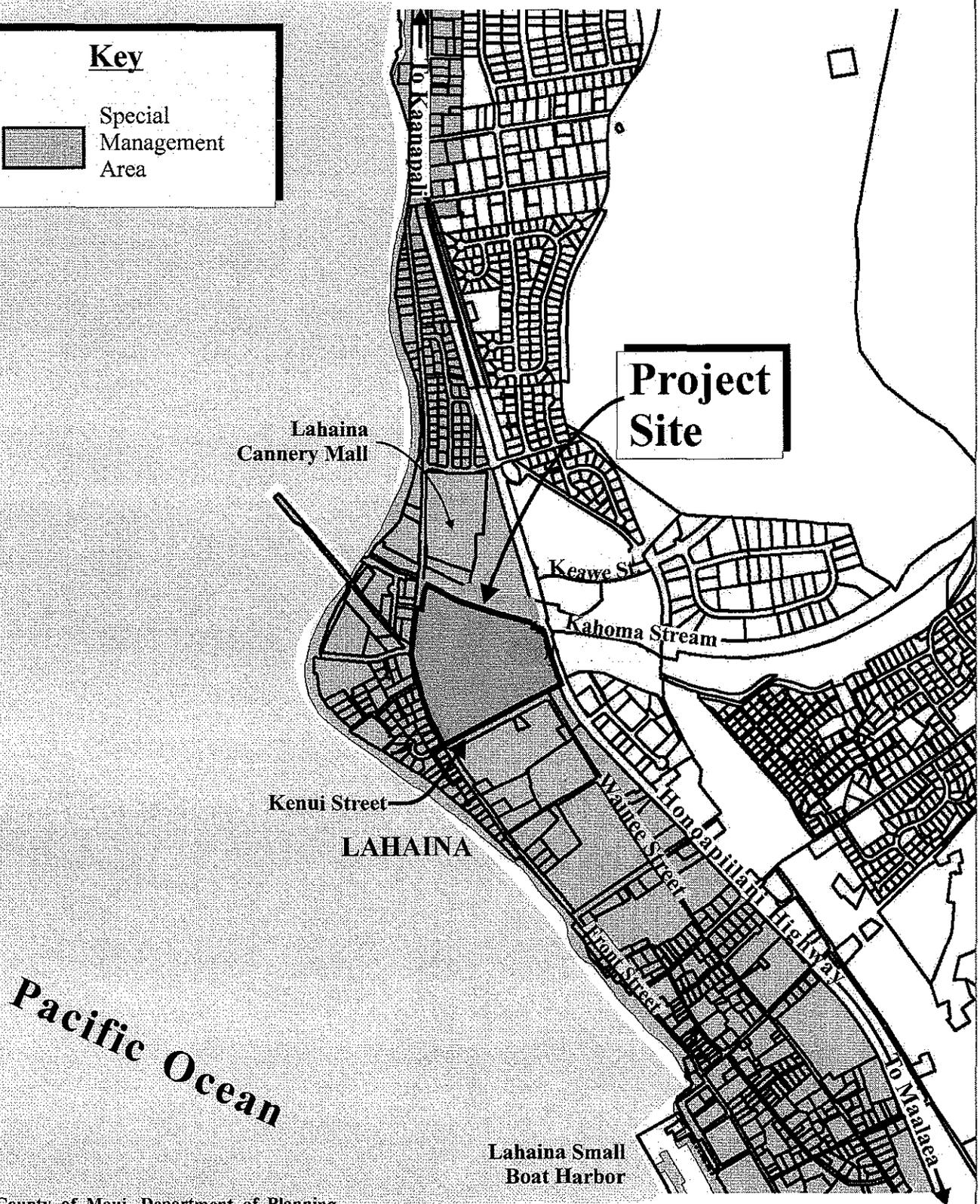
Objective: *Provide coastal recreational opportunities accessible to the public.*

Policies:

- a. *Improve coordination and funding of coastal recreation planning and management; and*
- b. *Provide adequate, accessible and diverse recreational opportunities in the coastal zone management area by:*
 - i. *Protecting coastal resources uniquely suited for recreation activities that cannot be provided in other areas;*
 - ii. *Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds and sandy beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;*
 - iii. *Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*

Key

Special Management Area

Source: County of Maui, Department of Planning

Figure 10 Proposed Kahoma Village Project Special Management Area Map

NOT TO SCALE



Prepared for: Stanford Carr Development LLC, on behalf of
The Harry and Jeanette Weinberg Foundation, Inc.

MUNEKIYO HIRAGA, INC.

- iv. *Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*
- v. *Ensuring public recreational use of County, State and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*
- vi. *Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible, restore the recreational value of coastal waters;*
- vii. *Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches and artificial reefs for surfing and fishing; and*
- viii. *Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the Land Use Commission, Board of Land and Natural Resources, County Planning Commissions and crediting such dedication against the requirements of Section 46-6 of the Hawaii Revised Statutes.*

Response: The project site is located on the mauka side of Front Street and is not a shoreline-abutting property and includes a drainage system designed to protect nearshore waters. Further, there are several beach accesses within walking distance of the Kahoma Village Project that will provide shoreline recreational opportunities to residents without impacting beach access parking. The proposed action is not anticipated to impact coastal recreational opportunities or affect existing public access to the shoreline.

2. Historical/Cultural 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.*

Response: The project site is located outside of the Lahaina National Historic Landmark District. According to the Archaeological Assessment Survey, there was no evidence of traditional or pre-contact surface or subsurface features or cultural deposits. However, because of its location pre-contact and/or post-contact human burials and/or previously disturbed human remains may lie in those portions of the project area that were not tested.

As such, archaeological monitoring of all future earth disturbance activities on the project area is recommended as human burials have been previously documented on nearby parcels, including the Lahaina Cannery Mall property.

Should human remains be inadvertently discovered during earth moving activities for the proposed project, work shall cease at once in the immediate area of the find, and the find shall be protected from further damage. The State Historic Preservation Division (SHPD) shall be immediately notified and procedures for the treatment of inadvertently discovered human remains shall be followed pursuant to Chapter 6E, HRS.

3. **Scenic and Open Space Resources**

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

Policies:

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

Response: The proposed project is located on the mauka side of Front Street and does not abut the shoreline. It will be designed and landscaped in accordance with applicable regulatory standards to ensure visual compatibility with the surrounding land uses. The project site is within an urban infill area identified for housing in the West Maui Community Plan. The proposed action is not anticipated to impact coastal scenic and open space resources, nor will it adversely affect public views to and along the coastline.

4. **Coastal Ecosystem**

Objective: *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*

Policies:

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

Response: The proposed action is not expected to adversely impact coastal ecosystems. Drainage system improvements will include a combination of underground perforated pipes and a retention/detention basin as a mitigation control measure designed in accordance with applicable regulatory standards to ensure that there are no adverse effects to adjacent or downstream properties from stormwater runoff.

In addition, appropriate BMPs and erosion control measures will be implemented to minimize the effects of stormwater runoff during construction of the project.

5. Economic Use

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 developments 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 used 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 effects are minimized; and*
 - iii. *The development is important to the State's economy.*

Response: The project site is located within an urban infill area identified for future housing in the West Maui Community Plan. It is noted also that the project site is recommended as a future residential growth area for Lahaina Town in the draft Maui Island Plan. As such, the project is located in a suitable location. There are no anticipated adverse impacts to coastal zone resource parameters anticipated to result from the proposed action.

6. Coastal Hazards

Objective: *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, point and nonpoint source pollution hazards;*
- b. *Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;*
- c. *Ensure that developments comply with requirements of the Federal Flood Insurance Program; and*
- d. *Prevent coastal flooding from inland projects.*

Response: The project site is an urban infill location situated within the midst of Lahaina Town. Lands underlying the project site fall within Zone X (unshaded) of the FIRM map, an area of minimal flooding. Refer to **Figure 6**. Drainage improvements will include a combination of underground perforated pipes and a retention/detention basin designed in accordance with the Drainage Standards of the County of Maui to ensure that stormwater runoff from the project will not adversely affect downstream and adjoining properties and nearshore waters.

The project site is located in the tsunami inundation zone. Evacuation routes during a tsunami event would be readily available towards the upper slopes of Lahaina Town mauka of Honoapiilani Highway towards Keawe Street across the Lahaina Cannery Mall.

7. **Managing Development**

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

Policies:

- a. *Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and coastal zone development;*
- b. *Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and*

- c. *Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the general public to facilitate public participation in the planning and review process.*

Response: All aspects of the development will be conducted in accordance with applicable State and County requirements. Opportunity for public review of the proposed action will be offered through the Chapter 343, HRS, Environmental Assessment, Section 201H-38, HRS application and SMA permitting processes.

8. Public Participation

Objective: *Stimulate public awareness, education, and participation in coastal management.*

Policies:

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

Response: As mentioned previously, opportunities for public participation will be provided through the Section 201H-38, HRS application and SMA permitting processes. Further, a community meeting was held on February 15, 2012 where approximately 27 persons attended. See **Appendix “K”**.

9. Beach Protection

Objective: *Protect beaches for public use and recreation.*

Policies:

- a. *Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;*

- b. *Prohibit construction of private 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.*

Response: The project site is located approximately 0.5 mile away from the shoreline on the landward (mauka) side of Front Street. As the project site is not a shoreline abutting property and appropriate BMPs will be implemented during construction, the proposed project is not anticipated to impact shoreline activities in the area.

10. **Marine Resources**

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

Policies:

- a. *Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*
- b. *Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;*
- c. *Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;*
- d. *Promote research, study, and understanding of ocean 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*
- e. *Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

Response: The project will be designed in compliance with the County of Maui's drainage requirements to ensure that there are no adverse impacts from stormwater

runoff on marine resources located downstream of the project site. BMPs will be incorporated into the construction phase of the project to support the policies of effective management to protect marine and coastal resources.

In addition to the foregoing objectives and policies, SMA permit review criteria pursuant to Section 205A-30.5 (a) provides that:

No special management area use permit or special management area minor permit shall be granted for structures that allow artificial light from floodlights, uplights, or spotlights used for decorative or aesthetic purposes when the light:

- (1) Directly illuminates the shoreline and ocean waters; or*
- (2) Is directed to travel across property boundaries toward the shoreline and ocean waters.*

The project site is located landward of Front Street and is approximately 0.5 mile from the shoreline. However, in addressing light pollution issues, the proposed project lighting and landscape plan will specify that all lights within the project be shielded and of the directional down lighting design to mitigate light pollution and to prevent lighting traveling across property boundaries. All outdoor lighting will comply with the County's outdoor lighting ordinance.

Rules and Regulations of the Maui Planning Commission

Pursuant to Section 12-202-12(e) of the Maui Planning Commission Rules, the project has been evaluated in accordance with the following criteria.

A. Involves an irrevocable commitment or destruction of any natural or cultural resources.

The project site was previously used for sugarcane cultivation until Honoapiilani Highway was constructed and separated the site from the rest of the plantation's cultivated fields. Any native habitat that may have been a natural resource on the site has long been destroyed by this previous agricultural cultivation. The project site is currently vacant and overgrown with non-native vegetation species.

An Archaeological Assessment Survey and a Cultural Impact Assessment have been prepared for the proposed project. No archaeological, historic or cultural sites were identified during the completion of these reports. However, as a precaution, archaeological monitoring during ground altering work is recommended. Further, no traditional cultural practices were found. As such, the proposed project will not involve an irrevocable commitment or destruction of any natural or cultural resources.

B. Significantly curtails the range of beneficial uses of the environment.

The project site is located within the Urban District and identified as an urban infill area for future housing in the West Maui Community Plan and draft Maui Island Plan. The proposed development is compatible with the surrounding residential uses and will not significantly curtail the range of beneficial uses of the environment.

C. Conflicts with the county's or the state's long-term environmental policies or goals.

The proposed project includes Best Management Practices such as a drainage system designed as a mitigation control measure to protect downstream and coastal waters. As such, the proposed project is consistent with and does not conflict with the State's and County's long-term environmental policies and goals.

D. Substantially affects the economic or social welfare and activities of the community, county, or state.

The proposed development will provide a positive effect on availability of affordable housing in West Maui for local residents. Fifty-one percent of the units will meet the affordable criteria of the County of Maui. The proposed project would utilize the existing vacant property which has been an area of makeshift homeless shelters, vagrancy, loitering, illegal dumping, and drug activities. As such, the project will not substantially adversely affect the economic or social welfare and activities of the community, County, or State.

E. Involves substantial secondary impacts, such as population changes and increased effects on public facilities, streets, drainage, sewage, and water systems and pedestrian walkways.

The proposed development will provide housing in West Maui for its growing population, and 51 percent of the units will meet the affordable criteria of the County of Maui. Necessary improvements, such as roadways, sidewalks, drainage, sewage, water and other utilities will be provided during implementation of the proposed project. There is existing infrastructure service to accommodate the proposed project. Pursuant to Chapter 14.12, MCC, the applicant will work with the Department of Water Supply to provide a reliable water source for the project prior to obtaining building permits. Streets and sidewalks will be improved to county standards and onsite drainage improvements will be constructed to accommodate the increase in stormwater runoff from the project. The proposed project does not involve substantial secondary impacts.

F. In itself has no significant adverse effects but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.

The project site is identified in the West Maui Community Plan for future housing. The project is not part of a larger action and, as such, is not anticipated to result in any cumulative impacts.

G. Substantially affects a rare, threatened, or endangered species of animal or plant, or its habitat.

A Biological Resources Study was conducted on the subject property. No rare, threatened, or endangered species of animal or plant were identified during the course of the study. Although the tobacco tree plant, which is a non-native habitat for the Blackburn sphinx moth was found on the property, no moths were encountered and appropriate mitigation measures are proposed for the removal of the tobacco tree plants to ensure the project does not impact any moths that may be present in the area.

H. Is contrary to the state plan, county's general plan, appropriate community plans, zoning and subdivision ordinances.

Pursuant to the Section 201H-38, HRS exemptions, the proposed project is not considered to be contrary to the State Plan, County's General Plan, West Maui Community Plan, zoning and subdivision ordinances. The project is intended to

implement the intent of the West Maui Community Plan's project district designation by providing housing opportunities in a central and convenient location in Lahaina Town.

I. Detrimentially affects air or water quality or ambient noise levels.

The proposed project includes a drainage system as a mitigation control matter to protect downstream and coastal waters from stormwater runoff. The proposed project is not anticipated to have a detrimental effect on air or water quality or ambient noise levels.

J. Affects an environmentally sensitive area, such as flood plain, shoreline, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh waters, or coastal waters.

The proposed project is located in the tsunami inundation zone. Evacuation routes, during a tsunami event are readily available towards the upper slopes of Lahaina Town mauka of Honoapiilani Highway. As such, the proposed project is not anticipated to affect an environmentally sensitive area.

The project includes a drainage system as a mitigation control measure to protect downstream and coastal waters from stormwater runoff.

K. Substantially alters natural land forms and existing public views to and along the shoreline.

The proposed project, which is on the landward (mauka) side of Front Street, is not anticipated to substantially alter natural land forms or affect existing public views to the shoreline. Public views to the ocean from Honoapiilani Highway to the east of the project site is currently obstructed by existing development on the ocean-side of the highway.

L. Is contrary to the objectives and policies of chapter 205A, HRS.

As noted previously, the proposed project is not contrary to the objectives and policies of Chapter 205A, HRS.

G. SECTION 201H-38, HRS APPLICATION

As described in Section I of this document, Section 201H-38, HRS allows eligible developers/housing projects to be exempt

“...from all statutes, ordinances, charter provisions, and rules of any governmental agency relating to planning, development and improvement of land, and the construction of units thereon...”

in order to facilitate the timely and cost effective implementation of proposed affordable housing projects.

As part of the Section 201H-38, HRS application, exemptions from the Maui County Code requirements will be requested. The full list of proposed exemptions requested are described in **Appendix “B”**.

A Section 201H-38, HRS application will be prepared and filed with the County of Maui’s Department of Housing and Human Concerns (DHHC). The review of the Environmental Assessment (EA) was coordinated with the DHHC to ensure that issues raised during the EA process, which are pertinent to Section 201H-38, HRS criteria, are appropriately addressed. The Final EA will be included in the Section 201H-38, HRS application which will be transmitted to the Maui County Council by DHHC for review and action.

**IV. SUMMARY OF
ADVERSE
ENVIRONMENTAL
EFFECTS WHICH
CANNOT BE AVOIDED**

IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The proposed development of the Kahoma Village Project will result in certain unavoidable construction-related environmental impacts and commitments of resources including land, infrastructure, and public services, as outlined in Chapter II. Commitments of these resources are considered irreversible and irretrievable. These commitments, however, are considered appropriate in the context of providing affordable housing opportunities to Maui County.

The project area is an urban infill location within the midst of Lahaina Town. The project site was previously impacted by land altering activities associated with agricultural cultivation, construction of the Kahoma Stream Channel and Flood Control project, nearby residential development, road construction and similar activities due to heavy equipment clearing and piles of construction-related debris. The project site is relatively flat and minimal grading will be done to clear and prepare the site for development with utilization of Best Management Practices (BMPs) during construction. Erosion control measures during construction will also be incorporated into the use of BMPs to minimize soil loss. As such, no adverse impacts to topography and soils are anticipated.

The construction of the proposed project will result in certain construction-related impacts. Such impacts include those related to noise generation occurring from heavy equipment used for site preparation and construction activities. In addition, temporary air quality impacts associated with dust generation from construction activities, and exhaust emissions discharged by construction equipment are also likely. However, during construction these impacts are temporary and will be mitigated through the use of appropriate BMPs, such as dust barriers, water wagons and/or sprinklers to control dust, and watering graded areas upon completion of daily construction activities. Upon completion the proposed project is not expected to be a source of long-term adverse air or noise conditions. The proposed project includes a drainage system designed as a mitigation control measure to protect downstream and coastal waters from stormwater runoff.

V. ALTERNATIVES TO THE PROPOSED ACTION

V. ALTERNATIVES TO THE PROPOSED ACTION

A. PREFERRED ALTERNATIVE

The proposed project, as outlined in Chapter I, Project Overview, is the preferred alternative. It is an efficient use of vacant infill land within the urban area of Lahaina Town which has been designated for housing in the West Maui Community Plan and is easily accessible to existing infrastructure. This is the preferred alternative as it addresses community comments on traffic circulation in the area and accommodates the future housing needs of the population growth projected for West Maui and expands the inventory of affordable housing.

Construction supports the economy by providing jobs and the proposed project, when completed, generates tax revenues to provide public facilities and services.

B. NO ACTION ALTERNATIVE

The no action alternative maintains the existing lack of affordable housing in West Maui. It continues the inability to meet the needs of the future population growth projected in the region. The no action alternative would keep the property vacant and in its current condition. The project area has been idle for over 50 years since it was taken out of sugar cane cultivation and is overgrown with dry-land grasses, shrubs and scattered trees. Such vacant lands encourage the homeless to occupy the property with their makeshift shelters and create social problems in the area. This vacant parcel is the subject of complaints by residents due to drug activities, loitering, illegal dumping, and vagrancy and this condition would continue with the no action alternative.

C. POSTPONED ACTION ALTERNATIVE

Similar to the no action alternative, the postponed action alternative maintains the property in its idle condition and does not address the housing needs for a projected population growth in West Maui.

**VI. IRREVERSIBLE AND
IRRETRIEVABLE
COMMITMENTS OF
RESOURCES**

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The project is an urban in-fill project designated for future housing in both the West Maui Community Plan and the draft Maui Island Plan to accommodate a small portion of future growth in West Maui, and is not at a scale to significantly impact the regional setting of the area.

The proposed housing project is anticipated to result in the irreversible and irretrievable commitment of natural and fiscal resources. Other resource commitments include energy, labor, and material resources. Impacts relating to the use of these resources are not considered significant when weighed against the expected positive socio-economic and community benefits derived from the project.

Furthermore, the proposed project is located near existing infrastructure and public services and is not anticipated to require a substantial commitment of government services or facilities, and it is not anticipated to place significant additional requirements on police, fire, medical, and social services.

VII. SIGNIFICANCE CRITERIA ASSESSMENT

VII. SIGNIFICANCE CRITERIA ASSESSMENT

The proposed project includes the use of County lands involving interconnections to the County's roadways and utilities, road widening and drainage improvements involving work within the County right-of-ways. Since County lands are being utilized for the project, an Environmental Assessment (EA) has been prepared pursuant to Chapter 343, HRS and Chapter 200 of Title 11, Hawaii Administrative Rules (HAR) of the State Department of Health, Environmental Impact Statement Rules.

The "Significance Criteria", Section 12 of the HAR, Title 11, Chapter 200, Environmental Impact Statement Rules, were reviewed and analyzed to determine whether the proposed project will have significant impacts to the environment. The following analysis is provided.

1. **Involves an irrevocable commitment to loss or destruction of any natural or cultural resources.**

The project site was previously used for sugarcane cultivation until Honoapiilani Highway was constructed, separating this site from the rest of the cultivated fields. Natural and cultural resources were destroyed due to this previous ground altering agricultural cultivation and the viability of agriculture diminished due to the construction of the highway. The current site is vacant and overgrown with non-native vegetation species. A number of the non-native tobacco trees, host plant of the Blackburn's sphinx moth were found on the project site. Removal of the trees will be done by hand during the fall months after the Blackburn's sphinx moth breeding cycle is completed. Also, large scale clearing will not occur before at least the passage of another four (4) months to allow any potential pupae in the soil to hatch and disperse.

To protect endangered seabirds that may fly over the project site, outdoor lights will be hooded to direct the light downward to minimize distractions to the seabirds.

The project site is located outside of the Lahaina National Historic Landmark District. No archaeological, historic or cultural sites were identified during the Archaeological Assessment Survey and Cultural Impact Assessment prepared for the proposed project. Archaeological monitoring during ground altering work is recommended. No traditional cultural practices were found.

There is no loss or destruction of significant natural or cultural resources associated with the proposed project.

2. **Curtails the range of beneficial use of the environment.**

The project site is located within the Urban District and identified as an urban infill area for future housing in the West Maui Community Plan and draft Maui Island Plan. The proposed project is compatible with the surrounding residential uses. As such, the proposed project is not anticipated to result in a significant effect on the beneficial uses of the environment.

3. **Conflicts with the state's long-term, environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.**

The State's Environmental Policy and Guidelines are set forth in Chapter 344, HRS. The project is located mauka of Front Street and does not abut the shoreline. Best Management Practices will be implemented and includes a drainage system designed to protect downstream and coastal resources from stormwater runoff. The proposed action is not contrary to the policies and guidelines set forth in Chapter 344, HRS.

4. **Substantially affects the economic welfare, social welfare, and cultural practices of the community or State.**

The proposed project is located outside the Lahaina National Historic Landmark District and will provide housing in West Maui. Fifty-one percent of the units will meet the affordable criteria of the County of Maui. Recognizing that this proposed project will serve to accommodate future housing needs of a projected population growth for West Maui, the proposed project is anticipated to have positive effect on the availability of housing, short-term construction-related employment and services and will utilize what is an existing vacant property.

In the long term, these housing units will generate real property tax as a revenue source for the County's general fund which finances public facilities and services. Those services include fire and police protection, street maintenance, water, sewer, refuse collection and recreational activities. New homeowners moving into this area supports the economy with these added consumers of goods and services.

The Archaeological Assessment Survey conducted for this project did not identify evidence of traditional or pre-contact surface or subsurface features or cultural deposits. Archaeological monitoring of future earth disturbance activities on the project area was recommended.

The proposed project is not anticipated to have an adverse effect on the economic welfare, social welfare and cultural practice in the area.

5. **Substantially affects public health.**

The project site is currently vacant and the subject of complaints related to drug use and vagrancy. The proposed project would have a positive effect by utilizing the property for housing in West Maui. Fifty-one percent of the units will meet the affordable housing criteria of the County of Maui. As such, no adverse impacts to the public's health and welfare are anticipated as a result of the proposed project.

6. **Involves substantial secondary impacts, such as population changes or effects on public facilities.**

Population growth in West Maui is anticipated to occur with or without the proposed project. Any secondary impacts may be attributed to project effects on the island's overall housing situation. That is, the availability of new housing targeted to local residents in Lahaina may open up housing (for rental or purchase) in other areas of the island, depending on market conditions at the time of project development.

The proposed project will provide housing in West Maui, including at least 51 percent of the units will meet the affordable housing criteria of the County of Maui, to accommodate a small portion of its growing population. There is existing infrastructure and public services to accommodate the proposed project. Pursuant to Chapter 14.12, MCC, the applicant will work with the Department of Water Supply to develop a reliable water source for the project prior to obtaining building permits. Necessary improvements to connect to existing infrastructure, such as roadways, sidewalks, drainage, sewage, water and other utilities, will be done during implementation of the proposed project. The proposed project also includes three (3) park areas which have a combined area of approximately 1.75 acres. These landscaped common open spaces are for use by residents and open to the public.

Based on projections, the proposed project will add approximately 68 students to the student enrollment in the elementary, middle, and high schools in West Maui. In accordance with the West Maui Impact Fee District, the DOE will assess the housing units based on the projected number of students generated from the Kahoma Village project.

In general, the proposed project is not considered a generator of substantial secondary impacts.

7. **Involves a substantial degradation of environmental quality.**

The proposed project was previously ground altered as it was utilized for agricultural cultivation. It is now vacant and covered with non-native vegetation species. The project will involve minimal grading for development of this project and is anticipated to have a positive effect on the environmental quality as it will incorporate landscaping for shade, management of soil erosion and stormwater runoff.

The proposed project is located approximately 0.5-mile away from the shoreline on the landward (mauka) side of Front Street and includes a one-acre landscaped private park, a portion of which will also function as a drainage system designed to include permanent BMPs to protect downstream coastal waters from stormwater runoff.

The project is not anticipated to involve a substantial degradation of environmental quality.

8. **Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.**

The proposed project site is identified in the West Maui Community Plan for future housing. The project is not part of a larger action and, as such, is not anticipated to result in any cumulative impacts or have significant adverse impact on the environment.

9. **Substantially affects a rare, threatened, or endangered species of animal or plant, or its habitat.**

A Biological Resources Study was conducted on the subject property for the proposed project and no rare, threatened, or endangered species of animal or plant or

their habitat were identified. Although the tobacco tree plant, which is a non-native habitat for the Blackburn's sphinx moth was found on the property, appropriate mitigation measures are proposed to ensure the project does not impact any moths that may be present in the area. Mitigation measures include removal of such shrubs by hand in the fall months after the Blackburn's sphinx moth's breeding cycle is completed and that large scale clearing not proceed before at least another four (4) months so that any potential moth pupae in the soil hatch and disperse.

Also, to protect endangered seabirds that may fly over the project site, outdoor lights will be hooded to direct the light downward to minimize distractions to the seabirds.

10. Detrimentially affects air or water quality or ambient noise levels.

The proposed project site in general does not experience adverse air quality conditions. Airborne pollutants that do exist are largely attributed to automobile exhaust from Honoapiilani Highway and other surrounding roadways. With additional traffic from the proposed project, these sources of airborne pollutants are intermittent and prevailing winds would quickly disperse the particulates generated by these temporary sources.

Existing background noise in the vicinity of the project area is mainly attributed to traffic movements along the adjoining stretch of Honoapiilani Highway and other surrounding roadways. Any additional traffic from the proposed project would not adversely affect the noise levels attributed to the existing traffic movements in the area of the proposed project.

The proposed project site is located landward of Front Street and is located 0.5 mile away from the shoreline. Drainage improvements will be designed in accordance with the Drainage Standards of the County of Maui and will include permanent BMPs to ensure that stormwater runoff from the project will not adversely affect downstream coastal waters and adjoining properties.

The proposed project is not anticipated to adversely affect air, water quality or ambient noise levels.

11. **Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geological hazardous land, estuary, fresh water, or coastal waters.**

The proposed project is located approximately 0.5 mile away from the coastal waters on the landward (mauka) side of Front Street and is an area of minimal flooding with no restrictions placed on development as indicated in the Flood Insurance Rate Map (FIRM). The project area is not subject to the Flood Hazard District Ordinance, Chapter 19.62 of the Maui County Code.

The project site is within the tsunami inundation zone. Evacuation routes, during a tsunami event are readily available towards the upper slopes of Lahaina Town mauka of Honoapiilani Highway.

The proposed project is not anticipated to affect any environmentally sensitive area.

12. **Substantially affects scenic vistas and viewplanes identified in county or state plans or studies.**

Although the project site is currently vacant, views to the ocean from Honoapiilani Highway are limited. The existing vegetation on the property, housing units, and commercial uses on the makai side of the highway currently obstruct views to the ocean. The project site is three (3) to five (5) feet below the highway, as such, the proposed two-story structures will be at a lower elevation which will reduce the visual impact of the buildings from the highway.

13. **Requires substantial energy consumption.**

During construction there will be a short-term demand for fuel for construction equipment. The proposed project will include renewable energy, such as solar systems for the units, and the option to install photovoltaic systems to lessen dependency on fossil fuels. As such, the demand for fossil fuel derived energy is not anticipated to be substantial.

Based on the foregoing finds, it is anticipated that the proposed action will result in a Finding of No Significant Impact (FONSI) by the DHHC as the approving agency.

VIII. LIST OF PERMITS AND APPROVALS

VIII. LIST OF PERMITS AND APPROVALS

The following list of permits and approvals are anticipated to be needed for project implementation:

State

1. Department of Health NPDES Permit, as applicable
2. Department of Health Noise Permit, as applicable

County of Maui

1. Section 201H-38, HRS Affordable Housing Approval
2. Special Management Area Use Permit
3. Subdivision Approval
4. Construction Permits
5. Work in County Rights-of-Way

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

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

The following list of agencies, organizations, and individuals were consulted in the preparation of the Draft Environmental Assessment (EA). Agency comments and responses to substantiate comments are included herein.

- | | |
|--|---|
| 1. Ranae Ganske-Cerizo, Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
77 Hookele Street, Suite 202
Kahului, Hawaii 96732 | 6. Richard C. Lim, Director
State of Hawaii
Department of Business, Economic
Development & Tourism
P.O. Box 2359
Honolulu, Hawaii 96804 |
| 2. George Young
Chief, Regulatory Branch
U.S. Department of the Army
U.S. Army Engineer District, Honolulu
Regulatory Branch
Building 230
Fort Shafter, Hawaii 96858-5440 | 7. Kathryn Matayoshi, Superintendent
State of Hawaii
Department of Education
P.O. Box 2360
Honolulu, Hawaii 96804 |
| 3. Gordon Furutani, Field Office Director
U. S. Department of Housing and Urban
Development
500 Ala Moana Boulevard, Suite 3A
Honolulu, Hawaii 96813-4918 | 8. Heidi Meeker
Planning Division
Office of Business Services
Department of Education
c/o Kalani High School
4680 Kalaniana'ole Highway, #T-B1A
Honolulu, Hawaii 96821 |
| 4. Loyal A. Mehrhoff, Field Supervisor
U. S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 3-122
Box 50088
Honolulu, Hawaii 96813 | 9. Alapaki Nahale-a, Chairman
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawaii 96805 |
| 5. Karen Seddon, Executive Director
Hawaii Housing Finance and Development
Corporation
677 Queen Street
Honolulu, Hawaii 96813 | 10. Loretta J. Fuddy, Director
State of Hawaii
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaii 96814 |

11. Alec Wong, P.E., Chief
Clean Water Branch
 State of Hawaii
Department of Health
 919 Ala Moana Blvd., Room 300
 Honolulu, Hawaii 96814
12. Patti Kitkowski
 District Environmental Health
 Program Chief
 State of Hawaii
Department of Health
 54 High Street
 Wailuku, Hawaii 96793
13. Genevieve Salmonson, Acting Manager
 Environmental Planning Office
Department of Health
 919 Ala Moana Blvd., Suite 312
 Honolulu, Hawaii 96814
14. Lene Ichinotsubo
 Environmental Management Division
 State of Hawaii
Department of Health
 919 Ala Moana Blvd., Room 212
 Honolulu, Hawaii 96814
15. William J. Aila, Jr., Chairperson
 State of Hawaii
**Department of Land and Natural
 Resources**
 P. O. Box 621
 Honolulu, Hawaii 96809
16. Puaalaokalani Aiu, Administrator
 State of Hawaii
**Department of Land and Natural
 Resources**
State Historic Preservation Division
 601 Kamokila Blvd., Room 555
 Kapolei, Hawaii 96707
17. **Department of Land and Natural
 Resources**
State Historic Preservation Division
 130 Mahalani Street
 Wailuku, Hawaii 96793
18. Glenn Okimoto, Director
 State of Hawaii
Department of Transportation
 869 Punchbowl Street
 Honolulu, Hawaii 96813
- cc: Fred Cajigal
19. Major General Darryll Wong, Director
Hawaii State Civil Defense
 3949 Diamond Head Road
 Honolulu, Hawaii 96813-4495
20. Gary Hooser, Director
Office of Environmental Quality Control
 235 S. Beretania Street, Suite 702
 Honolulu, Hawaii 96813
21. Dr. Kamana`opono Crabbe, Chief Executive
 Officer
Office of Hawaiian Affairs
 711 Kapiolani Boulevard, Suite 500
 Honolulu, Hawaii 96813
22. Jesse Souki, Director
 State of Hawaii
Office of Planning
 P. O. Box 2359
 Honolulu, Hawaii 96804
23. Dan Davidson, Executive Officer
 State of Hawaii
 State Land Use Commission
 P.O. Box 2359
 Honolulu, Hawaii 96804
24. University of Hawaii at Manoa
Environmental Center
 2550 Campus Road, Crawford 317
 Honolulu, Hawaii 96822
25. Rosalyn H. Baker, Senator
Hawaii State Senate
 Hawaii State Capitol, Room 210
 415 S. Beretania Street
 Honolulu, Hawaii 96813
26. Angus L.K. McKelvey, Representative
House of Representatives
 Hawaii State Capitol, Room 315
 415 S. Beretania Street
 Honolulu, Hawaii 96813
27. Alan Arakawa, Mayor
 County of Maui
 200 South High Street
 Wailuku, Hawaii 96793

28. Teena Rasmussen, Coordinator
County of Maui
Office of Economic Development
2200 Main Street, Suite 305
Wailuku, Hawaii 96793
29. Anna Foust, Officer Management Officer
Maui Civil Defense Agency
200 South High Street
Wailuku, Hawaii 96793
30. Jeffrey A. Murray, Fire Chief
County of Maui
**Department of Fire
and Public Safety**
200 Dairy Road
Kahului, Hawaii 96732
31. Jo-Ann Ridao, Director
County of Maui
**Department of Housing and
Human Concerns**
One Main Plaza
2200 Main Street, Suite 546
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32. Glenn Correa, Director
County of Maui
Department of Parks and Recreation
700 Halia Nakoa Street, Unit 2
Wailuku, Hawaii 96793
33. William Spence, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793
34. Gary Yabuta, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793
35. David Goode, Director
County of Maui
Department of Public Works
200 South High Street
Wailuku, Hawaii 96793
36. Kyle Ginoza, Director
County of Maui
Department of Environmental Management
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2200 Main Street, Suite 100
Wailuku, Hawaii 96793
37. Jo Anne Johnson Winer, Director
County of Maui
Department of Transportation
200 South High Street
Wailuku, Hawaii 96793
38. David Taylor, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793
39. Honorable Danny Mateo, Council Chair
Maui County Council
200 South High Street
Wailuku, Hawaii 96793
40. Honorable Joseph Pontanilla, Council Vice Chair
Maui County Council
200 South High Street
Wailuku, Hawaii 96793
41. Honorable Gladys Baisa
Maui County Council
200 South High Street
Wailuku, Hawaii 96793
42. Honorable Robert Carroll
Maui County Council
200 South High Street
Wailuku, Hawaii 96793
43. Honorable Elle Cochran
Maui County Council
200 South High Street
Wailuku, Hawaii 96793
44. Honorable Don Couch
Maui County Council
200 South High Street
Wailuku, Hawaii 96793
45. Honorable G. Riki Hokama
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

46. Honorable Mike Victorino
Maui County Council
200 South High Street
Wailuku, Hawaii 96793
47. Honorable Michael White
Maui County Council
200 South High Street
Wailuku, Hawaii 96793
48. Dan Takahata, Manager – Engineering
Maui Electric Company, Ltd.
P.O. Box 398
Kahului, Hawaii 96733
49. **Hawaiian Telcom**
60 South Church Street
Wailuku, Hawaii 96793
50. Bob Pure, President
Lahaina Bypass Now
PO Box 11205
Lahaina, Hawaii 96761
51. Theo Morrison, Executive Director
Lahaina Restoration Foundation
120 Dickenson Street
Lahaina, Hawaii 96761
52. Karee Karlucci, Executive Director
Lahaina Town Action Committee
648 Wharf Street, Suite 102
Lahaina, Hawaii 96761
53. Pamela Tumpap, Executive Director
Maui Chamber of Commerce
The Office Center
270 Ho'okahi Street, Suite 212
Wailuku, HI 96793
54. Lyn McNeff, Executive Director
Maui Economic Opportunity
99 Mahalani Street
Wailuku, Hawaii 96793
55. Carol Reimann, Executive Director
Maui Hotel & Lodging Association
1727 Wili Pa Loop, Suite B
Wailuku, Hawaii 96793
56. Joe Pluta, President
West Maui Improvement Foundation
P. O. Box 10338
Lahaina, Hawaii 96761
57. Donald Lehman, President
West Maui Taxpayers Association
P.O. Box 10338
Lahaina, Hawaii 96761



APR 09 2012

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

April 5, 2012

Ms. Colleen Suyama, Senior Associate
Munekiyo & Hiraga Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

Subject: Early Consultation on Proposed Kahoma Village Project
Lahaina, Maui TMK:4-5-008:001

The Department of Education (DOE) has reviewed your request for early consultation on the Kahoma Village Project in Lahaina. The Project is located within the West Maui School Impact Fee District and will be required to have an education contribution agreement executed with the DOE.

Thank you for the opportunity to comment. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at 377-8301.

Very truly yours,

A handwritten signature in black ink, appearing to read "K. Matayoshi", written over a horizontal line.

Kathryn S. Matayoshi
Superintendent

KSM:jmb

c: Randolph G. Moore, Assistant Superintendent, OSFSS
Lindsay Ball, CAS, Hana-Lahainaluna-Lanai-Molokai Complex Areas



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Kathryn S. Matayoshi, Superintendent
Department of Education
State of Hawaii
P. O. Box 2360
Honolulu, Hawaii 96804

SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii

Dear Ms. Matayoshi:

Thank you for your letter dated April 5, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc., we note that the Department of Education (DOE) has reviewed the information and provided comment. As the proposed project is located within the West Maui School Impact Fee District, the DOE will be contacted regarding an education contribution agreement.

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC

K:\DATA\Weinberg\LahainaRes\EC Response\DOE.res.doc

MAUI

305 High St., Suite 104 Wailuku, Hawaii 96793

PH: (808)244-2015 FAX: (808)244-8729

OAHU

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NEIL ABERCROMBIE
GOVERNOR
STATE OF HAWAII



ALBERT "ALAPAKI" NAHALE-A
CHAIRMAN
HAWAIIAN HOMES COMMISSION

MICHELLE K. KAUHANE
DEPUTY TO THE CHAIRMAN

M. WAIALEALE SARSONA
EXECUTIVE ASSISTANT

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 2009
KAUNAKAKAI, HAWAII 96748

April 2, 2012

Munekiyo and Hiraga, Inc.
Attn: Colleen Suyama, Senior Associate
305 High Street, Suite 104
Wailuku, Hawaii'i 96793

Subject: Request for Early Consultation on the Proposed 201H-38, HRS
Kahoma Village Project at TMK (2) 4-5-008:001, Lahaina,
Maui, Hawaii'i

Dear Ms. Suyama,

Thank you for the opportunity to provide pre-assessment comments prior to the Draft Environmental Assessment (DEA) for the Kahoma Village 201H Project at Kahoma Stream near Mālā Wharf in Lahaina. The Department understands that this project is for a 203 unit affordable housing project consisting of a mix of cluster and rear service alley single-family dwellings, multifamily dwellings and a 1.3 acre landscaped park.

The Department-owned lands closest to the project site are at Honokowai, a distance of approximately 3.5 miles. Honokowai is designated a Priority site for homelands development in the DHHL Maui Island Plan, with 411 residential homestead lots anticipated, as well as agricultural lots, community facilities and commercial development. There are no Department owned lands directly adjacent to the project site.

Please consider the following comments on your proposed project as you develop the Draft Environmental Assessment:

1. The Department of Hawaiian Homelands (Department) commends the project designers for incorporating elements of Smart

Ms. Colleen Suyama

April 2, 2012

Page 2

Design such as clustering and rear service alleys into the conceptual site plan.

2. The Department would also like to encourage the applicants to consider Kahoma Stream as a project resource and propose an alternative that includes relocation of the park area to the designated open space buffer/linear park/greenway along the southern bank of the stream as described in the West Maui Community Plan. Although the stream is currently channelized, there may be potential for de-channelization and stream restoration in the future in order to reduce nonpoint source pollution, and at that juncture the stream and its restored riparian habitat could become much more of an aesthetic and environmental amenity for the residents of Kahoma Village.
3. As there is a large cemetery across the highway makai of the project site, the utmost care must be taken to prevent inadvertent discoveries of 'iwi kupuna (ancestral remains), therefore a cultural impact assessment and full archaeological survey is highly advised, and sandy areas of the site should be avoided for development.
4. Due to internal business processes, ten days is not enough time for our Department to process a request for comment. Please allow more time, such as 20-30 days, for preparation of a response to requests for comment as part of the environmental review process.

We thank you for the opportunity to provide preliminary comments as part of early consultation for preparation of a Draft Environmental Assessment. If you have any questions, please contact Nancy McPherson at our Planning Office via email at nancy.m.mcpherson@hawaii.gov or by phone at 808.620.9519.

Aloha and mahalo,



Albert "Alapaki" Nahale-a, Chairman
Hawaiian Homes Commission



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

SWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSUBU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24 2012

Jobie Masagatani, Chairperson
Hawaiian Homes Commission
State of Hawaii
Department of Hawaiian Home Lands
P.O. Box 2009
Kaunakakai, Hawaii 96748

**SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii**

Dear Ms. Masagatani:

Thank you for your Department's letter dated April 2, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc. we note that the Department of Hawaiian Home Lands, Hawaiian Homes Commission has reviewed the information and provided comments. The following responses to your comments are provided and correspond to the numbered paragraphs in your letter.

1. The developer supports incorporating Smart Design elements into the project to the extent practicable.
2. The open spaces that buffer the lineal park/greenway along the southern bank of Kahoma Stream are in the jurisdiction of the U.S. Army Corps of Engineers (Corps) and outside the scope of the proposed project. Should de-channelization occur, stream restoration would need to be coordinated with the Corps. The developer is assessing options for the project's park area. Details of the park design and location will be included in the Draft EA.
3. The project development will not affect the lands that are makai of this project and across the highway. A cultural impact assessment and archaeological survey has been completed for the project and will be included in the Draft EA.
4. We appreciate your feedback regarding the response time for comment as part of the environmental review process.

Jobie Masagatani, Chairperson
September 24, 2012
Page 2

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:mge

cc: Jay Nakamura, Stanford Carr Development, LLC

K:\DATA\Weinberg\LahainaRestEC Response\DHHL.res.doc

APR 11 2012

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD/CWB

04005PDCL.12

April 9, 2012

Ms. Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

**SUBJECT: Environmental Assessment (EA) Early Consultation for the
Kahoma Village Project
Lahaina, Island of Maui, Hawaii**

The Department of Health (DOH), Clean Water Branch (CWB), has reviewed the subject document and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at: <http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for an NPDES general permit coverage by submitting a Notice of Intent (NOI) form:
 - a. Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than

one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. This includes areas used for a construction base yard and the storage of any construction related equipment, material, and waste products. An NPDES permit is required before the start of the construction activities.

- b. Hydrotesting waters.
- c. Construction dewatering effluent.

You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at:

<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.

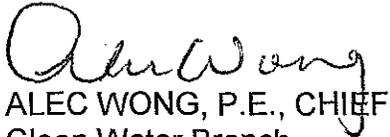
- 3. For other types of wastewater not listed in Item No. 2 above or wastewater discharging into Class 1 or Class AA waters, an NPDES individual permit will need to be obtained. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at <http://hawaii.gov/health/environmental/water/cleanwater/forms/environmental/water/cleanwater/forms/indiv-index.html>.
- 4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 Water Quality Certification are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

Ms. Colleen Suyama
April 9, 2012
Page 3

04005PDCL.12

If you have any questions, please visit our website at:
<http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the
Engineering Section, CWB, at (808) 586-4309.

Sincerely,


ALEC WONG, P.E., CHIEF
Clean Water Branch

DCL:ml

c: DOH-EPO [via email only]



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSUBU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Alec Wong, P.E. Chief
Clean Water Branch
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801-3378

SUBJECT: Early Consultation Request on the Proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2) 4-5-008:001, Lahaina, Maui, Hawaii, EMD/CWB 04005PDCL.12

Dear Mr. Wong:

Thank you for your letter dated April 9, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc. we note that the Department of Health Clean Water Branch has reviewed the information and provided comments. The following responses to your comments are provided.

1. The proposed project is on the landward (mauka) side of Front Street and about 0.5 mile away from the shoreline. As a Best Management Practice (BMP) mitigation measure, the proposed project will include a drainage system consisting of underground perforated pipes and a drainage retention/detention basin located in the largest of the three (3) proposed park sites. The drainage system will be designed in accordance with the County of Maui requirements to avert adverse impact to water quality from sediment and pollutants. Appropriate BMPs will be considered during the design phase of the project.
2. A National Pollutant Discharge Elimination System (NPDES) permit will be applied for, if required. During project construction, temporary BMPs will employ prevention measures to contain stormwater runoff onsite to protect downstream coastal waters from sediments and pollutants.
3. Should other wastewater discharges be identified, an NPDES permit will be applied for, as required.

MAUI
305 High St., Suite 104 Wailuku, Hawaii 96793
PH: (808)244-2015 FAX: (808)244-8729
OAHU
735 Bishop St., Suite 238 Honolulu, Hawaii 96813 | PH: (808)983-1233

WWW.MHPLANNING.COM

excellence in
process
management 10

Alex Wong, P.E., Chief
September 24, 2012
Page 2

4. Compliance and enforcement of the State's Water Quality Standards is acknowledged.

The standard comments posted on the department website noted in your letter will be reviewed.

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, Inc.

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APR 03 2012

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

12-054
Kahoma Village Project

March 30, 2012

Ms. Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

**SUBJECT: Early Consultation on the Proposed 201H-38, Hawaii Revised Statutes (HRS)
Kahoma Village Project at TMK: (2) 4-5-008: 001, Lahaina, Maui, Hawaii**

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your letter, dated March 23, 2012. Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have no comments at this time, but reserve the right to future comments. We strongly recommend that you review all of the Standard Comments on our website: www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this application should be adhered to.

The United States Environmental Protection Agency (EPA) provides a wealth of information on their website including strategies to help protect our natural environment and build sustainable communities at: www.epa.gov/sustainability. The DOH encourages State and county planning departments, developers, planners, engineers and other interested parties to apply these strategies and environment principles whenever they plan or review new developments or redevelopments projects. We also ask you to share this information with others to increase community awareness on healthy, sustainable community design. If there are any questions about these comments please contact me.

Sincerely,

Laura Leialoha Phillips McIntyre, AICP
Environmental Planning Office Manager
Environmental Health Administration
Department of Health
919 Ala Moana Blvd., Ste. 312
Honolulu, Hawaii 96814
Phone: 586-4337
Fax: 586-4370
Email: laura.mcintyre@doh.hawaii.gov
Website: www.hawaii.gov/health/environmental

cc: Stanford Carr, Stanford Carr Development LLC



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

BWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Laura Leialoha Phillips McIntyre, AICP
Environmental Planning Office Manager
Environmental Health Administration
Department of Health
919 Ala Moana Blvd., Suite 312
Honolulu, Hawaii 96814

SUBJECT: Early Consultation Request on the Proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2) 4-5-008:001, Lahaina, Maui, Hawaii, 12-054 Kahoma Village Project, 12-504 Kahoma Village Project

Dear Ms. McIntyre:

Thank you for your letter dated March 30, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS), Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc., we note that the Department of Health, Environmental Health Administration has reviewed the information and has no comments at this time.

As indicated in your letter, applicable comments in the Standard Comments on the Department of Health website will be complied with. Information on the U.S. Environmental Protection Agency website will also be considered.

Laura Leialoha Phillips McIntyre, AICP
September 24, 2012
Page 2

Thank you for your participation in the Chapter 343, HRS, review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, Inc.

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NEIL ABERCROMBIE
GOVERNOR OF HAWAII



APR 20 2012

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

LUD - 2 4 5 008 001-ID950
Early Cons Prop Kahoma Village

April 10, 2012

Ms. Colleen Suyama
Senior Associate
Munekiyo & Hiraga, Inc.
305 High Street Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

Subject: Early Consultation on the Proposed 201H-38, Hawaii Revised Statutes (HRS)
Kahoma Village Project at TMK (2) 4-5-008: 001, Lahaina, Maui 96761

Thank you for the opportunity to comment during early consultation of the proposed Kahoma Village Project. We have the following comments and information to offer:

The subject project is located in the critical wastewater disposal area as determined by the Maui Wastewater Advisory Committee. Domestic wastewater treatment and disposal have not been addressed in the project document. Please be informed that if a County sewer connection is not available, domestic wastewater generated by the project shall be handled by wastewater systems that comply with our Chapter 11-62, Hawaii Administrative Rules.

Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at (808) 586-4294 or fax to (808) 586-4300.

Sincerely,

MARSHALL LUM, P.E., ACTING CHIEF
Wastewater Branch

LM:cle

c: DOH's Environmental Planning Office (12-054)
DOH-WWB's Maui Staff - Mr. Roland Tejano



MICHAEL T. MUNEKIYOD
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Marshall Lum, P.E., Acting Chief
Wastewater Branch
State of Hawaii
Department of Health
P. O. Box 3378
Honolulu, Hawaii 96801-3378

SUBJECT: Early Consultation Request on the Proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2) 4-5-008:001, Lahaina, Maui, Hawaii, LUD 2-4-5-008:001 ID950

Dear Mr. Lum:

Thank you for your letter dated April 10, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc. we note that the Department of Health, Wastewater Branch has reviewed the information and provided comments. The following responses to your comments are provided.

There will be coordination with the County of Maui, Department of Environmental Management, Division of Wastewater Reclamation so that domestic wastewater generated by this project will be disposed of in the County's wastewater system. In the event connection is not available, the project will comply with Chapter 11-62, Hawaii Administrative Rules.

Marshall Lum
September 24, 2012
Page 2

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015

Very truly yours,

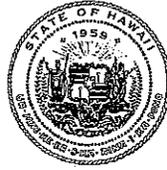


Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, Inc.

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APR 02 2012

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

LORRIN W. PANG, M.D., M.P.H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, HAWAII 96793

March 30, 2012

Ms. Colleen Suyama
Senior Associate
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

**Subject: Early Consultation on the Proposed 201H-38, Hawaii
Revised Statutes, Kahoma Village Project, Lahaina, Hawaii
TMK: (2) 4-5-008:001**

Thank you for the opportunity to review this project. We have the following comments to offer:

1. National Pollutant Discharge Elimination System (NPDES) permit coverage may be required for this project. The Clean Water Branch should be contacted at 808 586-4309.
2. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control." A noise permit may be required and should be obtained before the commencement of work. The Indoor & Radiological Health Branch should be contacted at 808 586-4700.

It is strongly recommended that the Standard Comments found at the Department's website: <http://hawaii.gov/health/environmental/env-planning/landuse/landuse.html> be reviewed, and any comments specifically applicable to this project should be adhered to.

Ms. Colleen Suyama
March 30, 2012
Page 2

Should you have any questions, please call me at 808 984-8230 or E-mail me at patricia.kitkowski@doh.hawaii.gov.

Sincerely,

A handwritten signature in cursive script that reads "Patti Kitkowski".

Patti Kitkowski
District Environmental Health Program Chief



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Patti Kitkowski, District Environmental
Health Program Chief
State of Hawaii
Department of Health
Maui District Health Office
54 High Street
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii

Dear Ms. Kitkowski:

Thank you for your letter dated March 30, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc., we note that the Department of Health Maui District has reviewed the information and provided comments. In response to those comments and the Standard Comments on the Department of Health's website that may apply, the following responses are provided.

1. In the event a National Pollutant Discharge Elimination System (NPDES) permit may be needed for this proposed project, an application will be submitted to the Clean Water Branch of the Department of Health.
2. Should a noise permit be needed in accordance with the Hawaii Administrative Rules, Chapter 11-46, "Community Noise Control", an application will be submitted to the Indoor & Radiological Health Branch of the Department of Health.

Patti Kitkowski, District Environmental
Health Program Chief
September 24, 2012
Page 2

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015

Very truly yours,



Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, Inc.

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NEIL ABERCROMBIE
GOVERNOR OF HAWAII



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



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 11, 2012

Munekiyo & Hiraga, Inc.
Attention: Ms. Colleen Suyama
Senior Associate
30 High Street, Suite 104
Wailuku, HI 96793

via email: planning@mhplanning.com

Dear Ms. Suyama:

SUBJECT: Early Consultation on the Proposed 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project; TMK (2) 4-5-008:001

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

At this time, the DLNR has no comments to offer on the subject matter. If you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator



MICHAEL T. MUNEKIYU
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

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

SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii

Dear Mr. Tsuji:

Thank you for your letter dated April 11, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc., we note that the Department of Land and Natural Resources, Land Division has reviewed the information and has no comments at this time.

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC

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MAY 08 2012

NEIL ABERCROMBIE
GOVERNOR



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

GLENN M. OKIMOTO
DIRECTOR

Deputy Directors
JADE T. BUTAY
FORD N. FUCHIGAMI
RANDY GRUNE
JADINE URASAKI

IN REPLY REFER TO:

STP 8.0815

April 26, 2012

Ms. Colleen Suyama
Senior Associate
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

Subject: Kahoma Village Project, Lahaina, Maui
Early Consultation for Draft Environmental Assessment (DEA)

Thank you for requesting the State Department of Transportation's (DOT) review of the subject project. DOT understands the Harry and Jeanette Weinberg Foundation, Inc., (HJWF) is proposing a 21.6 acres affordable housing project. The project will consist of 101 single-family dwelling units, 102 affordable multi-family units, and a 1.3 acres park for residents. The property is located along Honoapiilani Highway with accesses from Front Street and Kehui Street.

Given the project location and physical constraints, Honoapiilani Highway will be impacted. The DEA shall include a Traffic Impact Analysis Report (TIAR) that shall address, but not limited to, the following concerns:

1. Due to the close proximity of the project's Kenui Street access to Honoapiilani Highway, potential queing could result in backups onto the highway. The TIAR should address this concern and identify mitigation measures.
2. Plans to convert the current right-turn in and out configuration of the Kenui Street and Honoapiilani Highway intersection should be addressed in the TIAR, including the identification of mitigation measures. However, if there is no intention or plan to do so, that should be specifically stated in the report.
3. The TIAR should address the effects on any proposed impact mitigation measures on Honoapiilani Highway due to the Kahoma Stream Bridge.

Ms. Colleen Suyama
April 26, 2012
Page 2

STP 8.0815

DOT appreciates the opportunity to provide comments on the subject project. If there are any questions, including the need to meet with DOT Highways Division staff, please contact Mr. Garrett Smith of the DOT Statewide Transportation Planning Office at (808)831-7976.

Very truly yours,



GLENN M. OKIMOTO, Ph.D.
Director of Transportation



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Glenn M. Okimoto, Ph.D., Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

SUBJECT: Early Consultation Request on the Proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2) 4-5-008:001, Lahaina, Maui, Hawaii, STP 8.0815

Dear Mr. Okimoto:

Thank you for your letter dated April 26, 2012 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc., we note that the Department of Transportation has reviewed the information and provided comments. The following responses to your comments are provided and correspond to the numbered paragraphs in your letter.

1. Since our request for early consultation, the site plan for Kahoma Village has been modified to relocate the driveway access on Kenui Street further west toward Front Street, directly across Nakeli Place. As such, the relocated access should not conflict with traffic at the Kenui Street intersection with Honoapiilani Highway.
2. At present, there are no plans to convert the current right-turn in and out configuration of the Kenui Street and Honoapiilani Highway intersection. The project's TIAR note that addition or replacement of pavement marking and signage at the intersection may help notify approaching motorist of the vehicular and pedestrian movement at the intersection.
3. The TIAR does not propose any mitigation measures on Honoapiilani Highway that will affect the Kahoma Stream Bridge.

Glenn M. Okimoto, Ph.D., Director
September 24, 2012
Page 2

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:tn

cc: Jay Nakamura, Stanford Carr Development, LLC
Michael Packard, SSFM International, Inc.
Eric Matsuda, SSFM International, Inc.

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APR 18 2012



The Senate

STATE CAPITOL
HONOLULU, HAWAII 96813

April 16, 2012

Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama,

A handwritten signature in cursive that reads "Colleen".

Thank you for the opportunity to provide comments on the Kahoma Village Project. Affordable housing is a very important issue and I support developments that will assist families that meet certain income requirements. However, I have some concerns about the Kahoma Village Project as I understand its current plan.

After reviewing the figures submitted with your letter, the density of this project appears problematic. The plan places 203 housing units in the development, which is primarily accessed through Front Street. The Kahoma Village Project will likely bring many cars to the area and significantly impact the amount of traffic on Front Street, a two-lane road. A plan with less density would be preferable due to the potential negative impact to the greater community.

Affordable housing is needed on the West Side. I request that the developer work with the community to address some of the concerns related to this project, particularly traffic issues. There must be more discussion with the residents in the surrounding neighborhood.

Again, I appreciate the opportunity to provide comments and look forward to a Kahoma Village Project that is responsive to the community and adds to the quality of life for new residents and existing ones.

Mahalo,

A handwritten signature in cursive that reads "Rosalyn Baker".

Rosalyn H. Baker
SENATOR
5th District - South and West Maui



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

EWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Senator Rosalyn H. Baker
Hawaii State Senate
Hawaii State Capitol, Room 210
415 South Beretania Street
Honolulu, Hawaii 96813

SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii

Dear Senator Baker:

Thank you for your letter dated April 16, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc. we note that you have reviewed the information and provided comments. In response to your comments, the following information is provided.

The project site is zoned "A-1, Apartment District". With this zoning, the project could have a higher density than what is currently proposed. The proposed Kahoma Village is a residential development of 101 single family dwellings and 102 townhouse units which will provide landscaped yards and open space areas. The landscape yards will help to reduce the visual impacts of the project and provide for spacing between residential units and the townhouse buildings.

The Traffic Impact Analysis Report (TIAR) prepared for Kahoma Village examined and analyzed traffic impacts of the project, as well as other potential projects in the area. The study found that upon project build-out in 2017, traffic from the Kahoma Village project is not expected to significantly impact study intersections and the roadway network in and around Lahaina. Existing intersections along Honoapiilani Highway and Front Street currently operate at acceptable levels of service (LOS) and are expected to maintain these levels of operations up to 2017. Existing traffic LOS on Honoapiilani Highway is undesirable, however, the opening of the first two (2) phases of the Lahaina Bypass in 2012 is expected to alleviate some congestion along Honoapiilani Highway.

Senator Rosalyn H. Baker
September 24, 2012
Page 2

between Lahainaluna Road and Keawe Street. Opening of additional phases of Lahaina Bypass in future years will further alleviate congestion in the area of Lahaina Town.

Due to community concerns that have been expressed regarding potential traffic impact from the project, plans have been revised to locate the driveway entrances into Kahoma Village across from Puunoa Place on Front Street and Nakeli Place on Kenui Street. Further, road widening improvements consisting of curbs, gutters, sidewalks and landscaping will be provided along Front Street and Kenui Street.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

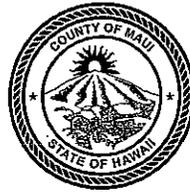


Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, Inc.
Michael Kujubu, Alakea Design Group, LLC
Michael Miyabara, Miyabara Associates LLC

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APR 20 2012

JEFFREY A. MURRAY
CHIEF

ROBERT M. SHIMADA
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY
FIRE PREVENTION BUREAU

313 MANEA PLACE • WAILUKU, HAWAII 96793
(808) 244-9161 • FAX (808) 244-1363

April 17, 2012

To : Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High St.
Wailuku, HI 96793

Re : **Kahoma Village Project**
(2) 4-5-008: 001

Dear Colleen:

Thank you for the opportunity to comment on the proposed project. At this time, our office provides the following comments:

- The Department of Fire and Public Safety has no objections or negative comments regarding this proposed project.
- This parcel has been the location of many brush fires and the source of numerous complaints regarding vagrants, crime, and illegal dumping. Development of this parcel will provide needed affordable housing and eliminate many types of community concerns associated with this area.
- Our office reserves the right to comment on fire apparatus access and water supply for fire protection for this project. Detailed plans should be routed to the bureau as soon as possible so that the final design of these important features can be reviewed, discussed if necessary, and approved; adequate access and fire protection are vital components of fire prevention and public safety.
- Our office also reserves the right to comment during the building permit process for the proposed buildings.

Kahoma Village Project
(2) 4-5-008: 001

Page 2

To assist with the 201H-38 application process, detailed plans for the project's fire apparatus access and fire protection should be routed to our office at your earliest convenience.

If there are any questions or comments, please feel free to contact me at 244-9161 ext. 23. Thank you for your attention to fire prevention and public safety.

Sincerely,



Paul Haake
Captain, Fire Prevention Bureau
Department of Fire & Public Safety
313 Manea Place
Wailuku, HI 96793



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSUBU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Captain Paul Haake
Fire Prevention Bureau
Department of Fire & Public Safety
313 Manea Place
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii

Dear Captain Haake:

Thank you for your letter dated April 17, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc. we note that the Department of Fire and Public Safety, Fire Prevention Bureau has reviewed the information and has no objections or negative comments at this time.

Detailed project plans addressing adequate access and fire protection for the project will be submitted to the Fire Prevention Bureau for review and approval. We understand that the Fire Prevention Bureau may have comments during the building permit process for this proposed project.

Captain Paul Haake
September 24, 2012
Page 2

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,



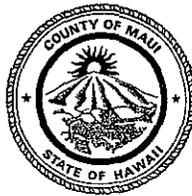
Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, Inc.

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ALAN M. ARAKAWA
Mayor



APR 04 2012

GLENN T. CORREA
Director

PATRICK T. MATSUI
Deputy Director

(808) 270-7230
FAX (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nako'a Street, Unit 2, Wailuku, Hawaii 96793

April 3, 2012

Colleen Suyama, Senior Associate
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Ms. Suyama:

SUBJECT: Early Consultation on the Proposed 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2) 4-5-008:012, Lahaina, Maui, Hawaii

Based on our review of the information provided in the request for early consultation on the proposed Kahoma Village Project, the Department of Parks and Recreation does not support the waiver of Section 18.16.320 of the Maui County Code (MCC). It is our position that, at the very least, the minimum park area required by the MCC, be provided in such a concentrated development.

Further, it appears that the area shown in the conceptual site plan for the proposed park may be the development's drainage retention site. Should that be the case, the department cannot support this dual use.

Thank you for the opportunity to review and comment on this matter. Should you have any questions or need of additional information, please contact me or Robert Halvorson at 808.870.5942 or robert.halvorson@co.maui.hi.us

Sincerely,

A handwritten signature in black ink, appearing to read "Glenn T. Correa".

Glenn T. Correa
DIRECTOR

c: Robert Halvorson, Planning & Development
Stanford Carr, Stanford Carr Development, LLC
Jay Nakamura, Stanford Carr Development LLC

GTC:RH:do



MICHAEL T. MUNEKIYODA
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

ISWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Glenn T. Correa, Director
Department of Parks and Recreation
700 Hali'a Nakoia Street, Unit 2
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii

Dear Mr. Correa:

Thank you for your letter dated April 3, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc., we note that the Department of Parks and Recreation (Department) has reviewed the information and provided comments. In response to your comments, the following information is provided.

1. The applicant is reevaluating the project plans to provide the park area required by Maui County Code.
2. Associated improvements will include three (3) park areas that have a combined area of approximately 1.75 acres. The larger of the three (3) park areas will also function as a drainage retention/detention basin. At the meeting held on June 5, 2012, with your Department, there was a discussion on the design and proposed use of a portion of the private park as a retention/detention drainage basin in combination with underground perforated drainage pipes. As a result of that meeting, it is our understanding that your concerns regarding the park design and use have been addressed to the Department's satisfaction.

Glenn T. Correa, Director
September 24, 2012
Page 2

Thank you for your participation in the Chapter 343, HRS, review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, Inc.
Michael Kujubu, Alakea Design Group, LLC
Michael Miyabara, Miyabara Associates LLC

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APR 10 2012

ALAN M. ARAKAWA
Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

April 9, 2012

Ms. Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

**SUBJECT: COMMENTS ON A DRAFT ENVIRONMENTAL ASSESSMENT (EA)
EARLY CONSULTATION NOTICE FOR THE PROPOSED 201H-38,
HAWAII REVISED STATUTES (HRS) KAHOMA VILLAGE PROJECT
LOCATED AT LAHAINA, MAUI, HAWAII; TMK: (2) 4-5-008:001
(RFC 2012/0048)**

The Department of Planning (Department) is in receipt of the above-referenced request for comments on the Draft EA for the above-referenced project. The Department understands the proposed action includes the following:

- The Applicant is the Harry and Jeanette Weinberg Foundation, Inc.
- The project will consist of 203 housing units including 69 Single-Family dwellings in clusters of two (2) to six (6) dwelling units along a common driveway, 32 Single-Family dwellings with a rear service alley, 102 affordable Multi-Family units located in 17 two-story, six-plexes. The Applicant also proposes a 1.3 acre park for residents;
- The project proposes to seek a waiver of Project District 4 in the West Maui Community Plan using Section 201H-38, HRS;
- The project is located within the SMA and will thus require a SMA Use Permit; and
- The project triggers compliance with HRS, Chapter 343.

Based on the foregoing, the Department provides the following comments on the Draft EA:

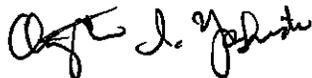
1. Please include a Zoning and Flood confirmation form from the Department's Zoning Administration and Enforcement Division;

Ms. Colleen Suyama
April 9, 2012
Page 2

2. That the Applicant considers including in its development proposal a (public) greenway adjacent to the south bank of Kahoma Stream, from Honoapiilani Highway to Front Street; and
3. Please provide the Department with one (1) hard copy and one (1) electronic copy of the Final EA.

Thank you for the opportunity to comment. Should you require further clarification, please contact Staff Planner Kathleen Ross Aoki at kathleen.aoki@mauicounty.gov or at (808) 270-5529.

Sincerely,



CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

for WILLIAM SPENCE
Planning Director

xc: John F. Summer, Planning Program Administrator (PDF)
Kathleen Ross Aoki, Staff Planner (PDF)
Nolly Yagin, Department of Public Works
Project File
General File

WRS:CIY:KRA:sa

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MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

William Spence, Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

**SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii**

Dear Mr. Spence:

Thank you for your letter dated April 9, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS), Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc. we note that the Department of Planning has reviewed the information and provided comments. The following responses to your comments are provided and correspond to the numbered paragraphs in your letter.

1. The Zoning and Flood confirmation form from the Department's Zoning Administration and Enforcement Division will be included in the proposed Section 201H-38 application.
2. In 1990, The Harry and Jeanette Weinberg Foundation (Foundation) provided approximately 2.8 acres to the U.S. Army Corps of Engineers (Corps) for their Kahoma Stream Flood Control improvements. The proposed greenway adjacent to the south bank of Kahoma Stream is located on the 2.8 acres portion of the larger 24.354 acre parcel and is identified on the West Maui Community Plan. The Foundation does not own this 2.8-acre portion of the parcel and as such cannot provide improvements to the greenway area which is under the control of the Corps.
3. One (1) hard copy and one (1) electronic copy of the Final EA will be provided to your Department. One (1) hard copy of the Draft EA will be provided to your Department.

MAUI
305 High St., Suite 104 Wailuku, Hawaii 96793
PH: (808)244-2015 FAX: (808)244-8729

OAHU
735 Bishop St., Suite 238 Honolulu, Hawaii 96813 | PH: (808)983-1233

WWW.MHPLANNING.COM

excellence in
process
management 40

William Spence, Director
September 24, 2012
Page 2

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,

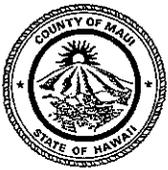


Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC

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ALAN M. ARAKAWA
MAYOR

OUR REFERENCE

YOUR REFERENCE

POLICE DEPARTMENT

COUNTY OF MAUI

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

May 9, 2012



GARY A. YABUTA
CHIEF OF POLICE

CLAYTON N.Y.W. TOM
DEPUTY CHIEF OF POLICE

Ms. Colleen Suyama
Senior Associate
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Ms. Suyama:

SUBJECT: Early Consultation on the Proposed 201H-38, HRS Kahoma Village
Project at TMK (2) 4-5-008:001

This is in response to the request for comments on the above subject.

We have reviewed the information submitted for this project and have submitted our comments and/or recommendations. Thank you for giving us the opportunity to comment on this project.

Very truly yours,

Assistant Chief Victor K. Ramos
for: Gary A. Yabuta
Chief of Police

c: William Spence, Planning Department

COPY

TO : GARY A. YABUTA, CHIEF OF POLICE
VIA : CHANNELS
FROM : JOHN D. JAKUBCZAK, COMMANDER, LAHAINA PATROL DIVISION
SUBJECT : PROPOSED KAHOMA VILLAGE PROJECT AT TMK (2) 4-5-008:001, LAHAINA

Sir, following a review of the proposed Kahoma Village Project and a site inspection of the area, the following concerns/issues were noted:

*Approved of Gary A. Yabuta
Act. 05/11/14*

1) Traffic

The addition of over 200 housing units in a relatively small area will invariably lead to just as many vehicles, if not more, that will be utilizing the county and state roadways in that area, most notably, Front Street and Kenui Street.

Front Street is a two-lane roadway running north to south, parallel to the Honoapi'ilani Highway, on the makai side. The road is due for improvements (re-paving, etc.) with very little room to expand in width.

Kenui Street is a two-lane roadway running east to west, on the Olowalu side of the proposed project, connecting Front Street to Honoapi'ilani Highway. The roadway is in good condition, with the possibility to expand if needed.

It is not known if the roadways current design and condition will be able to handle the project's anticipated increase in vehicular traffic.

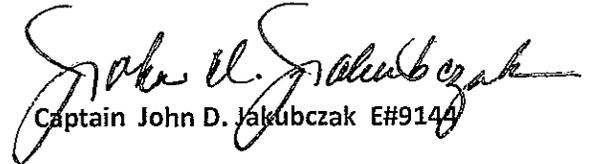
The proposed entry/exit into the project area on Front Street appears to be at the intersection with Ala Moana Street and the Mala Boat Harbor. An expansion of that intersection could cause confusion and traffic congestion, especially during peak traffic hours.

The proposed entry/exit into the project area on Kenui Street is located near the right turn-off lane from Honoapi'ilani Highway onto Kenui Street. Vehicles exiting the highway onto Kenui Street would be encountering vehicles entering/exiting from the proposed project area as soon as they enter onto Kenui Street, which could result in traffic backing up on Honoapiilani Highway, or motor vehicle accidents on Kenui Street or the highway.

2) Population

The addition of 200 housing units will also increase the number of additional residents to the Lahaina Patrol District by approximately 800-1000 people, increasing and expanding the demand for police services.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John D. Jakubczak". The signature is fluid and cursive, with the first name "John" being particularly prominent.

Captain John D. Jakubczak E#9144

Commander, Lahaina Patrol Division

05/04/12 @ 1245 hours



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Gary A. Yabuta, Chief
Maui Police Department
County of Maui
55 Mahalani Street
Wailuku, Hawaii 96793

**SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii**

Dear Chief Yabuta:

Thank you for your letter dated May 9, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc., we note that the Maui Police Department has reviewed the information and provided comments. The following responses to your comments are provided and correspond to the numbered paragraphs in your letter.

1. Since the request for early consultation was sent, the site plan has been revised to include road widening improvements on Front Street and Kenui Street. In addition, the entry driveway on Front Street has been relocated further south across Puunoa Place so as not to exacerbate traffic conflicts at the Ala Moana Street and Mala Boat Harbor intersection. Also, the entry driveway on Kenui Street has been relocated further west toward Front Street across Nakeli Place to eliminate potential traffic conflicts with the Honoapiilani Highway and Wainee Street intersections.
2. We acknowledge the increase in housing units will create a demand for expanded police services. However, the new housing units will generate additional tax revenues through the payment of real property taxes. The County of Maui may utilize this new revenue source to provide additional police services to accommodate the Kahoma Village project.

Gary A. Yabuta, Chief
September 24, 2012
Page 2

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015

Very truly yours,



Colleen Suyama
Senior Associate

CS:lh

cc: Jay Nakamura, Stanford Carr Development, LLC
Mike Packard, SSFM International, Inc.

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APR 20 2012



ALAN M. ARAKAWA
Mayor

DAVID C. GOODE
Director

ROWENA M. DAGDAG-ANDAYA
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET, ROOM NO. 434
WAILUKU, MAUI, HAWAII 96793

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

April 17, 2012

Ms. Colleen Suyama
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Ms. Suyama:

**SUBJECT: EARLY CONSULTATION ON THE PROPOSED 201H-38,
HAWAII REVISED STATUTES (HRS) KAHOMA VILLAGE
PROJECT; TMK (2) 4-5-008:001**

We reviewed your early consultation request and offer the following comments:

1. Provide road-widening/frontage improvements along Front Street and Kenui Street.
2. Internal roadways shall be designed to County standards if roads are proposed to be dedicated to the County.
3. Recommend that fencing be installed between the development and the Kahoma Stream Flood Control facility.
4. Proposed roadway entrance/exit closest to Honoapiilani Highway should be aligned opposite of Wainee Street to form a standard four-way intersection.
5. The area of the parcel is 21.345 acres according to our records.
6. The plans submitted for this project do not adequately show sufficient details to determine whether the project is in compliance with building codes. We will review the project for building code requirements during the building permit application process.

Ms. Colleen Suyama
April 17, 2012
Page 2

Please call Rowena M. Dagdag-Andaya at 270-7845 if you have any questions regarding this letter.

Sincerely,



DAVID C. GOODE
Director of Public Works

DCG:ls

xc: Highways Division
Engineering Division

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MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

David C. Goode, Director
Department of Public Works
200 South High Street, Room No. 434
Wailuku, Maui, Hawaii 96793

SUBJECT: Early Consultation Request on the Proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2) 4-5-008:001, Lahaina, Maui, Hawaii

Dear Mr. Goode:

Thank you for your letter dated April 17, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc. we note that the Department of Public Works has reviewed the information and provided comments. The following responses to your comments are provided and correspond to the numbered paragraphs in your letter.

1. The plans will include road widening improvements along Front Street and Kenui Street.
2. The internal roadways within the proposed project will not be dedicated to the County and will remain under private ownership.
3. Fencing will be installed between the proposed project and the Kahoma Stream Flood Control facility.
4. Based on community concerns that have been expressed regarding traffic impact resulting from the proposed project, plans have been revised to locate the roadway entrances into the Kahoma Village project off of Puunoa Place on Front Street and Nakeli Place on Kenui Street. As such, the entry on Kenui Street is no longer planned to be opposite of Wainee Street.
5. The deed recorded in the Bureau of Conveyances March 26, 1989 as Liber 23232, Page 229, indicates that this property is 21.566 acres, which differs from the Department of Public Work's records. The project area acreage will be clarified with your Department as part of the project review process.

David C. Goode, Director
September 24, 2012
Page 2

6. Detailed project plans will be submitted during the building permit process.

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, Inc.

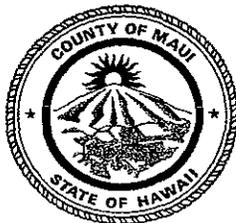
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APR 27 2012

ALAN M. ARAKAWA
Mayor

KYLE K. GINOZA, P.E.
Director

MICHAEL M. MIYAMOTO
Deputy Director



TRACY TAKAMINE, P.E.
Solid Waste Division

ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

**COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT**

2200 MAIN STREET, SUITE 100
WAILUKU, MAUI, HAWAII 96793

April 25, 2012

Ms. Colleen Suyama
Munikiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

**SUBJECT: KAHOMA VILLAGE PROJECT
EARLY CONSULTATION
TMK (2) 4-5-008:001, LAHAINA**

We reviewed the subject application and have the following comments:

1. Solid Waste Division comments:
 - a. Address solid waste/recycling and construction waste issues.
2. Wastewater Reclamation Division (WWRD) comments:
 - a. Although wastewater system capacity is currently available as of 4/25/2012, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
 - b. Wastewater contribution calculations are required before building permit is issued.
 - c. Developer is not required to pay assessment fees for this area at the current time
 - d. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.
 - e. Show or list minimum slope of new sewer laterals.
 - f. Plans shall show the existing property sewer service manhole near the property line.
 - g. Indicate on the plans the ownership of each easement (in favor of which party).
Note: County will not accept sewer easements that traverse private property.
 - h. Non-contact cooling water and condensate should not drain to the wastewater system.

If you have any questions regarding this memorandum, please contact Michael Miyamoto at 270-8230.

Sincerely,

KYLE K. GINOZA, P.E.
Director of Environmental Management



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSUBU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Kyle K. Ginoza, P.E., Director
Department of Environmental Management
2200 Main Street, Suite 100
Wailuku, Maui, Hawaii 96793

SUBJECT: Early Consultation Request on the Proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2) 4-5-008:001, Lahaina, Maui, Hawaii

Dear Mr. Ginoza:

Thank you for your letter dated April 25, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc. we note that the divisions of Solid Waste and Wastewater Reclamation have reviewed the information and provided comments. The following responses to their comments are provided and correspond to the numbered paragraphs in your letter.

Solid Waste

1. a. Prior to the initiation of construction a solid waste management plan, including recycling and construction waste issues, shall be coordinated with the Department of Environmental Management (DEM).

Wastewater Reclamation

2. a. While wastewater system capacity is currently available, the developer acknowledges that wastewater system capacity cannot be ensured until the building permit is issued.
b. Wastewater calculations will be submitted prior to the issuance of the building permit.
c. The applicant acknowledges that payment of assessment fees is not required for the project at this time.

Kyle K. Ginoza, P.E., Director
September 24, 2012
Page 2

- d. The applicant acknowledges that any necessary off-site improvements to the collection system and wastewater pump stations must be funded.
- e. The minimum slope of new sewer laterals will be provided at the time of building permit application.
- f. The subject project is currently undeveloped, and as such, the project plans will show the existing property sewer service manhole near the property line as part of the building permit application submitted.
- g. Project plans will indicate the ownership of each easement. The applicant understands that the County will not accept sewer easements across private property.
- h. The applicant acknowledges that non-contact cooling water and condensate should not drain into the wastewater system.

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:mge

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, Inc.

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MAY 03 2012

ALAN M. ARAKAWA
Mayor



DAVID TAYLOR, P.E.
Director

PAUL J. MEYER
Deputy Director

DEPARTMENT OF WATER SUPPLY

COUNTY OF MAUI

200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauewater.org

April 23, 2012

Ms. Colleen Suyama
Munekiyō & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

SUBJECT: Early Consultation on the Proposed 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK: (2) 4-5-008:001

Dear Ms. Suyama:

Thank you for the opportunity to participate in the Environmental Assessment early consultation process for the above stated proposal.

Source Availability and Consumption

The project area is served by our Lahaina system. The main sources of water for this portion of the system are wells withdrawing from Launiupoko aquifer and surface water from Kanaha Stream. DWS does not grant or imply any guarantee of water until an application for water meter has been received and reviewed.

The EA should address anticipated potable and non-potable water use for the proposed development. Based on system standards daily consumption would be approximately 120,000 gallons. Empirical usage information for Lahaina suggests that actual demand would likely be higher.

System Infrastructure

Twelve and eight-inch waterlines as well as fire hydrants are in close proximity of the project site. The applicant proposes to connect to the county water system. The applicant will be required to provide domestic and irrigation services in accordance with system standards. Fire flow requirements for the proposed development will be determined by the Department of Fire and Public Safety in accordance with the County Fire Code.

"By Water All Things Find Life"



Conservation

In order to reduce demand in the Lahaina system, we recommend that the following water conservation measures be included in the EA:

- ◆ Use brackish and/or reclaimed water sources for dust control and for all non-potable water uses during various phases of construction.

- ◆ Low Flow Fixtures - Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures. Even more efficient fixtures are both available and tested for consumer satisfaction. The applicant should utilize EPA *WaterSense* certified high-efficiency toilets and other fixtures wherever possible. Additional information on such fixtures may be found at <http://www.epa.gov/WaterSense/pp/index.html>

1. Select high efficiency toilets that use 1.28 gallons per flush or less.
2. Select kitchen and bathroom sink faucets with fixtures that do not exceed 1.5 gpm at 60 psi.
3. Select showerheads with a flow rate of 1.5 gpm at 60 psi or less
4. Select washing machines with Energy Star label

- ◆ Use Climate-adapted Plants- The project is located in plant zones 3, 4, & 5. We encourage the applicant to utilize appropriate native and non invasive species in landscaping. Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species.

- ◆ Limit Irrigated Turf to 25% or less of total landscaped area. Low-water use shrubs and ground covers can be equally attractive and require substantially less water than turf.

1. Help grass develop deep roots – the deeper the roots the more likely turf grass is able to withstand drought and reduced irrigation.
2. Set lawn mower blades high
3. Practice grass cycling – grass clippings contain about 85% water and 5% nitrogen; leaving them on the lawn helps hold in moisture, reduces evaporation, keeps grass cool, help fertilize the lawn and can be used as mulch
4. Fertilize and prune sparingly to curtail growth acceleration that would increase watering requirements.

- ◆ Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day.

- ◆ Look for Opportunities to Conserve Water: A few examples of these are as follows: When clearing driveways, etc. of debris, use a broom instead of a hose; check for leaks in faucets and toilet tanks.

Pollution Prevention

The project overlies the Launiupoko aquifer which has an estimated sustainable yield of 7 MGD of potable water. In order to protect ground and surface water resources, we recommend that the applicant utilize Best Management Practices (BMPs) designed to minimize infiltration and runoff from construction and vehicle operations. We ask the applicant to take precautionary measures during construction to prevent construction materials and debris and eroded soils from entering the Kahoma Stream. We recommend that mitigation measures enumerated below be implemented during construction:

1. Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the water.
2. Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.
3. Retain ground cover until the last possible date.
4. Stabilize denuded areas by sodding or planting as soon as possible. Replanting should include soil amendments, fertilizers and temporary irrigation. Use high seeding rates to ensure rapid stand establishment.
5. Avoid fertilizers and biocides, or apply only during periods of low rainfall to minimize chemical run-off.
6. Keep run-off on site.

Should you have any questions regarding system infrastructure and requirements, please call our Engineering Division at 270-7835. For questions on water resources, please contact Edna Manzano at 463-3108 or edna.manzano@co.mauı.hi.us.

Sincerely,



David Taylor, P.E.
Director
eam

c: engineering division



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

BWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

David Taylor, P.E., Director
Department of Water Supply
County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793-2155

SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii

Dear Mr. Taylor:

Thank you for your letter dated April 23, 2012 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc., we note that the Department of Water Supply (Department) has reviewed the information and provided comments which are responded to below. The responses correspond to the paragraphs in your letter.

Source Availability and Consumption

Anticipated potable and non-potable water use resulting from the proposed project will be addressed in the Draft EA.

System Infrastructure

Domestic and irrigation services in accordance with the Department of Water Supply (DWS) system standards will be included in the project plans during the building permit review process. There will be coordination with the Department of Fire and Public Safety regarding fire flow requirements for this project.

Conservation

Recommended water conservation measures, which include the use of brackish and/or reclaimed water sources, low flow fixtures, climate-adapted plants, limiting irrigated turf, maintenance of fixtures to prevent leaks, and opportunities to conserve water have been forwarded to the project consultants for review. As may be practicable, these measures will be incorporated into the project plans.

Pollution Prevention

To protect water resources, Best Management Practices (BMPs) will be implemented during project construction in order to minimize pollution runoff from the site and to prevent materials from entering Kahoma Stream. Measures that include the recommendations set forth in the Department's letter will be incorporated, as applicable, in the BMP plan implemented during construction.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:mge

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, Inc.
Michael Kujubu, Alakea Design Group, LLC
Michael Miyabara, Miyabara Associates LLC

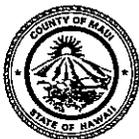
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APR 05 2012

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COUNTY COUNCIL
COUNTY OF MAUI
200 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793
www.maui-county.gov/council

April 3, 2012

Munekiyo and Hiraga, Inc.
Attention: Colleen Suyama, Senior Associate
305 High Street, Suite 104
Wailuku, HI 96793

SUBJECT: Early Consultation Request for the Proposed 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project at (TMK (2) 4-5-008:001) Lahaina, Maui, Hawaii

Dear Ms. Suyama:

Thank you for the opportunity to provide early review and comments for the Proposed 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project at (TMK (2) 4-5-008:001) Lahaina, Maui, Hawaii.

After review of the information presented, I am submitting the following comments:

1. Are dwelling units for the project being proposed to serve the middle income group category?
2. Has provision of dwelling units in the project been considered to serve the gap group income category?
3. Provide address to traffic impacts resulting from the project upon Front Street, Kenui Street, and Honoapiilani Highway.
4. Provide address to water source and availability for the project.
5. Provide detail and address to matters in regard of any drainage concerns relating to the subject property.

Sincerely,

Handwritten signature of Joseph Pontanilla in cursive script.
JOSEPH PONTANILLA,
COUNCIL MEMBER



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

BWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICHY" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Honorable Joseph Pontanilla
County Council
County of Maui
200 South High Street
Wailuku, Hawaii 96793

**SUBJECT: Early Consultation Request on the Proposed Section 201H-38,
Hawaii Revised Statutes (HRS) Kahoma Village Project at TMK (2)
4-5-008:001, Lahaina, Maui, Hawaii**

Dear Councilmember Pontanilla:

Thank you for your letter dated April 3, 2012, responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Section 201H-38, Hawaii Revised Statutes (HRS) Kahoma Village Project in Lahaina, Maui. On behalf of Stanford Carr Development, LLC for The Harry and Jeanette Weinberg Foundation, Inc., we note that you have reviewed the information and provided comments. The following responses to those comments are provided and correspond to the paragraphs in your letter.

1. The proposed project includes affordable units, as well as market units which will be sold at prices that the market will bear. The affordable units will be sold in accordance with the County's Department of Housing and Human Concern's (DHHC) requirements. The income categories for the affordable units are between 80 percent to 160 percent of the median income for Maui as determined by the U.S. Department of Housing and Urban Development. These include affordable housing for the middle or moderate income groups. Current information on the County's website indicates the affordable prices are from \$260,000.00 to \$500,000.00 for Maui.
2. The affordable units include units to serve the gap group income category, identified as those persons with a median income between 141 percent to 160 percent for Maui.
3. The Traffic Impact Analysis Report prepared for the proposed project examined and analyzed traffic impacts of the project, as well as other potential projects. That study found that upon project build-out in 2017, traffic from the Kahoma Village project is not expected to significantly impact study intersections and the

MAUI

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roadway network in and around Lahaina. Existing intersections along Honoapiilani Highway and Front Street currently operate at acceptable levels of service (LOS) and are expected to maintain these levels of operations up to 2017. The existing LOS for the portion of Honoapiilani Highway, adjacent to the project site, is undesirable with slightly worsening conditions in 2017. The opening of the first two (2) phases of the Lahaina Bypass anticipated for 2012 is expected to alleviate some congestion along Honoapiilani Highway between Lahainaluna Road and Keawe Street, reducing traffic volumes in this area. Opening of additional phases of Lahaina Bypass in future years will further serve to alleviate congestion in the area of Lahaina Town.

Due to concerns raised by residents during the February 15, 2012 community meeting on the project, the site plan has been modified to relocate the project entrance to reduce traffic conflicts. The entrance on Front Street has been relocated south of Mala Wharf to across Puunoa Place. The entrance on Kenui Street has been relocated to across Nakeli Place. Also, road widening improvements consisting of curbs, gutters, sidewalks, pavement widening and landscaping will be provided along Front Street and Kenui Street.

4. The applicant is aware of the County's "water availability" requirement and is in discussion with the Department of Water Supply (DWS) regarding available options. The applicant is aware that it will be required to identify a reliable water source prior to obtaining building permits.
5. The County requires that stormwater flow generated by the project have no adverse impact on adjacent or downstream properties and coastal waters. Preliminary drainage improvements for the Kahoma Village project include a combination of an underground drainage system of perforated pipes and a drainage retention/detention basin in a portion of the proposed park areas. If required by the Department of Public Works, upgrades to the County's existing drainage system will be implemented in accordance with the County's Lahaina Town Drainage Master Plan. Further, the drainage retention/detention basin will allow sediments and pollutants to settle within the basin and protect coastal resources.

Honorable Joseph Pontanilla
September 24, 2012
Page 3

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:yp

cc: Jay Nakamura, Stanford Carr Development, LLC
Eric Matsuda and Fiona van Ammers, SSFM International, LLC

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X. REFERENCES

X. REFERENCES

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APPENDIX A.

**Analysis of Housing Market
Conditions and the
Development Feasibility**

**ANALYSIS OF HOUSING MARKET CONDITIONS
AND THE DEVELOPMENT FEASIBILITY**

RELATIVE TO A WEST MAUI AFFORDABLE & MARKET HOUSING PROJECT CALLED:

KAHOMA VILLAGE

TMK: (2) 4-5-08:001



Submitted to

The Harry & Jeanette Weinberg Foundation, Inc

By

Ricky Cassidy

**Honolulu, Hawaii,
rcassiday@me.com**



Site Plan



KAHOMA VILLAGE SITE PLAN

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I. INTRODUCTION

The Data@Work is a market research firm that specializes in analyzing residential real estate markets for developers and lenders. We have been retained to perform a study analyzing the market for primary housing on the island of Maui, relative to a planned development in Lahaina called Kahoma Village, on the west shore of the island.

This study focuses on the historical, current, and projected market conditions and trends in accessing the ability of the project to sell residential property at a price and at a velocity. In particular, it will project product pricing and absorption for the various product types. The study entailed collecting, comparing and analyzing information that has a bearing on the numerous aspects of market demand for the proposed project, including but not limited to publicly available real property, economic and commercial data.

The author makes every effort to verify that all of the information in study and in particular the market description and analysis is accurate, but is aware that 100% accuracy is unlikely.

II. PROJECT DESCRIPTION & STUDY OUTLINE

Proposed Development

The property to be developed is in the town of Lahaina, on the western coast of Maui. It is an hour's drive away from Wailuku-Kahalui, the center of county's business and political activity. Lahaina is the original port of the nation of Hawaii, as well as the first resort area in the state. It has since grown into the state's second largest tourist destination, thanks to two of the island's three major resorts being located within 5 miles.

The project will be called Kahoma Village and it sits on 21.56 acres of land next to the Lahaina Cannery Mall. To the west of the property is Front Street and, across that, the community's major boating area, Mala Wharf. To the north is a regional shopping center, the Cannery Mall. To the South is an established neighborhood. And to the East is the major highway on West Maui, Honoapiilani Highway. The proposed project intends to build 203 units, 102 of which will be multifamily and be affordable to those making from 100%-120% of Area Median Income. The other 101 units will be single-family dwellings. The unit mix and prices are described as follows:

UNIT OFFERING DESCRIPTION AND SUMMARY

Product	# Units	Beds	Bath	Sq. Feet	Price	Price/sf
MF Affordable	34	2	2.5	1,000	\$260,300	\$260
MF Affordable	34	3	2.5	1,090	\$306,200	\$281
MF Affordable	34	3	2.5	1,223	\$343,562	\$281
Cluster SFD	44	3	2 1/2	1,304	\$521,600	\$400
Alley SFD	21	3	2 1/2	1,646	\$617,250	\$375
Cluster SFD	26	4	2 1/2	1,692	\$676,800	\$400
Alley SFD	10	4	3	2,194	\$822,750	\$375
Total/Averages	203			1,332	\$455,621	\$342

Study Outline

In order to forecast sales and evaluate pricing of the proposed project, the study will describe and analyze of the macro and micro economic factors and trends that affect housing relative to the county of Maui and to the proposed project. Thereafter, it will describe the housing market in general, including the national and the state housing markets, and then in particular to this project, including Maui, West Maui and the relevant sub-market segments.

It will look at the factors and trends behind the general and specific supply and demand for housing. It will describe the relevant target market of these units and compare them to the relevant market segments in order to analyze how the product offerings match up in terms of value and sales velocity. In doing so, it will forecast the market reception to the proposed product offerings and project sales velocity by product type and price point. It will summarize the findings and finish with some concluding remarks and expectations.

III. AREA DESCRIPTION & BACKGROUND

Subject Property's Community

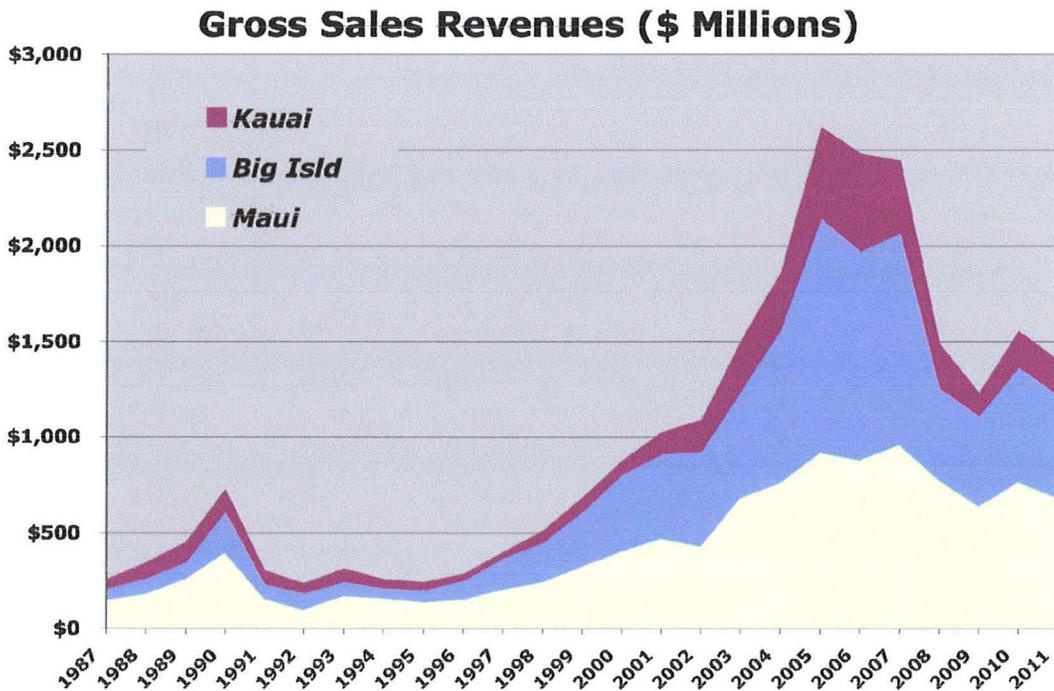
Maui County is the third largest county in the state, as ranked by population and economic activity, behind the City & County of Honolulu (Oahu) and the Big Island of Hawaii. It has one of the strongest brands in the global visitor industry, as well as a somewhat diversified economy, at least relative to the other neighbor islands in the state (with agriculture, services and high technology being the other mainstays). That said, the main driver on the island of economic activity is money spent by visitors and homeowners from outside the island on recreation or lifestyle. Indeed, like the rest of the state, the county's economy's comparative advantage involves a very high quality of life, relative to the rest of the world, including resorts and second home communities.

This quality of life, both for visitors and residents alike, is based on the number of unique advantages that Hawaii has relative to other visitor or second home locations: it's in America, it's socially safe, politically stable, under American jurisprudence. Additionally, it is naturally beautiful, with a benign environment and near perfect climate. Indeed, the proof of its attractiveness can be found in the quality of the number of 'rich and famous' who have bought in Hawaii, starting with Lawrence Rockefeller in 1960 (followed by John Wayne, Paul Allen, George Harrison, Peter Gruber, George Roberts, Charles Schwab, Michael Dell, Ben Stiller, Oprah Winfrey, Akio Morita, Michael Creighton, etc.)

Maui has three major resort destinations:

- **Wailea/Makena**, a 45-minute drive from the Airport, runs along the South Maui coastline, with Haleakala Mountain and, open pastures lands above and the extraordinarily beautiful Maalaea Bay below.
- **Kaanapali**, along the western shore, 10 miles south of Kapalua Airport, was once the favored area of Hawaiian royalty and today hosts one of the largest percentage of accommodations, shops and historical sites in a single destination.
- **Kapalua**, also along the western shore, 10 miles north of Kapalua Airport, was once a working pineapple plantation and now has two major hotels and a significant residential population.

The majority of the primary housing development is located in Central Maui, within the Kehalani and Maui Lani master planned communities. There are several secondary sources of housing activity, in and around Wailuku, Kihei and Upcountry. Second home development is a major component of the housing development on the island, accounting for around 25-30% of total sales and 50-60% of the gross revenues (on average, 2003-2011). As seen in the chart below, the gross sales revenues from residential property within resort master planned communities on Maui has been over half a billion dollars annually since 2002 (and this would be higher if the sales of condos in Kihei and Napili and the sales of single family homes on the Waihee area ridges were included).



By way of context, housing construction hit a peak on Maui when major resorts were developed in the 1970s; recent high-volume years reach only half that level. Thereafter, many of the condominium projects that were developed on Maui targeted the offshore buyer market. Sales records show that upwards of 60% of the condo sales on Maui went to out of state buyers. Census records have shown that a quarter of Maui County's housing stock and more than 40 percent of housing in West Maui did not house residents in 2000. Thus, while the Census categorizes these units as "vacant," they may be actually rented to vacationers, reserved by owners as a second home, or both. Demand in the housing market hence comes from residents, investors, and non-residents. As a result, the average prices for the various types of dwellings mentioned in this study do not accurately reflect residents' ability to pay for housing.

IV. THE ECONOMIC BACKGROUND:

Simply put, real estate sales and values move closely in synch with an area's economic growth, and the mechanism by which this growth occurs is via rising incomes and higher job counts. Both feed directly into demand for housing.

In the short run, economic growth is determined by trading activity, the most important of which is the level and balance of trade between the area and its major trading partners. In the case of Maui, the major trade is in recreational goods and services, the largest of which is the visitor industry. The health of this industry is tied to the health of the economies which send visitors to Maui.

In the longer run, economic growth is also determined by population changes (both migration and demographic) and lifestyle preferences.

We start by looking at the economic outlook for Maui, which will be closely followed by examining the residential market. Both the Maui's economy and Maui's residential real estate market are affected by the global and national economy, as well as the national real estate market.

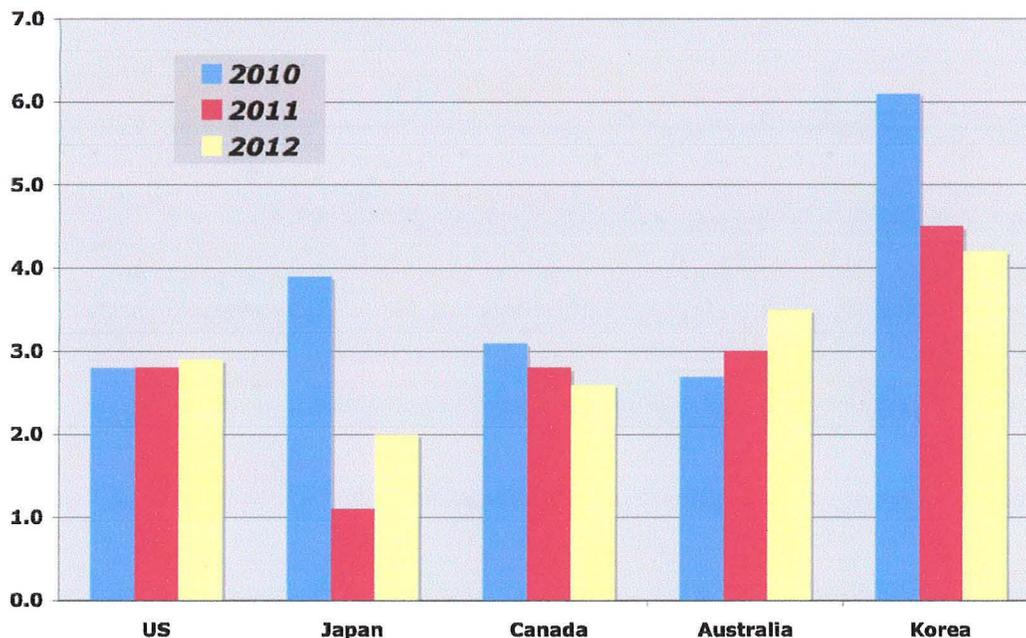
As Maui's major industry is tourism, the major trading partners here would be the US, Canada and Asia on the international level; then California, and the west coast states, on the national level; and finally Oahu on the state level. As such, we examine the economic health of these trading partners in order to get an understanding of their ability to trade (send visitors, home owners and capital funding) with Maui, currently and for the future.

Of concern for the proposed development is that these economies will be able to trade with Maui going forward in a positive or growing trend. That would then underwrite the demand for the housing that this development proposes to build.

GLOBAL ECONOMY:

The overall global economic forecast by the IMF earlier this year noted that the recovery had solidified, but the unemployment remained stubbornly high. It said financial conditions are improving, and the risks have shrunk, but there is still a chance of a fallback in economic activity (a double dip). The advanced economies need to repair their public and financial balance sheets, and stimulate employment. The emerging markets need to beware of overheated economies, financial markets and property markets.

Real GDP Forecast, Major Tourism Markets



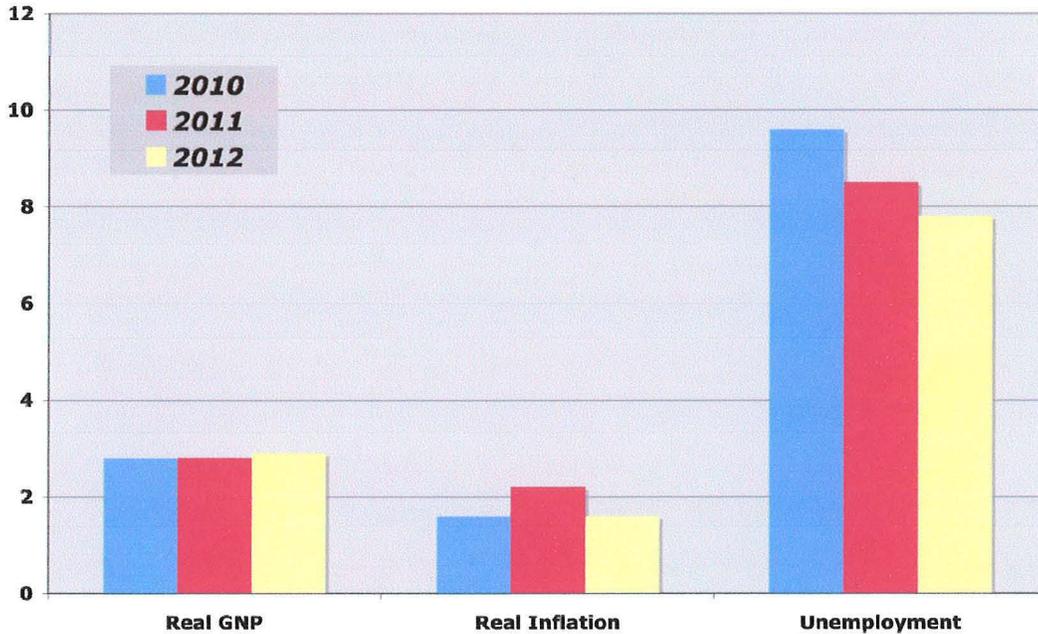
Looking into the future, the global economy should continue to improve over the next few years, and do so at a pace that will sustain the health of the state’s number one industry: visitor recreation. In that regard, the advanced economies of Australia, US, Canada and the Japan will continue to send greater numbers of visitors, while the newly industrializing ones of Korea, China and India, so long as getting a visa doesn’t become more difficult.

Japan is a special case, inasmuch as the earthquake slash tsunami will slow economic growth in the near term. Indeed, most economic forecasters cut their GNP growth in half for this year, 2011, but then doubled in for 2012, recognizing the stimulus that the spending on the recovery will bring to the economy. However, most importantly for Hawaii, their visitor counts have not been significantly lower to-date, with whatever shortfall occurring being filled in by other markets... and that bodes well going forward.

UNITED STATES:

The US economy is projected to grow by 2 percent and 3 percent in 2011 and 2012, respectively, with gradually firming private final demand off setting the waning support from federal fiscal policy. That said, the risks to the outlook remain tilted to the downside: spillover of financial turmoil from euro area, the spike in commodity prices and continued fall in housing prices. Given the substantial slack in the economy—the output gap is estimated to remain above 3 percent this year—inflation is expected to stay subdued, with price increases of 2 percent this year and 1 percent next year.

US Economic Forecast (IMF)



The sluggish pace of the economic recovery calls for supportive macroeconomic policies, but fiscal room is becoming increasingly limited. In this context, the right policy mix for the United States is one of continued monetary accommodation alongside moves to put fiscal balances on a sounder footing.

Looking ahead, the US economy will be on the rise, albeit slightly. However, that, plus the perception of a growing economy, should be sufficient to grow the state and the county economies. An improved US economy manifests itself in terms of higher visitor industry revenues and continued federal funding of the national security assets the country has in Hawaii (as well as the scientific ones).

CALIFORNIA:

The state's forecast is mixed: Real income growth is positive, but job creation in California remains sluggish.

Real personal income growth is forecast to be 1.3% in 2011 and 3.7% and 4.1% in 2012 and 2013 respectively. On the other hand, unemployment will remain at 10.5% next year, but improving substantially. By 2013, it will stand substantially above the U.S. rate, driven by health care, professional and business services, exports, and technology-related manufacturing, as well as residential construction.

The negative is housing and related activities: Though activity picked up last year, this year it slumped back into a near-depression state. The market for existing homes looks somewhat better, but with the same double dip pattern of growth. As such, the timing and strength of any upturn in housing is uncertain. The main risk continues to be a large round of foreclosures that come onto the market in a short period of time.

Demographic Trends: The California economy does have one big thing going for it: a large and growing population. The state's populace numbered 38.7 million persons as of July 1, 2010. That total is expected to swell by about 350,000 persons annually.

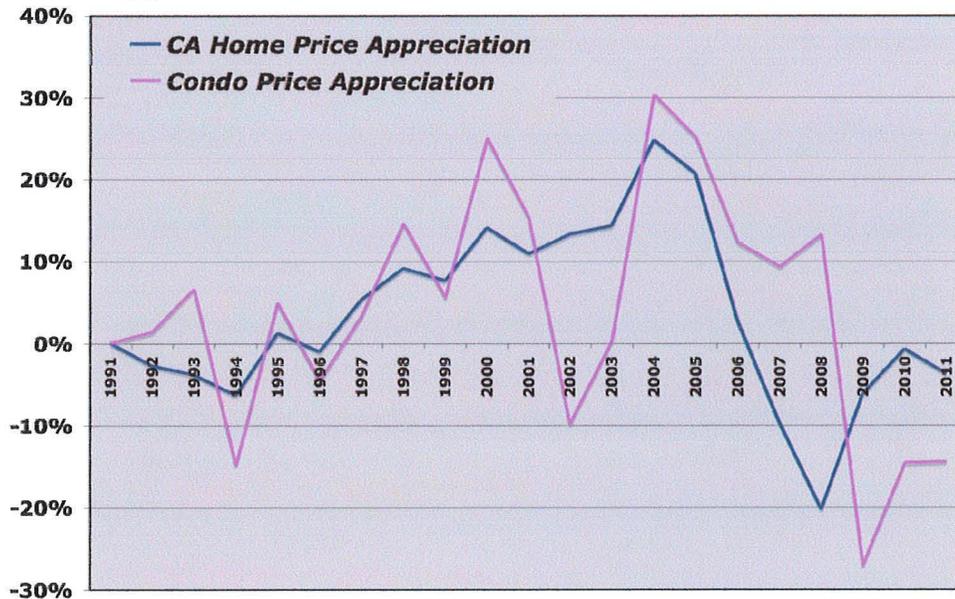
Tourism: 2010 was an encouraging year for California's tourism industry after a very difficult 2009. According to Smith Travel Research, the state's hotels reported increases in occupancy rates last year (averaging +6.1%) along with roughly even room rates. This combination caused total hotel room revenues to grow by a welcome +7.4% and begin to retrieve some of the losses in 2009. All major markets reported higher room revenues in 2010, except for a few smaller cities where room rates were weak. Going forward, tourism industry revenues should continue on the upswing in 2011, as the pace of business and leisure travel is quickening.

California's economy is beginning to recover from the steep 2008-2009 recession, with the following industries leading the way:

- Retail and autos:
- International Trade:
- Entertainment:
- Tourism:
- Private education:
- Health care:

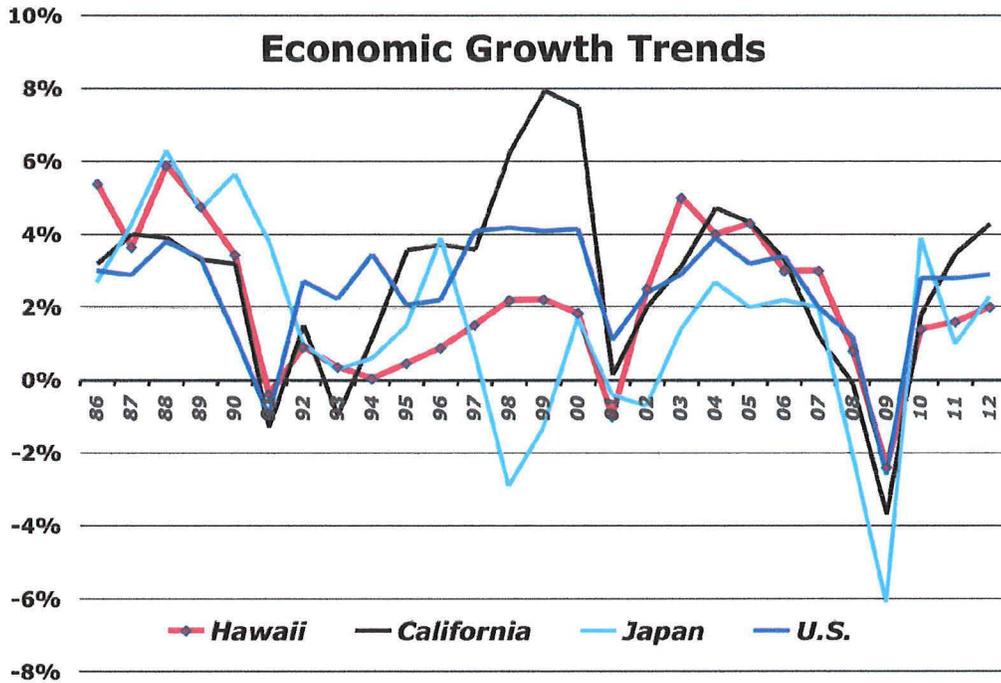
Note that as tourism is one of the industries that will lead the state into recovery, the same will be true for Hawaii. One indicator of that is the positive correlation between the home prices in California and the prices for resort condos in Hawaii. This is seen in the following chart.

Appreciation: California Home vs Resort Condo



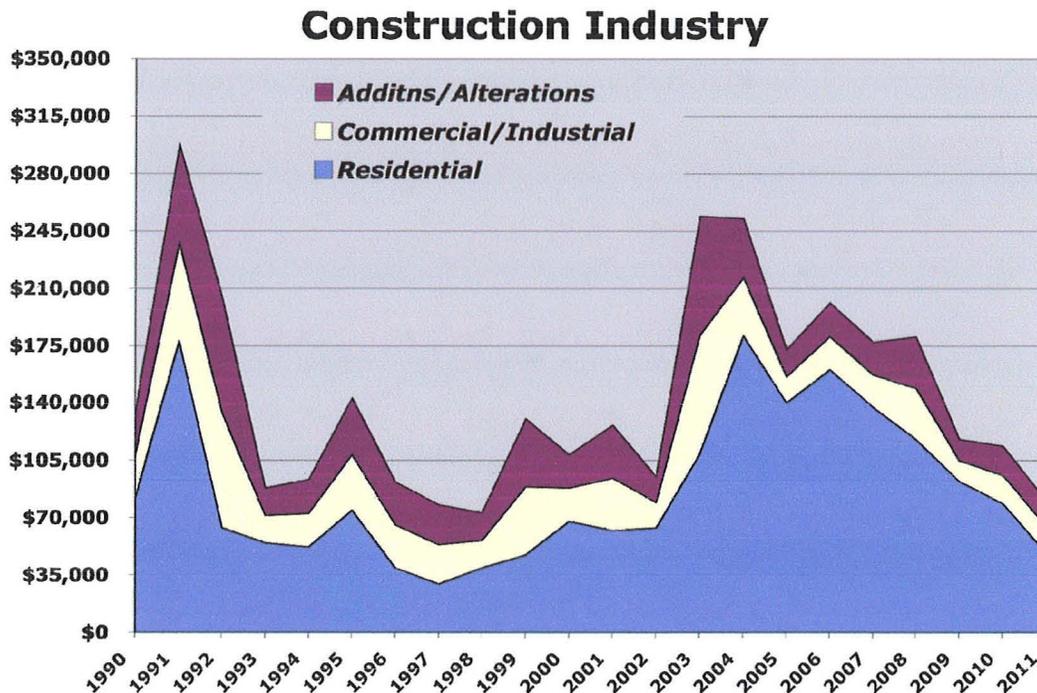
SUMMARY: The outlook going forward? Cloudy with passing showers. Hopefully clearing. Any and all economic recovery in state's major trading partners should stimulate Hawaii's economy.

The following chart shows the forecasts for this year and the next, according to the ECONOMIST Magazine's forecast group, UCLA and DBEDT for Hawaii.



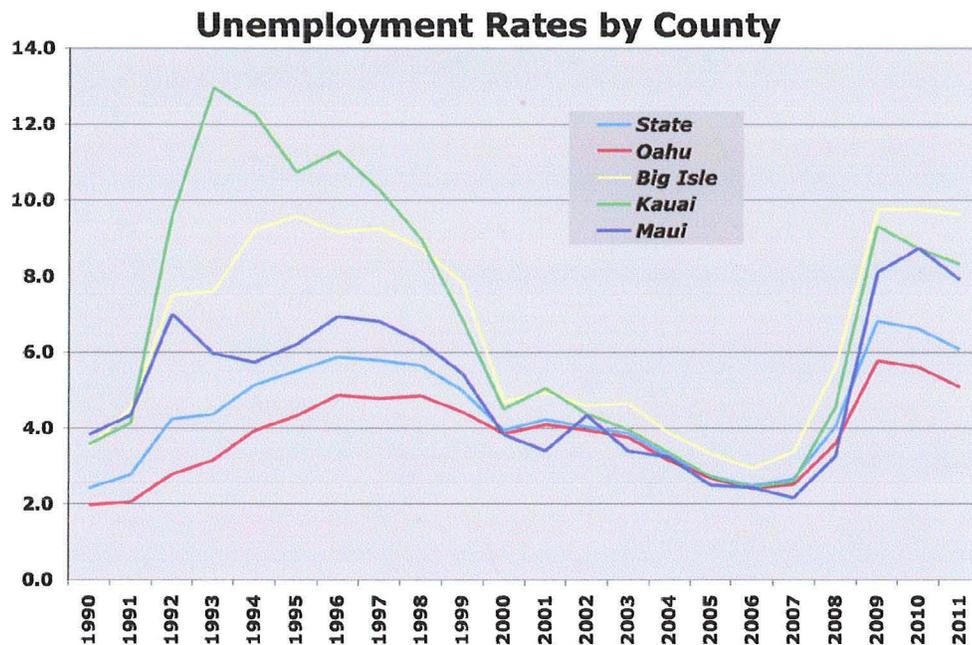
HAWAII STATE:

According to the state economic forecasters at DBEDT, Hawaii's economy continues to recover in 2011 but at an accelerating rate. Economic expansion is expected to start in 2012. The economic indicators were mixed in the first quarter of 2011, with visitor arrivals, average daily visitor census, visitor expenditures, and civilian wage and salary jobs all increased. That said, however, construction was down and general fund tax revenues also decreased.

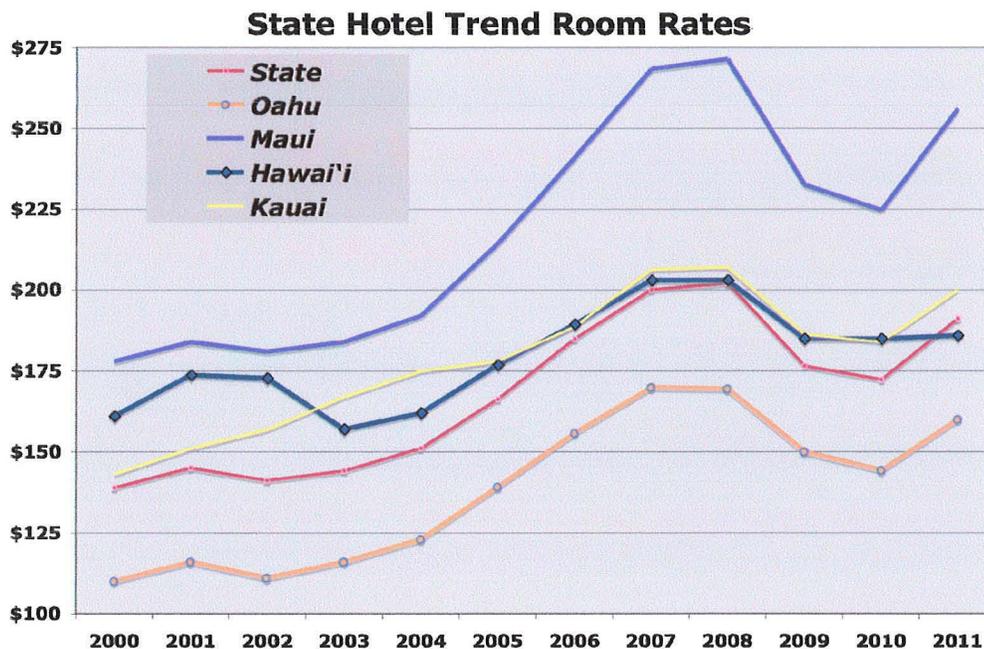


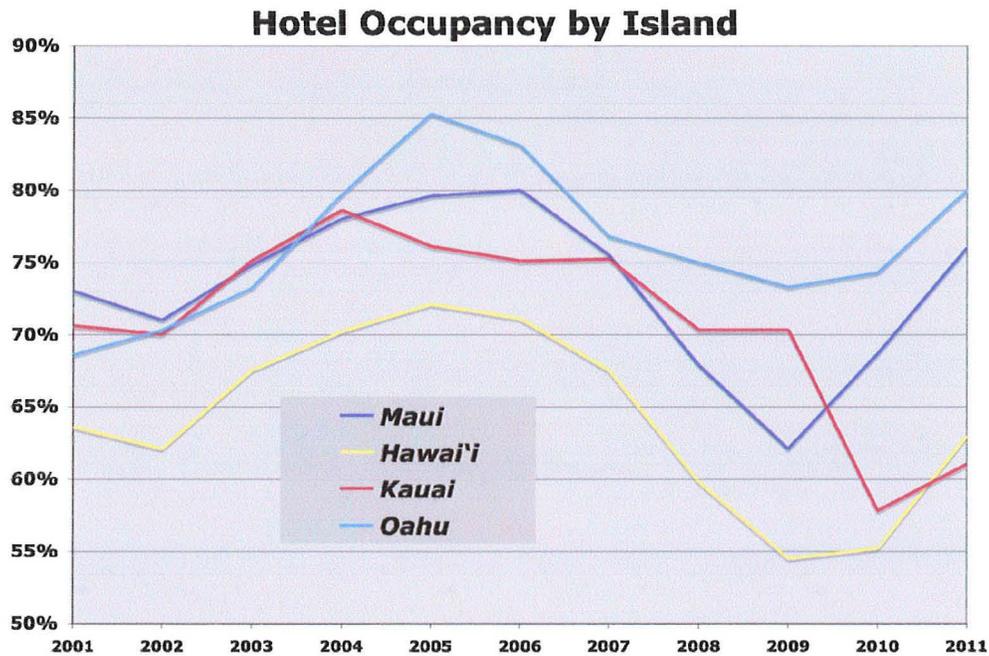
Note that the state of Hawaii has very low unemployment relative to the rest of the nation: the latest statistics show (in April) the rate falling to 6.1 percent, the lowest level in more than two years. Hawaii fared better than the nation as a whole, which experienced an increase in the average unemployment rate to 9 percent in April from 8.8 percent in March.

On a county-by-county basis, Honolulu County's 4.6 percent jobless rate in April was the lowest in the state, as opposed to 7.1 percent in Maui County, 7.7 percent in Kauai County and 8.9 percent in Hawaii County.

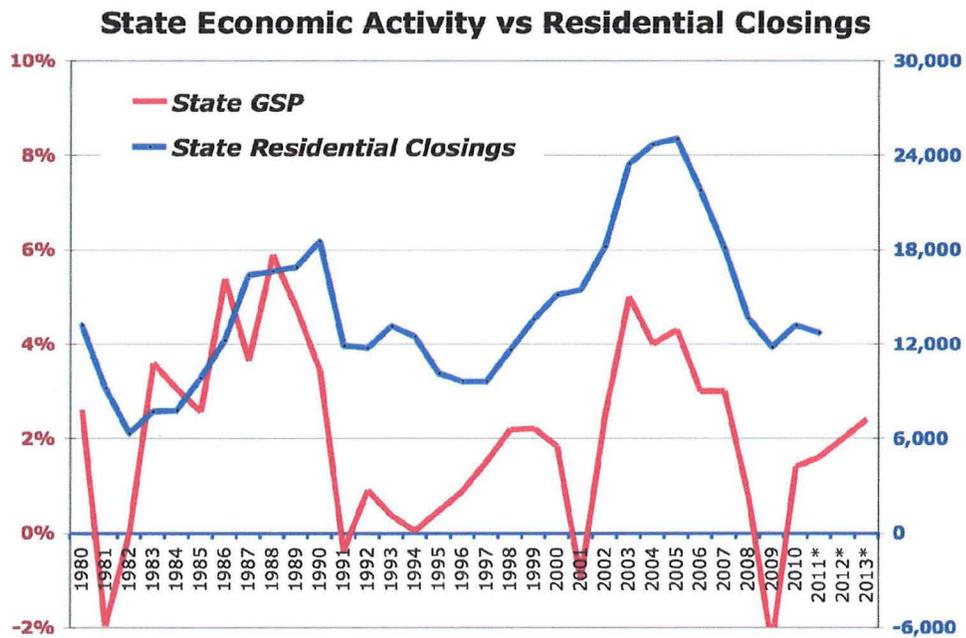


The forecast for visitor expenditure in 2011 is also revised upward to 10.8 percent, from 9.2 percent growth projected in the previous forecast. For 2012, the growth rates of visitor arrivals, visitor days, and visitor expenditures are now expected to be 2.9 percent, 2.7 percent, and 5.5 percent, respectively. Hotel occupancy took a hit on Oahu and the Big Island in the weeks following the quake, although there was little effect on Maui or Kauai, who receive few Japanese visitors.

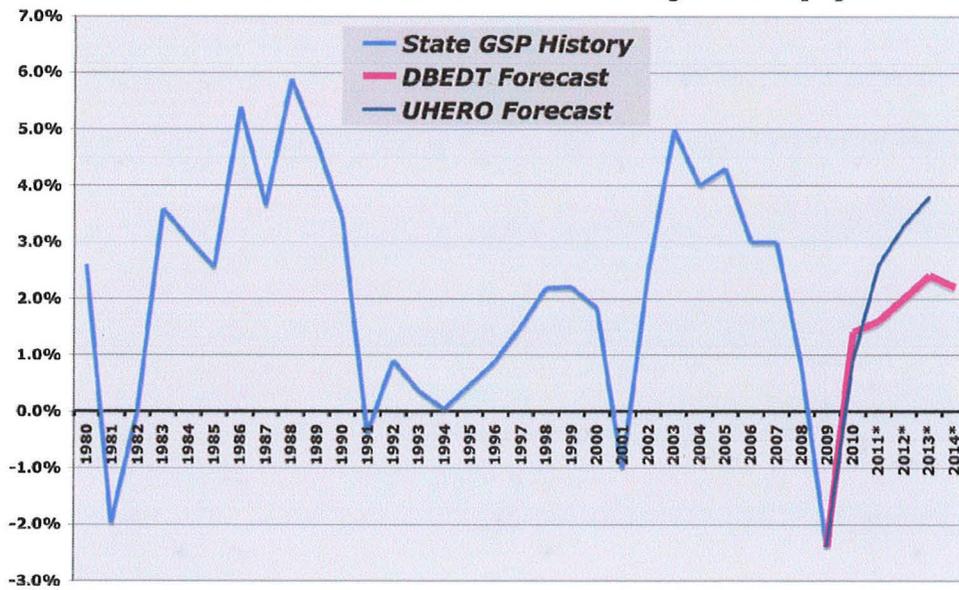




The benefit of growth in terms of the state GNP, it is a leading indicator for real estate demand. As seen in the chart below, it's showing that losses in sale probably are over this year, and will be higher in the coming ones.



Gross State Product Past & Projection(*)



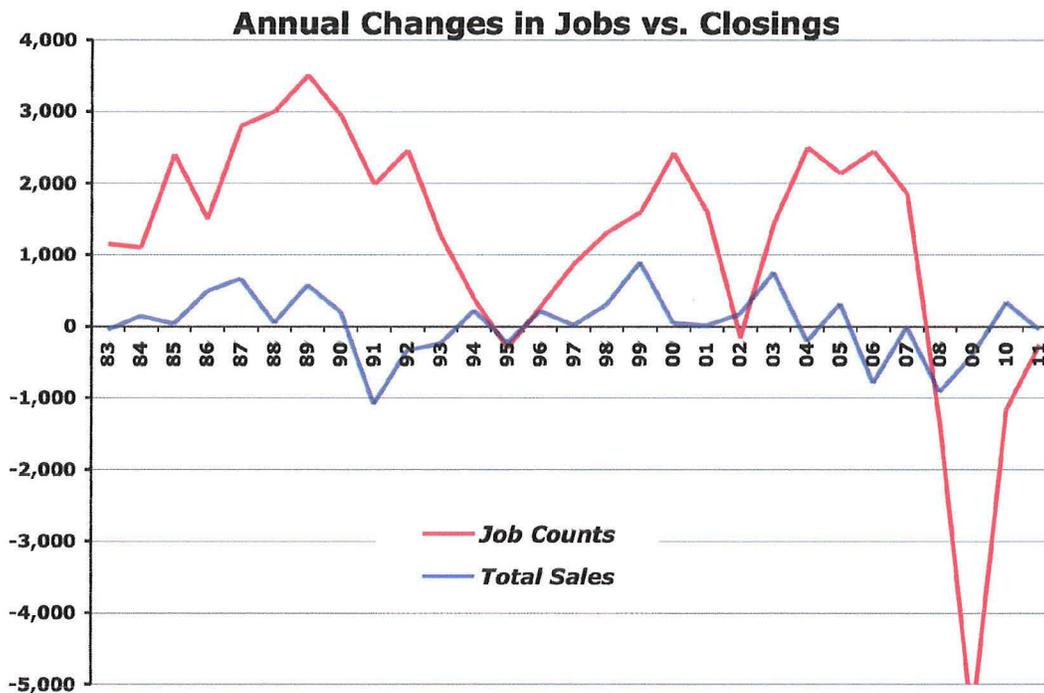
Overall, Hawaii's economy measured by real GDP is projected to show a 1.6 percent increase in 2011, down from a 2.0 percent growth forecast last quarter. That growth is expected to increase to 2.0 percent in 2012.

MAUI COUNTY

The Maui economy and its real estate market are volatile (as seen in chart below). They are typified by multi-year periods of mounting demand (leading to hyper appreciation) followed by a fall-off in a recession, with a commensurate degree of low activity.

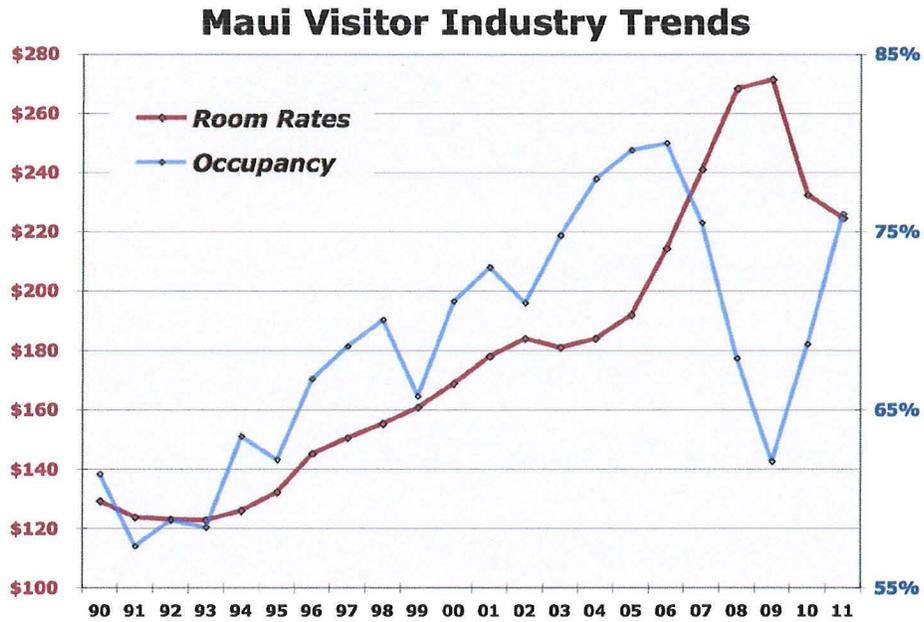
Much of this is due to external economic factors, such as the demand for recreational goods and services (hotel rooms and transportation, for example) from offshore economies (mainly West Coast of North America and Japan). In addition, the development of the hospitality industry is dependent on offshore capital sources, inasmuch as the magnitude of that investment outstrips the capacity of local lenders.

The volatility of this market is also due to supply constraints of the necessary inputs to economic activity in general and housing production in particular. These constraints are due to a limited island resource base (land, labor and capital, as well as other natural resources).

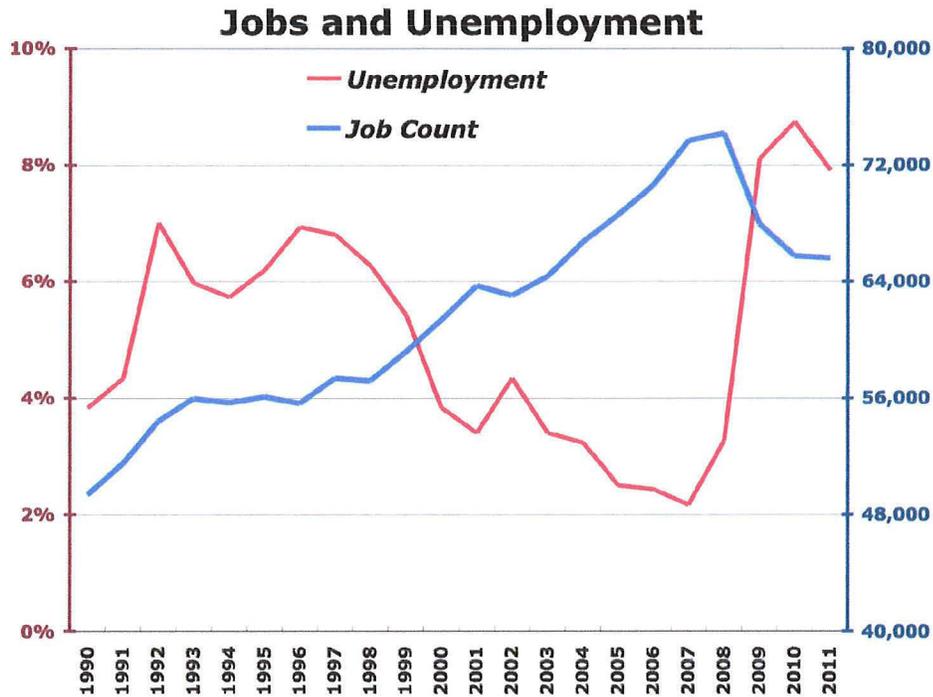


Currently, Maui may currently be near or at the apex of the down cycle, showing overall soft demand and weak pricing. There are signs the economy has bottomed-out and stabilized, thanks to a big boom in tourism, leading to an expectation that recovery/growth will arrive next year or the following one.

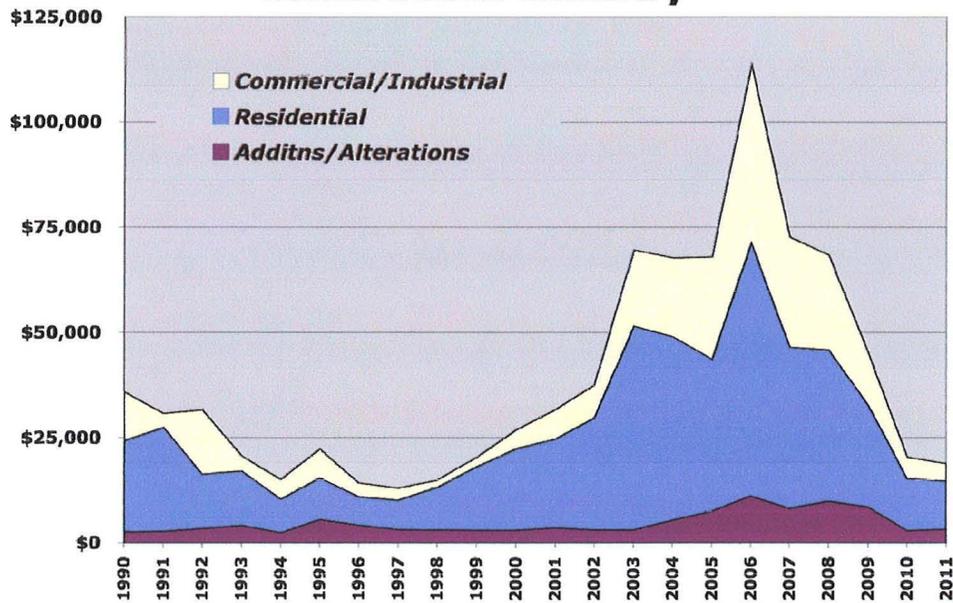
Although mainland economic weakness had begun to affect the local economy in mid-2007, the critical event that precipitated a broad downturn was the collapse of Aloha and ATA airlines early in 2008. This pushed tourism over the cliff, leading to increasing unemployment, business failures, slackening of demand, and undercut spending levels island wide



As a result, the unemployment rate on Maui, traditionally among the lowest in the nation, more than doubled. Tourism indicators have declined by 10 to 20-plus percent, and gross total expenditures (residents and visitors) was down significantly. A previously fast growing population has been somewhat stabilized by out-migration and a stagnation of gross household income.



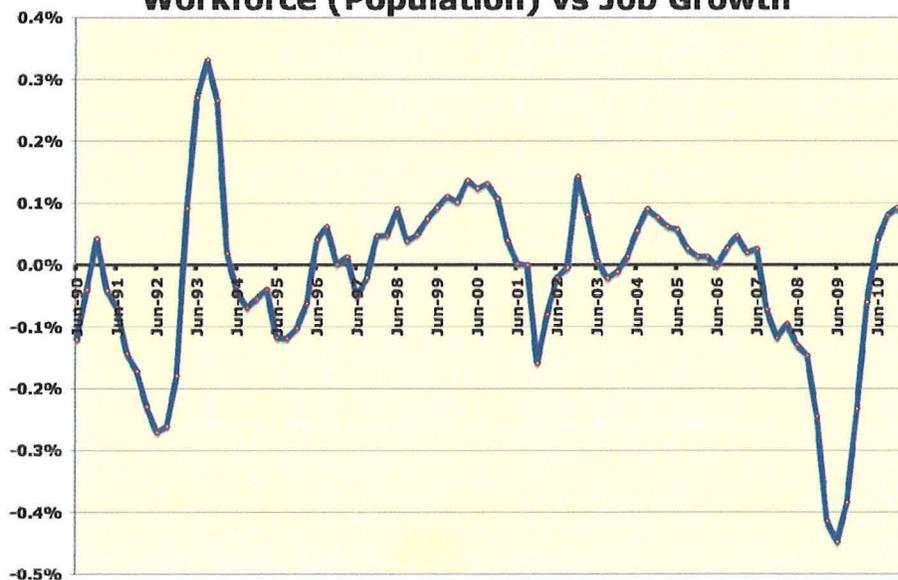
Construction Industry



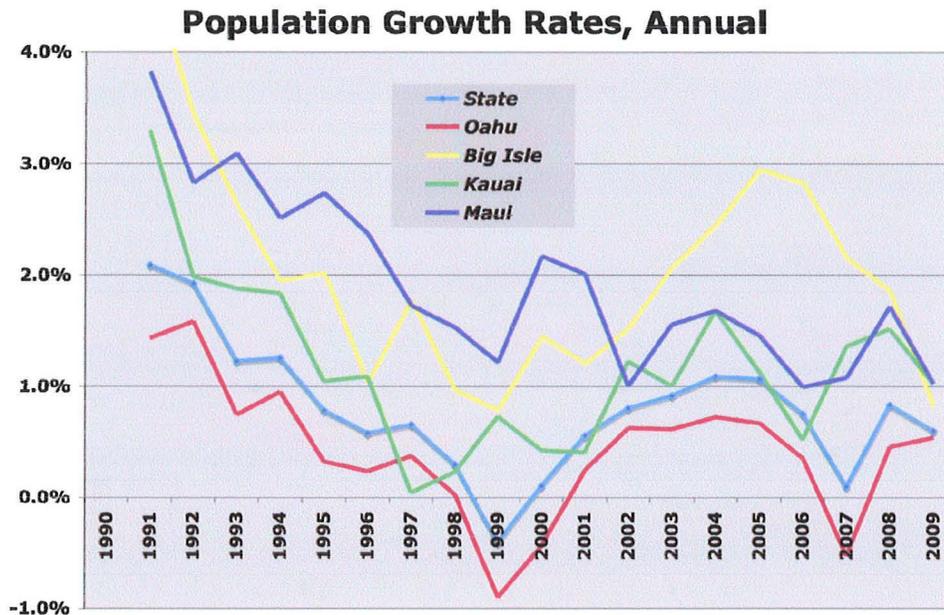
Maui's construction industry is lagging Honolulu, with private building permits down significantly. With respect to residential construction, many cite two causes for the downtrend, besides the recession: Maui's 50 percent affordable housing requirement for new residential development, as well as the 'show me the water' ordinance requiring a water meter permit before building can begin.

Lastly, the balance between job growth and working force (new entrants into the job market, i.e., those needing jobs) has rebounded strongly on Maui, thanks to a slight slowing growth of the population, in combination with a strong rebound in a strong service sector and federal (defense) spending.

Workforce (Population) vs Job Growth



Notwithstanding the near-term turmoil, which will require many months to be resolved, mid to long-term indicators and foundational economic attributes have begun to look up for Maui and especially the Lahaina study area. An increasing population base via natural growth and inevitable in-migration, coupled with the intrinsic worldwide demand for Maui tourism and its limited land resources, will result in a renewal of the well-established, highly-cyclical nature of the local economy and the real estate market along historic trend lines



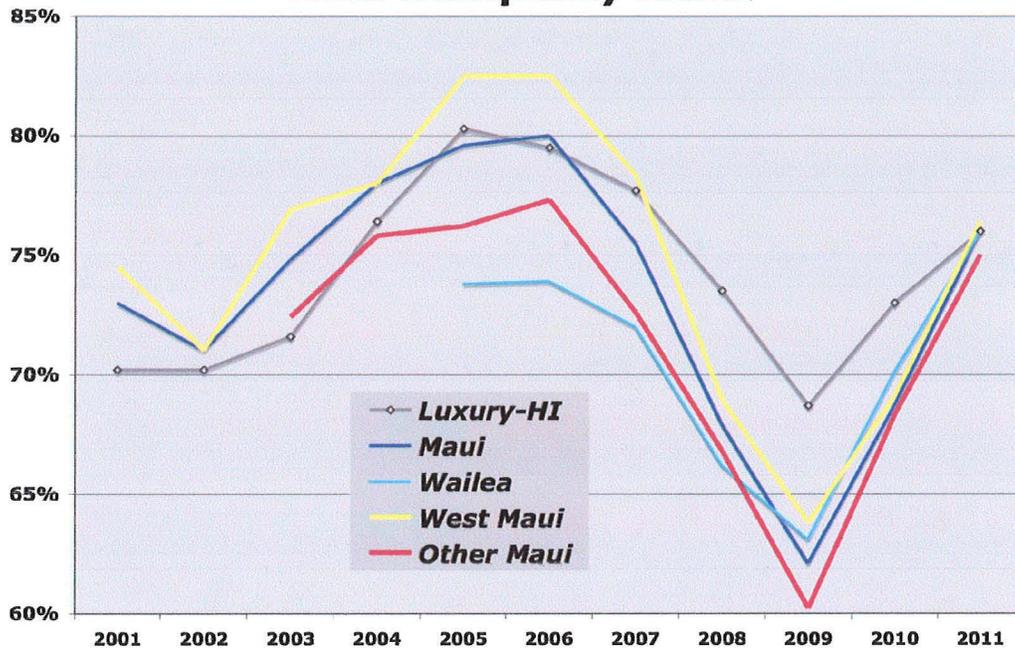
CONCLUSION:

As seen, the economies of most of Maui’s trading partners have moving through the global recession, with varying degrees of success. The most successful are the economies of Canada and Asia, thanks to their positive balances of trade in natural resources and manufactured goods. As such, they are able to send more and more visitors to Maui (and those visitors are spending more and more, as well). The US economy is showing slightly positive growth, but is still able to send a steady stream of visitors to Maui (with California in the same category). Indeed, the state’s total visitor arrival numbers YTD through October show an increase of 7.8% (and up 20% for Maui, October 2010 vs. October 2011).

Generally, the State’s economy lags behind that of these mainland by one to two quarters within the economic cycle; as demonstrated by Hawaii being one of the last areas of the country to move into the current recession. However, this recession differs in the sense that tourism appears to be recovering ahead of the rest of the US (and Californian) economy, with Hawaii and particularly Maui the beneficiary. This is evident in the low rate of unemployment that the state is enjoying, relative to the rest of the country.

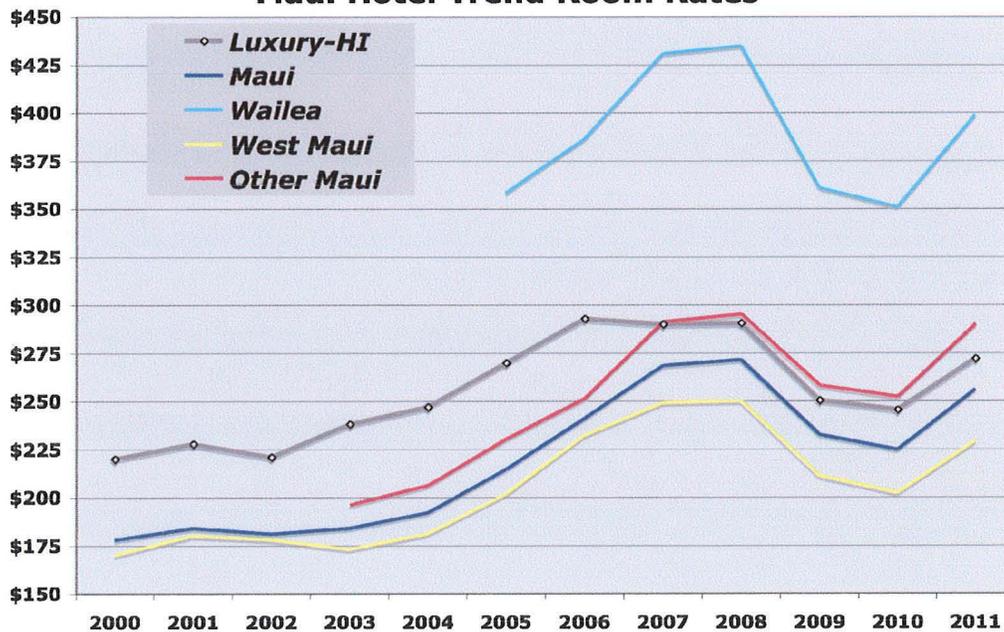
While there are significant problems in the global and national economy to be worked through, they are not impinging on Maui’s visitor industry. This gives us confidence that the current economic recovery on the island will continue, and continue to make itself felt positively in the residential market of Maui, as well. This can be seen in the following charts.

Maui Occupancy Rates



As seen, both occupancy rates and room rates are trending upwards.

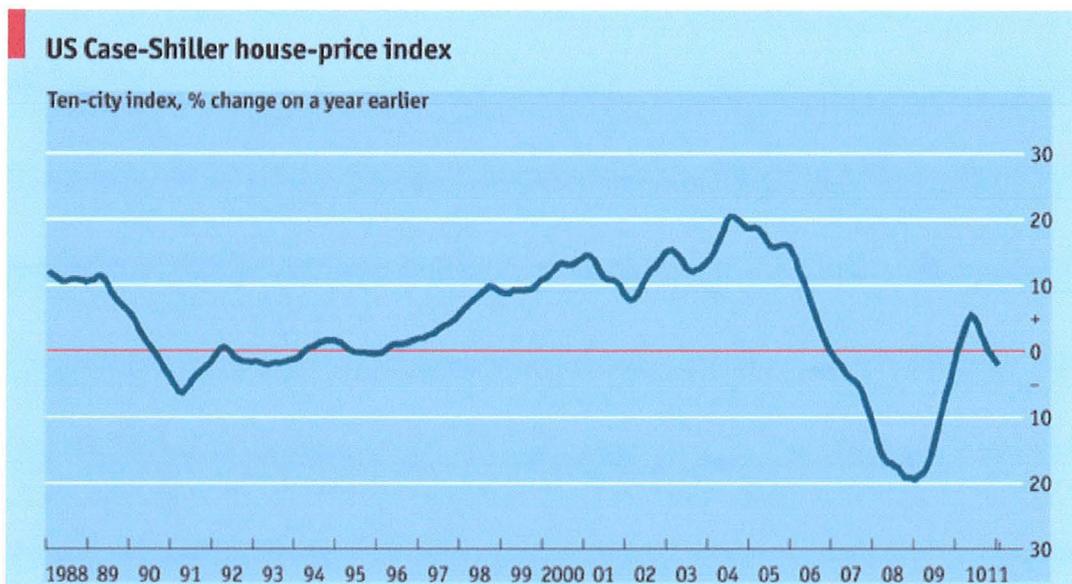
Maui Hotel Trend Room Rates



V. THE NATIONAL & STATE HOUSING MARKET

NATIONAL OVERVIEW:

At a ripe old age of five years, America's housing bust is still alive and kicking, with the latest being that a new phase of the downturn is under way. Two years ago, the market seemed to hit bottom: prices and sales leveled off thanks to low interest rates and tax credits. That ended last summer and a broader economic chill descended, and so... price declines resumed. Some forecasters expect another 5% to 10% fall in prices before the market turns. Robert Shiller, of Case-Shiller index, said that a further 25% decline is not out of the question.



The new single-family homes production last year hit lows last seen in WWII. Prices continue to fall, despite the lack of new supply: the latest Case-Shiller national home-price index, released earlier this year, showed a first-quarter fall of 4.2%. The pressure on prices is not about to let up given weak demand and a huge overhang of properties on the way to market: more than 11m homeowners are stuck in negative equity, with another 4m more either behind on their payments or already in the foreclosure process.

Low-income households have borne the brunt of the pain: prices at the lower end of the country's metropolitan markets have fallen much more steeply than those for plusher properties.

Yet there are signs of life. Rental vacancies dropped last year, and nominal rents began to increase in the second half of 2010. Rising rents may not sound like something to celebrate but it could fuel a recovery in the construction of multi-family rental apartments, and will also eventually persuade more tenants to think about taking advantage of lower house prices. The most bullish observers reckon that when prices do eventually turn, they will bounce dramatically.

When there is a rebound, an analysis of American demography suggests demand will strongest at either ends of the age spectrum: pent-up demand from younger adults who have deferred setting out on their own; and baby-boomers looking to downsize. Given the limitations on mortgage financing, the likely revival in housing construction will focus on smaller houses.

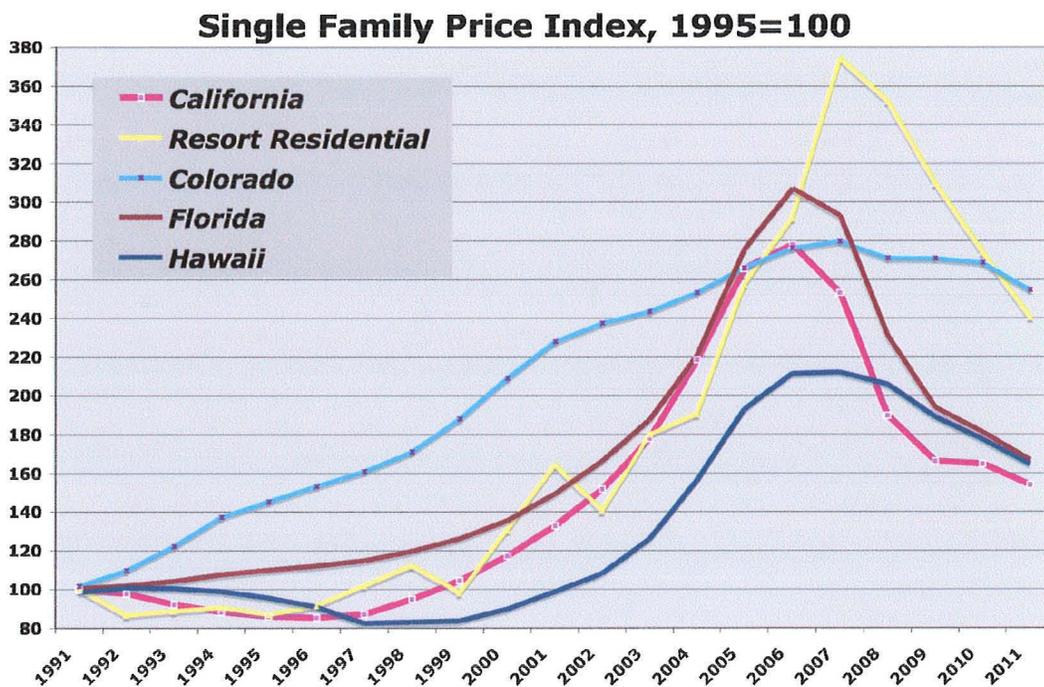
Credit markets are healing: mortgage borrowing actually rose in the first quarter, according to the Fed. New foreclosures were 17.7% lower in the first quarter than they had been at the end of 2010, and household delinquency improved for a fifth consecutive quarter.

That said, the best news for housing can come from the labor market. A better job market enables struggling households to make mortgage payments, reducing foreclosures. Job growth may also set loose what economists call "shadow demand". Some households, especially young workers, shared homes during the recovery to economize but can now afford to move out. Above all, the construction business has been so depressed that even a minor spurt in demand from new households could give prices a lift. If that, in turn, boosts construction employment, a vicious housing cycle could turn virtuous.

Turning to how the real estate markets in the individual states are faring, the following chart shows the median price of a single family home overtime. The trend for Hawaii is much less volatile than most states, in spite of the large (30%, by revenues, 15% by volume) component of out-of-state owners (see the yellow line, resort residential, as isolated in the chart).

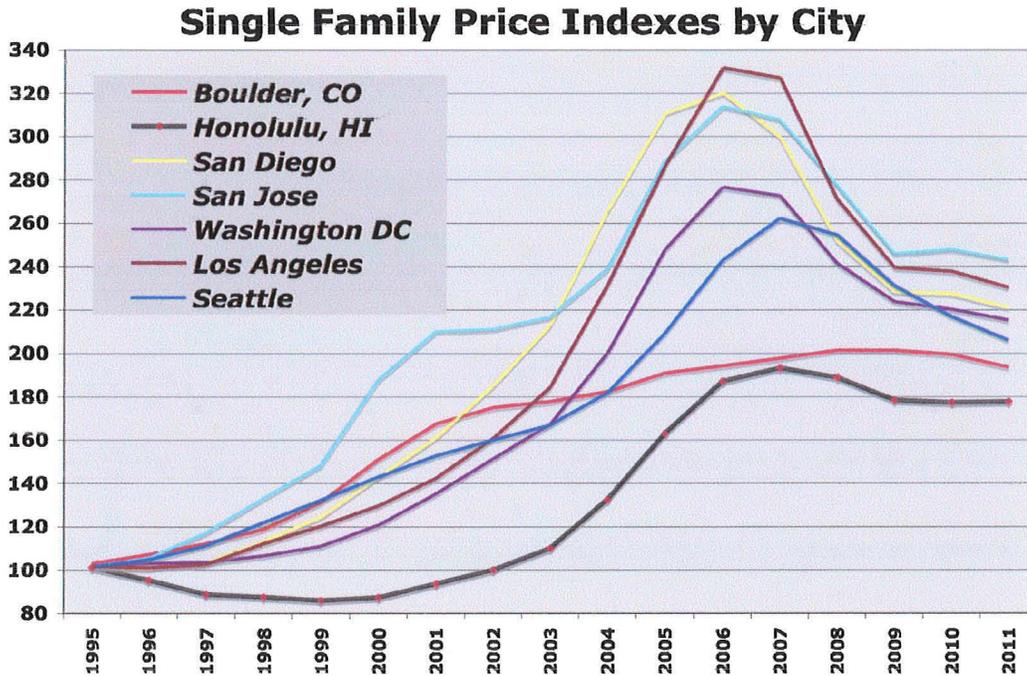
This indicates that the prices for primary housing in the state should not have to fall far, at least relative to other state markets that were more volatile upwards.

Note the similarity between the Resort Residential and Florida and California trends. Clearly, the resort market in Hawaii was affected by California real estate prices.



Note also that the trend in Hawaii state prices appear mirror those of California prices, but to a lesser degree and with a lag time.

The same trend on the state level can be seen on the city level in the following chart. Here, the City and County of Honolulu is seen to be less volatile relative to other major cities on the West Coast. Given this, it is our expectation that since Honolulu did not experience the same extreme degree of price appreciation over the up cycle, it will escape a commensurate degree of deflation in this down cycle – unlike several of the other cities shown here (some of which are where many of Maui’s visitors and second home owners reside).



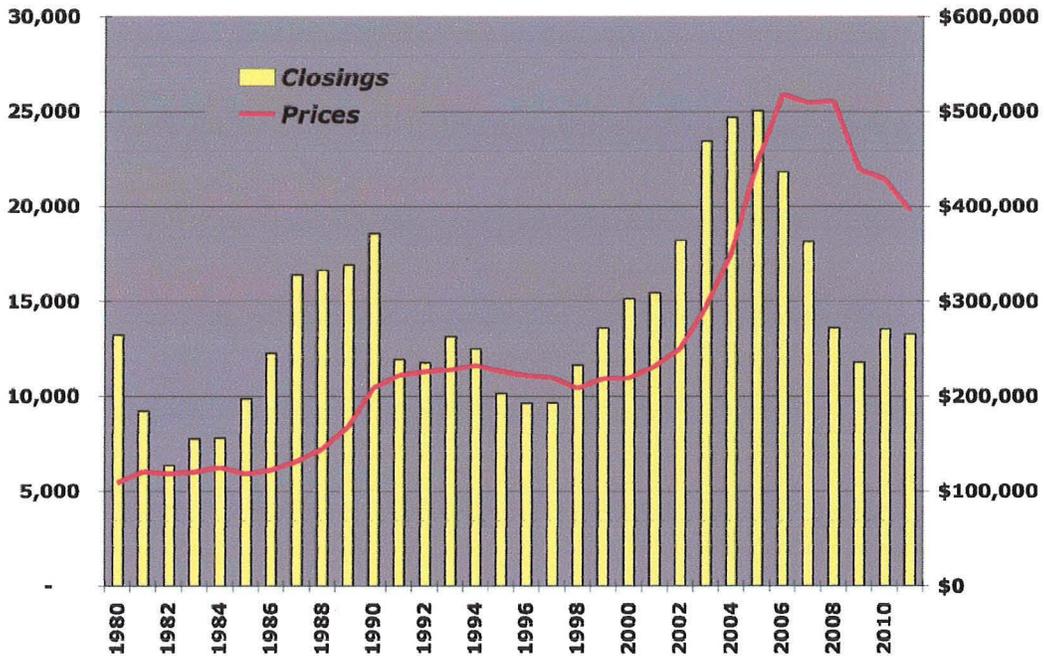
STATE OVERVIEW:

It is important to understand that the market for residential property in the state of Hawaii is and has been constrained in terms of supply, and flexible and deep in terms of demand. The net result is that the sales activity and the values of housing this market is often volatile, especially in an up market, but not as much in a down market.

Of note is how values (prices) are relatively free and uninhibited when the market is on the way upwards – but that they are ‘sticky’ on the way downward (generally, prices do not give up the whole of their appreciation, but instead they ‘hold’ on to accumulated values).

Currently, Hawaii’s residential markets are in the consolidation phase of the down-cycle, having gone through 5-6 years of dramatically lower sales and falling prices. The chart below shows total residential sales (combining resales and newly built units, as well as detached and attached housing) statewide, as well as an aggregate price index. It confirms the cyclicity of the market, particularly the compressed price appreciation. A feature of the current market, not seen in times past, is the price deceleration (please note the 2010 data point is a personal projection, showing continued price depreciation and a leveling of sales activity)

State Residential Market Trend



The following table takes the above 30 years of data from 1980-2010 and summarizes the swings in the market sales activity and sales prices.

TOTAL SALES ACTIVITY CYCLES, TERM AND CHANGES STATEWIDE

Period	Term	Start Sales	Finish Sales	Delta Sales	Delta %
1982-1990	8	6,341	18,557	12,216	193%
1990-1996	6	18,557	9,631	-8,926	-48%
1996-2005	9	9,631	25,313	15,682	163%
2005-2009	4	25,313	11,102	-14,211	-56%

It shows that the up cycle, 1982-1990, lasted 8 years, and saw an increase in 12,216 sales, or a change of 193%. It then saw a down cycle, lasting 6 years, losing almost 9,000 sales, or a falloff of 48%.

Generally speaking, the up cycles last 2-5 years longer the down cycles, and show 3-4 times more change (in this case, the growth cycle 1996-2005 of 163% is three times greater than the -56% deceleration in the following down cycle, 2005-2009). To be sure, this down cycle is continuing to unfold, and may overtime yet exceed the fourfold change in the prior cycle, 193% vs. -48%.

That said, this market cycle has seen a greater percentage change in terms of the falloff from peak to through sales activity, -56% vs. -48%. That leads us to a bottom in terms of market sales this year (or next) by shifting from declining to rising sales.

Turning from sales activity to price changes, the following table analyzes the price cycle over the last 30 years. It shows that price wise the first up cycle was 1985-1994, lasted 9 years, and saw prices grow 96%. Following that, the down cycle saw prices retrench -13% over 4 years.

PRICE CYCLES, TERM AND CHANGES STATEWIDE

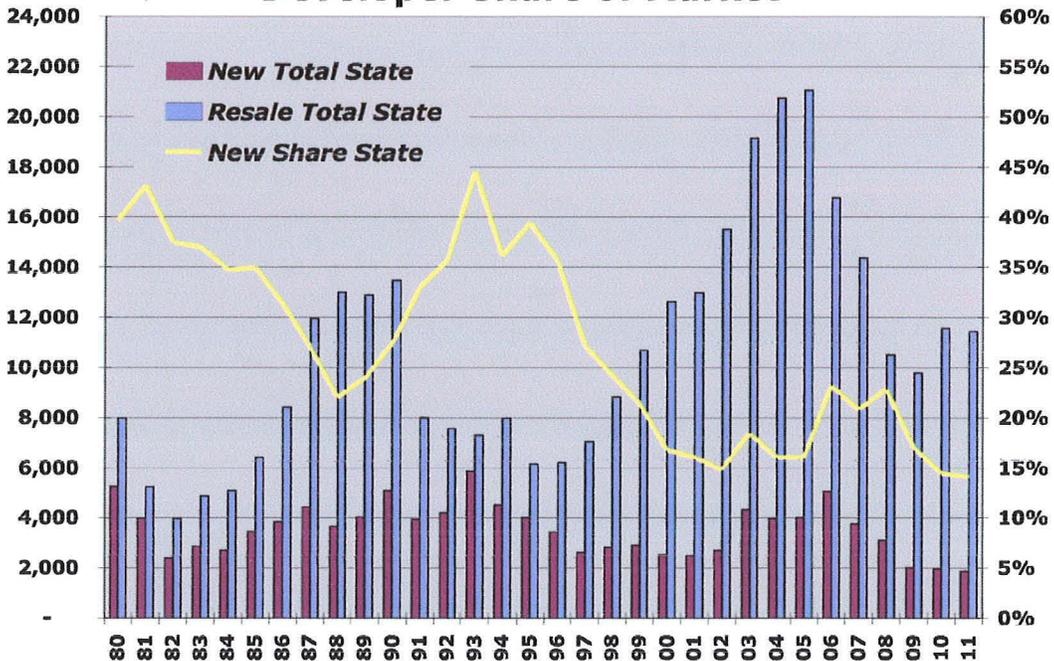
Period	Term	Start Price	Finish Price	Delta \$	Delta %
1985-1994	9	\$117,800	\$231,000	\$113,200	96%
1994-1998	4	\$231,000	\$201,500	-\$29,500	-13%
1998-2006	8	\$201,500	\$515,400	\$313,900	156%
2006-2011	5	\$517,721	\$379,056	-\$138,666	-27%

Then, the time it takes for pricing to go from trough to peak is longer than the time it takes to do the reverse, to go from peak to trough. As seen in the table, it takes 8-9 years for the total move to happen on the upside, as opposed to 3-4 years going downwards (again, the jury is still out on this down cycle).

That said, this most recent up cycle significantly outpaced the last one, thanks to cheap money, low lending standards and securitization. That makes forecasting the end of this current down cycle more difficult. While prices this cycle have already fallen off to a greater degree than they did during the last turnover (-14% vs. -27%), the fact remains that they went much higher this cycle relative to last (156% vs. 96%). As such, it appears that the current price level could be near the bottom point of the cycle.

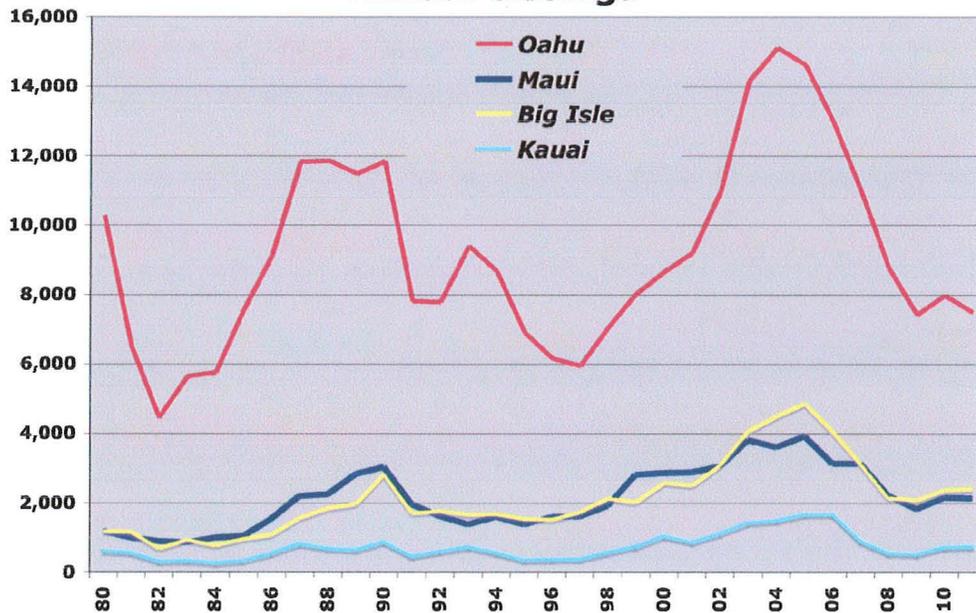
Total sales of all residential property last year, 2010, were 13,195 units (both SF & MF, and Resales & Newly Built), 12% of which were newly built 1,625) and the remainder were resales. For the new homes segment, this was the lowest share of market ever.

Developer Share of Market



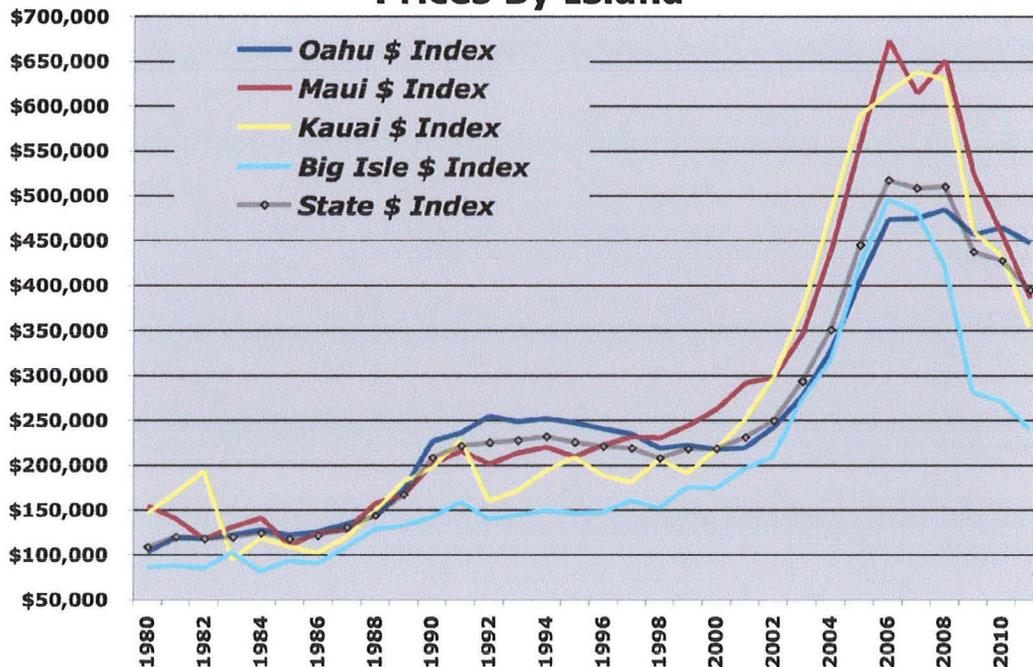
Finally, we break the state markets into their respective island (separate counties), and see how their sales and price trends compare to the overall state ones.

Annual Closings



As seen, Oahu is the state's major market, with Maui and the Big Island tied for second. Per prices, Maui was the most expensive market state-wide, but Oahu came in higher in 2011.

Prices By Island



Price-wise, Oahu is the least volatile island this cycle, but the most in the last one. This is because the 'hot' money chasing the high end in the last cycle was Japanese, focused on Oahu's south shore. This time, it was West Coast money focused on the outer islands.

VI. MAUI HOUSING MARKET

Overview

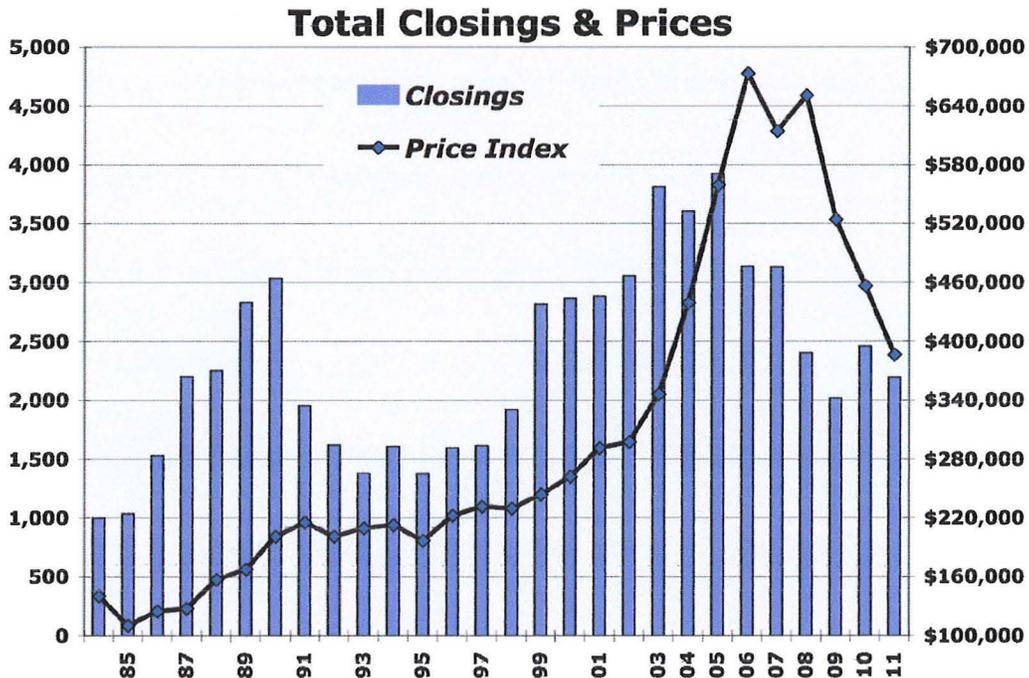
Much like the state, Maui's residential market is quite volatile, with demand overwhelming supply at the top of the cycle and vice versa at the bottom. Part of this is due to the fact that the supply side of housing is constrained (inelastic), due to a lengthy production process, as well as limited supply of zoned land (indeed, limited land, period).

On the other hand, demand for residential real estate is flexible (elastic), and is particularly flexible upwards (expansionary) when there is an economic boom, on-island and off. This is because, in general, residential property is of a very high quality (a place that is environmentally safe, aesthetically pleasing, socially accommodating, politically stable, etc.). This is coupled by a deep and broad appreciation of that lifestyle by very large population accustomed to visiting the island (mainly West Coast and East Asia), which has one of the highest rankings in brand awareness.

the chart below shows this, with total closings more than doubling in the last cycle, with prices more than tripling. However, demand is currently constrained significantly, thanks to the continuing uncertainty after the drastic fall off in economic activity globally and nationally in 2007.

In combination, this results in a market that can dramatically volatile, up and down, in terms of sales and, to a lesser extent, prices. We note that in the past cycles, prices have been relatively 'sticky' downward, i.e., generally holding on to accumulated values. In this cycle, however, the price appreciation was so extensive and lasted so long, that the ensuing price depreciation during the down cycle has also been extensive.

That said, Maui's residential markets are now near or at the end of the down-cycle.



The chart above shows total residential sales, as well as an aggregate price index. It confirms the cyclical nature of the market, particularly the compressed price appreciation.

Next, we quantify the volatility of sales and prices in the market. The following table takes the 30 years of data from 1980-2010 and summarizes the swings in the market sales activity and sales prices. We do this in order to compare the past cycles to the current one, and to use the past to predict the future.

TOTAL MAUI COUNTY SALES ACTIVITY CYCLES, TERM AND CHANGES

Period	Term (Years)	Start Sales	Finish Sales	Unit Change	Percent Change
1980-1983	3	1,677	853	-824	-49%
1984-1990	6	853	3,037	2,184	256%
1991-1995	4	3,037	1,378	-1,659	-55%
1996-2005	9	1,378	3,924	2,546	185%
2006-2011	5	3,924	2,196	-1,728	-44%

As seen, the table shows that the first market swing in the cycle was down. Its term was 3 years, 1980-1983, and saw a decrease in 824 sales, or a change of -49%. It then saw an 'up' cycle, lasting 6 years, gaining over 2,100 sales, or 256%.

Generally, up cycles last 7.5 years, about twice as long as the down cycles, and show about 4 times more change (in this case, the two growth cycles shown above average 220%, which is four times greater than the -49% average deceleration in the three down cycles). To be sure, this down cycle is continuing to unfold, and may overtime yet exceed the average).

Knowing this, we turn from the volatility of whole market to that of the individual market components, condominiums and homes. In the same way as above, we quantify the sales and price cycle over the last 30 years for condo and single-family sales.

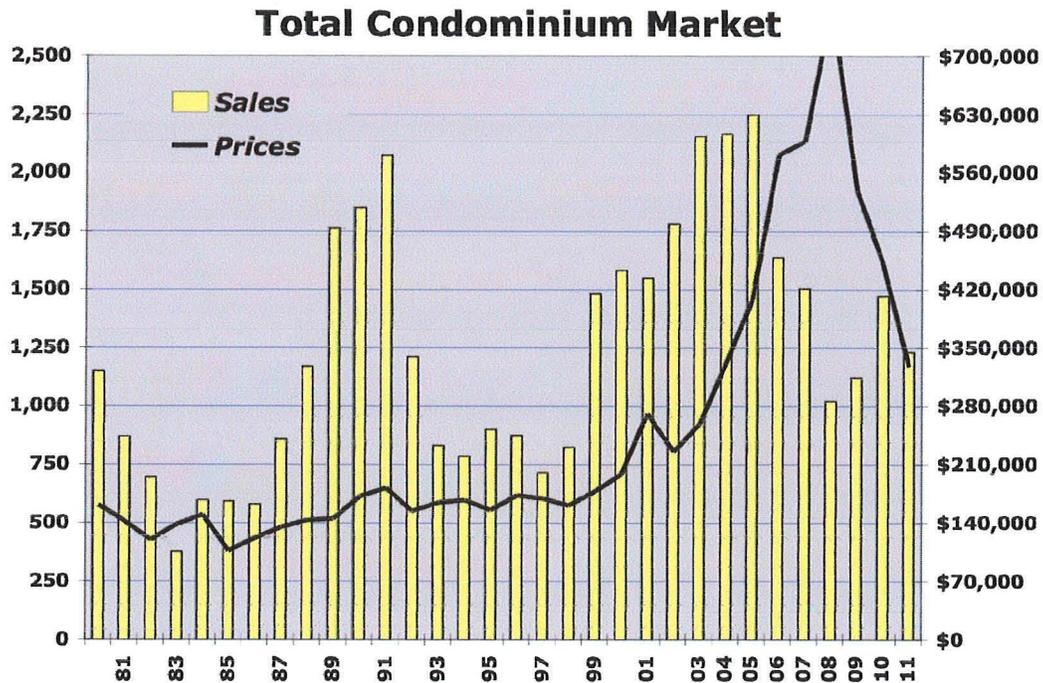
Condominium Market

Starting with the condo market:

MAUI COUNTY CONDO SALES ACTIVITY CYCLES, TERM AND CHANGES

Period	Term (Years)	Start Sales	Finish Sales	Unit Change	Percent Change
1980-1983	3	871	558	-313	-36%
1983-1990	7	558	2,121	1,563	280%
1990-1993	3	2,121	778	-1,343	-63%
1993-2005	12	778	2,248	1,470	189%
2005-2008	3	2,248	1,020	-1,228	-55%
2008-2011	3	1,020	1,230	210	21%

For the condo market, the up cycles last about 7 years, more than twice as long as the down cycles. In addition, they move 3 times greater going up than they do going down (up 160% and down 51%). The following chart illustrates this.



Next, we look at the condo market's price cycles.

MAUI COUNTY CONDOMINIUM PRICE CYCLES, TERM AND CHANGES

Period	Term (Years)	Start Sales	Finish Sales	Unit Change	Percent Change
1980-1982	2	\$160,885	\$119,599	-\$41,286	-26%
1982-1984	2	\$119,599	\$149,900	\$30,301	25%
1984-1985	1	\$149,900	\$106,500	-\$43,400	-29%
1985-1991	6	\$106,500	\$181,671	\$75,171	71%
1991-1995	4	\$181,671	\$155,359	-\$26,312	-14%
1995-2001	6	\$155,359	\$270,403	\$115,044	74%
2001-2002	1	\$270,403	\$225,553	-\$44,850	-17%
2003-2008	5	\$225,553	\$759,319	\$533,766	237%
2009-2011	2	\$759,319	\$327,239	-\$432,080	-57%

As seen, there are a lot more up and down condo cycles than the overall market. This is thanks to the new homes component of the market (which adds more volatility, due to the nature of it having bulk closings several years after the initial contract was signed).

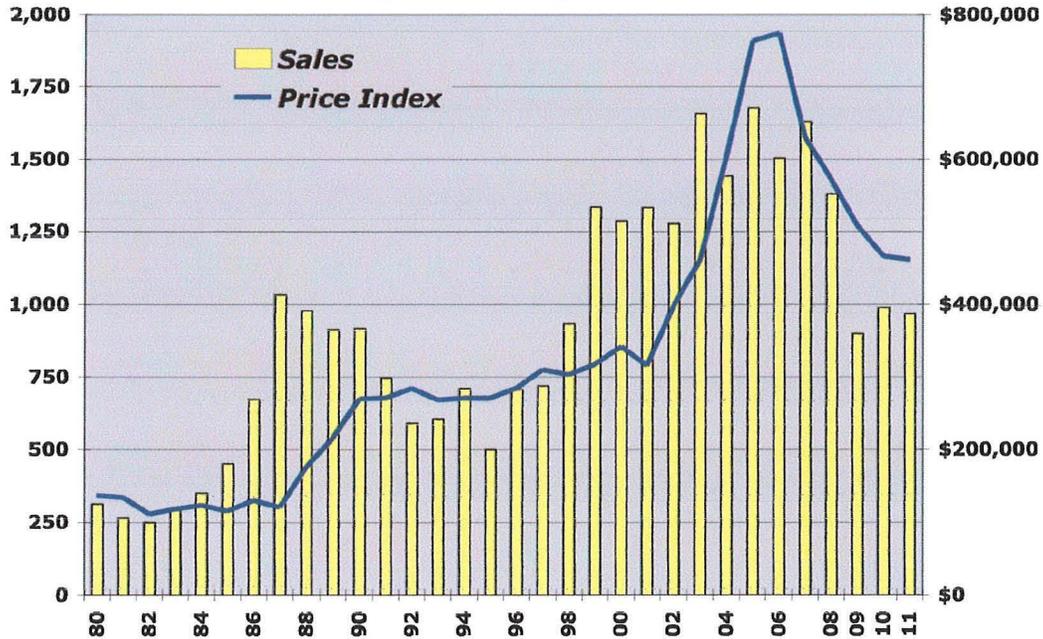
The average down cycle is 2 years, more than twice as short as the 5 years for the up cycles.

In addition, the up cycle appreciation averages about 100%, which is more than three times the average depreciation of the down cycle (-29%).

Single Family Market

Turning now to the Maui Homes Market, the following charts prices and sales:

Single Family Market



MAUI COUNTY HOME SALES ACTIVITY CYCLES, TERM AND CHANGES

Period	Term (Years)	Start Sales	Finish Sales	Unit Change	Percent Change
1980-1982	2	312	248	-64	-21%
1982-1987	5	248	1,032	784	316%
1987-1995	8	1,032	499	-533	-52%
1995-2005	10	499	1,676	1,177	236%
2005-2009	4	1,676	898	-778	-46%
2009-2011	2	898	967	69	8%

For the single family housing market sales, the up cycles last about 6 years, 2 more than the down cycles. In addition, they are more volatile, moving up an average of 190% as opposed to dropping an average of 40%.

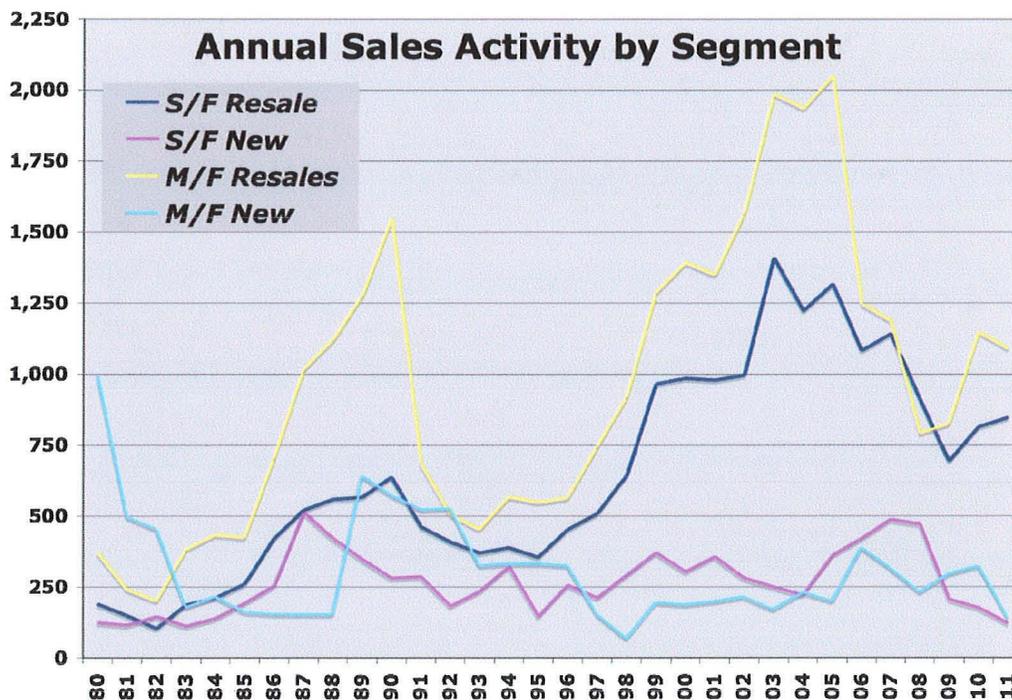
MAUI COUNTY HOME PRICE CYCLES, TERM AND CHANGES

Period	Term (Years)	Start Sales	Finish Sales	Unit Change	Percent Change
1980-1982	2	\$136,740	\$111,347	-\$25,393	-19%
1982-1984	2	\$111,347	\$123,405	\$12,058	11%
1984-1985	1	\$123,405	\$115,614	-\$7,791	-6%
1985-1992	7	\$115,614	\$284,149	\$168,535	146%
1992-1993	1	\$284,149	\$268,408	-\$15,741	-6%
1993-2006	13	\$268,408	\$774,230	\$505,822	188%
2009-2011	2	\$774,230	\$461,794	-\$312,435	-40%

Generally speaking, the single-family market's price trend has up cycles (appreciation) that last 7.5 years on average, as opposed to 2.3 years for the down cycles (price deflation), and show about 6 times more change (up on average 115%, vs. the -19% average deceleration in the four down cycles). Currently, this down cycle – price deflation - is continuing to unfold, and may yet overshoot the historical average for the cycle.

The general rule, shown here, is that prices appreciate more than depreciate, long-term, as do sales, but more so. And that depreciation occurs more quickly happens in a year or two, while appreciation occurs over many more years. That said, the current cycle's upswing has seen such dramatic and long-lasting appreciation and increase in sales activity that the downswing should similarly be long lasting and volatile.

Turning now to the other characteristics of the market, we begin by looking at the overall sales activity and sales prices for the different market segments: resale homes and condos, and developer homes and condos.



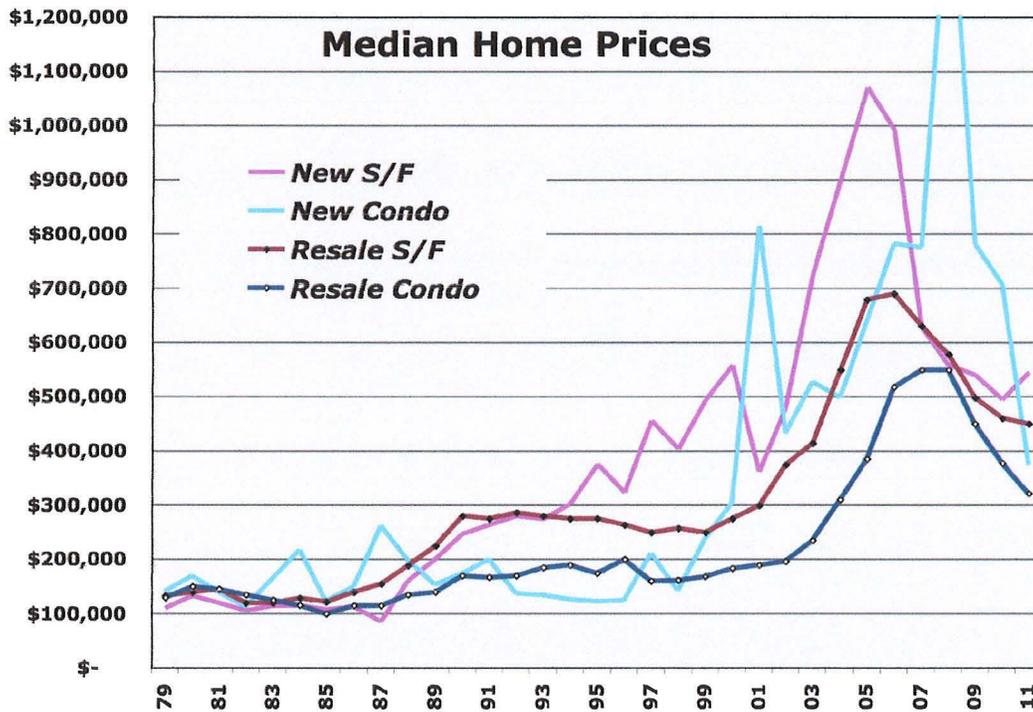
Starting with sales activity, chart shows the dramatic volatility of the condo (M/F) resale market, relative to the other segments.

Note that it is a leading indicator for the M/F New market (developer), as well as the single-family resale market. This is interesting because it says that the segment most exposed to offshore demand leads the market. In this current manifestation, it looks like the M/F Resale market is signaling either a bottom of the market, or (if the 2011 YTD trend, done through May 2011, holds true for the rest of the year) a double dip. The single-family resale market trend seems to argue for a market bottom.

The data also shows the shift overtime in the developer market from an emphasis on building condos primarily to single-family homes. This is a sign that the local market prefers living in a detached home, rather than a residence, which is good for the proposed project, in terms of

meeting good demand. It also says that the project might well attract offshore demand for the market condos, as well as the market single-family homes.

Looking at the pricing trend overtime, the following chart shows that developer new homes prices are very volatile, while resale prices are relatively stable.



This is a function of the strong demand for high quality residential real estate on Maui in general, as manifested by the manner in which developers (or land sellers) inflate prices above and beyond the resale pricing in an up-market. It also shows that the prices being charged by condo developers this year and last are nearing those in the resale market. The last time that occurred, 1998, the prices for developer condos rebounded. That this will happen again in the near future is a possibility.

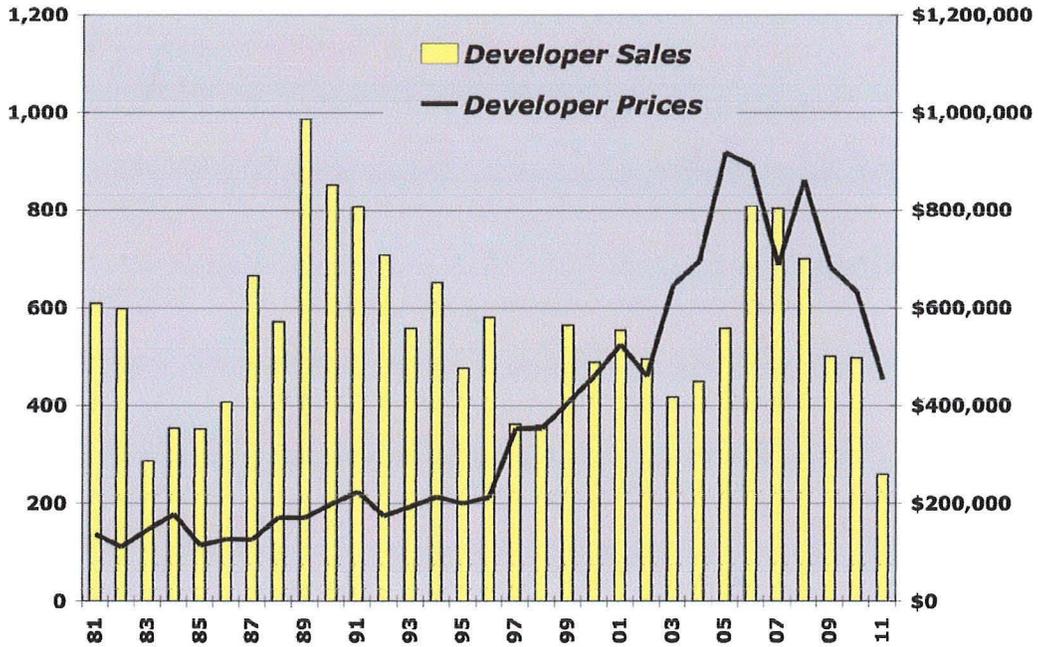
It also indicates that a condo development starting now should price its units at or slightly above those of comparable resale market. For this reason, we will look closely at the comparable condo market segment to the units of the proposed project (we will do so for single family units, as well).

Note that when the trend lines touch for single-family homes resales and new that the prices in the developer market then begins to move higher again.

Next, we look at the market for developer new unit sales. As seen in the next chart, the level of level of sales activity is at a record all-time low. This would indicate there is very little developer inventory available to compete with the proposed project.

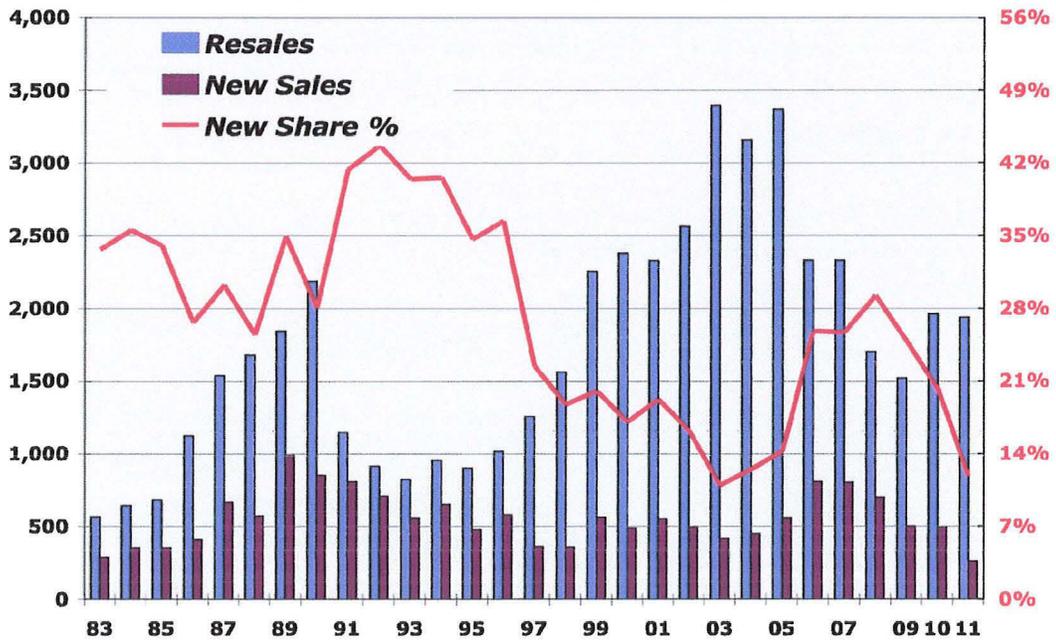
Additionally, new home prices is at the lowest it has been in over a decade, which would give pause to most developers in terms of starting up a new project. Indeed, over the last few years, there have been several projects that started and then shut down.

Total New Homes Market



There was one in Kahalui (A&B had a condo component to a larger commercial development) and one in Wailuku (in Maui Lani MPC, a single family project well located to schools and retail outlets, shut down because prospective buyers balked at the prices).

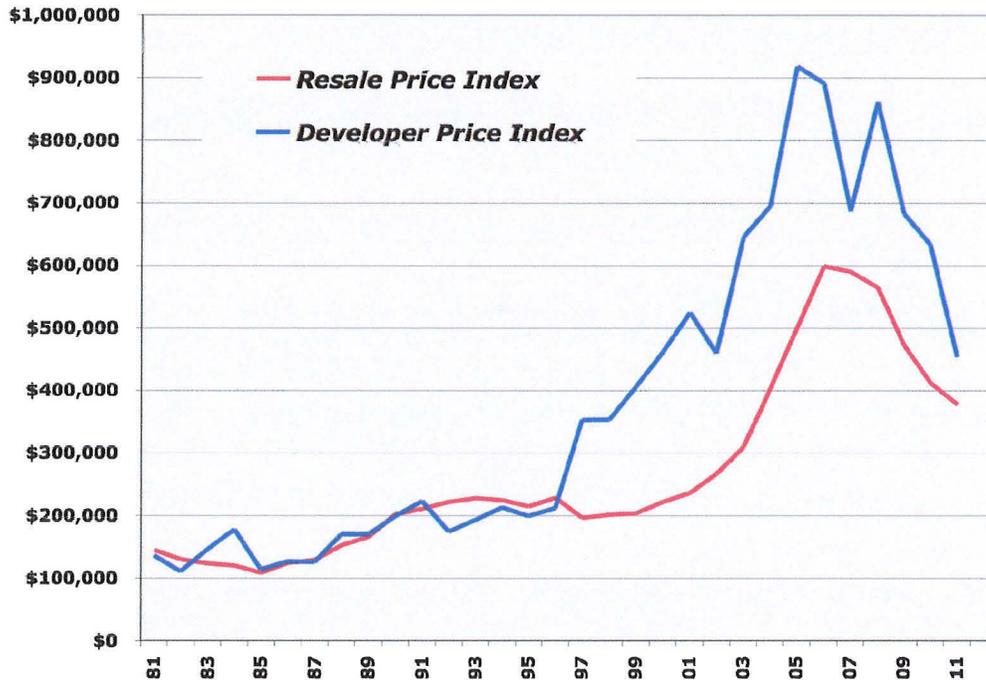
New Homes vs Resales Market Share



Then, the above chart compares sales activity for new developer units with the resale market, and shows share of total market activity of the developers is very low, although not at an all-time record.

Much of the production of new dwelling units on Maui has been targeted on the offshore, high-end buyer. This can be seen in the next chart that compares resale prices to developer unit prices.

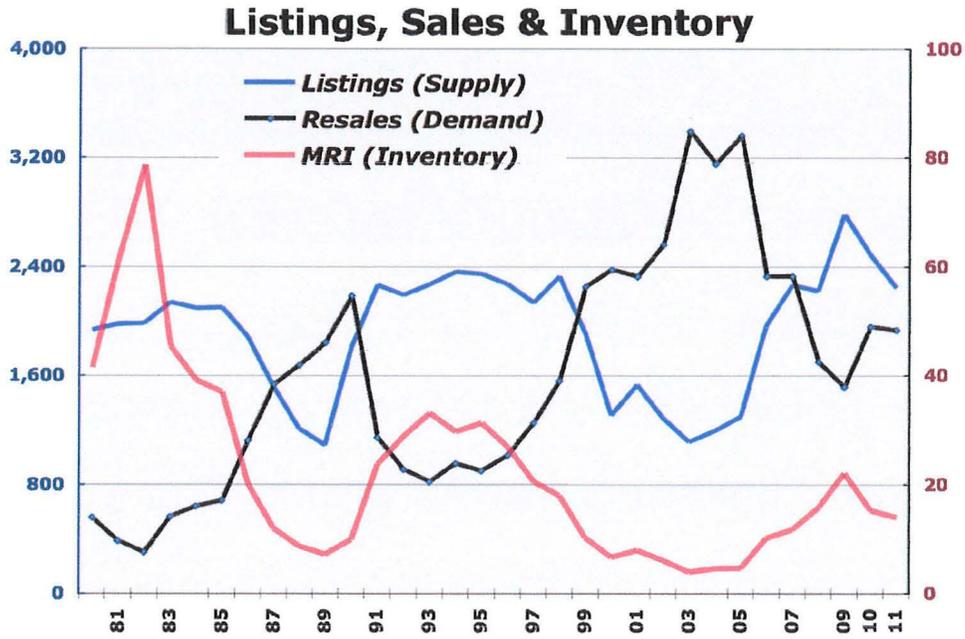
Price Indexes: New vs Resales



While there are very few developer projects currently selling on the market, with the prospect of even few ones in the future, there will be competition from the resale market – particularly, the listings.

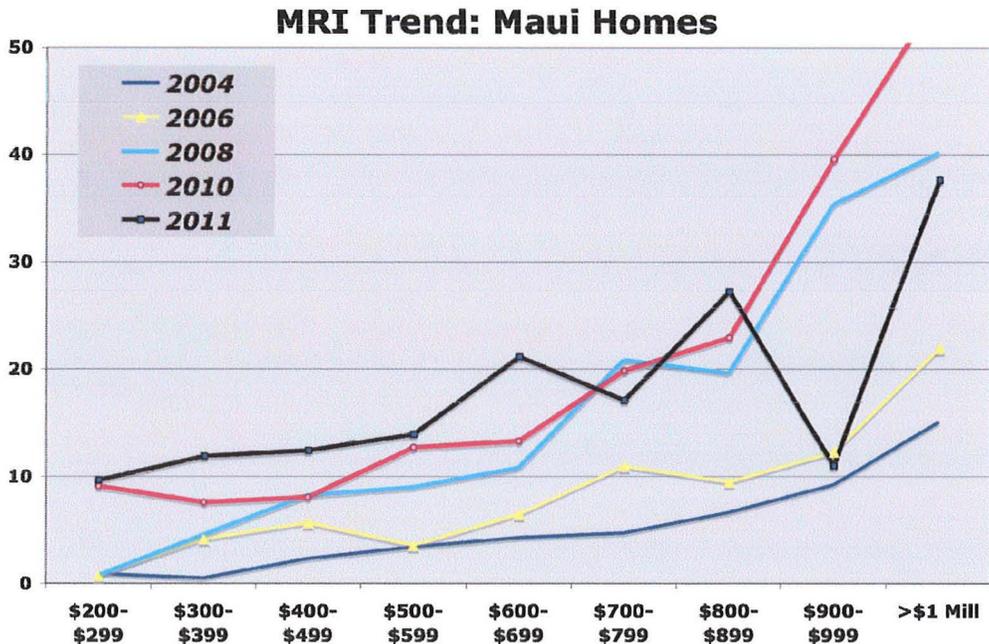
The following section compares listings to resales, plus shows an index, called MRI, which stands for the months of remaining inventory.

MRI is sales (demand) divided into supply (listings) and results in a number of months of remaining inventory. A high number for MRI (a lot of listings and a few sales) signals a lot of competition for a new development to sell against. A low number for MRI indicates a more favorable environment. A balanced market is between 6-10 MRI, with anything below 6 months being a seller's market (lots of buyers) and vice versa above 10 months.



As seen, the trend in listings is down, which is favorable to development, inasmuch as there will be less resale supply to compete against.

Next, we segregate the MRI data by price ranges (bottom axis), thus gaining insight into how prices are affecting the market. First, we look at the single-family market island wide..

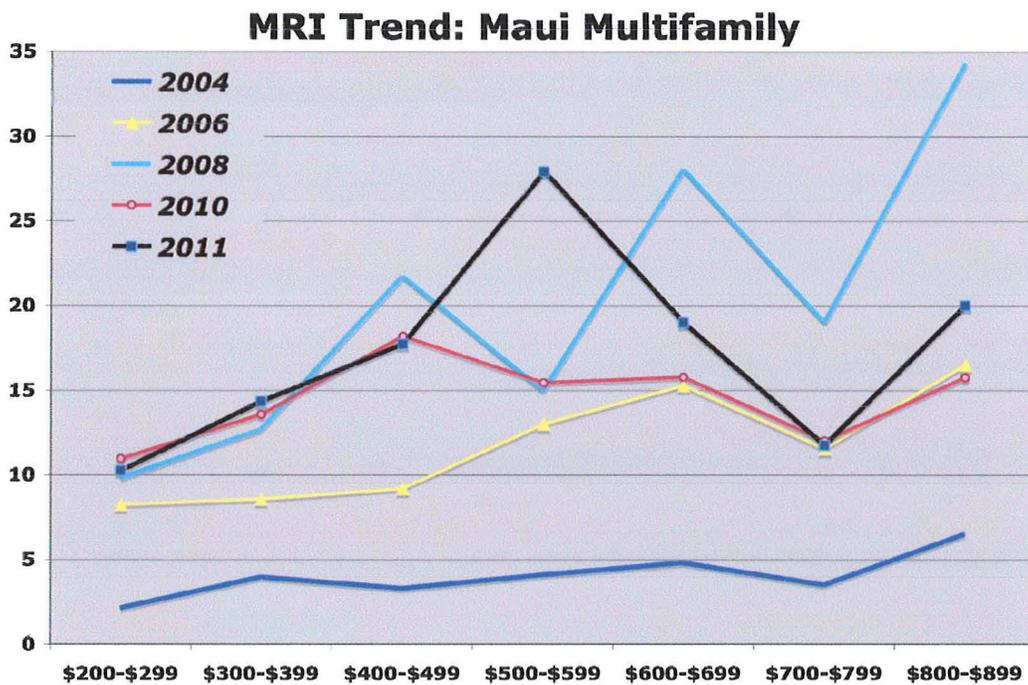


Initially, we look at the shape of the MRI curve by year, starting in 2005, when the market cycle was peaking. It shows the lowest priced (thus the most strongly demanded) market segment was

\$300-\$399,000, followed by the one below it. By contrast, the weakest market segment (the one with the highest MRI) was the most expensive, \$1Million+.

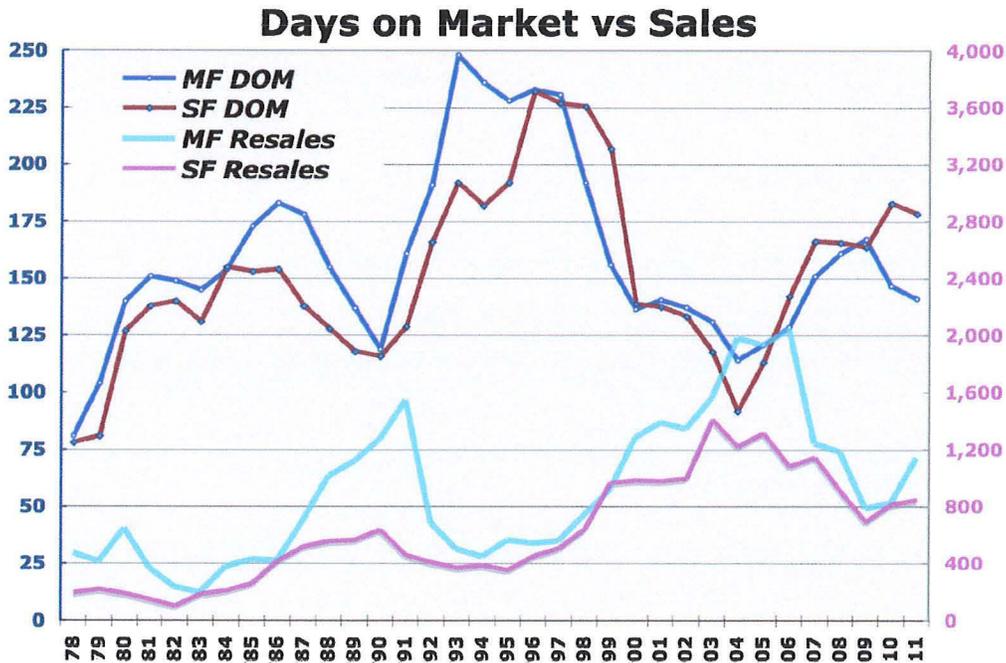
With time, 2006 & 2008, the market weakens (the financial crisis hits) and the curve moves higher. This continues, at least on the lower price end segments, \$200,000 up through \$699,999. Then, at \$700,000 and beyond, the MRI improves, with the line moving below that of 2008 & 2010. In other words, the MRI is indicating some stabilization at the upper ends of the market.

Turning to the condo market, we see that the basic trend is similar, with 2004 tight, 2006 looser, 2008 generally the loosest (weakest) point of the market, with some improvement in 2010. As seen, 2011 is showing a weaker market trend, with generally higher MRI in the middle of the market, \$500-\$699,999.



Finally, there is a indicator called Days on Market, which calculates the average number of days a sold unit is listed, or sits available on the market. A low number is good for sellers, meaning there's good demand in the market, and vice versa.

Currently, the trend is down, which indicates the market will be improving (for sellers, particularly) and that prices, down the road, will be rising.

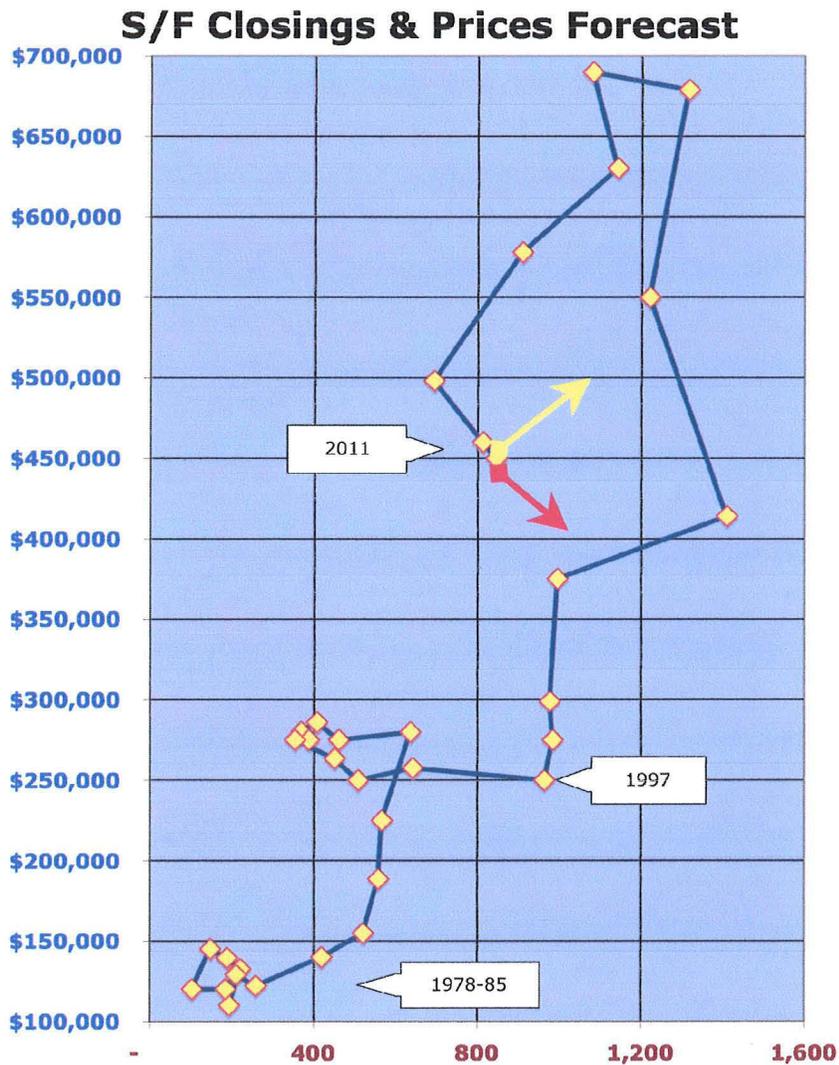


The DAYS ON MARKET VS SALES Chart also provides an insight into the direction of the market by illustrating the resale activity for single-family homes vs. multifamily ones. A close examination of that trend shows that the single-family activity trend often leads the multifamily one, effectively saying that if resale home activity rises, resale multifamily activity will rise, as well. As seen in other indicators, the single-family market often is ahead of the multifamily one (and this is happening in this cycle, as well).

In conclusion, there are a number of long-term indicators in the overall market that indicate a turn in the trend from the down part of the cycle and towards the upswing. The indicators that are signaling this include a reduction in the number of listings, a lowering of the Days on Market and Months of Remaining Inventory, a convergence in the average prices for resales as opposed to newly developed dwelling units and the fall in the number of new homes being produced, thus restricting supply. More importantly, the fall in sales and prices on average has been lengthy and dramatic – setting the stage for a turnaround, as buyers reenter the market to take advantage of low prices.

Finally, this is shown in the CLOSINGS & PRICES FORECAST Chart on the following page. It plots the relationship between price and sales, with sales at the bottom and price on the right.

The yellow points on the blue line in the chart represent the market's position (in terms of the intersection of closings and prices) for every year since 1978. It illustrates the general tendency of markets to follow a pattern (or cycle) that starts with low sales and low prices.

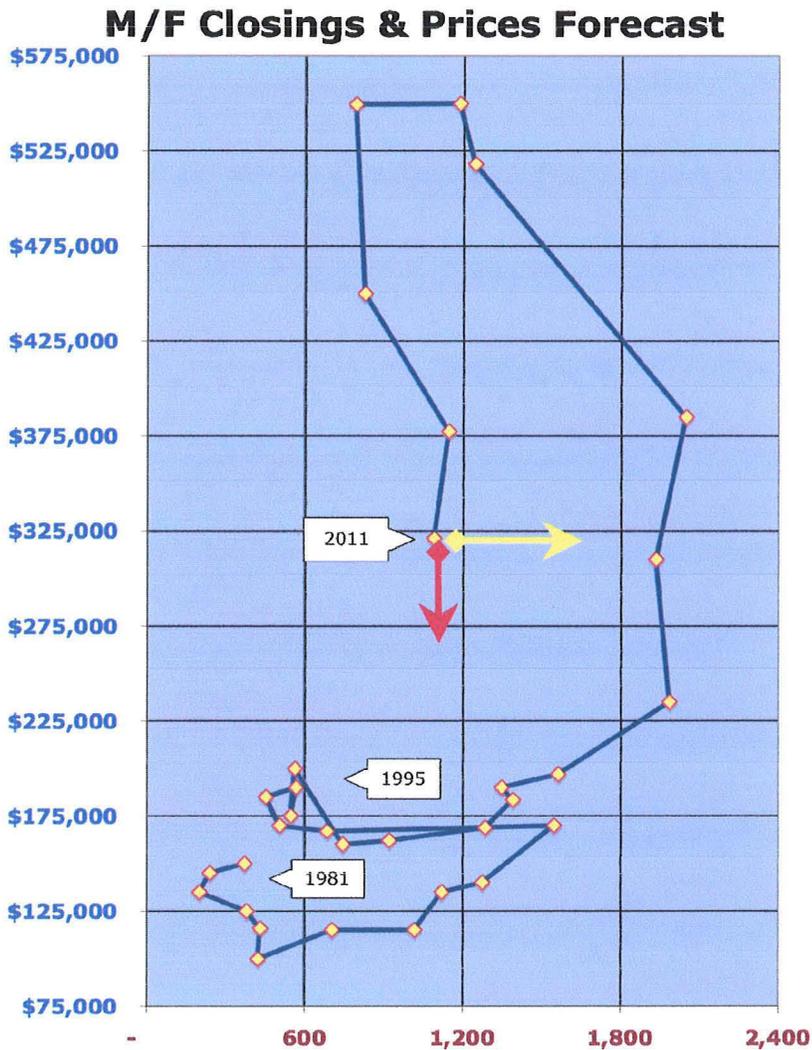


To explain the chart, the cycle starts with low sales and low prices (moves in a spiral direction):

1. Low prices generally attract buyers, which generates higher sales (line moves right).
2. Higher sales reduce inventory, which leads to higher prices (line moves up).
3. Higher prices and lower inventory discourage buyers, and leads to lower sales (line moves left).
4. Lower sales, after a lag, leads to falling prices, as sellers try to attract buyers (line moves down). Lower sales also build up inventory.
5. Lower prices and higher inventory reinvigorate buyers, which leads to (starting point) higher sales.

At present, the single-family resale market shows prices still falling, but sales beginning to revive. (move upward). If true to form, the next stage will see prices flattening out, and then rising. The yellow line is the best scenario (more sales, better prices), and the red line the worst.

In comparison, the multi-family market (below) is further behind in the cycle: it is still showing falling sales (YTD 2011) and falling prices. The next stage will be rising sales and falling prices, but that hasn't yet happened. Again, the yellow and red arrows posit the good and bad scenario.



CONCLUSIONS

As seen, the housing market is volatile over the long run, as well depressed in the short run. In order to look towards the future, we took the average changes for sales and prices in the market cycles over the last 30 years. Although every cycle is different, there is a tendency to at least adhere to the trend's averages.

For the condo sales, the up cycles run for about 7 years, which is twice as long as the down cycles. In addition, sales grow on average 3 times greater than they shrink. In terms of prices, condo values appreciate about 100% over the term of the up cycle, and depreciate by about a third of that (-29%) over the down cycle.

For the single family housing market sales, the up cycles last about 6 years, 2 more than the down cycles. In addition, they are more volatile on the upside, moving up by an average of 190% as opposed to dropping an average of 40%. Single family prices have trended up (appreciated) on average by 7 years on average, but trended down 2.3 years for the down cycles (price deflation). In terms of the magnitude of the change, prices appreciate far more than they depreciate (up on average 115%, vs. the -19% average deceleration in the four down cycles).

These averages are what we will be using in our forecast of the level of sales and prices that the market will allow Kahoma Village to achieve over the life of the development.

Now, we turn to examine the sales and listing data for the specific market segments that relate to the proposed development. These are the condominium and the single-family segments. In each we start with an overview of the market, island-wide, and then drill downwards towards the specific sub-markets that directly compare to the bedroom types and values that Kodama Village is planning to pursue.

We will be starting with the condo market, first.

VII. CONDOMINIUM TARGET MARKET & COMPARISON

The following sections look specifically at the conditions in the targeted market that compare directly with this proposed development. We start by looking at the biggest market, all Maui, for all condominium sales. The following table looks at the market over the last six years (plus the first 5 months of 2011). It shows the sales and listings for condominium (multifamily) product on Maui, fee-simple sales only.

CONDO SALES & LISTINGS, ALL MAUI, FEE-SIMPLE ONLY

	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
2005	1,838	\$566,271	899	159	98.0%	\$630
2006	1,120	\$796,297	994	207	97.0%	\$801
2007	1,098	\$819,834	1,075	191	96.3%	\$763
2008	731	\$958,372	1,182	196	95.0%	\$811
2009	766	\$755,879	1,082	336	94.9%	\$698
2010	1,082	\$675,817	1,026	339	94.9%	\$659
2011	1,086	\$529,451	1,025	248	95.2%	\$516
% ▲	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
2008	-33%	17%	10%	2%	-1%	6%
2009	5%	-21%	-8%	71%	0%	-14%
2010	41%	-11%	-5%	1%	0%	-6%
2011	0%	-22%	0%	-27%	0%	-22%
% ▲	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	0%	-22%	0%	-27%	0.3%	-22%
2 Yr	21%	-16%	-3%	-13%	0.1%	-14%
3 Yr	15%	-18%	-5%	15%	0.0%	-14%
	MRI	Sale\$/List\$	Intrr sf	DOM	\$/sf Value	
2007	13	100%		205%	84%	
2008	26	107%		129%	90%	
2009	29	86%		182%	81%	
2010	15	85%		174%	82%	
2011	15	72%		104%	72%	
	Listings	Price	Intrr sf	DOM	\$/sf	
2006	974	\$821,148	899	93	\$913	
2007	1,176	\$893,180	990	152	\$902	
2008	1,597	\$876,935	1,023	185	\$858	
2009	1,846	\$796,152	992	194	\$803	
2010	1,311	\$733,905	1,042	228	\$704	
2011	1,318	\$732,445	1,026	239	\$714	
% ▲	Listings	Price	Intrr sf	DOM	\$/sf	
2007	21%	9%	10%	62%	-1%	
2008	36%	-2%	3%	22%	-5%	
2009	16%	-9%	-3%	5%	-6%	
2010	-29%	-8%	5%	18%	-12%	
2011	1%	0%	-1%	5%	1%	
% ▲	Listings	Price	Intrr sf	DOM	\$/sf	
1 Yr	1%	0%	-1%	5%	-12%	
2 Yr	-14%	-4%	2%	11%	-2%	
3 Yr	-4%	-6%	0%	9%	-2%	

Overall, the market has stabilized since the fall off in 2008, but is not quite yet back to 2005 levels. The last year and this one shows it experienced up and down sales with declining prices. The price per square foot values also is down. DOM (Days on Market) is better this year on the sales side, but worse on the listing side (240 DOM, up 5%). Sales to List price ratio is trending better, which is encouraging. The Months of Remaining Inventory (MRI) is steady, and listings are down, both good signs.

This next one shows all fee-simple condo sales and listings, but only for Zone 2-4 (West Maui).

CONDO SALES & LISTINGS, WEST MAUI ONLY

	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
2005	544	\$660,388	929	178	97.4%	\$711
2006	361	\$879,255	963	187	96.2%	\$913
2007	300	\$904,632	986	160	94.7%	\$918
2008	156	\$863,751	937	196	93.1%	\$922
2009	336	\$1,040,069	1,109	526	96.4%	\$938
2010	472	\$885,993	1,028	539	95.7%	\$862
2011	412	\$562,023	997	336	95.0%	\$564
% ▲	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
2008	-48%	-5%	-5%	23%	-2%	0%
2009	115%	20%	18%	168%	3%	2%
2010	40%	-15%	-7%	3%	-1%	-8%
2011	-13%	-37%	-3%	-38%	-1%	-35%
% ▲	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-13%	-37%	-3%	-38%	-0.8%	-35%
2 Yr	14%	-26%	-5%	-18%	-0.7%	-21%
3 Yr	48%	-10%	3%	44%	0.7%	-14%
	MRI	Sale\$/List\$	Intrr sf	DOM	\$/sf Value	
2007	18	88%		165%		86%
2008	52	83%		122%		89%
2009	31	98%		251%		92%
2010	15	101%		255%		95%
2011	18	77%		126%		76%
	Listings	Price	Intrr sf	DOM	\$/sf	
2006	334	\$1,029,401	960	97		\$1,073
2007	450	\$1,040,519	1,003	161		\$1,037
2008	682	\$1,057,328	1,037	210		\$1,020
2009	860	\$879,099	964	212		\$912
2010	588	\$840,453	1,042	261		\$807
2011	623	\$732,784	983	267		\$746
% ▲	Listings	Price	Intrr sf	DOM	\$/sf	
2007	35%	1%	5%	67%		-3%
2008	52%	2%	3%	30%		-2%
2009	26%	-17%	-7%	1%		-11%
2010	-32%	-4%	8%	23%		-12%
2011	6%	-13%	-6%	2%		-8%
% ▲	Listings	Price	Intrr sf	DOM	\$/sf	
1 Yr	6%	-13%	-6%	2%		-12%
2 Yr	-13%	-9%	1%	13%		-5%
3 Yr	0%	-11%	-2%	9%		-7%

Like the overall market, this one has also stabilized, but more so: activity last year was quite close to the 2005 level. And so were prices.

Clearly, offshore, high-end buyers influence this market: values are much higher, and more volatile, and the same with sales activity. Looking for positives, there's not much in terms of sales activity, which looks exhausted from a big burst of activity 2009-2010. The silver lining is that this indicates the desirability of units in this location (to have such sales is contra-cyclical). Other positives: the decrease in the DOM, Days on Market; last year's fall in MRI (but not the rise this year); the 2.5 year fall in listings in number and in average price (but not much). In sum, this market is mixed, with more improvement than deterioration.

This next one shows fee-simple Zone 2-4 sales, but for affordably priced units, under \$500,000.

CONDO SALES & LISTINGS, WEST MAUI UNDER \$500,000 ONLY

	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2005	241	\$339,295	676	215	98.1%	\$502
2006	110	\$402,952	636	239	96.7%	\$634
2007	57	\$394,560	565	142	95.2%	\$699
2008	41	\$377,395	650	206	92.7%	\$580
2009	102	\$359,443	884	162	93.6%	\$406
2010	189	\$319,755	783	183	94.1%	\$408
2011	190	\$289,985	795	205	94.6%	\$365
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2008	-28%	-4%	15%	45%	-3%	-17%
2009	149%	-5%	36%	-21%	1%	-30%
2010	85%	-11%	-11%	13%	1%	0%
2011	1%	-9%	2%	12%	1%	-11%
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	1%	-9%	2%	12%	0.5%	-11%
2 Yr	43%	-10%	-5%	13%	0.5%	-5%
3 Yr	78%	-8%	9%	1%	0.7%	-13%
	MRI	Sale\$/List\$	Intr sf	DOM	\$/sf Value	
2007	17	99%		169%	92%	
2008	55	96%		134%	83%	
2009	26	91%		82%	65%	
2010	15	83%		88%	67%	
2011	14	85%		81%	77%	
	Listings	Price	Intr sf	DOM	\$/sf	
2006	59	\$399,661	526	84	\$760	
2007	80	\$392,458	561	153	\$699	
2008	189	\$394,161	630	198	\$625	
2009	225	\$384,941	636	207	\$605	
2010	244	\$351,744	735	244	\$478	
2011	217	\$341,248	725	253	\$471	
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
2007	36%	-2%	7%	83%	-8%	
2008	136%	0%	12%	29%	-11%	
2009	19%	-2%	1%	5%	-3%	
2010	8%	-9%	16%	18%	-21%	
2011	-11%	-3%	-1%	4%	-2%	
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
1 Yr	-11%	-3%	-1%	4%	-21%	
2 Yr	-1%	-6%	7%	11%	-6%	
3 Yr	5%	-5%	5%	9%	-4%	

This market sub-set shows similar trends, but with more positives: the sales activity last year also blossomed but then continued to grow YTD in this one. Prices have fallen but not as dramatically.

Values per square foot are mainly down. The Days on Market rose last year and this year again, which is a slight negative. On the positive side, the last three years has seen the MRI improving slightly, which is very good.

the next table shows only West Maui condos, but the price range is \$200,000-\$300,000 only.

CONDO SALES & LISTINGS, WEST MAUI & \$200-\$300,000 ONLY

	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2005	64	\$256,611	613	216	98.4%	\$418
2006	13	\$255,692	451	113	93.6%	\$567
2007	5	\$259,700	487	90	95.9%	\$533
2008	8	\$247,890	500	215	90.8%	\$496
2009	16	\$237,555	531	143	94.4%	\$447
2010	59	\$245,264	682	154	94.3%	\$360
2011	82	\$247,766	783	180	96.4%	\$316
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2008	60%	-5%	3%	139%	-5%	-7%
2009	100%	-4%	6%	-34%	4%	-10%
2010	269%	3%	28%	8%	0%	-20%
2011	39%	1%	15%	17%	2%	-12%
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	39%	1%	15%	17%	2.2%	-12%
2 Yr	154%	2%	22%	12%	1.1%	-16%
3 Yr	136%	0%	17%	-3%	2.0%	-14%
MRI	Sale\$/List\$	Intr sf	DOM	\$/sf Value		
2007	17	109%		101%		91%
2008	39	94%		125%		82%
2009	29	92%		80%		87%
2010	13	97%		98%		76%
2011	8	98%		83%		86%
Listings	Price	Intr sf	DOM	\$/sf		
2006	11	\$238,795	408	90		\$585
2007	7	\$263,000	434	172		\$607
2008	26	\$257,610	500	178		\$515
2009	39	\$253,408	532	157		\$476
2010	62	\$263,487	720	213		\$366
2011	55	\$253,375	687	218		\$369
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
2007	-36%	10%	6%	92%		4%
2008	271%	-2%	15%	3%		-15%
2009	50%	-2%	6%	-12%		-8%
2010	59%	4%	35%	36%		-23%
2011	-11%	-4%	-5%	3%		1%
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
1 Yr	-11%	-4%	-5%	3%		-23%
2 Yr	24%	0%	15%	19%		-7%
3 Yr	33%	0%	12%	9%		-1%

This market is in good shape, with higher sales since 2009 and, even better, higher prices. That said, however, the \$/sf values has been dramatically falling (NOTE: this is positive for the project, which has much larger units than this average). DOM is growing (bad) but the MRI is shrinking (good). Also positive is that the sale price to list price ratio has risen nicely this year, perhaps because listers are being more realistic in pricing their units (indeed, listing prices are off by 4% this year).

Finally, there is some convergence between the sales prices and the listing prices, as seen in the ratio of 98% for 2011, up from 2010's 97% (green shading) – this indicates that sellers and buyers are moving closer in price, a good sign.

This next table shows the same thing, West Maui only, but the price range is \$300,000-\$400,000.

CONDO SALES & LISTINGS, WEST MAUI & \$300-\$400,000 ONLY

	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
2005	77	\$351,692	671	198	98.1%	\$524
2006	24	\$339,938	564	135	95.5%	\$602
2007	18	\$351,967	540	204	94.2%	\$652
2008	12	\$352,500	686	230	93.2%	\$514
2009	40	\$363,925	939	191	94.3%	\$387
2010	71	\$351,241	856	189	94.3%	\$411
2011	48	\$362,806	894	258	92.8%	\$406
% ▲	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
2008	-33%	0%	27%	12%	-1%	-21%
2009	233%	3%	37%	-17%	1%	-25%
2010	78%	-3%	-9%	-1%	0%	6%
2011	-32%	3%	4%	37%	-2%	-1%
% ▲	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-32%	3%	4%	37%	-1.6%	-1%
2 Yr	23%	0%	-2%	18%	-0.8%	2%
3 Yr	93%	1%	11%	6%	-0.1%	-7%
MRI	Sale\$/List\$	Intrr sf	DOM	\$/sf Value		
2007	23	99%		181%		100%
2008	54	99%		206%		83%
2009	21	100%		92%		66%
2010	15	96%		84%		71%
2011	18	101%		102%		85%
	Listings	Price	Intrr sf	DOM		\$/sf
2006	14	\$355,850	547	113		\$650
2007	34	\$357,541	580	112		\$616
2008	54	\$364,792	624	207		\$584
2009	71	\$364,546	630	224		\$579
2010	88	\$363,264	720	240		\$505
2011	73	\$360,064	755	255		\$477
% ▲	Listings	Price	Intrr sf	DOM		\$/sf
2007	143%	0%	6%	-1%		-5%
2008	59%	2%	8%	86%		-5%
2009	31%	0%	1%	8%		-1%
2010	24%	0%	14%	7%		-13%
2011	-17%	-1%	5%	6%		-6%
% ▲	Listings	Price	Intrr sf	DOM		\$/sf
1 Yr	-17%	-1%	5%	6%		-13%
2 Yr	3%	-1%	10%	7%		-5%
3 Yr	13%	0%	7%	7%		-4%

Again, the table shows the market moving up and down in terms of activity, but it is almost recovered in the sense that 2005 and 2010 sales are the same, as are the average prices. Price trend is slightly growing, but not the \$/sf value trend. On the negative side, the MRI this year rose back up, YTD, as did the Days on Market. And, also, the ratio of sales prices to list prices is also down.

The following table puts the two segments together, so West Maui only, \$200,000-\$400,000.

CONDO SALES & LISTINGS, WEST MAUI & \$200-\$400,000 ONLY

	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2005	141	\$308,535	645	206	98.2%	\$479
2006	37	\$310,338	525	127	94.8%	\$592
2007	23	\$331,909	529	180	94.6%	\$628
2008	20	\$310,656	612	224	92.2%	\$508
2009	56	\$327,819	823	177	94.3%	\$398
2010	130	\$303,144	777	173	94.3%	\$390
2011	130	\$290,242	824	209	95.0%	\$352
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2008	-13%	-6%	16%	25%	-3%	-19%
2009	180%	6%	35%	-21%	2%	-22%
2010	132%	-8%	-6%	-2%	0%	-2%
2011	0%	-4%	6%	21%	1%	-10%
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	0%	-4%	6%	21%	0.8%	-10%
2 Yr	66%	-6%	0%	9%	0.4%	-6%
3 Yr	104%	-2%	12%	-1%	1.0%	-11%
MRI	Sale\$/List\$	Intr sf	DOM	\$/sf Value		
2007	21	109%		175%		100%
2008	48	91%		184%		83%
2009	24	99%		90%		71%
2010	14	93%		87%		71%
2011	12	92%		88%		81%
Listings	Price	Intr sf	DOM	\$/sf		
2006	25	\$304,346	486	103		\$626
2007	41	\$341,400	555	122		\$615
2008	80	\$329,958	584	198		\$565
2009	110	\$325,143	595	200		\$546
2010	150	\$322,023	720	229		\$447
2011	128	\$314,221	726	239		\$433
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
2007	64%	12%	14%	19%		-2%
2008	95%	-3%	5%	62%		-8%
2009	38%	-1%	2%	1%		-3%
2010	36%	-1%	21%	14%		-18%
2011	-15%	-2%	1%	4%		-3%
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
1 Yr	-15%	-2%	1%	4%		-18%
2 Yr	11%	-2%	11%	9%		-6%
3 Yr	20%	-2%	8%	7%		-3%

As seen, the comparable market segment shows good sales growth the last three years, but slowly declining prices and price per square foot values. The Days on Market is growing this YTD but the ratio of sales to listing prices is rising. Best of all, the MRI falling, thanks to lower listing counts. All in all, it's a stable market.

The following shows the same data above, except it is for Central Maui (TMK Zones 2 & 3).

CONDO SALES & LISTINGS, CENTRAL MAUI ONLY

	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
2005	686	\$300,180	762	141	98.7%	\$394
2006	316	\$313,280	757	153	98.0%	\$414
2007	274	\$307,427	748	130	97.2%	\$411
2008	177	\$303,455	769	167	94.9%	\$395
2009	145	\$282,537	815	176	94.0%	\$347
2010	214	\$293,867	883	175	95.3%	\$333
2011	202	\$302,420	913	207	96.3%	\$331
% ▲	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
2008	-35%	-1%	3%	29%	-2%	-4%
2009	-18%	-7%	6%	5%	-1%	-12%
2010	48%	4%	8%	-1%	1%	-4%
2011	-6%	3%	3%	18%	1%	0%
% ▲	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-6%	3%	3%	18%	1.1%	0%
2 Yr	21%	3%	6%	9%	1.2%	-2%
3 Yr	8%	0%	6%	8%	0.5%	-6%
MRI	Sale\$/List\$	Intrr sf	DOM	\$/sf Value		
2007	10	96%	144%	91%		
2008	20	96%	109%	89%		
2009	25	91%	114%	81%		
2010	12	95%	104%	80%		
2011	11	98%	98%	88%		
Listings	Price	Intrr sf	DOM	\$/sf		
2006	220	\$320,055	708	90	\$452	
2007	231	\$314,701	707	153	\$445	
2008	292	\$311,361	727	155	\$428	
2009	303	\$308,129	736	168	\$419	
2010	216	\$307,340	854	183	\$360	
2011	192	\$308,624	816	212	\$378	
% ▲	Listings	Price	Intrr sf	DOM	\$/sf	
2007	5%	-2%	0%	70%	-1%	
2008	26%	-1%	3%	1%	-4%	
2009	4%	-1%	1%	8%	-2%	
2010	-29%	0%	16%	9%	-14%	
2011	-11%	0%	-4%	16%	5%	
% ▲	Listings	Price	Intrr sf	DOM	\$/sf	
1 Yr	-11%	0%	-4%	16%	-14%	
2 Yr	-20%	0%	6%	12%	1%	
3 Yr	-12%	0%	4%	11%	0%	

As seen, this also is a pretty good market: sales activity is much higher than 2-3 years ago, as are prices. The price per square foot is down, but leveling off. DOM is growing (bad), while the sales to list price ratio is higher. Best of all, MRI is down and staying down.

Important to this project is the size of this market. This next table adds to the 200 units sold a year (projected, this year, using YTD data) in Central Maui to the 130 units (projected the same way, West Mau), and the sum (330 units sold p.a. for West and Central) dwarfs the 102 units of the proposed project.

The following combines West and Central Maui.

TARGET MARKET SUMMARY CONDO SALES & LISTINGS, WEST & CENTRAL MAUI

	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2005	827	\$301,604	742	152	98.6%	\$406
2006	353	\$312,971	732	150	97.6%	\$427
2007	297	\$309,323	731	134	97.0%	\$423
2008	197	\$304,186	753	173	94.6%	\$404
2009	201	\$295,153	817	177	94.1%	\$361
2010	344	\$297,373	843	175	94.9%	\$353
2011	332	\$297,652	878	208	95.8%	\$339
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2008	-34%	-2%	3%	29%	-2%	-5%
2009	2%	-3%	9%	2%	-1%	-11%
2010	71%	1%	3%	-1%	1%	-2%
2011	-3%	0%	4%	19%	1%	-4%
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-3%	0%	4%	19%	0.9%	-4%
2 Yr	34%	0%	4%	9%	0.9%	-3%
3 Yr	23%	-1%	5%	7%	0.4%	-6%
MRI	Sale\$/List\$	Intr sf	DOM	\$/sf Value		
2007	11	97%	146%	91%		
2008	23	95%	117%	87%		
2009	25	94%	108%	80%		
2010	13	95%	99%	79%		
2011	12	96%	94%	85%		
	Listings	Price	Intr sf	DOM	\$/sf	
2006	245	\$318,452	685	91	\$465	
2007	272	\$318,726	684	148	\$466	
2008	372	\$315,360	696	164	\$453	
2009	413	\$312,661	699	176	\$448	
2010	366	\$313,358	799	202	\$392	
2011	320	\$310,863	780	223	\$398	
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
2007	11%	0%	0%	62%	0%	
2008	37%	-1%	2%	11%	-3%	
2009	11%	-1%	0%	7%	-1%	
2010	-11%	0%	14%	14%	-12%	
2011	-13%	-1%	-2%	10%	2%	
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
1 Yr	-13%	-1%	-2%	10%	-12%	
2 Yr	-12%	0%	6%	12%	-1%	
3 Yr	-4%	0%	4%	11%	0%	

For the overall market, again sales are steady, prices are slightly higher, Days on Market is up, but MRI is down. \$/sf values are only slightly down and well above the project average of \$275/sf.

MARKET SEGMENT, PRICE RANGE AND BEDROOM COUNT: Now, we look at only the market rate relative to the project's product offerings by bedroom count. Again, we will combine the data for Central Maui with West Maui, on the premise that demand for affordable and quality housing is island-wide.

For the project's 34 two-bedroom units, 1,000 sf, target price of \$260,300 (and a \$260/sf value), the market between \$200,000 and \$299,999 looks like this:

TARGET MARKET CONDO SALES & LISTINGS, TWO BEDROOM @ \$260,300

	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2005	271	\$261,100	762	149	98.7%	\$343
2006	73	\$265,881	756	165	98.7%	\$352
2007	81	\$263,873	749	125	96.6%	\$352
2008	66	\$254,969	737	186	94.4%	\$346
2009	46	\$233,589	780	169	94.6%	\$299
2010	59	\$249,874	838	173	94.6%	\$298
2011	54	\$240,848	864	172	97.2%	\$279
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2008	-19%	-3%	-2%	49%	-2%	-2%
2009	-30%	-8%	6%	-9%	0%	-13%
2010	28%	7%	7%	2%	0%	0%
2011	-8%	-4%	3%	0%	3%	-7%
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-8%	-4%	3%	0%	2.8%	-7%
2 Yr	10%	2%	5%	1%	1.4%	-3%
3 Yr	-4%	-2%	5%	-2%	1.0%	-7%
MRI	Sale\$/List\$	Intr sf	DOM	\$/sf Value		
2007	10	104%		159%		105%
2008	14	94%		101%		93%
2009	22	94%		112%		90%
2010	13	101%		116%		92%
2011	10	97%		71%		91%
Listings	Price	Intr sf	DOM	\$/sf		
2006	45	\$254,403	757	78		\$336
2007	68	\$271,009	725	184		\$374
2008	77	\$249,559	753	151		\$331
2009	83	\$247,235	760	149		\$325
2010	63	\$251,824	810	203		\$311
2011	43	\$249,032	817	244		\$305
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
2007	51%	7%	-4%	134%		11%
2008	13%	-8%	4%	-18%		-11%
2009	8%	-1%	1%	-1%		-2%
2010	-24%	2%	6%	36%		-4%
2011	-32%	-1%	1%	20%		-2%
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
1 Yr	-32%	-1%	1%	20%		-4%
2 Yr	-28%	0%	4%	28%		-7%
3 Yr	-16%	0%	3%	18%		2%

Overall, this sub-market looks good: while sales activity is steady, average prices are somewhat softer this year, compared to last. On the other hand, the MRI is very good, the sales to list price ratio has risen nicely this year, and the \$/sf values are down, but well above the \$260/sf above that targeted by the developer's units. We note that average age of these resale market sales is 20 years old, and they are about 150 square feet smaller than the proposed developer units.

The share of the total YTD market that these 34 units represent is about 63% and 58% using last year - if the window of sales activity is spread out over 2-3 years, the normal marketing time (12-18 months presales; 12-18 months construction), We describe this in a future section.

Next we look at the comparable market (priced \$250,000-\$349,999) for the development's 34 three-bedroom units, sized 1,090 square feet and priced at \$306,000, with an average \$281/sf.

TARGET MARKET CONDO SALES & LISTINGS, THREE BEDROOM @ \$306,000

	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2005	61	\$293,572	1,053	236	101.5%	\$279
2006	25	\$298,825	1,047	345	102.2%	\$285
2007	6	\$325,000	993	91	94.9%	\$327
2008	14	\$302,714	969	159	95.2%	\$312
2009	20	\$305,975	1,053	154	95.2%	\$291
2010	34	\$304,033	1,161	199	97.4%	\$262
2011	46	\$294,546	1,185	219	98.0%	\$249
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2008	133%	-7%	-2%	76%	0%	-5%
2009	43%	1%	9%	-3%	0%	-7%
2010	70%	-1%	10%	30%	2%	-10%
2011	35%	-3%	2%	10%	1%	-5%
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	35%	-3%	2%	10%	0.7%	-5%
2 Yr	53%	-2%	6%	20%	1.5%	-8%
3 Yr	49%	-1%	7%	12%	1.0%	-7%
MRI	Sale\$/List\$	Intr sf	DOM	\$/sf Value		
2007	8	118%		22%		127%
2008	12	89%		124%		89%
2009	6	102%		78%		94%
2010	14	99%		118%		84%
2011	6	97%		113%		98%
	Listings	Price	Intr sf	DOM		\$/sf
2006	2	\$276,000	1,072	405		\$258
2007	4	\$339,000	961	128		\$353
2008	14	\$300,421	974	198		\$308
2009	10	\$307,090	987	170		\$311
2010	40	\$308,111	1,175	164		\$262
2011	23	\$304,497	1,199	195		\$254
% ▲	Listings	Price	Intr sf	DOM		\$/sf
2007	100%	23%	-10%	-68%		37%
2008	250%	-11%	1%	55%		-13%
2009	-29%	2%	1%	-14%		1%
2010	300%	0%	19%	-3%		-16%
2011	-43%	-1%	2%	19%		-3%
% ▲	Listings	Price	Intr sf	DOM		\$/sf
1 Yr	-43%	-1%	2%	19%		-16%
2 Yr	129%	0%	11%	8%		-8%
3 Yr	76%	0%	7%	0%		12%

This comparable market's trend is improving nicely: sales activity YTD is near to 2005's level, as is average prices. The DOM is higher, but the Sales to List price ratio is up. While the \$/sf is down, the MRI is falling to a level that favors sellers (so there is good potential that prices will continue rising). The resale comps are averaging 17 years in age.

The share of the total market for these 34 units would be some 74% this year, and 21% if spread out over three years (again, looked at in the next section, which takes into account the market's trends).

Next, we look at the comparable market (priced \$300,000-\$399,999) for the 34 three bedroom units, sized 1,223 square feet and priced at \$343,000 respectively on average (\$281/sf).

TARGET MARKET CONDO SALES & LISTINGS, THREE BEDROOM @ \$343,000

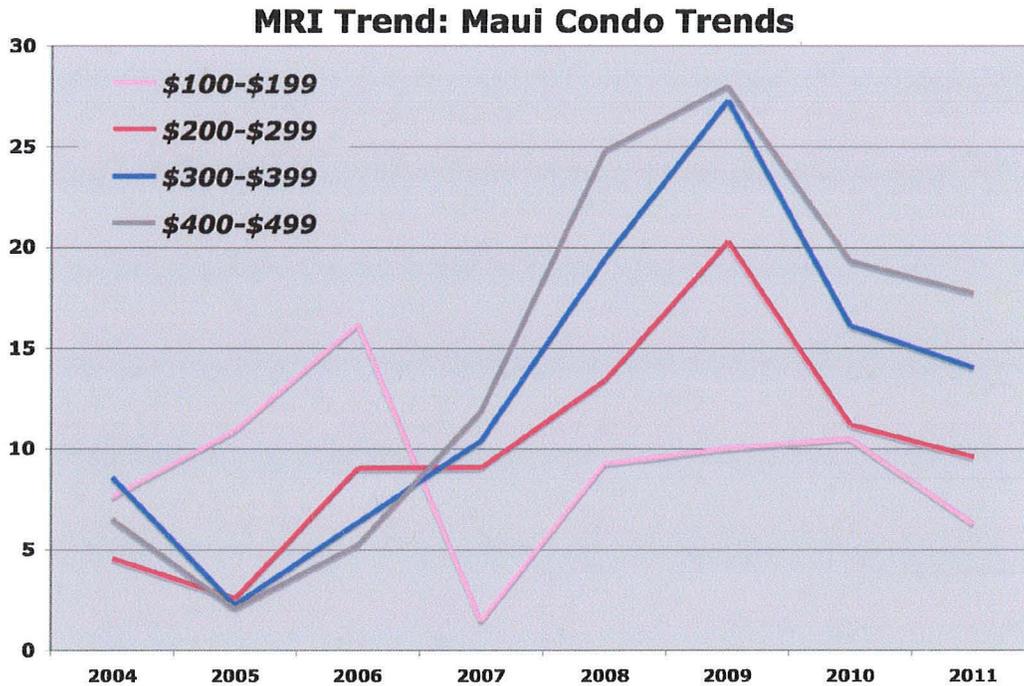
	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2005	58	\$357,185	1,011	266	99.7%	\$353
2006	27	\$353,065	1,011	267	101.6%	\$349
2007	13	\$350,115	980	133	96.6%	\$357
2008	21	\$357,333	1,072	159	95.2%	\$333
2009	17	\$335,206	1,080	135	94.0%	\$310
2010	47	\$346,939	1,292	163	97.9%	\$269
2011	44	\$357,730	1,332	220	98.5%	\$269
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
2008	62%	2%	9%	20%	-1%	-7%
2009	-19%	-6%	1%	-15%	-1%	-7%
2010	176%	4%	20%	20%	4%	-13%
2011	-6%	3%	3%	35%	1%	0%
% ▲	Sold	Price	Intr sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-6%	3%	3%	35%	0.6%	0%
2 Yr	85%	3%	11%	28%	2.4%	-7%
3 Yr	50%	0%	8%	13%	1.2%	-7%
	MRI	Sale\$/List\$	Intr sf	DOM	\$/sf Value	
2007	18	90%		193%		89%
2008	11	95%		109%		85%
2009	15	92%		87%		87%
2010	10	95%		99%		78%
2011	7	100%		131%		97%
	Listings	Price	Intr sf	DOM	\$/sf	
2006	6	\$389,417	966	69		\$403
2007	20	\$376,125	960	146		\$392
2008	20	\$362,678	1,021	155		\$355
2009	21	\$366,317	1,061	164		\$345
2010	40	\$351,753	1,294	192		\$272
2011	24	\$357,614	1,286	168		\$278
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
2007	233%	-3%	-1%	112%		-3%
2008	0%	-4%	6%	6%		-9%
2009	5%	1%	4%	6%		-3%
2010	90%	-4%	22%	17%		-21%
2011	-40%	2%	-1%	-12%		2%
% ▲	Listings	Price	Intr sf	DOM	\$/sf	
1 Yr	-40%	2%	-1%	-12%		-21%
2 Yr	25%	-1%	11%	2%		-4%
3 Yr	18%	0%	8%	3%		-1%

Again, this trend is improving nicely: sales activity and prices near to 2005, the last strong year. The current Days on Market number is bearish, but the Sales to List price ratio is bullish, the \$/sf is steady and the MRI is falling to a level that favors sellers (so there is good potential that prices will continue rising). The age of the comparable resale unit is 20 years old).

This project's share of market is large, 77% for one year, and 72% for the one-year prior. However, as before, we will analyze this in a future section.

SUMMARY:

Another way to see the market trend is to focus on the Months of Remaining Inventory (MRI), because it combines market demand and supply into one trend line. The following chart shows that MRI trended down as the market topped out, then rose in the aftermath of the economic crash 2007-2008. Currently, it is trending down again, a positive for sellers, indicating that the market is in the process of recovering.



CONCLUSIONS:

As seen in the MRI trend line above, the market segments that relate to those of the proposed development are in the process of recovering. The question going forward is whether they will recover at a pace and in a time frame that will allow the proposed development to be successful, in sales velocity and pricing.

To be sure, the current sales velocity is below the pace that the proposed development would like, as is the pricing. This will be taken into account in the following section. For instance, the sales velocity of the current target market was shown to be not very high, relative to the numbers to be supplied into the market by the proposed project. Similarly, there were some price point and price per square foot disparities between the current market and the proposed development.

To be sure, these are conditions in the current moment. And they will certainly change, especially over the next 18-36 months. This change will tell us whether the proposed development's condominium units will meet with widespread acceptance (strong sales) or not. What will be taken into account in the following section is the timing and the strength of the market's recovery, to wit: how sales activity will pick up overtime, and how prices will follow.

VIII. CONDO MARKET TREND ANALYSIS AND PROJECTION

MARKET SHARE COMPARISON & ANALYSIS: In this section, we look at the quantity and pricing of particular product offering (supply) of the project in relation to the sales of the comparable market segments in the current market. We want to see how large a market share this supply represents (note: a large share – 40% plus – is ‘bad’ and a low one – 25% minus – is ‘good’).

Starting with the lower end of their condominium product, we describe their unit counts and pricing, then compare that to the current sales activity and average prices YTD 2011 (note, we will project sales and prices for all of 2011, using data through 1 June).

PROJECT OFFERING VS. TARGET MARKET, MARKET SHARES

Bedroom Counts	Average Price	Unit Counts	2011 YTD Sales	Project Share, Over 1 Yr	Project Share, Over 2 Yrs	Project Share, Over 3 Yrs
2 Bed	\$260,300	34	54	63%	31%	21%
3 Bed	\$306,200	34	46	74%	37%	25%
3 Bed	\$343,562	34	44	77%	39%	26%

As the table shows, the proposed development’s low-end condominium segment shows generally high market shares in terms of one year’s sales (the share of 2011 sales that these unit offerings represent, so project supply divided by total demand) – but that share percentage declines significantly by year three. For instance, the shares for the 2-bedroom unit priced at \$260,000 are 63% for one year, 31% for two years and 21% for three years.

In analyzing this, it is to be remembered that, under normal conditions, it takes 1-2 years to bring a project like this to market, and then another 1-2 years to sell out. So, the market these units will encounter is at least 2 years out, at the start, and perhaps as far out as 4 years, by development close out. As such, the market shares shown above are not particularly accurate in the sense that year one for the sales of these units will be more than 2 years out (by which time, the market will have moved to higher levels of activity). And as it does, the project’s share of market will fall, meaning the development will have an easier time selling.

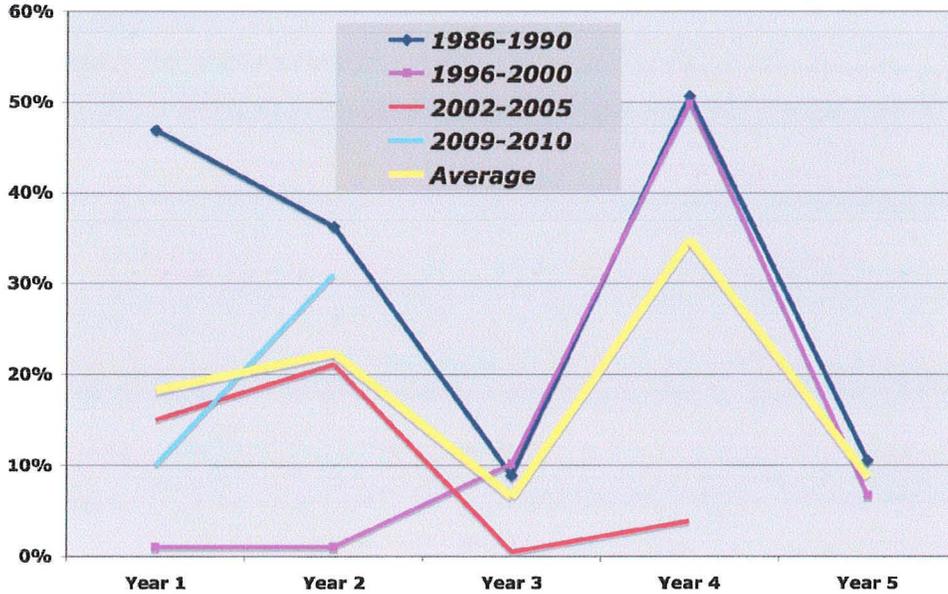
As mentioned earlier, we believe that the market cycle is near or at the bottom this year, and can enter the upward phase of the cycle next year. This expectation is because the visitor industry this year has enjoyed very strong success, with spending up for 13 straight months, with an increase over last year’s spending up by 16.2%.

With that in mind, we now look to analyze how the sales activity expands during a market recovery (as the cycle turns). The following analysis focuses on total sales – a combination of resales and developer sales - for condos (MF). The table below describes the annual change in sales activity for periods that are two years or longer (2+ years of positive growth).

PER ANNUM GROWTH IN CONDO SALES VELOCITY, PER THE CYCLE UPSWING

Period	Sales Rise, Year 1	Sales Rise, Year 2	Sales Rise, Year 3	Sales Rise, Year 4	Sales Rise, Year 5
1986-1990	47%	36%	9%	51%	11%
1996-2000	1%	1%	10%	50%	7%
2002-2005	15%	21%	0%	4%	
2009-2010	10%	31%			
Average	18%	22%	7%	35%	9%

Condo Sales Growth Per Annum, Post-Trough



The table shows that the average growth for condominium sales in year one of a recovery is 18%, followed by 22% growth in year two. This is consistent with the experience that most real estate professionals have had, which is: when the market turns, it turns suddenly and dramatically.

Using the average rate of growth per annum from the table above, we project the project's sales activity from 2011 YTD levels – using 2011 YTD as a the market bottom. As seen, this gives our forecast a base from which we could the following years.

In the tables below, we use these averages to recalculate the market share of the project's offerings in each of the segments described earlier. Note that we made the assumption that this project could command a 25% share of market. We believe this share is reasonable, particularly in light of the low (affordable) unit prices, the acute lack of housing supply on the west side of Maui, and the proposed development's ideal location, near the beach and shopping.

As seen, the market share for the two-bedroom unit would be 24% in 2012 (assuming that these units can come on the market at that time), followed by 21% in 2013, and 5% in 2014 (low, because most of the units have already been sold out).

MARKET SALES AND SHARE PROJECTION, 1,000 SF TWO-BEDROOM UNIT

	Beds	Units	'11 YTD	2012	2013	2014	2015
Market	2	34	54	64	71	76	105
Project Sales				15	15	4	
Market Share				24%	21%	5%	

MARKET SALES AND SHARE PROJECTION, 1,090 SF THREE-BEDROOM UNIT

	Beds	Units	'11 YTD	2012	2013	2014	2015
Market	3	34	46	54	61	65	89
Project Sales				12	14	8	
Market Share				22%	23%	12%	

MARKET SALES AND SHARE PROJECTION, 1,090 SF THREE-BEDROOM UNIT

	Beds	Units	'11 YTD	2012	2013	2014	2015
Market	3	34	44	52	58	62	85
Project Sales				12	14	8	
Market Share				23%	24%	13%	

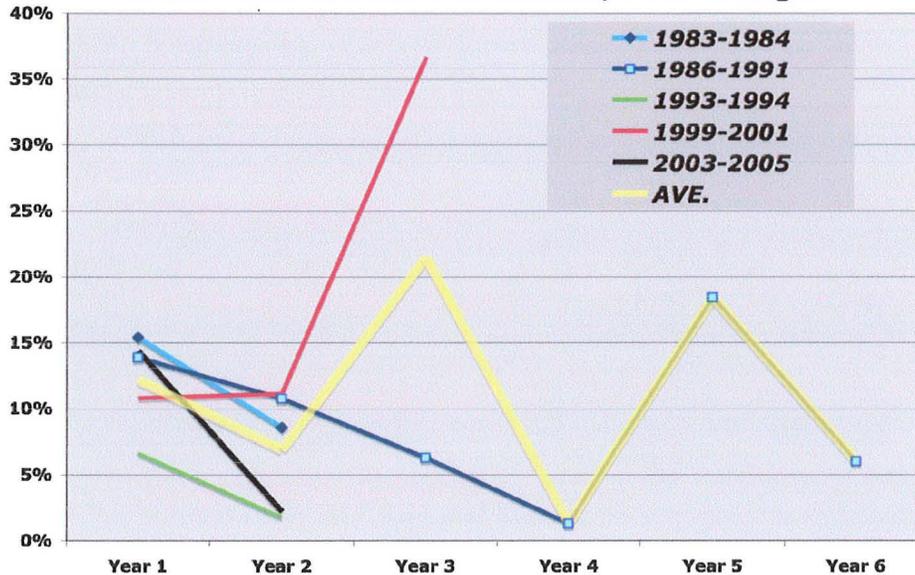
In comparison with the earlier market share analysis, these shares are much more achievable.

PRICE TREND ANALYSIS: The other change in the market as it moves into the up cycle happens to prices. Using the same methodology as used above, we derived the average price appreciation on an annual basis for periods that are two years or longer (2+ years of positive growth). The table and the chart below describe this.

PER ANNUM GROWTH IN MARKET PRICE APPRECIATION, PER THE CYCLE UPSWING

Period	Rise Year 1	Rise Year 2	Rise Year 3	Rise Year 4	Rise Year 5	Rise Year 6
1983-1984	15%	9%				
1986-1991	14%	11%	6%	1%	18%	6%
1993-1994	7%	2%				
1999-2001	11%	11%	37%			
2003-2005	14%	2%				
Average	12%	7%	21%	1%	18%	6%

Condo Price Growth Per Annum, Post-Trough



Next, we take the prices and the price per square foot values for the project's lower end condominium offerings and compare that with the current pricing and price per square foot values

in the comparable market segment. The table below describes those prices and values, as well as the proportions.

PROJECT OFFERING VS. TARGET MARKET, AVERAGE PRICES & VALUES

Models by Beds	Ave Price	Ave. \$/sf	2011 YTD Price	2011 YTD Price/sf	Project/Market Price	Project/Market Price/sf
2	\$260,300	\$260	\$254,000	\$279	102%	93%
3	\$306,200	\$281	\$294,456	\$249	104%	113%
3	\$343,562	\$281	\$357,730	\$269	96%	104%

For instance, the two-bedroom model is priced at \$260,300 on average, and that is at 102% of the current 2011 YTD price (or at a 2% premium). It also has a \$260/sf value, which is relative to the average price per square foot value for 2011 YTD of \$279/sf. Thus, this unit's value is 93% of the market's (or is at a 7% discount). Essentially, this unit will be seen as slightly higher than the market in terms of absolute price, but lower (hence, a good value) in terms of its price per square foot. As such, it should meet with relatively good market acceptance (particularly considering it is new construction, and well located).

Looking next at the smaller three bedroom, the table shows that it is at a premium in both aspects, absolute price and, particularly, value per square foot. Thus, it is possibly still attractive to the market (as seen through 2001 YTD eyes), but less so than its 2 bedroom brethren. And the bigger three bedroom reverses the situation of the two bedroom – it is at a discount to the average price by 4%, but at a premium to the per square foot value of 4%.

Again, we look into the future pricing in the market by taking the average annual increase in prices and apply it to each of the model offerings in the years subsequent to 2011 (2012 and 2013, seen in the table below). It helps us to better visualize the progression of the market relative to the project.

PROJECT OFFERING VS. TARGET MARKET, PROJECTED PRICES & VALUES

Beds	Model Price	2011 Price	2012 Price	2013 Price	2014 Price	Model \$/sf	2011 \$/sf	2012 \$/sf	2013 \$/sf	2014 \$/sf
2	\$260,300	\$254,000	\$284,480	\$304,394	\$368,316	\$260	\$279	\$312	\$334	\$405
3	\$306,200	\$294,456	\$329,791	\$352,876	\$426,980	\$281	\$249	\$279	\$298	\$361
3	\$343,562	\$357,730	\$400,658	\$428,704	\$518,731	\$281	\$269	\$301	\$322	\$390

As seen, the current YTD 2011 market's values, when projected outwards 2-3 years, appreciate rather quickly, and thus surpass those prices that are presently envisioned by the project. For instance, by 2013, the project's two bedroom model prices are at a 13% to 20% discount to where the market will be on a price point basis, and a 6% to 22% discount on a price per square foot basis. The same general trend has a similar effect on the prices and values of the other two units.

Thus, in light of this progression of values and prices 2012-2013, there is a basis for expecting that the lower end condominium product will sell out rapidly, given that they will be priced significantly below the price in the rest of the market (assuming the market recovery affects prices and values this time, as it has in the past).

Now, we look at the single-family homes market.

IX. SINGLE FAMILY TARGET MARKET & COMPARISION

Again, we start with an overview, this table describes sales and listings, for all west Maui, no leasehold, at prices that are over \$100,000.

SINGLE FAMILY SALES & LISTINGS, ALL MAUI, FEE-SIMPLE ONLY

	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2004	1,227	\$747,536	1,851	29,510	125	96.6%	\$404
2005	1,357	\$925,053	1,836	26,085	77	97.0%	\$504
2006	1,038	\$938,287	1,737	27,814	143	96.4%	\$540
2007	1,129	\$919,378	1,784	23,657	170	96.9%	\$515
2008	877	\$822,044	1,827	66,334	210	96.0%	\$450
2009	680	\$717,104	1,821	44,330	215	94.4%	\$394
2010	799	\$752,628	1,873	33,484	199	95.3%	\$402
2011	710	\$736,773	1,947	28,403	170	95.3%	\$378
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2007	9%	-2%	3%	-15%	19%	1%	-4.6%
2008	-22%	-11%	2%	180%	24%	-1%	-12.7%
2009	-22%	-13%	0%	-33%	2%	-2%	-12.5%
2010	18%	5%	3%	-24%	-7%	1%	2.0%
2011	-11%	-2%	4%	-15%	-14%	0%	-5.8%
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-11%	-2%	4%	-15%	-14%	0%	-6%
2 Yr	3%	1%	3%	-20%	-11%	1%	-2%
3 Yr	-5%	-3%	2%	-24%	-7%	0%	-5%
	MRI	Sale\$/List\$	Intrr sf	Lot sf	DOM	\$/sf Value	
2006	7	56%	78%	53%	128%	72%	
2007	8	62%	88%	29%	116%	71%	
2008	13	51%	88%	88%	144%	57%	
2009	20	46%	84%	18%	107%	55%	
2010	17	48%	85%	13%	93%	57%	
2011	17	49%	88%	10%	81%	56%	
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2006	640	\$1,668,495	2,234	52,216	111		\$747
2007	728	\$1,475,025	2,031	81,074	146		\$726
2008	936	\$1,622,644	2,066	75,577	146		\$785
2009	1,147	\$1,560,710	2,168	248,275	200		\$720
2010	1,121	\$1,553,772	2,194	258,088	214		\$708
2011	1,029	\$1,498,082	2,218	281,363	210		\$676
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2008	29%	10%	2%	-7%	0%		8%
2009	23%	-4%	5%	229%	37%		-8%
2010	-2%	0%	1%	4%	7%		-2%
2011	-8%	-4%	1%	9%	-2%		-5%
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
1 Yr	-8%	-4%	1%	9%	-2%		-2%
2 Yr	-5%	-2%	1%	6%	2%		-5%
3 Yr	4%	-3%	2%	80%	14%		-1%

This market has stabilized since 2009 with higher prices and sales, but has not quite gotten to the recovery stage. Sales are down YTD after a good showing last year. Listings are down, too, but

not by much (or enough to drop the MRI, which is as high as it was last year). DOM is down, and the sales to list price ratio is stable.

This table describes sales, in only West Maui, no leasehold

SINGLE FAMILY SALES & LISTINGS, WEST MAUI, FEE-SIMPLE ONLY

	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2004	147	\$975,007	1,934	16,592	136	94.7%	\$504
2005	144	\$983,311	1,784	33,563	81	95.7%	\$551
2006	106	\$1,131,075	1,626	23,460	142	94.2%	\$695
2007	93	\$1,304,265	1,699	23,100	189	95.0%	\$768
2008	52	\$1,591,633	2,276	32,323	249	91.1%	\$699
2009	65	\$1,012,152	1,814	62,073	207	93.1%	\$558
2010	72	\$799,652	2,021	27,719	195	94.0%	\$396
2011	70	\$1,058,750	1,985	55,328	187	95.0%	\$533
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2007	-12%	15%	4%	-2%	33%	1%	10.4%
2008	-44%	22%	34%	40%	32%	-4%	-8.9%
2009	25%	-36%	-20%	92%	-17%	2%	-20.2%
2010	11%	-21%	11%	-55%	-6%	1%	-29.1%
2011	-3%	32%	-2%	100%	-4%	1%	34.8%
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-3%	32%	-2%	100%	-4%	1%	35%
2 Yr	4%	6%	5%	22%	-5%	1%	3%
3 Yr	11%	-8%	-4%	45%	-9%	1%	-5%
	MRI	Sale\$/List\$	Intrr sf	Lot sf	DOM	\$/sf Value	
2006	8	73%	81%	122%	147%	90%	
2007	15	54%	78%	62%	117%	69%	
2008	27	75%	111%	114%	163%	68%	
2009	31	54%	88%	89%	108%	61%	
2010	31	48%	98%	65%	98%	49%	
2011	24	72%	98%	209%	92%	74%	
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2006	75	\$1,552,053	2,012	19,240	97		\$772
2007	116	\$2,422,596	2,178	37,206	161		\$1,112
2008	115	\$2,128,043	2,056	28,314	153		\$1,035
2009	168	\$1,882,033	2,070	69,505	192		\$909
2010	187	\$1,656,338	2,060	42,360	200		\$804
2011	139	\$1,469,989	2,029	26,489	203		\$724
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2008	-1%	-12%	-6%	-24%	-5%		-7%
2009	46%	-12%	1%	145%	26%		-12%
2010	11%	-12%	0%	-39%	4%		-12%
2011	-26%	-11%	-2%	-37%	2%		-10%
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
1 Yr	-26%	-11%	-2%	-37%	2%		-12%
2 Yr	-7%	-12%	-1%	-38%	3%		-12%
3 Yr	11%	-12%	0%	23%	11%		-10%

This trend deviates from the larger market. While it has slightly lower sales and listings, it's price average has risen dramatically. Same for the \$/sf values. Other positives include an improving (lower) MRI, YTD 2011, as well as DOM. And the Sales Price to List Price ratio is trending

upwards, indicating sellers and buyers are coming closer together in terms of their sense of what the appropriate value is.

Only West Maui, no leasehold, priced at \$400,000-\$800,000.

SINGLE FAMILY SALES & LISTINGS, WEST MAUI & \$400-\$800,000 ONLY

	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2004	77	\$593,071	1,528	7,268	109	96.7%	\$388
2005	55	\$620,680	1,330	29,929	65	96.3%	\$467
2006	31	\$609,129	1,196	5,760	121	94.2%	\$509
2007	36	\$599,165	1,101	5,783	171	96.0%	\$544
2008	19	\$587,100	1,377	6,951	206	94.8%	\$426
2009	27	\$560,804	1,519	7,097	211	95.1%	\$369
2010	40	\$571,235	2,114	8,867	198	96.2%	\$270
2011	30	\$557,382	1,852	20,408	166	95.7%	\$301
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2007	16%	-2%	-8%	0%	41%	2%	6.8%
2008	-47%	-2%	25%	20%	20%	-1%	-21.7%
2009	42%	-4%	10%	2%	2%	0%	-13.4%
2010	48%	2%	39%	25%	-6%	1%	-26.8%
2011	-25%	-2%	-12%	130%	-16%	-1%	11.4%
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-25%	-2%	-12%	130%	-16%	-1%	11%
2 Yr	12%	0%	13%	78%	-11%	0%	-8%
3 Yr	22%	-2%	12%	52%	-7%	0%	-10%
	MRI	Sale\$/List\$	Intrr sf	Lot sf	DOM	\$/sf Value	
2006	7	94%	88%	91%	155%	107%	
2007	6	91%	101%	99%	115%	90%	
2008	16	98%	129%	121%	174%	75%	
2009	19	89%	105%	19%	102%	85%	
2010	18	92%	138%	115%	109%	67%	
2011	21	94%	97%	184%	92%	96%	
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2006	17	\$645,294	1,352	6,343	78		\$477
2007	17	\$659,368	1,095	5,824	149		\$602
2008	26	\$602,096	1,065	5,743	119		\$566
2009	43	\$628,800	1,447	37,207	208		\$435
2010	61	\$620,860	1,531	7,733	182		\$406
2011	53	\$594,503	1,903	11,105	181		\$312
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2008	53%	-9%	-3%	-1%	-20%		-6%
2009	65%	4%	36%	548%	75%		-23%
2010	42%	-1%	6%	-79%	-12%		-7%
2011	-13%	-4%	24%	44%	-1%		-23%
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
1 Yr	-13%	-4%	24%	44%	-1%		-7%
2 Yr	14%	-3%	15%	-18%	-6%		-15%
3 Yr	31%	0%	22%	171%	21%		-12%

This market sub-set's trend shows lower activity and prices. However, the price per square foot value is growing, and the DOM is falling. There are both lower sales and lower listings, but the MRI is rising, YTD 2011. However, the MRI is at a lower level than the larger West Maui market.

As before when analyzing the condo market, we want to expand the market's area of interest to include Central Maui, on the premise that West Maui has historically not had a good supply of reasonably priced housing (instead of servicing the local demand, serviced the offshore buyer). Only Central Maui, \$400,000-\$800,000.

SINGLE FAMILY SALES & LISTINGS, CENTRAL MAUI & \$400-\$800,000 ONLY

	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2004	630	\$551,381	1,648	17,533	113	97.6%	\$335
2005	769	\$587,055	1,492	12,138	60	98.2%	\$394
2006	565	\$615,889	1,435	10,549	139	97.6%	\$429
2007	624	\$594,838	1,512	9,091	137	98.0%	\$393
2008	474	\$568,586	1,622	11,583	192	96.5%	\$351
2009	361	\$524,818	1,733	18,292	208	95.7%	\$303
2010	367	\$515,536	1,776	23,850	172	96.7%	\$290
2011	228	\$532,142	1,897	24,568	165	96.3%	\$280
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2007	10%	-3%	5%	-14%	-1%	0%	-8.3%
2008	-24%	-4%	7%	27%	40%	-2%	-10.9%
2009	-24%	-8%	7%	58%	8%	-1%	-13.6%
2010	2%	-2%	2%	30%	-17%	1%	-4.1%
2011	-38%	3%	7%	3%	-4%	0%	-3.4%
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-38%	3%	7%	3%	-4%	0%	-3%
2 Yr	-18%	1%	5%	17%	-11%	0%	-4%
3 Yr	-20%	-2%	5%	30%	-4%	0%	-7%
	MRI	Sale\$/List\$	Intrr sf	Lot sf	DOM	\$/sf Value	
2006	5	98%	99%	78%	167%	99%	
2007	6	93%	103%	106%	109%	90%	
2008	9	90%	112%	101%	141%	80%	
2009	14	93%	104%	105%	101%	89%	
2010	11	92%	106%	108%	89%	87%	
2011	14	93%	105%	99%	96%	89%	
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2006	235	\$626,274	1,443	13,480	83		\$434
2007	299	\$639,473	1,463	8,549	126		\$437
2008	375	\$629,902	1,442	11,522	137		\$437
2009	434	\$564,357	1,663	17,445	205		\$339
2010	340	\$559,163	1,672	22,063	195		\$334
2011	266	\$570,529	1,807	24,765	172		\$316
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2008	25%	-1%	-1%	35%	9%		0%
2009	16%	-10%	15%	51%	51%		-22%
2010	-22%	-1%	1%	26%	-5%		-1%
2011	-22%	2%	8%	12%	-11%		-6%
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
1 Yr	-22%	2%	8%	12%	-11%		-1%
2 Yr	-22%	1%	4%	19%	-8%		-12%
3 Yr	-9%	-3%	8%	30%	11%		-8%

This market shows the YTD sales rate is falling, and is falling faster than West Maui. However, prices are rising YTD, the DOM is falling. But, on the negative side, MRI is back up, the \$/sf is falling slightly and the Sales price to List price ratio is falling back down again. That said, this year could be the low of the market.

This table combines both Central and West Maui at \$400,000-\$600,000. It relates to the Cluster product's market.

TARGET MARKET SUMMARY, CLUSTER PRODUCT, WEST & CENTRAL MAUI

	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2004	478	\$491,949	1,464	11,799	107	97.4%	\$336
2005	464	\$511,570	1,348	9,454	53	98.4%	\$380
2006	256	\$529,170	1,257	8,914	144	98.0%	\$421
2007	361	\$527,334	1,365	7,517	128	97.9%	\$386
2008	314	\$507,364	1,453	9,420	176	96.5%	\$349
2009	296	\$479,063	1,615	15,689	219	95.6%	\$297
2010	309	\$471,531	1,693	17,279	167	97.1%	\$279
2011	186	\$476,077	1,780	18,373	168	96.6%	\$267
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2007	41%	0%	9%	-16%	-11%	0%	-8.3%
2008	-13%	-4%	6%	25%	37%	-1%	-9.6%
2009	-6%	-6%	11%	67%	24%	-1%	-15.1%
2010	4%	-2%	5%	10%	-24%	1%	-6.1%
2011	-40%	1%	5%	6%	1%	0%	-4.0%
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-40%	1%	5%	6%	1%	0%	-4%
2 Yr	-18%	0%	5%	8%	-11%	1%	-5%
3 Yr	-14%	-2%	7%	28%	1%	0%	-8%
	MRI	Sale\$/List\$	Intrr sf	Lot sf	DOM	\$/sf Value	
2006	5	99%	100%	94%	172%	99%	
2007	4	97%	119%	103%	98%	82%	
2008	7	94%	127%	98%	139%	74%	
2009	13	96%	108%	105%	99%	89%	
2010	10	95%	111%	100%	82%	86%	
2011	13	97%	105%	120%	103%	93%	
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2006	115	\$534,863	1,255	9,438	84		\$426
2007	109	\$542,515	1,150	7,321	131		\$472
2008	172	\$539,118	1,141	9,607	126		\$472
2009	313	\$500,557	1,498	14,985	220		\$334
2010	262	\$496,244	1,528	17,280	204		\$325
2011	194	\$490,064	1,698	15,362	163		\$289
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2008	58%	-1%	-1%	31%	-3%		0%
2009	82%	-7%	31%	56%	74%		-29%
2010	-16%	-1%	2%	15%	-7%		-3%
2011	-26%	-1%	11%	-11%	-20%		-11%
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
1 Yr	-26%	-1%	11%	-11%	-20%		-3%
2 Yr	-21%	-1%	7%	2%	-14%		-16%
3 Yr	13%	-3%	15%	20%	16%		-11%

Here the market trend shows sales down, prices up, MRI up, DOM up, \$/sf values down and list prices down. Importantly, the level of sales activity, even down, is at a reasonably good level, relative to the total units being offered to the market: 186 resales vs. 70 new units offered, or 38%. That said, if taking an average over the last five year, this share drops to 25%. The point here is to pay attention to the size of the combined market being large relative to the supply being offered.

This shows both West & Central Maui sales, \$600,000-\$800,000, a market equal to Alley product.

TARGET MARKET SUMMARY, ALLEY PRODUCT, WEST & CENTRAL MAUI

	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2004	229	\$689,455	1,992	26,052	126	97.7%	\$346
2005	360	\$689,483	1,653	18,315	70	97.7%	\$417
2006	340	\$680,567	1,547	11,343	133	97.0%	\$440
2007	299	\$676,860	1,639	10,594	151	97.9%	\$413
2008	179	\$677,947	1,893	14,886	221	96.4%	\$358
2009	92	\$682,590	2,050	23,380	177	95.6%	\$333
2010	98	\$677,022	2,176	38,452	201	95.4%	\$311
2011	72	\$687,491	2,182	38,839	159	95.3%	\$315
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2007	-12%	-1%	6%	-7%	14%	1%	-6.1%
2008	-40%	0%	15%	41%	47%	-2%	-13.2%
2009	-49%	1%	8%	57%	-20%	-1%	-7.0%
2010	7%	-1%	6%	64%	14%	0%	-6.6%
2011	-27%	2%	0%	1%	-21%	0%	1.3%
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-27%	2%	0%	1%	-21%	0%	1%
2 Yr	-10%	0%	3%	33%	-4%	0%	-3%
3 Yr	-23%	0%	5%	41%	-9%	0%	-4%
	MRI	Sale\$/List\$	Intrr sf	Lot sf	DOM	\$/sf Value	
2006	5	96%	97%	71%	163%	99%	
2007	8	98%	103%	118%	121%	95%	
2008	15	98%	116%	121%	156%	84%	
2009	21	97%	107%	86%	99%	91%	
2010	17	96%	116%	155%	117%	83%	
2011	21	97%	108%	116%	83%	90%	
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2006	137	\$705,366	1,591	15,988	81		\$443
2007	207	\$692,163	1,597	8,971	125		\$433
2008	229	\$694,932	1,625	12,304	142		\$428
2009	164	\$703,018	1,919	27,323	178		\$366
2010	139	\$704,834	1,882	24,790	172		\$374
2011	125	\$705,575	2,017	33,567	190		\$350
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2008	11%	0%	2%	37%	14%		-1%
2009	-28%	1%	18%	122%	25%		-14%
2010	-15%	0%	-2%	-9%	-4%		2%
2011	-10%	0%	7%	35%	10%		-7%
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
1 Yr	-10%	0%	7%	35%	10%		2%
2 Yr	-13%	0%	3%	13%	3%		-6%
3 Yr	-18%	1%	8%	49%	11%		-4%

What was said above can be said about this market sub-set, but that it is not as robust. Sales activity is still falling, prices have bounced up (including \$/sf), and the DOM is down, but not the MRI.

But, again, the size of the market, comparing the 72 unit sales projected this year, against 31 units being supplied equals a 43% share based on this year, and a 32% share based on last year, and a 21% share against a seven-year average.

PER MODEL COMPARISON: For the Cluster project's 45 three-bedroom units, 1,304 sf, target price of \$521,600, the market between \$500,000 and \$599,999 looks like this:

TARGET MARKET CLUSTER, THREE BEDROOM UNITS

	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2004	117	\$543,513	1,503	12,641	107	97.6%	\$362
2005	184	\$549,736	1,373	11,224	55	97.9%	\$400
2006	137	\$557,620	1,245	6,945	110	97.8%	\$448
2007	203	\$552,527	1,357	7,981	117	98.3%	\$407
2008	128	\$549,921	1,468	9,190	184	96.9%	\$375
2009	62	\$534,286	1,734	13,563	181	95.8%	\$308
2010	63	\$535,118	1,743	16,416	203	95.6%	\$307
2011	38	\$536,016	1,651	35,163	262	93.9%	\$325
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2007	48%	-0.9%	9%	15%	6%	0.5%	-9.2%
2008	-37%	-0.5%	8%	15%	58%	-1.4%	-8.0%
2009	-52%	-2.8%	18%	48%	-2%	-1.2%	-17.7%
2010	2%	0.2%	1%	21%	12%	-0.2%	-0.4%
2011	-40%	0.2%	-5%	114%	29%	-1.8%	5.7%
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-40%	0.2%	-5%	114%	29%	-1.8%	6%
2 Yr	-19%	0.2%	-2%	68%	21%	-1.0%	3%
3 Yr	-30%	-0.8%	4%	61%	13%	-1%	-4%
MRI	Sale\$/List\$	Intrr sf	Lot sf	DOM	\$/sf Value		
2006	5	99%	96%	68%	178%	104%	
2007	3	98%	111%	104%	109%	88%	
2008	9	97%	120%	106%	138%	81%	
2009	15	96%	112%	80%	91%	86%	
2010	13	95%	118%	106%	138%	81%	
2011	14	97%	101%	221%	122%	96%	
	Listings	Price	Intrr sf	Lot sf	DOM	\$/sf	
2006	57	\$561,928	1,299	10,185	62	\$433	
2007	56	\$564,527	1,224	7,667	107	\$461	
2008	94	\$564,482	1,228	8,698	134	\$460	
2009	80	\$556,176	1,548	16,945	198	\$359	
2010	66	\$561,448	1,475	15,425	147	\$381	
2011	43	\$551,824	1,640	15,903	214	\$337	
	Listings	Price	Intrr sf	Lot sf	DOM	\$/sf	
2008	68%	0.0%	0.3%	13%	25%	0%	
2009	-15%	-1.5%	26.1%	95%	48%	-22%	
2010	-18%	0.9%	-4.8%	-9%	-25%	6%	
2011	-35%	-1.7%	11.2%	3%	45%	-12%	
	Listings	Price	Intrr sf	Lot sf	DOM	\$/sf	
1 Yr	-35%	-1.7%	11.2%	3%	45%	6%	
2 Yr	-26%	-0.4%	3.2%	-3%	10%	-8%	
3 Yr	-22%	-0.7%	10.8%	30%	23%	-5%	

This sub-market's trends mirror most of those in the larger market, with declining sales, lower prices and \$/sf values, lower DOM and a higher Sales to List price ratio. The MRI has had a bounce this year (YTD), rising above the recent record high of 10 months (normal is 6-8 months).

The two issues are at hand: 1. the share of market of these new units against sold units would be very high if they went to market this year; and, 2. the price per square foot, with the new unit at a

premium, benchmarked to this year. Considering that the average resale is 18 years old, the prospect of paying a little bit more isn't too unreasonable. Especially when the location (next to beach, in Lahaina, etc.) is considered.

Next, we look at the comparable market (\$600,000-\$699,999) for the 24-unit four-bedroom Cluster project supply offering, at an average price of \$617,250 for 1,646 square feet.

TARGET MARKET CLUSTER, FOUR BEDROOM UNITS

	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2004	101	\$645,116	1,793	23,084	120	97.4%	\$360
2005	172	\$645,523	1,542	11,082	67	97.7%	\$419
2006	186	\$645,247	1,449	8,811	129	97.4%	\$445
2007	187	\$644,803	1,625	8,983	141	98.2%	\$397
2008	108	\$646,974	1,846	13,281	211	96.6%	\$350
2009	50	\$644,142	2,025	24,190	197	95.2%	\$318
2010	50	\$649,924	2,101	35,328	212	95.3%	\$309
2011	38	\$647,324	1,942	25,886	152	95.5%	\$333
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2007	1%	-0.1%	12%	2%	10%	0.9%	-10.9%
2008	-42%	0.3%	14%	48%	49%	-1.7%	-11.7%
2009	-54%	-0.4%	10%	82%	-6%	-1.4%	-9.2%
2010	0%	0.9%	4%	46%	7%	0.1%	-2.8%
2011	-24%	-0.4%	-8%	-27%	-28%	0.3%	7.7%
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-24%	-0.4%	-8%	-27%	-28%	0.3%	8%
2 Yr	-12%	0.2%	-2%	10%	-10%	0.2%	2%
3 Yr	-26%	0.0%	2%	34%	-9%	0%	-1%
MRI	Sale\$/List\$	Intrr sf	Lot sf	DOM	\$/sf Value		
2006	4	98%	98%	70%	175%	100%	
2007	8	99%	110%	121%	129%	90%	
2008	13	99%	123%	136%	156%	80%	
2009	18	97%	116%	110%	107%	84%	
2010	14	99%	124%	178%	117%	79%	
2011	19	97%	105%	111%	88%	92%	
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2006	57	\$657,375	1,481	12,642	74		\$444
2007	119	\$650,704	1,479	7,434	109		\$440
2008	121	\$656,356	1,496	9,759	135		\$439
2009	76	\$665,590	1,752	22,037	184		\$380
2010	58	\$659,198	1,693	19,839	181		\$389
2011	61	\$664,168	1,843	23,244	174		\$360
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2008	2%	0.9%	1.2%	31%	24%		0%
2009	-37%	1.4%	17.0%	126%	37%		-13%
2010	-24%	-1.0%	-3.4%	-10%	-2%		2%
2011	5%	0.8%	8.9%	17%	-4%		-7%
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
1 Yr	5%	0.8%	8.9%	17%	-4%		2%
2 Yr	-9%	-0.1%	2.7%	4%	-3%		-5%
3 Yr	-19%	0.4%	7.5%	44%	10%		-4%

Again, the market activity is on the decline, more so than the other market. Prices are stable and values, \$/sf, are actually on the rise. The trends for DOM, MRI and Sales to List price ratios are positive or neutral.

ALLEY: Here, we look at the Alley product in comparison with the market, starting with the 21 three bedroom units at 1,692 square foot unit, priced at \$676,800. Here the comps are sales between \$600,000 and \$700,000.

TARGET MARKET ALLEY, THREE BEDROOM UNITS

	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2004	68	\$643,574	1,651	26,987	116	97.3%	\$390
2005	131	\$645,299	1,463	11,927	66	97.4%	\$441
2006	147	\$642,434	1,373	9,173	127	97.5%	\$468
2007	126	\$644,011	1,536	9,206	139	98.2%	\$419
2008	72	\$650,779	1,691	13,119	234	96.9%	\$385
2009	36	\$645,947	1,929	29,519	177	94.8%	\$335
2010	36	\$651,117	1,994	39,370	208	94.8%	\$327
2011	24	\$644,679	1,650	33,295	132	95.4%	\$391
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2007	-14%	0.2%	12%	0%	10%	0.6%	-10.4%
2008	-43%	1.1%	10%	43%	68%	-1.3%	-8.2%
2009	-50%	-0.7%	14%	125%	-25%	-2.1%	-13.0%
2010	0%	0.8%	3%	33%	17%	-0.1%	-2.5%
2011	-33%	-1.0%	-17%	-15%	-37%	0.7%	19.6%
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
1 Yr	-33%	-1.0%	-17%	-15%	-37%	0.7%	20%
2 Yr	-17%	-0.1%	-7%	9%	-10%	0.3%	9%
3 Yr	-28%	-0.3%	0%	48%	-15%	0%	1%
	MRI	Sale\$/List\$	Intrr sf	Lot sf	DOM	\$/sf Value	
2006	4	98%	96%	67%	180%	103%	
2007	8	99%	109%	118%	133%	91%	
2008	16	99%	119%	126%	174%	83%	
2009	16	97%	122%	117%	87%	79%	
2010	14	99%	132%	164%	118%	75%	
2011	21	97%	99%	121%	82%	99%	
	Listings	Price	Intrr sf	Lot sf	DOM	\$/sf	
2006	44	\$653,373	1,435	13,750	70	\$455	
2007	87	\$650,107	1,414	7,800	104	\$460	
2008	93	\$658,377	1,423	10,391	135	\$463	
2009	48	\$667,999	1,580	25,232	204	\$423	
2010	41	\$657,963	1,509	23,963	177	\$436	
2011	42	\$662,522	1,675	27,626	160	\$395	
	Listings	Price	Intrr sf	Lot sf	DOM	\$/sf	
2008	7%	1.3%	0.6%	33%	29%	1%	
2009	-48%	1.5%	11.0%	143%	51%	-9%	
2010	-15%	-1.5%	-4.5%	-5%	-13%	3%	
2011	2%	0.7%	11.0%	15%	-9%	-9%	
	Listings	Price	Intrr sf	Lot sf	DOM	\$/sf	
1 Yr	2%	0.7%	11.0%	15%	-9%	3%	
2 Yr	-6%	-0.4%	3.3%	5%	-11%	-3%	
3 Yr	-20%	0.2%	5.8%	51%	9%	-2%	

Activity in the market is down, but listings are down more and the MRI is also down. Better, prices are up, as are values on a price per square foot basis. DOM is up and Sales to List price ratio is lower, too, so that's negative.

Last, we look at the comparable market for the Alley project's 11 units of the four-bedroom, 2,194 square foot model being priced at, on average, \$822,750.

TARGET MARKET ALLEY, FOUR BEDROOM UNITS

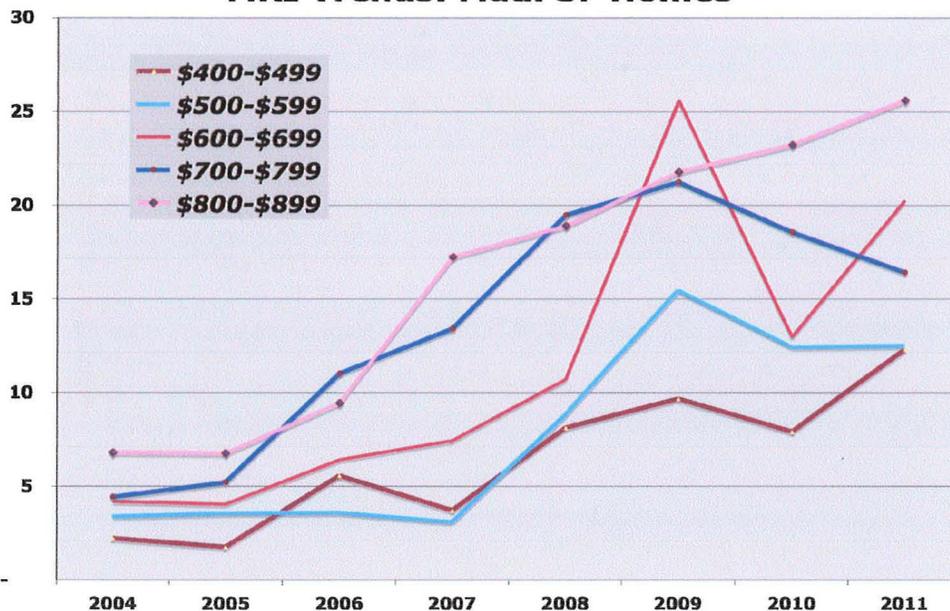
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2004	58	\$851,383	2,193	34,794	128	96.6%	\$388
2005	99	\$849,774	1,876	29,489	85	98.1%	\$453
2006	74	\$859,372	1,707	21,180	143	96.8%	\$503
2007	47	\$842,515	1,886	33,149	200	97.0%	\$447
2008	31	\$842,976	1,987	16,675	258	97.1%	\$424
2009	21	\$843,224	2,432	36,855	189	94.9%	\$347
2010	21	\$836,019	2,479	24,268	198	93.1%	\$337
2011	26	\$847,538	2,696	37,119	176	95.3%	\$314
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
2007	-36%	-2.0%	10%	57%	40%	0.2%	-11.2%
2008	-34%	0.1%	5%	-50%	29%	0.0%	-5.0%
2009	-32%	0.0%	22%	121%	-27%	-2.2%	-18.3%
2010	0%	-0.9%	2%	-34%	5%	-1.8%	-2.7%
2011	24%	1.4%	9%	53%	-12%	2.3%	-6.8%
	Sold	Price	Intrr sf	Lot sf	DOM	Sale\$/List\$	\$/sf
1 Yr	24%	1.4%	9%	53%	-12%	2.3%	-7%
2 Yr	12%	0.3%	5%	9%	-3%	0.2%	-5%
3 Yr	-3%	0.2%	11%	47%	-11%	-1%	-9%
MRI	Sale\$/List\$	Intrr sf	Lot sf	DOM	\$/sf Value		
2006	9	100%	92%	81%	145%	109%	
2007	11	97%	102%	261%	136%	96%	
2008	26	98%	109%	126%	183%	90%	
2009	22	98%	126%	118%	138%	78%	
2010	23	97%	126%	72%	85%	77%	
2011	22	98%	122%	89%	83%	80%	
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2006	53	\$861,420	1,863	26,261	98		\$462
2007	45	\$864,294	1,853	12,690	147		\$466
2008	66	\$855,861	1,823	13,239	141		\$469
2009	39	\$861,997	1,928	31,217	137		\$447
2010	41	\$861,761	1,960	33,778	234		\$440
2011	47	\$863,749	2,203	41,614	211		\$392
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
2008	47%	-1.0%	-1.6%	4%	-4%		1%
2009	-41%	0.7%	5.8%	136%	-2%		-5%
2010	5%	0.0%	1.6%	8%	70%		-2%
2011	15%	0.2%	12.4%	23%	-10%		-11%
	Listings	Price	Intrr sf	Lot sf	DOM		\$/sf
1 Yr	15%	0.2%	12.4%	23%	-10%		-2%
2 Yr	10%	0.1%	7.0%	16%	30%		-3%
3 Yr	-7%	0.3%	6.6%	56%	19%		-2%

This market is arguably stronger than the price segment right beneath it: While sales activity is also down, listing inventory is down much more, and so the MRI is for this market is much better. Prices are off, more for the \$/sf values. Furthermore, the DOM and Sales to List price ratio indicate a much stronger market than the last one.

In comparison, these ten units make up only a small share of market, given YTD sales forecasting: 28% this year, 20% last and 14% since 2003. When a longer sales period is considered, this share falls into single digits.

SUMMARY: As with the condo market, the follow table illustrates how the Months of Remaining Inventory is trending on an annual basis by price range. Interestingly, only the higher price segment has grown in the recent past, while the rest of these comparable market segments have declined, at least in one of the last two years. This is positive for sellers, particularly if it extends over several more years. The cut-off for a balanced market for single-family homes is between 9-12 months, with anything below that favoring the sell side of the market, as opposed to the buy side. As seen, the market still is siding with the buyers.

MRI Trends: Maui SF Homes



CONCLUSIONS:

As with the condo market, the direction of the single-family trend is important, as the current velocities, prices and values in the market come close to, but do not equate or exceed those of the project. The tables below illustrate this.

X. SINGLE FAMILY MARKET TREND ANALYSIS & PROJECTION

SALES TREND ANALYSIS: Using the same method in the previous trend analysis, we itemize the unit counts and average prices for the single-family component of the project. Again, we compare those to the projected sales activity for 2011, using YTD data (through 1 June).

PROJECT OFFERING VS. TARGET MARKET, SALES VELOCITY & MARKET SHARES

Bedrooms	Ave Price	Unit Count	2011 Sales	1 Year Share	2 Year Share	3 Year Share
3 Beds, Cluster	\$521,600	45	38	118%	59%	39%
4 Beds, Cluster	\$617,250	24	38	63%	32%	21%
3 Beds, Alley	\$676,800	21	24	88%	44%	29%
4 Beds, Alley	\$822,750	11	26	42%	21%	14%

The table shows that the proposed development's single family offerings have generally high market shares, in terms of one, two and three years. As noted earlier, it takes 1-2 years to bring a project like this to market, and then another 1-2 years to sell out. So, the market these units will encounter is at least 2 years out, at the start, and perhaps as far out as 4 years, by project finish.

As before, we assume that the market for homes will hit the bottom this year, and will start the upward phase of the cycle next year, thanks to visitor industry spending.

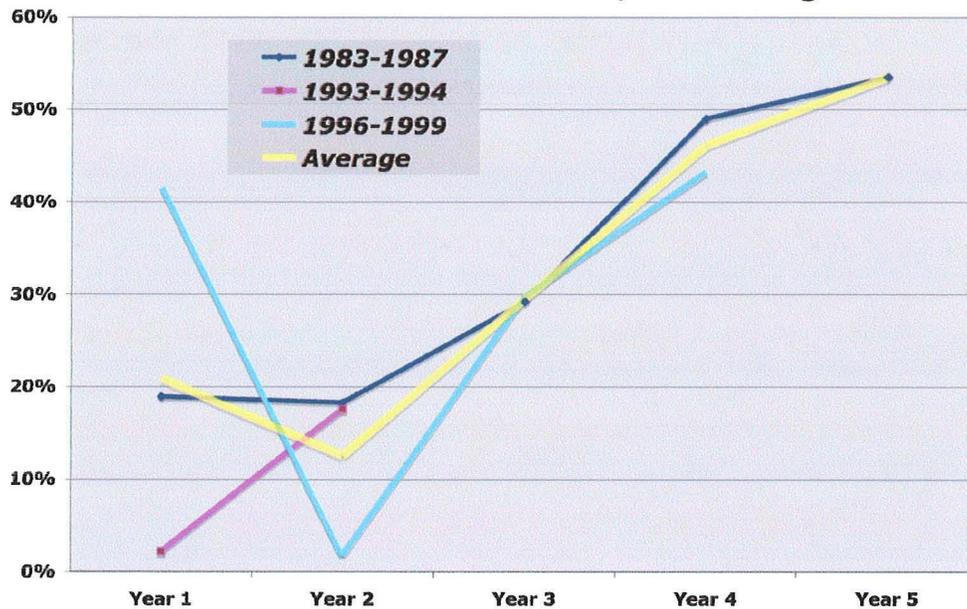
Given that, we again summarized how sales activity expands when rebounding off of the bottom of the cycle. It uses the total sales, resales and developer sales, for homes (SFD), to derive change in activity for periods that are two years or longer (2+ years of positive growth). The table and chart below describes this:

PER ANNUM GROWTH IN MARKET SALES VELOCITY, CYCLE UPSWING

	Sales Rise, Year 1	Sales Rise, Year 2	Sales Rise, Year 3	Sales Rise, Year 4	Sales Rise, Year 5
1983-1987	19%	18%	29%	49%	54%
1993-1994	2%	18%			
1996-1999	41%	2%	30%	43%	
Average	21%	13%	30%	46%	54%

Like last time, we took the sales level of 2011 YTD, and used it as the market's bottom. We then projected out what the level of sales would be in the coming years. Then, we used that to recalculate the share of market of the project's offerings in each of the segments described earlier.

SFD Sales Growth Per Annum, Post-Trough



Again, we made the assumption that this project could command at least a 33% share of market, which is conservative, given the strength of demand, lack of supply on the west side of Maui, and the location near the beach and shopping.

As seen, these shares are much more achievable.

SALES AND SHARE PROJECTION, 1,304 SF THREE-BEDROOM CLUSTER UNIT

	Beds	Units	'11 YTD	2012	2013	2014	2015
Market Size	3	45	72	46	52	67	97
Project Sales				15	17	13	
Market Share				33%	33%	19%	

SALES AND SHARE PROJECTION, 1,646 SF FOUR-BEDROOM CLUSTER UNIT

	Beds	Units	'11 YTD	2012	2013	2014	2015
Market Size	4	24	38	46	52	67	89
Project Sales				14	10		
Market Share				30%	19%	0%	

SALES AND SHARE PROJECTION, 1,692 SF THREE-BEDROOM ALLEY UNIT

	Beds	Units	'11 YTD	2012	2013	2014	2015
Market Size	3	21	24	29	33	42	61
Project Sales				9	10	5	
Market Share				31%	31%	12%	

SALES AND SHARE PROJECTION, 2,194 SF FOUR-BEDROOM ALLEY UNIT

	Beds	Units	'11 YTD	2012	2013	2014	2015
Market Size	4	11	26	31	35	46	66
Project Sales				10	1		
Market Share				32%	3%	0%	

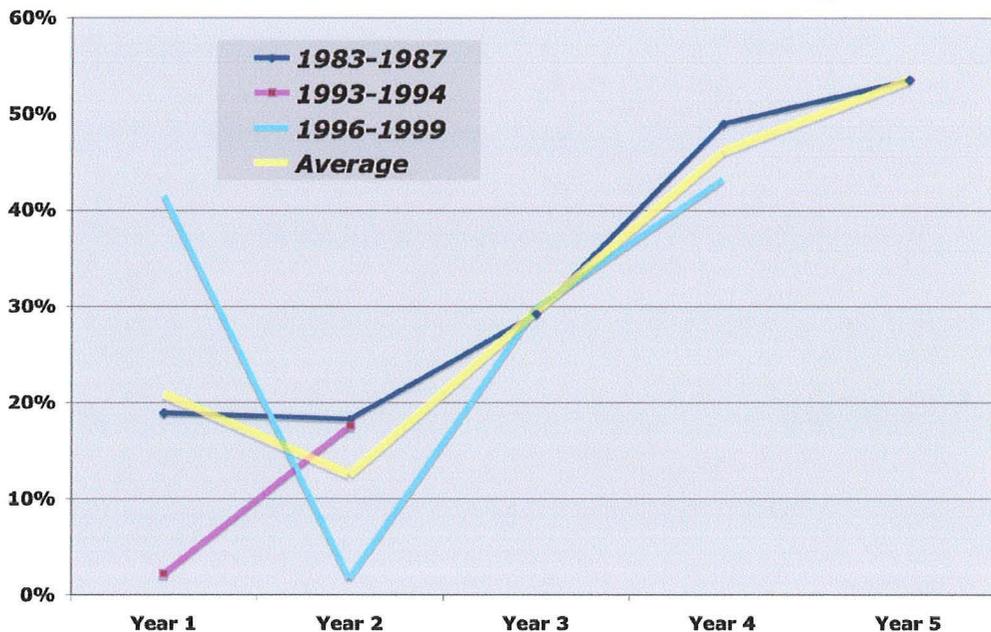
Thus, in sum, we predict these units will sell out within four years from marketing startup.

PRICE TREND ANALYSIS: The other change as the market moves into the up cycle that bears on this project are prices and values. Using the same methodology as above, we derived the table below showing the annual appreciation for periods that are two years or longer (2+ years of positive growth).

PER ANNUM GROWTH IN MARKET PRICE APPRECIATION, CYCLE UPSWING

Period	Year 1	Year 2	Year 3	Year 4	Year 5
1983-1984	6%	5%			
1988-1992	46%	23%	25%	0%	5%
1996-1997	5%	9%			
1999-2000	5%	8%			
2002-2005	26%	16%	2%		
1983-1984	6%	5%			
Average	17.7%	11.9%	13.6%	0.2%	5.0%

SFD Sales Growth Per Annum, From Trough



Given that, the table below describes the position the project is in relative to current prices and current values.

PROJECT OFFERING VS. TARGET MARKET, AVERAGE PRICES & VALUES

Models by Beds	Ave Price	Ave. \$/sf	2011 YTD Price	2011 YTD Price/sf	Project/Market Price	Project/Market Price/sf
3 Beds, Cluster	\$521,600	\$400	\$536,000	\$325	97%	123%
4 Beds, Cluster	\$617,250	\$375	\$647,324	\$333	95%	113%
3 Beds, Alley	\$676,800	\$400	\$644,700	\$391	105%	102%
4 Beds, Alley	\$822,750	\$375	\$847,538	\$314	97%	119%

As seen, the model prices and values are pretty close to those currently seen in the market, particularly in terms of price point (Note: Price point is much more important than \$/sf value in the eyes of buyers).

For the three-bedroom unit, Cluster Product, it is at a slight discount (3 %) to market, but at a premium one (23%) relative to values per square foot. The Cluster four bedroom is the same, at a discount and premium (5% and 13% respectively). For the Alley product's three-bedroom unit, both are at premiums (5% and 2%). The Alley product's four-bedroom unit is at a discount to price and a premium to value (3% and 19% respectively).

The proximity between the prices and values of the market and the project notwithstanding, we took the average appreciation trend for the up cycle and applied it to each of the model offerings in the table below. Again, we did this in order to visualize the progression of the market prices and values overtime relative to the project. NOTE: we kept the pricing for 2012 the same as 2011, on the expectation that prices will not rise over the next two years, but will the year after, 2014.

PROJECT OFFERING VS. TARGET MARKET, PROJECTED PRICES & VALUES

Beds	Model Price	2011-13 Price	2014 Price	2015 Price	Model \$/sf	2011-13 \$/sf	2014 \$/sf	2015 \$/sf
3B Clustr	\$521,600	\$536,000	\$630,872	\$705,946	\$400	\$325	\$383	\$409
4B Clustr	\$617,250	\$647,324	\$761,900	\$852,566	\$375	\$333	\$392	\$419
3B Alley	\$676,800	\$644,700	\$758,812	\$849,111	\$400	\$391	\$460	\$492
4B Alley	\$822,750	\$847,538	\$997,552	\$1,116,261	\$375	\$314	\$370	\$395

The market single-family average prices, when projected outwards 2-4 years, quickly pass those currently envisioned by the project. On a price per square foot basis, this also happens, albeit more slowly. This progression of market value shows that there is a good chance that potential buyers will judge these units as having good value, when the units go on market.

Next, we turn from looking at the specific data on sales in the market to looking at the data for general housing demand.

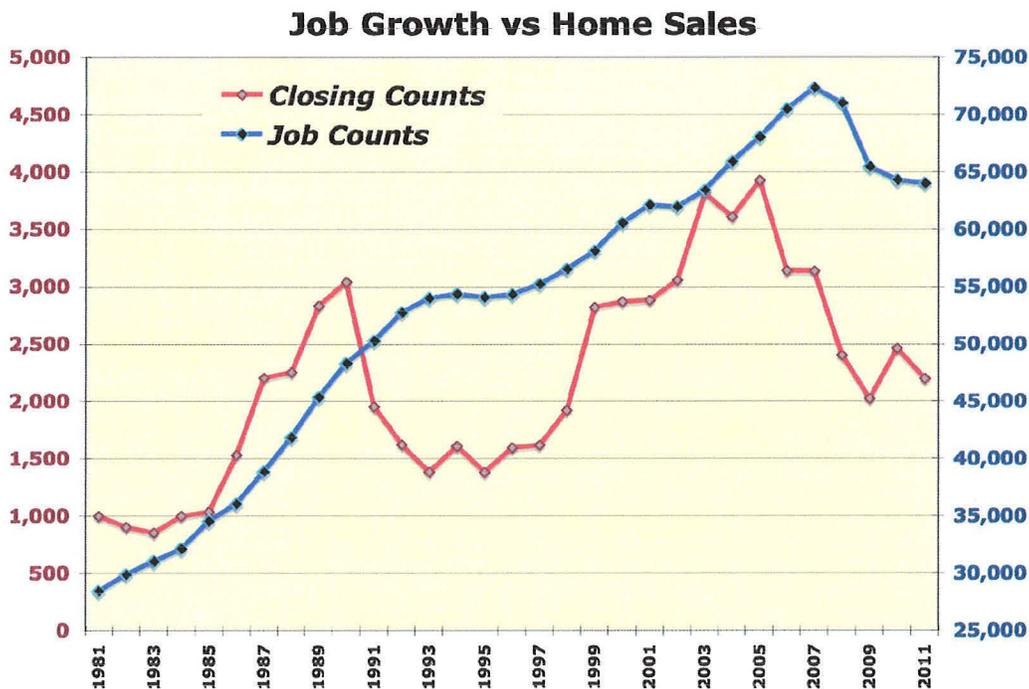
XI. MAUI HOUSING DEMAND

In this section, we look at the data we have concerning housing demand.

The prime determinant of housing demand is household formation, itself is a function of the economy and demographic and social trends. As noted above, in the short term, residential housing demand is driven by economics – specifically of job creation/income growth, as well as interest rate trends. In the long term, housing demand is driven by population growth, demographic changes and lifestyle attitudes (indeed, faster population (growth means higher land and housing values).

JOB CREATION BASED GROWTH:

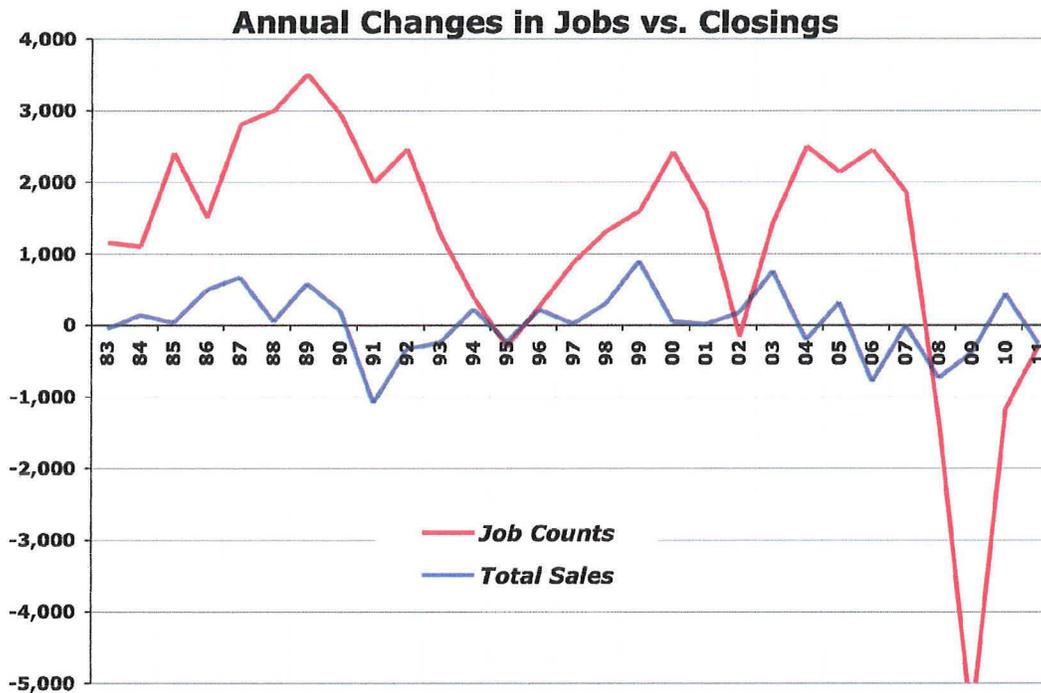
OVERVIEW: Second to none, housing demand is driven by the creation of jobs – jobs provide the incomes to buy homes, and they drive immigration, which is a prime source of housing demand (sometimes linked to population growth). This linkage is best illustrated in the TOTAL SALES & JOB GROWTH Chart.



What is notable is how job creation was quite steady up until 2009, when the financial conflagration globally caught up with Maui. Since then, the market has stabilized somewhat, with few job losses in the ensuing two years.

What's also notable is that, in the short run, housing sales are a leading indicator for job creation: as can be seen in the early 1980s and the late 1990s. Last year, it appeared that similar conditions were unfolding, but this year, YTD through May, it appears housing sales will fall back down (this postponing a job recovery).

This can be seen also in the JOBS AND HOUSING DEMAND Chart, which describes only the annual changes in the two markets – therefore, it is more volatile in illustrating the relationship.



In the longer run, there is a lagging relationship between jobs and residential sales, in the sense that new jobs create housing demand (new job holders are now able to afford to own a home).

JOB GROWTH TO HOUSING DEMAND: In the tables below, we describe DBEDT’s predictions for wage and salary job creation on Maui for the next 10-15 years, and derive from that a general expectation for housing demand over the next five to ten years (in other words, we will translate it into housing demand). Note that the model* used here ran from 2007, but was updated in 2009

DBEDT’S 2035 JOB FORECAST FOR MAUI COUNTY, WAGE & SALARY JOBS

	2007	2015	2020	2025
Total civilian wage and salary jobs	76,730	81,810	86,670	91,390
5 Year Growth		5,080	4,860	4,720
Annual Job Growth		635	972	944
Annual Housing Demand (2 Jobs: 1 Home)		318	486	472

*(http://hawaii.gov/dbedt/info/economic/data_reports/2035LongRangeSeries/LRFreport_2035series_revised_Aug09.pdf)

As seen, we use the annual changes in job counts to derive housing demand on the conservative premise that it will take 2 new jobs to generate demand for one new house (with the lower the salaries, the smaller or cheaper the house needs to be).

However, the job counts used in the charts and tables above are just the number of wage and salary jobholders, and do not encompass the self-employed or home worker. According to

DBEDT's projections, self-employed workers consist of about 20% of the total work force, but are growing to 25% in the next ten to twenty years.

The following transforms those projections into annual job growth projections, and then summarizes it in a complete DBEDT projection table.

DBEDT'S 2035 JOB FORECAST FOR MAUI COUNTY, SELF-EMPLOYED

	2007	2015	2020	2025
Total civilian wage and salary jobs	26,254	27,800	29,450	31,030
5 Year Growth		1,546	1,650	1,580
Annual Job Growth		193	330	316
Annual Housing Demand (2 Jobs: 1 Home)		97	165	158

Finally, the table below summarizes it in a complete DBEDT projection table.

DBEDT'S 2035 JOB FORECAST FOR MAUI COUNTY, TOTALED

	2007 to 2015	2015 to 2020	2020 to 2025
Annual Housing Demand (2 Jobs: 1 Home)	414	651	630

To be sure, most long-term projections are subject to error, but this one does come close to what the average number of permits pulled has been on Maui (just not in the last 4 years, 350 permits, p.a.)(but more than the past 10 years, 840 permits).

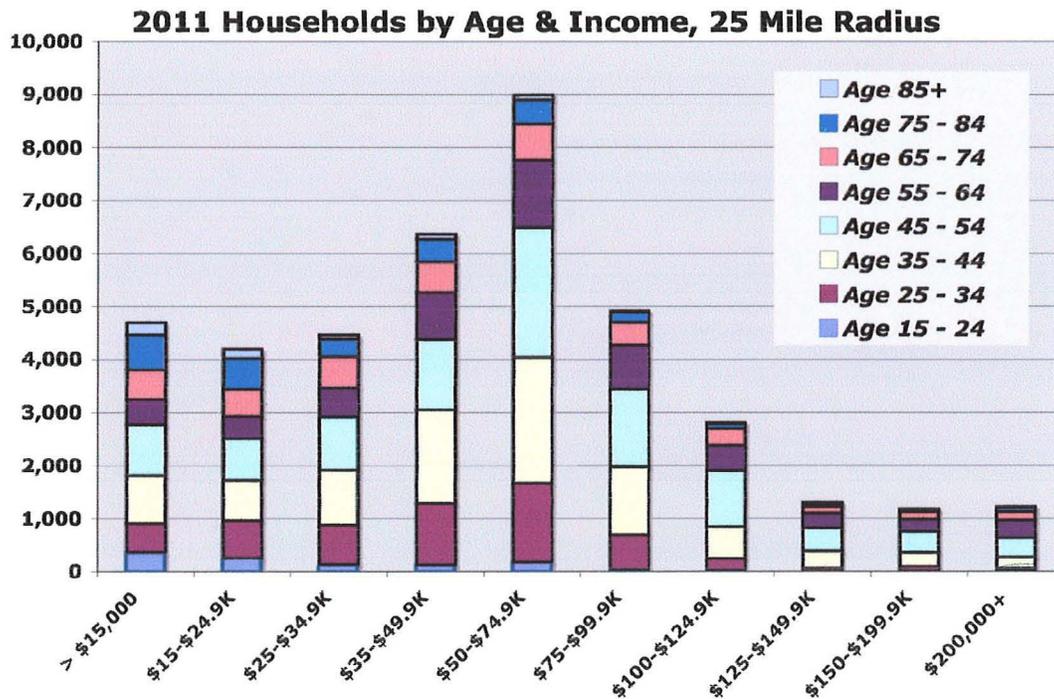
One final note about self-employed households: these families who have a home office are generally inclined to pay a premium for more interior house space (thus, this might be an opportunity for optioning a home office). They also are generally more inclined to being located near a commercial or business center (to secure a short commute and avoid parking fees). This makes them an ideal market for this particular site.

POPULATION BASED GROWTH:

This section looks at the level and the sources of long-term housing demand, given expected population changes, and analyzes how this would fit with the proposed projects' development plan. We employed the data of CLARITAS, a demographic forecasting firm that used the 2000 census data to project the number of households by income within the market area of Maui in 2011 and in 2016. The potential demand for this project is shown below, starting with 2011:

ANNUAL HOUSEHOLD INCOME SEGMENTS, FOR 2011

	Age 25 - 34	Age 35 - 44	Age 45 - 54	Age 55 - 59	Age 60 - 64	Age 65 - 74	Age 75 - 84	Total
\$25-\$34K	744	1,038	1,004	553	580	744	1,038	1,004
\$34-\$49K	1,152	1,763	1,336	885	572	1,152	1,763	1,336
\$50-\$74K	1,484	2,377	2,446	1,268	685	1,484	2,377	2,446
\$75-\$99K	658	1,289	1,465	818	439	658	1,289	1,465
\$100-\$124K	221	600	1,062	478	312	221	600	1,062
\$125-\$149K	63	321	431	283	122	63	321	431
\$150-\$199K	96	261	401	226	142	96	261	401
\$200+	55	218	364	326	161	55	218	364
Total	5,709	9,543	10,255	5,732	4,087	5,709	9,543	10,255



As seen, the largest demographic segments are highlighted in blue in the table. The chart above represents this graphically.

With this income forecast, we used a standard mortgage formula to derive the 'Purchasing Power' per income bracket quantification (using a 10% down payment, a 30 year fixed rate mortgage, 5.0% interest, 33% of household income goes towards housing costs, etc.).

2011 HOUSEHOLD PURCHASING POWER

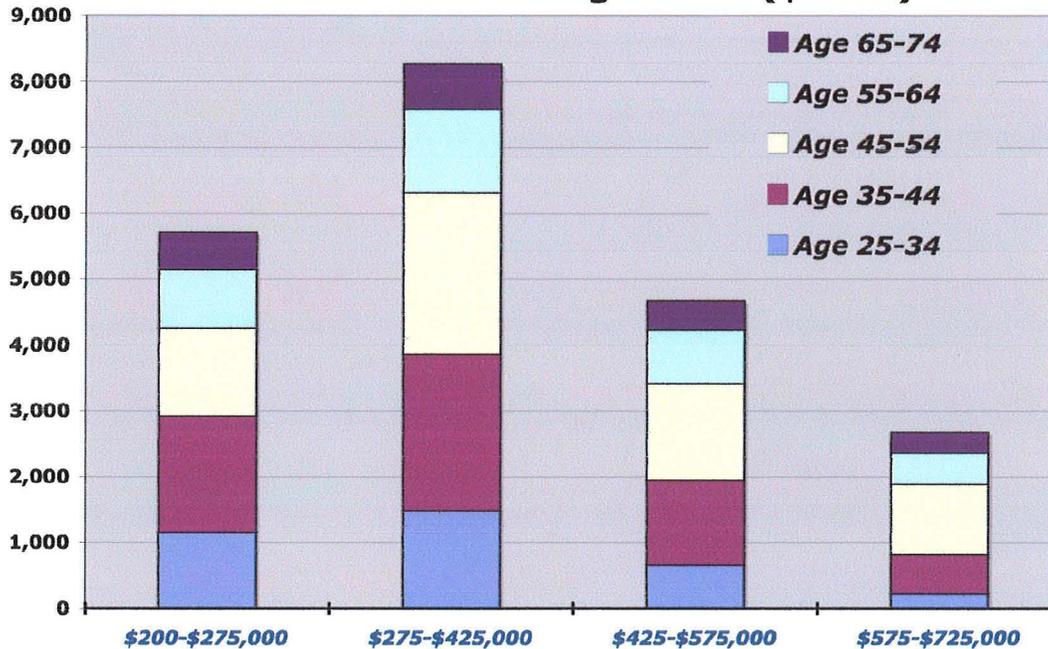
Income Range	Ave. Monthly Housing Expense	Down Payment	Housing Price
\$25,000-\$34,999	\$694.44	10.0%	\$150,000-\$200,000
\$35,000-\$49,999	\$972.22	10.0%	\$200,000-\$275,000
\$50,000-\$74,999	\$1,388.89	10.0%	\$275,000-\$425,000
\$75,000-\$99,999	\$2,083.33	10.0%	\$425,000-\$575,000
\$100,000-\$124,999	\$2,777.78	10.0%	\$575,000-\$725,000
\$125,000-\$149,999	\$3,472.22	10.0%	\$725,000-\$850,000

With these housing affordability brackets, we can estimate the number of potential buyers for the project using the Claritas Age/Income data shown earlier. Note: We cut these estimates and projections of household population growth down in order to get a realistic number of potential. As we do not believe that households whose heads are older than 74 years would undertake buying a home, we will ignore that population.

2011 ESTIMATE HOUSEHOLD BY AGE/INCOME

Incomes	Housing Prices	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65-74	Potential Households
\$35K-\$49.9K	\$200-\$275,000	1,152	1,763	1,336	885	572	5,708
\$50K-\$74.9K	\$275-\$425,000	1,484	2,377	2,446	1,268	685	8,260
\$75K-\$99.9K	\$425-\$575,000	658	1,289	1,465	818	439	4,669
\$100-\$124.9K	\$575-\$725,000	221	600	1,062	478	312	2,673
Totals		3,515	6,029	6,309	3,449	2,008	21,310

2011 Home Purchasing Power (\$000s)



This shows there are 21,310 potential households that could make a decision to buy one of the units in the subject project.

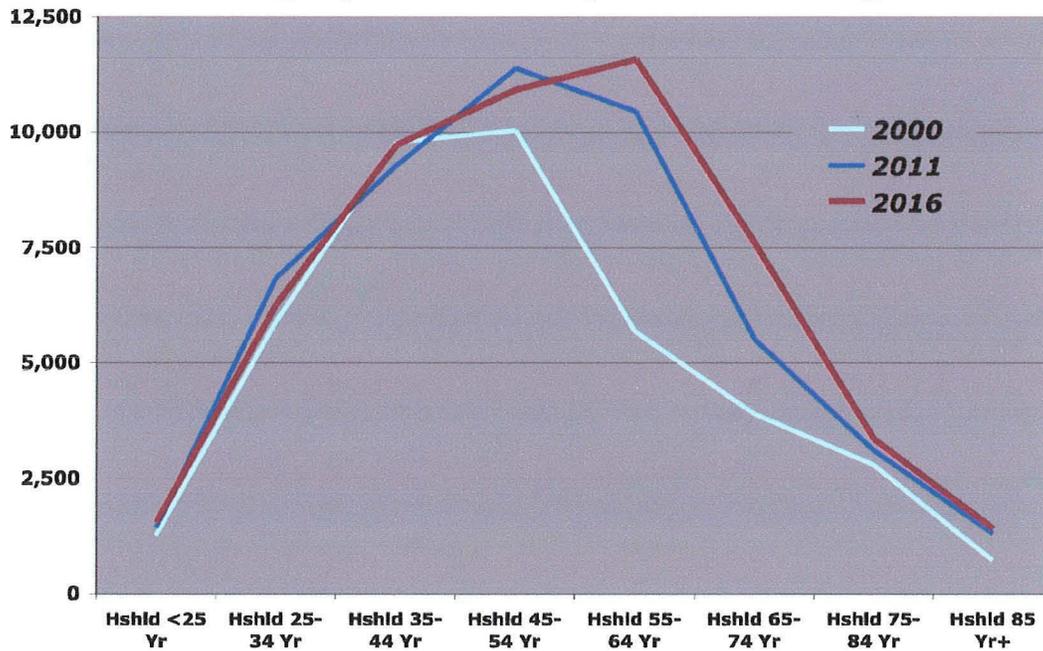
To make this figure more relevant, we compared the unit counts of the project in these housing price ranges to see what the share of market would be. As seen in the table below, overall it is less than one percent.

2011 ESTIMATE HOUSEHOLD DEMAND BY AGE/INCOME, VS PROJECT SUPPLY

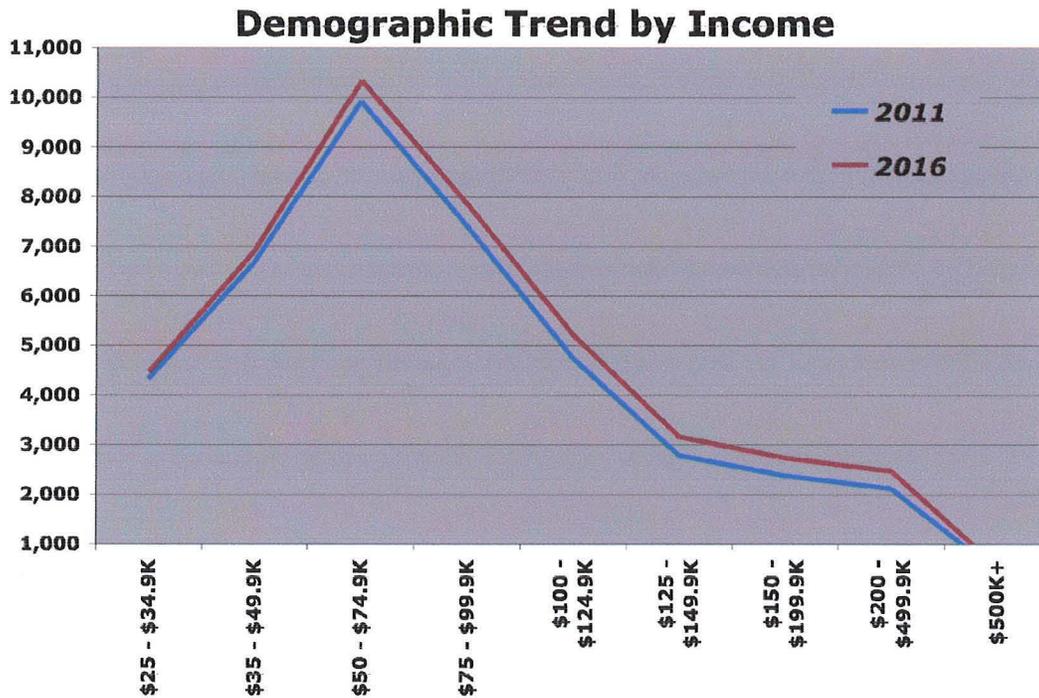
Incomes	Housing Prices	Potential Households	Project Unit Counts	Share of Potential Market
\$35K-\$49.9K	\$200-\$275,000	5,708	34	0.60%
\$50K-\$74.9K	\$275-\$425,000	8,260	68	0.82%
\$75K-\$99.9K	\$425-\$575,000	4,669	70	1.50%
\$100-\$124.9K	\$575-\$725,000	2,673	31	1.16%
Totals		21,310	203	0.95%

Then, to look into the future, we took the CLARITAS 2016 projection and summarized them in the tables and charts below. In sum, the population is getting older:

Demographic Trend by Household Age



And it is becoming more affluent.

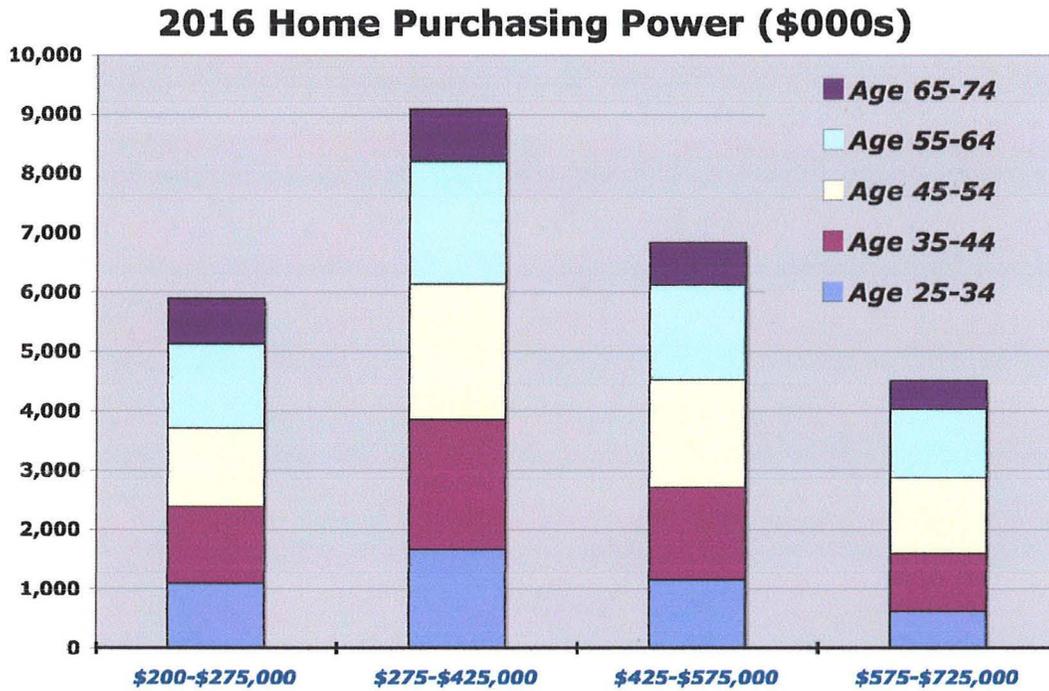


Using the same income group brackets, the comparable 2016 data looks like this:

2016 ESTIMATE HOUSEHOLD BY AGE/INCOME

Incomes	Housing Prices	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65-74	Potential Households
\$35K-\$49.9K	\$200-\$275,000	1,097	1,287	1,328	1,418	767	5,897
\$50K-\$74.9K	\$275-\$425,000	1,664	2,188	2,287	2,073	874	9,086
\$75K-\$99.9K	\$425-\$575,000	1,150	1,559	1,816	1,600	713	6,838
\$100-\$124.9K	\$575-\$725,000	623	975	1,276	1,158	472	4,504
Totals		4,534	6,009	6,707	6,249	2,826	26,325

This shows there should be 26,325 potential households buying one of the units in the subject project. Again, we compared the unit counts of the project in these housing price ranges to see what the share of market would be. And again, overall it is less than one percent.



2016 ESTIMATE HOUSEHOLD BY AGE/INCOME, VS PROJECT SUPPLY

Incomes	Housing Prices	Potential Households	Project Unit Counts	Share of Potential Market
\$35K-\$49.9K	\$200-\$275,000	5,897	34	0.58%
\$50K-\$74.9K	\$275-\$425,000	9,086	68	0.75%
\$75K-\$99.9K	\$425-\$575,000	6,838	70	1.02%
\$100-\$124.9K	\$575-\$725,000	4,504	31	0.69%
Totals		26,325	203	0.77%

BUYER PROFILES

Given the unique selling points of the subject property, buyers would have purchasing power commensurate with a total outlay for housing from a minimum of \$260,000 to a maximum of over \$700,00. The means by which they could achieve this is either due to sufficiently high income, home equity and/or fungible assets. Given they have financial capability or capacity, the decision to purchase then becomes a question of motivation. The site offers the following benefits, listed in order of uniqueness:

1. Location in Lahaina, one of the most storied towns in Hawaiian history and, for that reason, arguably the largest purely commercial and recreational area on the island, the Waikiki of Maui. The site abuts Front Street, effectively the Rodeo Drive of Maui. As such, this is both a work (like living next to your job) and a play location.
2. Location next to the ocean. A good beach and a great view of the sunset is a 3-minute walk across the road, with great public access.
3. Location next to a major mall, with the largest drug store and supermarket in West Maui, plus food court, retail outlets.
4. Good visual character: open views of the mountains, no high rises in vicinity, wide open space on the northern boundary, thanks to stream channel slash drainage culvert.
5. Good climate: dry, yet cooler than the rest of Lahaina (more wind)
6. Great commute to major employment area on West Maui, no traffic in any direction.

Buyer Sources

Here, we looked at the where the buyers of developer units on Maui since 2006 for condos and homes priced from \$200,000-\$800,000 came from. As seen below, our demographic research shows that they reside primarily in the US, and then primarily in Hawaii and primarily on Maui. The following tables illustrate this:

BUYER SOURCES, CONDOS ONLY

Country	Sales	Ave \$
USA	574	\$511,284
CANADA	29	\$577,365
JAPAN	1	\$660,000
RUSSIA	1	\$650,000
UNITED KINGDOM	1	\$795,000
	606	\$515,389

BUYER SOURCES, HOMES ONLY

Country	Sales	Ave \$
USA	1,100	\$480,406
CANADA	4	\$431,500
SWITZERLAND	1	\$699,000
Homes Total	1,105	\$480,426

Note: the average purchase price was higher for condos than for homes because there was significantly higher priced condos available in this market than homes.

The tables below show the US buyer in states that have over 2 buyers.

US BUYER SOURCES BY STATE, CONDOS ONLY

State	Sales	Ave \$
HI	310	\$462,749
CA	136	\$570,182
WA	26	\$603,146
OR	13	\$502,456
CO	11	\$555,827
NV	9	\$501,589
AZ	7	\$506,207
IL	5	\$640,518
NY	5	\$586,865
TX	5	\$544,285
FL	4	\$598,950
MI	4	\$640,406
OH	3	\$501,338
VA	3	\$499,130
WV	3	\$685,900
Other East	9	\$534,109
Other Mid West	11	\$626,093
	564	\$511,284

US BUYER SOURCES BY STATE, HOMES ONLY

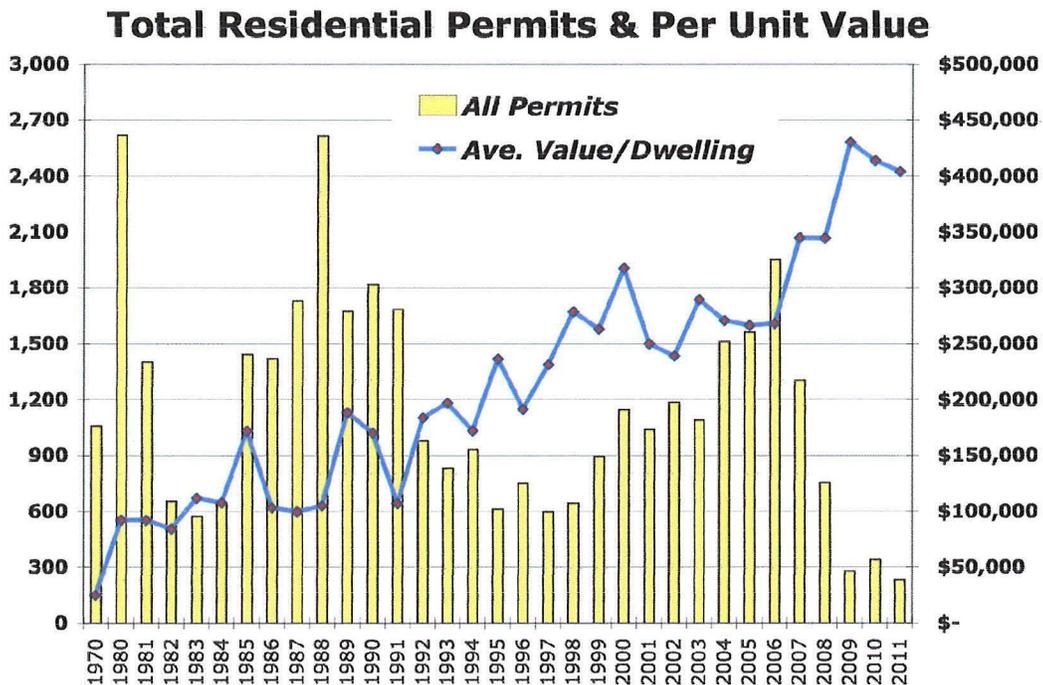
State	Sales	Ave \$
HI	1,013	\$471,783
CA	47	\$582,861
VA	5	\$582,441
AZ	4	\$543,316
WA	4	\$501,595
AK	3	\$605,000
NY	3	\$596,667
OR	3	\$377,242
TX	3	\$646,221
KS	2	\$584,500
NV	2	\$638,250
Other East	3	\$619,128
Other Mid West	6	\$658,367
	1,100	\$480,406

XII. MAUI HOUSING SUPPLY

PERMITS

The easiest way to look ahead to where the housing market is going in the short-term is by examining the activity in permits (where developers apply for permission, and pay their fees, for building residential units. A high level of activity indicates more supply, which means that more demand will be met, and the potential for prices adjusting downwards. Obviously, a low level of permits indicates less supply of housing (and potentially higher prices). In addition, low levels of per unit value indicate that the units being built are for the lower end of the market (and vice versa). And, this has not been the case overtime on Maui, indicating that most of the new housing has been targeted on the upper income end of the housing market.

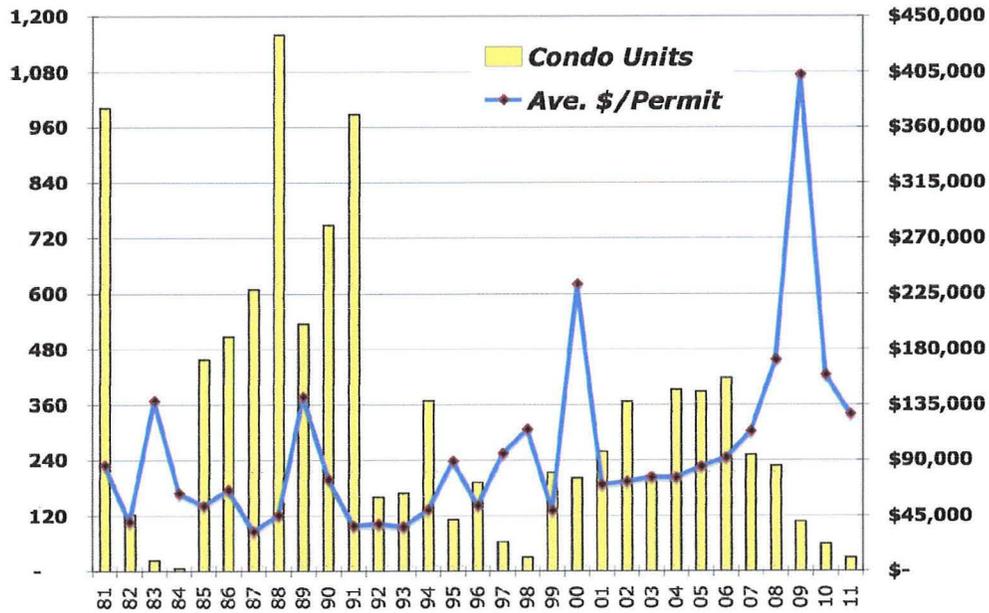
A quick overview of the TOTAL RESIDENTIAL PERMITS AND VALUES Chart shows that the number of permitted units has sunk so low that it is at an all-time historical low. On the other hand, the value per permitted unit is the third highest value on record.



Next, we separated the permits into single family and multifamily segments.

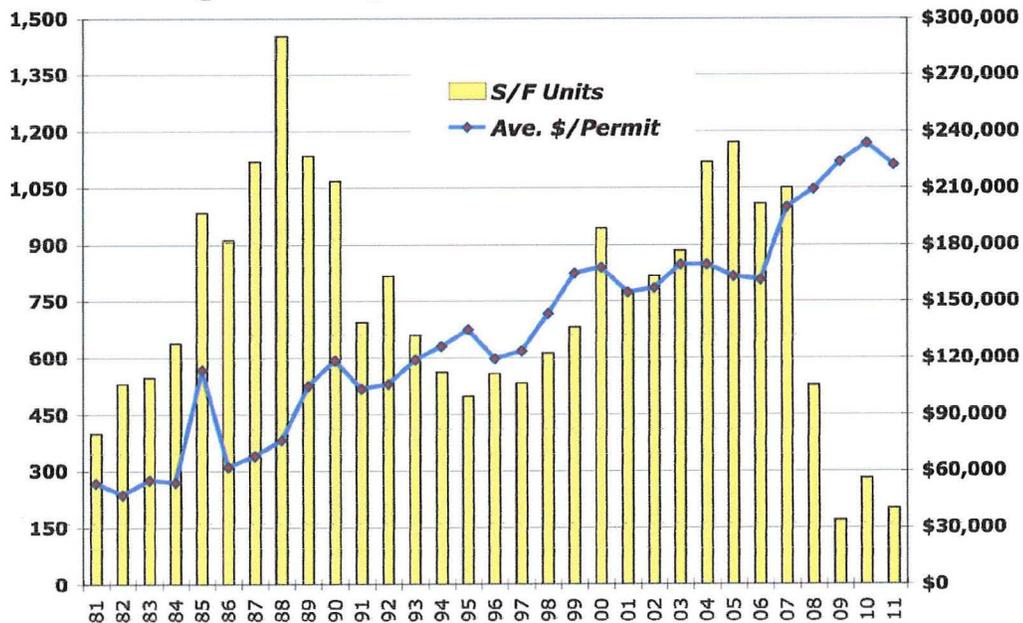
As seen in the Condominium Chart, low supply occurs at every economic downturn, with the current one being no different. Once the economy recovers, there is a boom within 3-4 years. That said, the level of permits pulled this decade is woefully less than prior ones, indicating a potential shortfall in housing for the lower and med-level income households. This is substantiated by the average dollar value per condo – it spikes upwards on a regular basis, usually at the peak of economic growth, when there is optimism in the industry about the continuation of housing demand.

Condominium Permits & Per Unit Values



Turning to the single-family permit arena, we see it is less volatile, at least until 2009, when it dropped dramatically. Historically, single-family homes have been the housing of choice for Maui, for primary residential purposes. However, in light of the coming years of financial constraints and the growing number of first-time buyers (many of whom have put their plans to purchase a home on-hold while the recovery takes hold), we believe demand will shift towards attached housing.

Single Family Permits & Per Unit Value



CURRENT PROJECTS

Here is a list of projects that are currently on the market in Maui.

MAUI CURRENTLY MARKETED PROJECTS

District	Project	Type(s)	Market	Units	Unsold
West Maui	Breakers	MF	Visitor	114	34
West Maui	Opukea	MF	Mid-End	114	52
West Maui	Ho'onanea	MF	Low/Mid-End	100	65
Upcountry	Kulamalu Cottages	Duplexes	Upper-End	40	3
South	Kamalii Alayna	Homes	Low/Mid-End	92	24
South	Moana Estates	Homes	High-End	90	11
South	Hokulani Golf Villas	MF	High-End	152	121
South	Ke Alii Ocean Villas	MF	High-End	144	59
South	Hoolei	MF	High-End	120	21
South	Kai Ani Village	MF	Mid-End	99	99
South	Cove Beach Villas	MF	High-End	32	32
South	Papali	MF	High-End	24	8
South	Nuu Aina Estates	MF & SF	High-End	68	68
Central	Milo Court	Duplexes	Low/Mid-End	94	58
Central	Koa at Kehalani	Homes	Upper-End	72	2
Central	Villas at Kehalani	MF	Upper-End	103	32
				1,458	689

For condos on Maui, there are some 1,100 units in projects being marketed, 328 of which are in West Maui, and 147 of which are condos that are unsold. There are some 843 homes on Maui being marketed, 465 are unsold and none of which are in West Maui.

IMMEDIATE COMPETITION, CONDOMINIUMS

Overall, we looked at all the multifamily projects on the island with closings between \$200,000 and \$400,000 since 2010 (including 1Q 2011). The list is as follows:

MAUI NEW CONDOMINIUM PROJECT CLOSINGS

Project	Closed	Ave \$	Closed/Mo.
Hoolea Terrace	12	\$244,000	0.8
Breakers	18	\$267,194	1.2
Kai Ani Village	6	\$354,097	0.7
Milo Court at Kehalani	30	\$354,454	2.0
Hoonanea At Lahaina	10	\$370,445	0.7
Cottages at Kulamalu	10	\$377,650	0.7
Opukea at Lahaina	11	\$384,470	0.7

Of the names of the projects on the list, the only immediate and relevant condominium competition on West Maui is from D R Horton in Lahaina: they have two projects side-by-side, Opukea and Hoonanea. The other project, Breakers, is not in the same price range (starting prices for a studio unit at \$300,000 in a condominium conversion targeting vacation rental

investors located across street from the beach near Kapalua). The following table describes all the sales by Horton in Lahaina (note: 2011 is extrapolated for full year, using data through 1 June, 2011).

DR HORTON WEST MAUI NEW CONDOMINIUM CLOSINGS

	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
2009	37	\$427,957	1,310	98	98.0%	\$327
2010	28	\$403,537	1,324	125	97.8%	\$305
2011	18	\$366,927	1,236	101	99.4%	\$297
% ▲	Sold	Price	Intrr sf	DOM	Sale\$/List\$	\$/sf
2010	-24%	-6%	1%	26%	0%	-7%
2011	-36%	-9%	-7%	-19%	2%	-3%
	MRI	Sale\$/List\$	Intrr sf	DOM	\$/sf Value	
2010	8	88%		34%	86%	
2011	7	101%		63%	97%	
	Listings	Price	Intrr sf	DOM		\$/sf
2009	7	\$461,099	1,299	365		\$355
2010	19	\$398,465	1,301	112		\$306
2011	10	\$364,038	1,192	160		\$305
% ▲	Listings	Price	Intrr sf	DOM		\$/sf
2010	171%	-14%	0%	-69%		-14%
2011	-47%	-9%	-8%	43%		0%

The first of the two projects for DR Horton was Opukea, which had a mix of two and three bedrooms in four story buildings with 16 units in each. There is central air conditioning, covered lanais, triple paned windows and double paned sliding glass doors. The project was designed with some higher end features, including a pool and a rec center, in the hopes that it would attract both primary and secondary homebuyers. In the early days, there was good interest from offshore buyers, but that ended with the collapse of the market brought on by Lehman Brothers bankruptcy. The sales history is as follows:

OPUKEA'S TWO BEDROOM SALES

Year	Sold	Ave Price	Interior sf	Price/sf
2009	21	\$399,850	1,264	\$316
2010	7	\$387,309	1,262	\$307

OPUKEA'S THREE BEDROOM SALES

Year	Sold	Ave Price	Interior sf	Price/sf
2009	16	\$464,847	1,370	\$339
2010	14	\$429,416	1,436	\$299
2011	1	\$378,000	1,373	\$275

Currently, DR Horton has stopped selling units at this project due to lack of buyer interest, and do not know when they will continue with the remaining 3 buildings.

At Ho'onanea, they have six customizable condominium town home model styles offering 2 & 3 bedrooms with multi and single floor living. Their sales are as follows:

HOONANEA'S TWO BEDROOM SALES

Year	Sold	Ave Price	Interior sf	Price/sf
2010	2	\$347,235	1,090	\$319
2011	5	\$362,108	1,193	\$304

HOONANEA'S THREE BEDROOM SALES

Year	Sold	Ave Price	Interior sf	Price/sf
2010	5	\$376,315	1,191	\$316
2011	3	\$371,267	1,264	\$294

These units were targeted on the resort worker market, but they started sales at a time when the hotel business was substantially down. Another factor contributing to the slow sales is the difficulty for the buyers to obtain financing, even at low rates.

In both cases, there is a large difference in price between the subject property and these to projects ongoing. And there is a large qualitative difference, inasmuch as the subject property offers buyers the following unique benefits:

- Less construction work and therefore disruption, both before the construction of the bypass road and afterward;
- More convenient to beach, workplaces and shopping;
- Better neighbors (established neighborhoods) and more open space.
- Better neighborhood layout (it has a central park) and
- Arguably better unit architecture and design (the Horton town homes are on 3 and 4 levels, and many units suffer from being chopped up and narrow)

Outside of the area, there are a number of projects in Central Maui that may be comparable, but will not compete directly with the proposed development. The three that stand out are described below (Kulamalu is sold out):

HOOLEA TERRACE, TWO & THREE BEDROOM SALES

Year	Sold	Ave Price	Interior sf	Price/sf
2010	4	\$257,000	854	\$301
2011	8	\$237,500	803	\$296
Total	12	\$244,000	820	\$298

MILO COURT, THREE BEDROOM SALES

Year	Sold	Ave Price	Interior sf	Price/sf
2010	5	\$350,184	1,465	\$239
2011	11	\$356,395	1,446	\$246
Total	16	\$354,454	1,452	\$244

KAI ANI VILLAGE, THREE BEDROOM SALES

Year	Sold	Ave Price	Interior sf	Price/sf
2010	1	\$599,900	1,845	\$325
2011	5	\$384,940	1,340	\$287
Total	6	\$420,767	1,424	\$295

In terms of affordable housing competition, there are several projects in West Maui that are similar to the proposed development, some of which are designed and ready to go. However, in

interviews, we get a sense that some project developer do not feel the project will be profitable in the current conditions. It is our sense that they need to have some success in selling market-rate units before they will be ready to proceed with their affordable units. In other interviews, we get a sense that they are waiting to get financing for their infrastructure and construction.

In all of these interviews, we did not get the sense that any of these projects would be coming to market in the next 2-3 years. As such, this proposed development will be at an advantage – by coming to market first, they will enjoy little or no competition, and thusly be able to grow their momentum. Particular to this proposed development, there is a strong market component existing next to the affordable component, and that is a condition that gives additional impetus for affordable buyers to want to buy in this development.

IMMEDIATE COMPETITION, SINGLE FAMILY HOMES

There is no immediate competition on West Maui in the targeted price range from \$400,000 to \$800,000, save for some spec homes in Napili. In central and south Maui, there are a few projects, but none that pose an impediment to this project in the future (most are almost sold out)(further, there is some speculation that two of the island's production builders may leave the market, altogether, Betsill and Towne).

In sum, there are a few new homes projects in the market, but they either are not direct competition, or they have sold out.

Looking ahead, the weakened state of the homebuilding industry, coupled with the high cost of acquiring land and building homes in Maui, make it very unlikely that there will be projects coming into the market after this one that will overlap.

In the first place, head to head competition in homebuilding in Hawaii happens rarely when the overall market is weak or inactive.

In the second place, the barriers to entry on Maui are extremely formidable – the objective factor include a very high cost of doing business (labor and materials), a scarcity of water hookups, as well as exactions such as affordable requirement; the subjective factors include political opposition and bureaucratic inefficiencies and peculiarities that contribute in a significant fashion to the time (and money) spent on getting to market.

And thirdly, there is no landowner on island willing to assist merchant builders to serve the market – which is a business model currently being pursued in Orange County, and successfully so, by the Irvine Ranch.

CONCLUSION

There is little current competition, and it is possible that there will be less of it going forward. The builders who are on the market today say that they are struggling, and will only build when they have a signed commitment from a buyer. (and they say that buyers are having a hard time qualifying for financing).

Next, we look at the medium- term and the long-term supply of housing that could compete with this project.

WEST MAUI CURRENT AND COMMITTED DEVELOPMENTS

The following lists the current and planned project for the proposed project's market area:

WEST MAUI COMMITTED DEVELOPMENTS

	Homes	Condos	Hotel/ Timeshare
Honokowai (DHHL)	1,250		
Kapalua Mauka Residential	690		
Villages of Leali'i 1B (DHHL)	253		
Lanikeha Ka'anapali	132		
Kahoma Residential Subdivision	68		
Ka'anapali Coffee Farms	67		
Honolua Ridge	50		
Kapalua Village Residential	20		
Ka'anapali Residences	18		
Ha Hale o Wainee Phase		26	
Pailolo Place		42	
West Maui Breakers		90	
West Maui Village		158	
Kapalua Project District 1	60		1,050
Intrawest Honua Kai			730
Ka'anapali Ocean Resort Villas			516
Villas at Royal Lahaina			455
Hyatt Regency Maui Time Shares			131
Kapalua Bay Visitor Accommodation			155
Hyatt Regency Maui Time Shares			131
Totals	2,608	316	3,185

We note that many of these projects will not compete directly with the proposed development. For instance, Honokowai and The Villages of Leali'i are restricted to selling their units to only buyers of Hawaiian descent (50%+ blood quantum), which is a small portion of the overall demand (it would be larger if the qualifications were more liberal).

In addition, many of these projects plan to supply housing at prices that are out of the ranges contemplated by this project. On the single family and home site market, Ka'anapali Coffee Farms, Kapalua Mauka, Honolua Ridge, Kaanapali Residences, and Lanikeha would fall into this category. In terms of condo projects, West Maui Breakers is also priced above this development. Then, Pailolo Place is restricted from selling units to anyone who doesn't work for Maui Land & Pine.

There is an affordable single-family housing project underway in West Maui, the Kahoma Residential Subdivision on approximately 16.7 acres, located between the Kahoma Flood Control Channel to the north and the Kelawea Mauka Subdivision, a residential neighborhood, to the south. It consists of approximately 68 single-family units, with lots ranging in size from approximately 5,000 square feet to 12,000 square feet, and a neighborhood park. However, only 10 of these units will be made available to those qualifying family making 80% of Area Median Income or under, with another 25 . Further, the timing for marketing and delivery on these units will likely be sometime after the start of the proposed development, and maybe even sometime after the completion of the proposed development. This project does have to fund several million

dollars of roadway and other infrastructure, not a particularly large number, but still not insubstantial.

There is an affordable multifamily project in Kihei - Kaiwahine Village - that looks like it will proceed. This is a 120-unit condominium, comprising 32 one and three bedroom units and 88 two-bedroom units, targeting households making 80% of AMI or lower. This is being done for the affordable housing credits, so it is likely that financing will be an issue, as it is for other affordable and market housing projects. While the proposed development and this project could overlap in terms of unit types and unit prices, we believe that they will not overlap in time – that this due to the fact that the proposed development has fewer obstacles and more resources available to it.

PLANNED DEVELOPMENTS:

On-Going Master Planned Communities on Maui overall include the following list of major ones that have an impact upon primary housing market.

- Maui Lani consists of approximately 1,000 acres of land in the Central Maui plains that has approximately 950 units completed. Completed phases are the Greens, Grand Fairways North, Grand Fairways, The Island and The Bluffs. There's an upcoming Village project containing mixed use product that will allow both residential and small scale commercial uses of approximately 650 units. Some 2,000 units remain to be developed.
- Kehalani has approximately 550 acres of developable land area with numerous ongoing residential developments and approximately 1,000 units remaining within this project district.
- Kapalua Mauka wants to expand upslope above the existing resort destination. They hope to build 690 units on over 920 acres, built around the Village Course, one of its three championship courses there.

Potential Master Planned Communities are projects in their preliminary stages of development.

- Pulelehua of Maul Land and Pineapple Company sits between the main highway and the Kapalua Airport on 310 acres of land. This plan has single family and multi-family residential units, totaling 882 residential units with approximately 50% being affordable targeting between 80-140 percent of the county's median income level. They have obtained their approvals through Ordinance No. 3887 effective Nov. 18, 2011
- Wallea 670, or Honua'ula, received Maul Planning Commission approval to rezone the land from on agriculture to residential and commercial districts. The owners hope to be allowed to build some 1,400 single-family homes and multi-family units, 2.1 units per acre. There will be only one golf course and approximately 80,000 square feet of retail space. The Council and Mayor approved their zoning through adoption of an Ordinance and not by the Maui Planning Commission. They agreed that their 250 affordable units would be located offsite, at Kaonoulu.
- Kaanapali 2020 sits on some 4,300 acres in Kaanapali, and is planning for a mix of cluster housing, single-family residential, multifamily, and commercial, schools, churches, medical, a cultural center, golf course and transportation center. Developers have hoped to build some 2,800 housing units in the next 20 to 30 years.
- Waine'e abuts the eastern boundary of the Lahaina Aquatic Center & Recreation Center, with approximately 240 acres of land owned by the Kaanapali Development Corporation.

They hope to build approximately 1,100 housing units with approximately half being affordable

- Maalaea Mauka may build some 1,100 housing units mauka of the boat harbor. Potentially, it will have different products including affordable, market priced and luxury units.
- Villages of Leialii project is on leasehold land, and therefore is not considered to be comparable.
- Waiehu Mauka Affordable Housing: 100 multi-family units housed in 20 buildings and six (6) single-family residential lots on an 8- acre parcel. The multi-family units will target households earning up to 120 percent of the area median income category.

The large-scale developments that potentially could compete with this one, based on location of West Maui, would be as follows:

- Maui Land & Pine's Pulelehua and West Maui Village Affordable Condos, and
- Kaanapali Development's Wainee, Pu'ukoli'i Village Mauka and Kaanapali 2020.

While these projects have a large number of affordable units, they also have a large number of market units as well. As such, there is a large up-front investment required before these units can come to market. In many cases, developments with large up-front costs try to build and sell their market units before their affordable units – because they need to pay down their infrastructure loan and maintain a strong capital position

In addition, it is our feeling that the developers of the developments mentioned above are not in a position to self-finance those necessary infrastructure and other improvements required before going to market. And it is our feeling that the capital markets are currently unsettled to such a degree that it is difficult to obtain finance either at the retail (close out) or the whole sale (investor) levels – at least until the market turns upward in a visible degree.

Given that the proposed development does not have the same degree of up-front infrastructure costs (and will thus have an easier path in coming to market now), we feel it is unlikely that there will be any overlap or competitive interference with the above-mentioned projects.

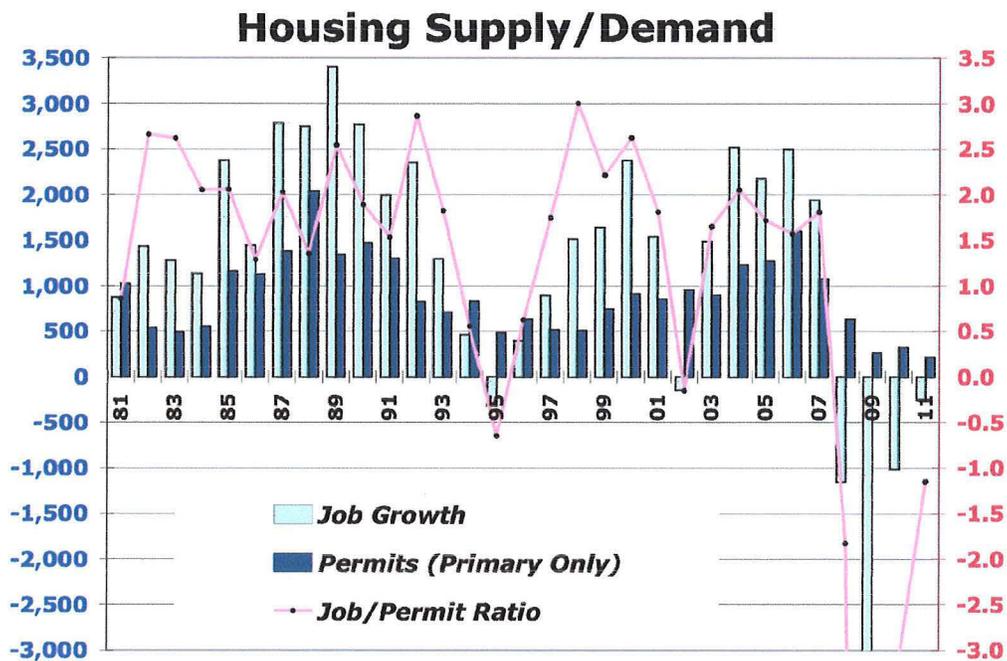
XIII. HOUSING SUPPLY & HOUSING DEMAND PROJECTIONS

Here, we look at the balance between supply and demand, using both short-term and long-term indicators.

SHORT RUN: In the short run, one of the most used indicator of the balance between housing demand and supply (other than the MLS's count of listings and sales, as seen earlier) is the Jobs/Permits Ratio. Developers use it to check if conditions are supportive of home building.

This indicator takes the number of jobs and compares them to the number of permits in order to see whether there has been enough jobs created to support the number of permits taken out, and vice versa. In other words, it helps tell developers when market conditions are good for them, i.e., when demand is high and supply is low. The benchmark to watch is the 1.5 to 2.0 ratio, which indicates that there are two jobs created for every permit pulled. Anything much below that (i.e., 1.2) means that there are beginning to be too many houses being built for the number of people with jobs. Conversely, anything much above that means that there is a shortage of housing being produced for the amount of jobs created.

Note: In areas where the cost of living is low, as in Texas, it doesn't take much job creation to fuel housing demand. The ratio there is roughly 1.5 to 1: the creation of one and a half new jobs translates to demand for one new home. In areas where the cost of living is high, such as California and Maui, there has to be a higher creation of jobs in order to engender enough demand for a new home. Thus, this ratio is between 1.5 to 2 jobs (and is reflective of the fact that a two income earner household is commonplace in the state).



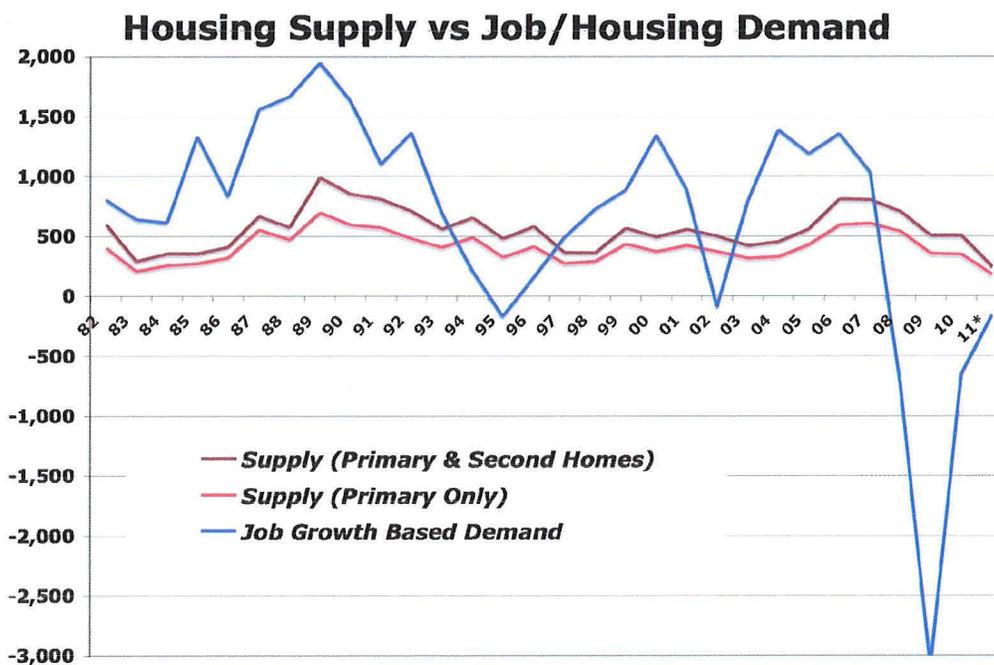
This chart shows that there are three time periods when the ratio was at or above 2.0: 1989-1993, again in 1997-2001, and now, from 2003 to 2007 – all mainly due to a high level of job creation (save for 1997, when job permit counts were very low).

This year, job growth has stayed negative, at the same time that building permits have dropped dramatically (from where they were 3-5 years ago). As noted elsewhere, portions of these permits pulled are for second home residences of offshore buyers. As such, the second-home buyers take housing 'out' of the hands of local residents, thus this ratio could be understating the strength of actual demand in the market for primary homes.

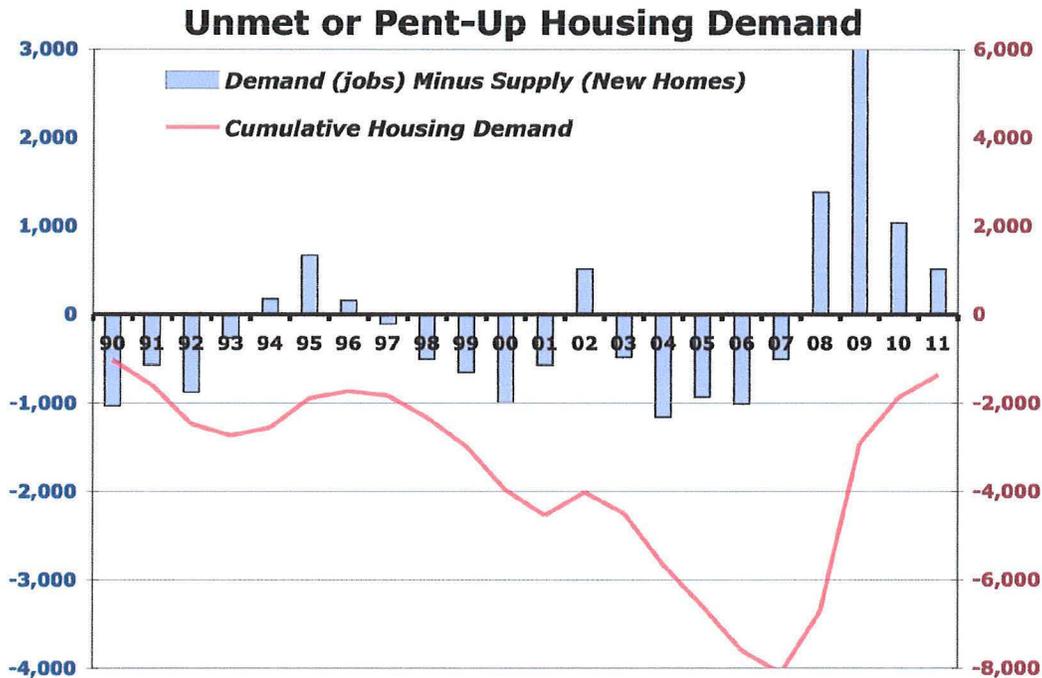
LONG RUN, JOBS: In the longer run, an good indicator of the balance of housing demand and supply is to look at job growth based housing demand (described above) in relation to the supply of new homes (a note here about the numbers used here for new homes: the data comes from the Bureau of Conveyances and then filtered so that non-residential transactions, including time share units, do not pollute the numbers. In addition, we ask developers for their housing production figures, and check that against what the Bureau provides).

Further, since there is a strong demand for new homes on Maui from second home owners and off-shore investors, we think it reasonable to deflate the total production of new housing so as to get to a sense of the amount of new housing that is servicing primary housing demand (in other words, local residents). The factor we have chose to use to deflate the production of new single homes is 90% (saying that 10% is purchase by non-residents) and 60% for condominiums (saying that 40% of all new units are bought off-shore).

The following chart shows the housing supply in two trend lines, one with both primary and second home production and the other with just primary housing supply. Against that, we provided the housing demand based on job growth. Also we have taken total job growth number and reduced it by a factor of 2 in order to arrive a housing demand. This say that it takes 2 new jobs being created so that there is a demand for one new housing unit. Effectively, this replicates the starter housing demand, where both husband and wife (or household couple) are working in order to be able to afford a home.



Note that where Demand (blue line) is greater than Supply (red lines), a housing deficit exists. Whenever that conditions exists over time, then there accumulates 'unmet' (or pent-up) housing demand. The following chart illustrates this.



It is worth noting that during times of economic duress that the supply/demand balance improves remarkably, thanks to negative job growth and decelerating supply of new housing. Currently, the trend indicates this, saying there is an unmet demand for about 1,000 dwellings on the island. Going forward, this will reverse itself, as the supply of new housing continues to dry up (due to a lack of construction and mortgage money, as mentioned) and the job market recovers (thanks to surprising strength in the visitor industry).

LONG RUN, POPULATION: Looking ahead, we examined the projections for household growth on Maui Island in the Department of Planning's 2006 Socio-Economic Forecast, Exhibit I-6 (page 43). This is described in the table below:

POPULATION GROWTH BASED HOUSING DEMAND, USING 2006 PLANNING FORECAST

	2005	2010	2015	2020	2025
Maui Isle Household Counts	45,474	50,146	54,755	59,734	64,911
Change, per period		4,672	4,609	4,979	5,177
Change, per annum		934	922	996	1,035

As seen, the projection here is for an annual growth in households of around 920 household over the 2005-2010 and 2010-2015 periods.

Bear in mind that the annual production of new home by Maui builder, averaged over the last ten and the last twenty years, is less than that. On an annual basis, the production of new housing over the 1991-2011 time period has been 554 dwelling units, and over the 2001-2011 period, it has been 553.

If there is a one-to-one relationship between household creation and household demand, then there has been an undersupply of housing by at least 400 units per annum since 2000.

We note that this projection of housing demand is more liberal than the one described earlier, which was based on the 2035 DBEDT forecast for Maui jobs. That projection is repeated below.

JOB BASED HOUSING DEMAND, USING DBEDT 2035 JOB COUNT PROJECTIONS

	2007	2015	2020	2025
Total civilian wage and salary jobs	76,730	81,810	86,670	91,390
Total self-employed job	26,254	27,800	29,450	31,030
Total Jobs	102,984	109,610	116,120	122,420
Job Count Change, per period		6,626	6,510	6,300
Job Count Change, per annum		828	1,302	1,260
Job Count Change to Housing Demand, p.a.		414	651	630

Nevertheless, in both cases, the idea that Maui’s housing demand is not in balance with it’s housing supply.

CONCLUSION: in the short run, the Jobs/Permit Ratio shows improving conditions in the Maui housing market. In the longer run, both job and population projections indicate there will be demand for new homes. Some of this demand will be pent-up demand from households that were unable to purchase housing during the last economic and residential market upswing, and some of this demand will be from a growing job market and population.

A note about development in general and in the state: builders, like most businesses, make decisions based primarily on where they think the market will be, as opposed to where it is now – sometimes this is called ‘skating to where the puck will be, rather than to where the puck is.’ They are willing to take on risk in anticipation of what will happen.

In the case of development in general in the state, there are a number of new housing projects that have been announced recently on Oahu that demonstrate this, including ones at Ala Moana Shopping Center, Kapiolani and Kakaako. The one that compares most directly with this project is the one by A&B in Kakaako that targets the mid-market. In addition, there are a number of other projects on Oahu targeting the affordable market, including ones in Kakaako, Ewa, Kapiolani, Waipahu and Waianae.

The reason there is a revival of interest in market-rate housing production at the current time is that these developers on Oahu are taking a risk in believing the economy will recover and stimulate housing demand. What they are banking on is the effect of new supply on the market. This effect, which happens when the housing market is rising, shows that new supply stimulates new demand. Effectively, in the presence of good economic conditions, the addition of new housing supply into the market causes the level of housing demand to rise, and rise to a significant level.

To some extent, this is happening on Oahu ahead of the neighbor islands. Part of this is due to the fact that Oahu is a much larger market. Part of it is due to the fact that Oahu’s economy is not so dependent on the visitor industry or the second home market.

XIV. MARKET REVIEW AND CONCLUSION

Overall, the Maui economy and housing market was analyzed and shown to be volatile, as well as contingent on external economic and political forces. Indeed, the driving force in the Maui economy is the visitor industry, and when this activity is up, Maui is able to have a strong economy and an active real estate market. However, as seen, both the global economy and national housing market have been depressed of late. This has had a negative impact on the drivers of Maui's housing market, local jobs and offshore second home buyers. That said, there are signs that the visitor industry is recovering, after a 3-4 downturn. This is driving job creation and gives us reason to believe the economic cycle is ready to turn back upward, and will pull the housing market with it.

The past and current housing market was analyzed in the context of the proposed development. Given that the market is at or near the bottom of it's cycle, we used historic data for housing market recoveries since 1980 to derive an average per annum expansion of the market sales and of the appreciation of market prices. We set this against the unit counts and pricing of these units and found that the market should be able to absorb all of the units (in all of the product types and all of the price ranges) within 3-4 years of the commencement of the development. We also found that the current prices projected for these units fall under the prices projected for the market in the marketing period, 2013+.

Further, we looked at the overall market for new housing on Maui and found it to be at a low point historically. We came to the opinion that there was little to be optimistic about in terms of there being a recovery in housing production in the near future, inasmuch as both construction and mortgage financing is scarce, and the fact that landowners and developers on Maui are generally in a diminished condition, relative to earlier this decade.

Against this, we see signs that the economy has stabilized and the job market is turning upwards, as the visitor industry continues to grow. This then leads us to expect that demand will rise (as noted in the previous section) and be able to absorb these units in a reasonable time frame and at the proposed pricing.

What also leads us to expect that the proposed development in West Maui will be successful is that it will be able to enjoy a reduced level of competition (that there will be little supply from other Maui builders).

To be sure, there will be competition from the resale market, but the quality of that competition will be inferior to the units of the proposed development in several ways:

- Resale units generally exhibit wear and tear, particularly foreclosures, whereas new housing units do not;
- Many, if not most, of these resale units will be on the other side of the island in Central Maui; and
- Many, if not most, of the resale units on the west side will not be as well located as these units (i.e., at a similar price point, they will not be within walking distance of a major supermarket and drug store, as well as the beach).

Finally, as mentioned earlier, the proposed development contains both affordable units and market rate units. For the affordable buyers, they look favorably upon the fact their neighbors live in market rate house, and therefore would be more inclined to buy into this project than into others (that may not have as nice a neighborhood).

APPENDIX B.

Proposed Section 201H-38, Hawaii Revised Statutes (HRS) Exemptions

**PROPOSED SECTION 201H-38, HRS, EXEMPTIONS
FROM THE MAUI COUNTY CODE ("MCC")**

A. EXEMPTION FROM TITLE 2, MCC, ADMINISTRATION AND PERSONNEL

1. Exemption from Chapter 2.80B, MCC, General Plan and Community Plans, shall be granted to permit the project without obtaining a community plan amendment for the project. The Kahoma Village Project, as proposed, is consistent with Project District 4.
2. Exemption from Chapter 2.96, Residential Workforce Housing Policy, Section 2.96.060 (D)(2) is granted for the project to waive the "deed restrictions that the units must remain affordable for twenty-five years from the initial sale".

B. EXEMPTIONS FROM TITLE 14, MCC, PUBLIC SERVICES

1. Exemption from Chapter 14.62, MCC, Impact Fees for Traffic and Roadway Improvements in West Maui, Hawaii, shall be granted to exempt the project should an impact fee be enacted prior to construction and completion of the project.

C. EXEMPTIONS FROM TITLE 16, MCC, BUILDINGS AND CONSTRUCTION

1. Exemption from MCC Chapters 16.04B, Fire Code, 16.18B, Electrical Code, 16.20A, Plumbing Code, and 16.26, Building Code, and new codes that are adopted pertaining to such MCC Chapters shall be granted to exempt the project from fire, electrical, plumbing, and building permit fees, as well as plan review and inspection fees.
2. Exemption from any new codes that pertain to MCC Chapters 16.04A, Fire Code, and 16.26, Building Code, that are adopted before the submittal of building permit applications for the project. The project shall conform to the 1997 Uniform Fire Code, the 2006 International Building Code and the 2006 International Residential Code in effect at the time of the 201H-38 submittal.

D. EXEMPTIONS FROM TITLE 18, MCC, SUBDIVISIONS

1. Exemption from Section 18.04.030, MCC, Administration, and related land use consistency and conformity requirements of Title 18, shall be granted to exempt the project from obtaining a change in zoning and/or community plan amendment to enable subdivision approval.

2. Exemption from Section 18.16.320, MCC, Parks and Playgrounds, shall be granted to allow the approximate 1.75 acres of land within the project as privately owned and maintained parks to satisfy the park dedication and assessment requirements and waive the requirements for parking areas and a comfort station. A portion of the park shall be utilized for drainage purposes.
3. Exemption from Section 18.20.140.B., MCC, Utility Lines and Facilities, shall be granted to allow overhead utility lines for electric, telephone, street lighting, cable television services and other related facilities.
4. Exemption from Chapter 18.24, MCC, Fees, shall be granted to exempt the project from subdivision filing, processing and plan review fees.

E. EXEMPTIONS FROM TITLE 19, MCC, ZONING

1. Exemption from Section 19.04.040, MCC, Definitions, "Height", shall be granted defining height as the vertical distance as measured from a point on the top of the structure to a corresponding point directly below on the finished grade.
2. Exemption from Section 19.04.040, MCC, Definitions, "Lot Area", shall be granted defining lot area as the total project site which is 21.6 acres.
3. Exemption from Section 19.04.040, MCC, Permitted Uses, shall be granted to allow the following principal uses: 1) cluster single-family units, 2) alley single-family units, 3) multi-family townhouse units, and 4) parks, and playgrounds. The following accessory uses and structures shall be permitted: 1) carports and private garages, 2) parking areas, 3) energy systems, small-scale, 4) fences and walls, 5) storage sheds, 6) park recreational buildings and structures, including but not limited to gazebo, pavilions, courts and pools; and playground equipment.
4. Exemption from Section 19.510.010(B), MCC, Fees, shall be granted to waive application fees.

F. EXEMPTIONS FROM TITLE 20, MCC, ENVIRONMENTAL PROTECTION

1. An exemption from Section 20.08.090, MCC, Grubbing and Grading Permit Fees shall be granted to exempt the project from payment of grading, grubbing, and excavation permit fees, as well as inspection fees.
2. An exemption from Sections 20.08.130, 20.08.140 and 20.08.150, MCC, Permit Bond shall be granted to exempt the project from filing a bond with the County of Maui for grading, construction of drainage improvements and implementation of erosion control measures.

APPENDIX C.

Letter Designating the Department of Housing and Human Concerns as the Approving Agency



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

APR 13 2012
ALAN M. KAKAWA
Mayor
JO-ANN T. RIDAO
Director
JAN SHISHIDO
Deputy Director

2200 MAIN STREET • SUITE 546 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165
MAILING ADDRESS: 200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • EMAIL: director.hhc@mauicounty.gov

April 5, 2012

Colleen Suyama
Senior Associate
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

**SUBJECT: Designation of Approving Agency for Chapter 343
Environmental Assessment for the Kahoma Village Project at
TMK (2) 4-5-008:001, Lahaina, Maui, Hawaii**

The Jeanette and Harry Weinberg Foundation and Stanford Carr Development LLC propose to develop the Kahoma Village project on property identified as TMK (2) 4-5-008:001 in Lahaina, Maui. Kahoma Village will include utility connections to County of Maui infrastructure on Kenui Street and Front Street and potential road widening improvements which would involve the use of County lands. The roadways are under the jurisdiction of the Department of Public Works. In accordance with Chapter 343, Hawaii Revised Statutes (HRS) and Title 200, Hawaii Administrative Rules (HAR) of the Department of Health, an Environmental Assessment (EA) is required.

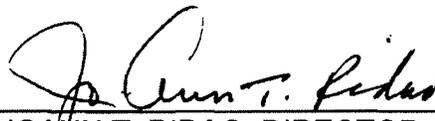
The Kahoma Village project will also require approval of a 201H-38, HRS Affordable Housing application by the Maui County Council processed through the Department of Housing and Human Concerns (DHHC) as well as a Special Management Area Use (SMA) Permit from the Maui Planning Commission. The Kahoma Village project involves multiple jurisdictions in which the Department of Housing and Human Concerns (DHHC), Department of Public Works (DPW) and Maui Planning Commission (MPC) may be the Approving Agency.

Since there is more than one (1) agency that has jurisdiction over the action, pursuant to Title 200, §11-200-4, and as a follow-up to our discussion on March 28, 2012, we concur that the DHHC will be the Approving Agency based on the following:

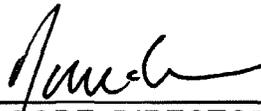
1. The first approval to be processed with the County of Maui is the 201H-38, HRS, application. Since the environmental review of a project should be conducted as early as possible, and the first approval will be processed through the DHHC, it is determined that the DHHC has the greatest responsibility for supervising and processing the Kahoma Village project.
2. The DHHC can most adequately fulfill the requirements of Chapter 343, HRS;
3. The participation of the DHHC in the design, construction and compliance for the Kahoma Village project is more involved than the DPW and MPC.

If you have any questions or concerns, please do not hesitate to contact Mr. Buddy Almeida of the DHHC at 270-7351.

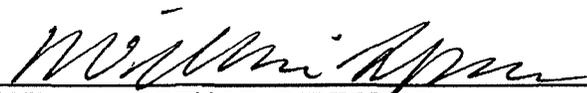
Sincerely,



JOANN T. RIDAO, DIRECTOR
Department of Housing and Human Concerns
County of Maui



DAVID GOODE, DIRECTOR
Department of Public Works
County of Maui



WILLIAM SPENCE, DIRECTOR
Department of Planning
County of Maui

APPENDIX D.

Biological Resources Survey

BIOLOGICAL RESOURCES SURVEY

for the

**HARRY & JEANETTE WEINBERG FOUNDATION, INC.
AFFORDABLE HOUSING PROJECT**

LAHAINA, MAUI

by

**ROBERT W. HOBODY
ENVIRONMENTAL CONSULTANT**

Kokomo, Maui

May 2011

Prepared for:

Stanford Carr Development, LLC

**BIOLOGICAL RESOURCES SURVEY
HARRY & JEANETTE WEINBERG FOUNDATION, INC.
AFFORDABLE HOUSING PROJECT – LAHAINA MAUI**

INTRODUCTION

The project area consists of a single 24.354 acre parcel of land, TMK (2) 4-5-08:1, situated in Lahaina, West Maui. The parcel is on the south side of the Kahoma Stream channel below Honoapiilani Highway, north of Kenui Street and east of Front Street. This biological resources study was initiated in compliance with environmental requirements of the planning process.

SITE DESCRIPTION

The project area lies on undeveloped, gently sloping land along the coastal plain in Lahaina between the elevations of 10 feet along Front Street and 25 feet along Honoapiilani Highway. Vegetation consists of dense grasses and shrubs with many scattered trees. Soils consist of deep, well-drained, alluvial soils of the Pulehu Silt Loam and the Ewa Silty Clay Loam series along Kahoma Stream terrace (Foot et al, 1972). Rainfall averages 12 to 15 inches per year, with the bulk falling between November and April.

BIOLOGICAL HISTORY

During ancient times and up through most of the 1800s this area was farmed by Hawaiians for kalo production using irrigation water channeled from Kahoma stream. This parcel, which is part of the ahupua'a of Alamihi and Pu'unoa, was entirely within kuleana lands dating back to the mahele and was highly productive. During the late 1800s this area was converted to sugar cane production and for about 100 years was plowed, planted and harvested in continuous cycles. Train tracks from the Pioneer Rail Road came down from the sugar mill through this parcel to Mala wharf. For the past 50 years, since the development of Honoapiilani highway through Lahaina, this parcel has stood idle and has become overgrown with dry-land grasses, shrubs and scattered trees (see Figures 1 & 2).

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the Lahaina Affordable Housing project that was conducted in May 2011. 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 that would ensure complete coverage of the property. Areas most likely to harbor native or rare plants were more intensively examined. Notes were made on plant species, distribution and abundance as well as on terrain and substrate.

DESCRIPTION OF THE VEGETATION

The vegetation is typical of the weedy species that take over disturbed sites in dry areas like Lahaina. Common species here include buffelgrass (*Cenchrus ciliaris*), saltbush (*Atriplex suberecta*), koa haole (*Leucaena leucocephala*) and kiawe (*Prosopis pallida*). All other species were uncommon to rare on the property.

A total of 47 plant species were recorded on the property. Of these just two were indigenous to Hawaii; 'uhaloa (*Waltheria indica*) and popolo (*Solanum americanum*). Both of these are widespread and common in Hawaii as well as on the mainland and on other Pacific islands. The remaining 45 species were all non-native plants.

DISCUSSION AND RECOMMENDATIONS

Little about the vegetation that currently occupies this property is worthy of comment or concern from an environmental or conservation standpoint. No federally Endangered or Threatened plants were recorded, nor were any that are candidates for such status seen. No special plant communities or habitats occur on or around this property in this urban environment either.

Proposed developments on this land will have no significant negative impacts on the botanical resources in this part of West Maui. No recommendations are deemed necessary or appropriate regarding the flora resources on this property.

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).

Polynesian introduction = plants introduced to Hawai'i in the course of Polynesian migrations and prior to western contact.

non-native = all those plants brought to the islands intentionally or accidentally after western contact.

4. Abundance of each species within the project area:

abundant = forming a major part of the vegetation within the project area.

common = widely scattered throughout the area or locally abundant within a portion of it.

uncommon = scattered sparsely throughout the area or occurring in a few small patches.

rare = only a few isolated individuals within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MONOCOTS			
ARECACEAE (Palm Family)			
<i>Phoenix x dactylifera</i>	hybrid date	non-native	rare
<i>Washingtonia robusta</i> H. Wendland	Mexican Wahingtonia	non-native	rare
POACEAE (Grass Family)			
<i>Cenchrus ciliaris</i> L.	buffelgrass	non-native	common
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass	non-native	uncommon
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	non-native	rare
<i>Eragrostis pectinacea</i> (Michx.) Nees	Carolina lovegrass	non-native	uncommon
<i>Megathyrsus maximus</i> (Jacq.) Simon & Jacobs	Guinea grass	non-native	uncommon
DICOTS			
AMARANTHACEAE (Amaranth Family)			
<i>Amaranthus spinosus</i> L.	spiny amaranth	non-native	uncommon
<i>Atriplex suberecta</i> Verd.	saltbush	non-native	common
ANACARDIACEAE (Mango Family)			
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	non-native	rare
ASTERACEAE (Sunflower Family)			
<i>Bidens pilosa</i> L.	Spanish needle	non-native	rare
<i>Lactuca sativa</i> L.	sourbush	non-native	uncommon
<i>Pluchea carolinensis</i> (Jacq.) G. Don	prickly lettuce	non-native	rare
<i>Pluchea indica</i> (L.) Less.	Indian fleabane	non-native	rare
<i>Verbesina encelioides</i> (Cav.) Benth. & Hook.	golden crown-beard	non-native	rare
BORAGINACEAE (Borage Family)			
<i>Heliotropium procumbens</i> Mill.	fourspike heliotrope	non-native	rare
CARICACEAE (Papaya Family)			
<i>Carica papaya</i> L.	papaya	non-native	rare
CONVOLVULACEAE (Morning Glory Family)			
<i>Ipomoea obscura</i> (L.) Ker-Gawl.	-----	non-native	rare
<i>Ipomoea triloba</i> L.	little bell	non-native	rare
<i>Merremia aegyptia</i> (L.) Urb.	hairy merremia	non-native	rare
CUCURBITACEAE (Gourd Family)			
<i>Cucumis dipsaceus</i> Ehrenb. ex Spach	hedgehog gourd	non-native	rare
EUPHORBIACEAE (Spurge Family)			
<i>Euphorbia hirta</i> L.	hairy spurge	non-native	rare
<i>Ricinus communis</i> L.	Castor bean	non-native	uncommon
FABACEAE (Pea Family)			
<i>Albizia lebbek</i> (L.) Benth.	siris tree	non-native	rare
<i>Crotalaria pallida</i> Aiton	smooth rattlepod	non-native	rare
<i>Desmanthus pernambucanus</i> (L.) Thellung	slender mimosa	non-native	uncommon
<i>Desmodium tortuosum</i> (Sw.) DC.	Florida beggarweed	non-native	rare
<i>Indigofera hendecaphylla</i> Jacq.	creeping indigo	non-native	uncommon
<i>Leucaena leucocephala</i> (Lam.) de Wit	koa haole	non-native	common

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
<i>Macroptilium atropurpureum</i> (DC.) Urb.	siratiro	non-native	rare
<i>Pithecellobium dulce</i> (Roxb.) Benth.	'opiuma	non-native	rare
<i>Prosopis pallida</i> (Humb. & Bonpl. ex Willd.) Kunth	kiawe	non-native	common
<i>Samanea saman</i> (Jacq.) Merr.	monkeypod	non-native	rare
LAMIACEAE (Mint Family)			
<i>Leonotis nepetifolia</i> (L.) R.Br.	lion's ear	non-native	uncommon
MALVACEAE (Mallow Family)			
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon	non-native	rare
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	non-native	rare
<i>Sida ciliaris</i> L.	red ilima	non-native	rare
<i>Sida rhombifolia</i> L.	Cuban jute	non-native	rare
<i>Waltheria indica</i> L.	'uhaloa	indigenous	uncommon
MYRTACEAE (Myrtle Family)			
<i>Syzygium cumini</i> (L.) Skeels	Java plum	non-native	rare
NYCTAGINACEAE (Four-o'clock Family)			
<i>Boerhavia coccinea</i> Mill.	scarlet spiderling	non-native	rare
PASSIFLORACEAE (Passion Flower Family)			
<i>Passiflora foetida</i> L.	love-in-a-mist	non-native	uncommon
PORTULACACEAE (Purslane Family)			
<i>Portulaca oleracea</i> L.	pigweed	non-native	rare
SOLANACEAE (Nighthshade Family)			
<i>Nicandra physalodes</i> (L.) Gaertn.	apple of Peru	non-native	rare
<i>Nicotiana glauca</i> R.C. Graham	tree tobacco	non-native	uncommon
<i>Solanum americanum</i> Mill.	popolo	indigenous	rare
<i>Solanum lycopersicum</i> L.	cherry tomato	non-native	rare

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through survey method was conducted in conjunction with the botanical survey. All parts of the project area were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities and location as well as observations of trails, tracks, scat and signs of feeding. In addition an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

RESULTS

MAMMALS

Signs of two non-native mammal species were observed during two site visits. Taxonomy and nomenclature follow Tomich (1986).

Numerous tracks of domestic dogs (*Canis familiaris*) were seen throughout the property. Dogs accompany people that frequent this area. Also seen were a few tracks of feral cats (*Felis catus*) which were seen in wet soil. These cats hunt for rodents and birds here.

A few other non-native mammals one could expect to see on the property include rats (*Rattus* spp.), mice (*Mus domesticus*) and mongoose (*Herpestes auro punctatus*). Rats and mice feed on seeds, fruits and herbaceous vegetation while the mongoose feed on these rodents and birds.

A special effort was made to look for the Hawaiian hoary bat by making an evening survey at two locations on the property. 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 bats were seen though visibility was excellent. In addition a bat detection device (Batbox IIID) was employed, set to the frequency of 27,000 hertz which these bats are known to use in echolocation. No bats were detected using this device either.

BIRDS

Birdlife was sparse in species representation but moderate in numbers on this property. Eight species of non-native birds were seen during two site visits. Eight species of non-native birds were seen during two site visits. Taxonomy and nomenclature follow American Ornithologists' Union (2009). Three species were found to be common on the property: zebra dove (*Geopelia striata*), house finch (*Carpodacus mexicanus*) and common myna (*Acridotheres tristis*). The remaining 5 species were uncommon to rare of occurrence (see Fauna Species List).

A few other common non-native bird species might be expected to occasionally frequent the property, but the habitat is not suitable for Hawaii's native forest birds that are presently restricted to native forests above 4,000 ft. elevation, beyond the range of mosquitoes and the lethal avian diseases they carry and transmit. One might expect to see a few migratory Pacific golden plovers (*Pluvialis fulva*) here during the fall and winter months.

INSECTS

A total of 11 species of insects were found on the property during two site visits. Taxonomy and nomenclature follow Nishida et al (1992). Of these just one was found to be common throughout the area, the indigenous globe skimmer (*Pantala flavescens*), a dragonfly. This dragonfly was also the only native insect among the 11 species. The rest were representatives of five separate orders (see Fauna Species List). The globe skimmer is very common in Hawaii and is found nearly world-wide in the tropics and subtropics. No Endangered or Threatened insect species were found during the survey.

About 20 tree tobacco (*Nicotiana glauca*) plants were seen scattered across the property during the botanical survey. These tree tobacco are a non-native host for Hawaii's endemic and Endangered Blackburn's sphinx moth (*Manduca blackburni*). Each of these tree tobacco plants was carefully examined and no eggs, larvae or adults of this Endangered moth were found.

DISCUSSION AND RECOMMENDATIONS

Out of 20 species of mammals, birds and insects found on this property, just one insect was found to be native, the ubiquitous globe skimmer. The habitat has been altered for over a century and is now overwhelmingly inhabited by non-native organisms and is surrounded by an urban community. No Endangered plants or animals are known to occur any closer than 2.5 miles from this project area, high in the foothills above Lahaina. These Endangered species are populations of (*Gouania hillebrandii*) and (*Spermolepis hawaiiensis*) that occur on ridges a mile above Lahainaluna High School and will not be affected by this proposed project.

While no Endangered Blackburn's sphinx moths were found during this survey, the presence of significant numbers of tree tobacco their host plants in the project area dictates caution. It is recommended that any removal of the approximately 20 tree tobacco shrubs be done by hand in the fall months after the moth's breeding cycle is completed and that large scale clearing not proceed before at least another four months to allow any potential pupae in the soil to hatch and disperse.

Another potential threat posed by the project involves the Endangered seabirds the Hawaiian petrel (*Pterodroma sandwichensis*) and the Threatened Newell's shearwater (*Puffinus newelli*). These seabirds nest high in the mountains during the spring, summer and fall months. These birds fly over the lowlands during the late evening hours to reach their burrows and fly back to the ocean in the early dawn hours. These birds can be confused by bright lights and crash into poles, wires and other structures and be injured or killed by the strike or by vehicles or animals such as cats, dogs or mongoose. Young inexperienced birds, taking their inaugural fledgling flights in the late fall are particularly vulnerable. It is recommended that any significant outdoor flood lights or pole lights be hooded to direct the light downward to minimize the distractions and dangers to these birds.

ANIMAL SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within two groups: Mammals, Birds and Insects. 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.

COMMON NAME	SCIENTIFIC NAME	STATUS	ABUNDANCE
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MAMMALS

Domestic dog	<i>Canis familiaris</i> L.	non-native	uncommon
Feral cat	<i>Felis catus</i> L.	non-native	uncommon

BIRDS

Zebra dove	<i>Geopelia striata</i> L.	non-native	common
House finch	<i>Carpodacus mexicanus</i> Muller	non-native	common
Common myna	<i>Acridotheres tristis</i> L.	non-native	common
Spotted dove	<i>Streptopelia chinensis</i> Scopoli	non-native	uncommon
Northern cardinal	<i>Cardinalis cardinalis</i> L.	non-native	uncommon
Nutmeg mannikin	<i>Lonchura punctulata</i> L.	non-native	uncommon
Gray francolin	<i>Francolinus pondicerianus</i> Gmelin	non-native	rare
Cattle egret	<i>Bubulcus ibis</i> L.	non-native	rare

INSECTS

ARANAE - Spiders

ARANEIDAE (Orb Weaver Family)

Garden spider	<i>Argiope appensa</i> Walkanaer	non-native	uncommon
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DIPTERA - flies

CALLIPHORIDAE (Blow Fly Family)

Blue bottle fly	<i>Calliphora vomitoria</i> L.	non-native	rare
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MUSCIDAE (House Fly Family)

Dung fly	<i>Musca sorbens</i> Wiedemann	non-native	uncommon
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HYMENOPTERA - Bees, Wasps and Ants

APIDAE (Honey Bee Family)

Sonoran carpenter bee	<i>Xylocopa Sonorina</i> Smith	non-native	uncommon
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FORMICIDAE (Ant Family)

Argentine ant	<i>Linepithema humile</i> Mayr	non-native	rare
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SPHECIDAE (Thread-waisted Wasp Family)

Mud dawber wasp	<i>Sceliphron cementarium</i> Drury	non-native	rare
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LEPIDOPTERA - Butterflies and Moths

LYCAENIDAE (Gossamer - winged Butterfly Family)

Western pygmy blue	<i>Brephidium exilis</i> Boisduval	non-native	rare
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Long tail blue	<i>Lampides boeticus</i> L.	non-native	uncommon
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NOCTUIDAE (Owlet Moth Family)

Black witch moth	<i>Ascalapha odorata</i> L.	non-native	rare
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ODONATA - Dragonflies and Damselflies

LIBELLULIDAE (Skimmer Dragonfly Family)

Globe skimmer	<i>Pantala flavescens</i> Fabricius	indigenous	common
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COMMON NAME	SCIENTIFIC NAME	STATUS	ABUNDANCE
ORTHOPTERA - Grasshoppers, Locusts and Crickets			
ACRIDIDAE (Grasshopper Family)			
Short-horned grasshopper	<i>Oedaleus abruptus</i> Thunberg	non-native	rare



Figure 1 Project area looking north - buffelgrass and koa haole shrubland



Figure 2 Project area looking east - buffelgrass with scattered kiawe trees

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APPENDIX E.

Archaeological Assessment Survey

**An Archaeological Assessment Survey of 21.556 acres of
land next to Kahoma Stream,
`Alamihi *Ahupua`a*, Lahaina District,
Island of Maui,
(TMK: (2) 4-5-008: Portion of 001)**

Prepared on behalf of:

**Stanford Carr Development, LLC
Honolulu, O`ahu**

Prepared by:

**Xamanek Researches, LLC
Pukalani, Maui**

**Jennifer J. Frey
Erik M. Fredericksen**

3 October 2011

ABSTRACT

Xamanek Researches, LLC carried out an archaeological assessment survey of a near coastal portion of land in Lahaina District, Maui, (TMK (2) 4-5-008: Portion of 001). The assessment survey was conducted on behalf of Stanford Carr Development, LLC. The landowner of the parcel is the Harry and Jeanette Weinberg Foundation, Inc. The surveyed area consists of a 21.556-acre portion of land in `Alamihi *Ahupua`a*, Lahaina District, Maui.

This archaeological survey utilized a pedestrian surface inspection, and 30 backhoe trenches to assess the project area. No significant material culture remains were identified during the assessment survey. It was not possible to test some portions of the parcel, because large stockpiles of fill and/or grubbed material were present. In addition, there were numbers of actively used informal campsites that were avoided during our fieldwork. Some portions of the project area may have been under sugarcane cultivation in the past.

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.

Archaeological monitoring is recommended during any future ground alteration activities, in case significant material culture remains are unearthed. A monitoring plan will be prepared in accordance with HAR Chapter 13-13-279 and sent to the SHPD Maui staff archaeologist for review and approval.

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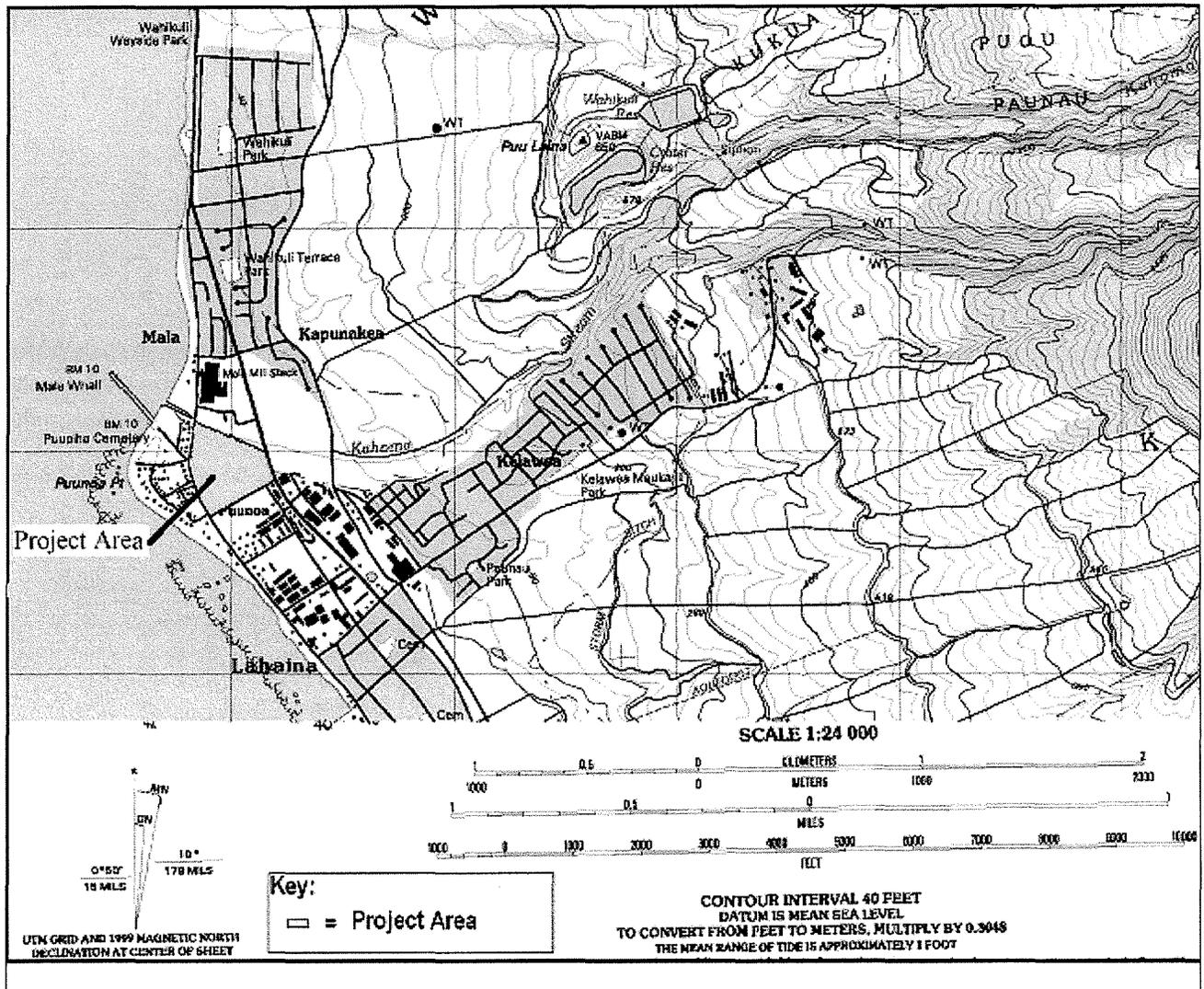


Figure 1: Topographic map of Lahaina Quad showing the project area.

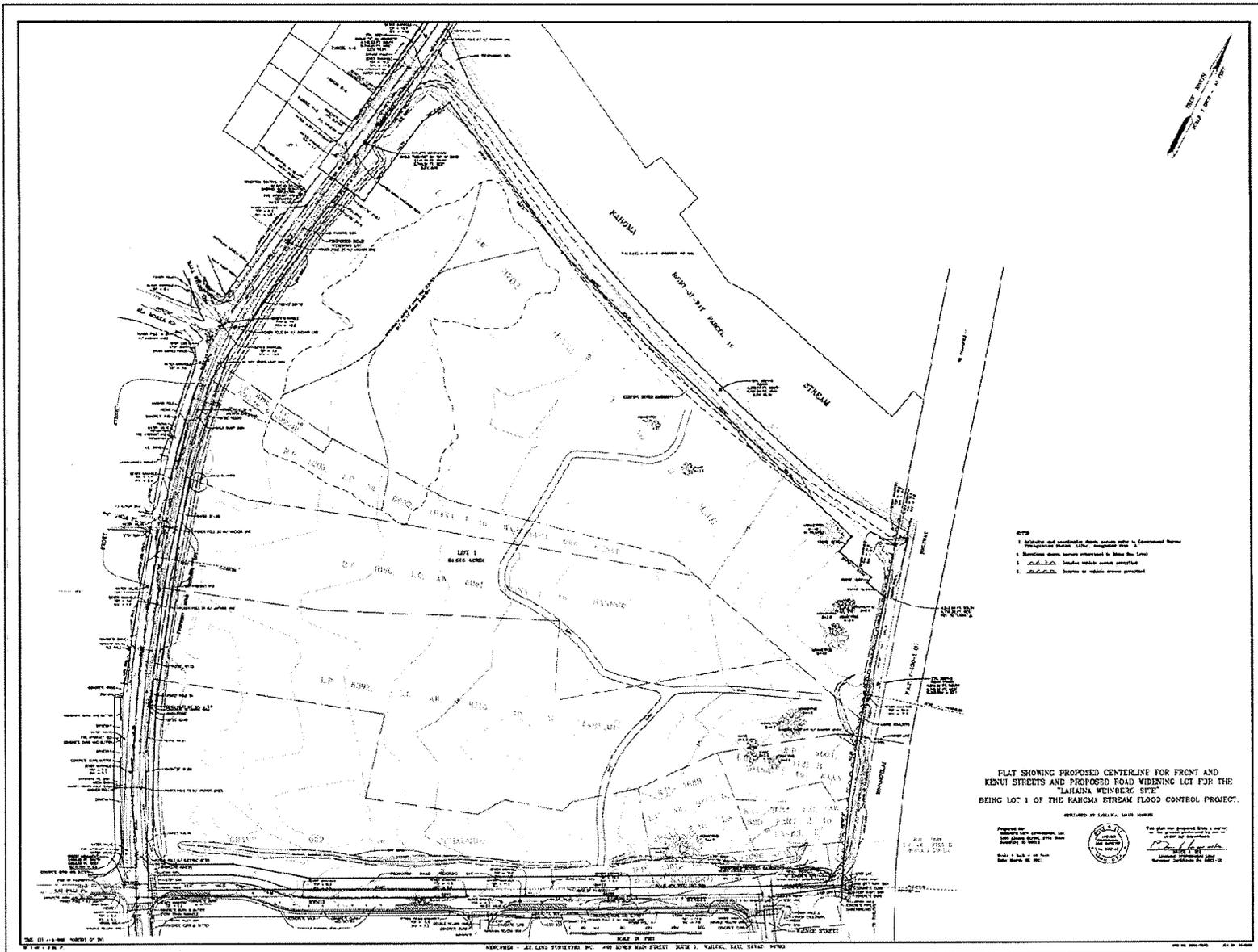


Figure 2: Tax Map Key showing location of current project area.

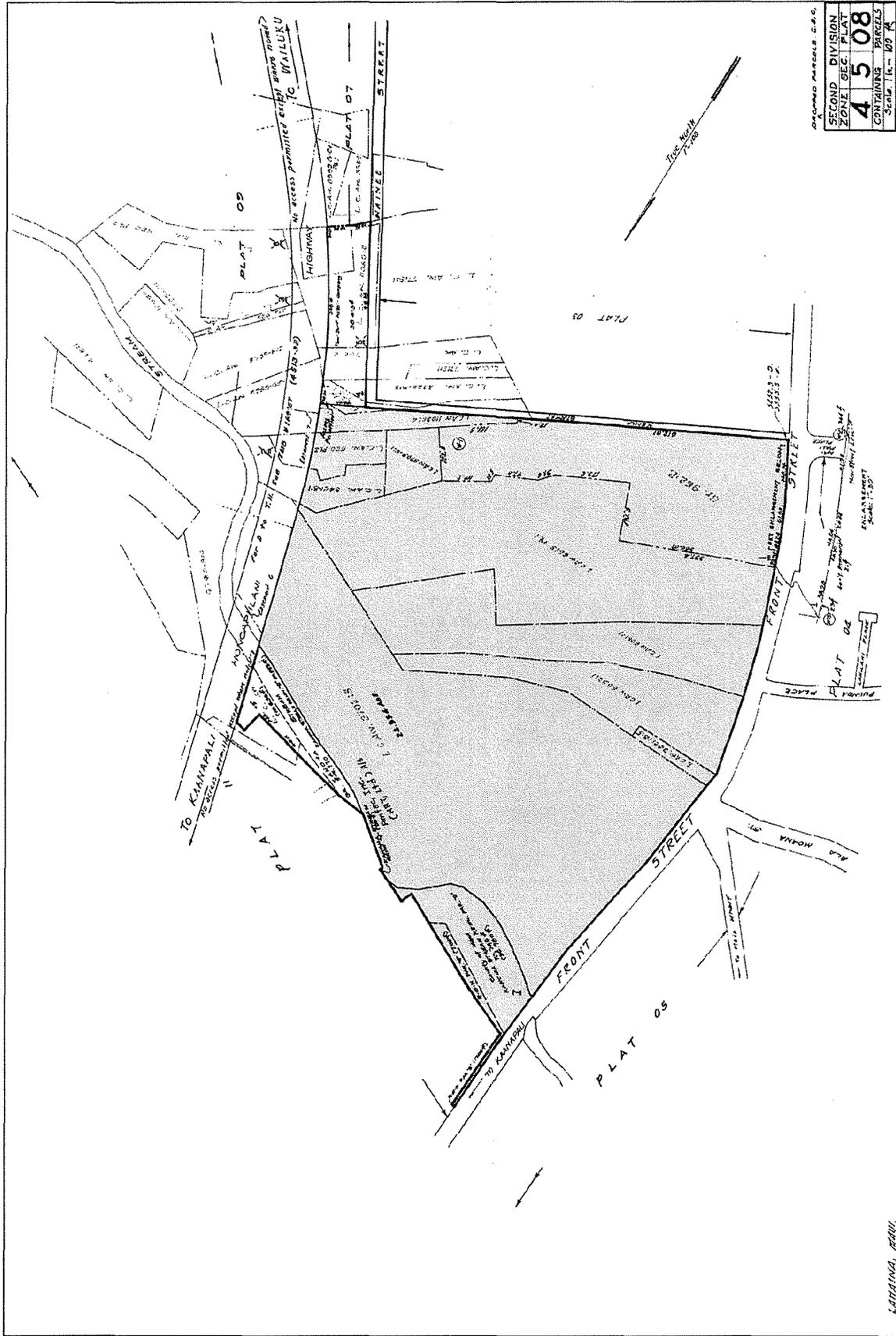


Figure 3: TMK map of project area.

INTRODUCTION

Xamanek Researches LLC was contacted in the fall of 2010 about carrying out an archaeological survey of the current project area. Proposed plans consisted of the development of a mixed housing complex, as well as a community park area (see APPENDIX A, this report). The planned project included an affordable housing component. In addition, parking and other infrastructure improvements would be needed. The landowner is identified as the Harry and Jeanette Weinberg Foundation.

The 21.556-acre parcel is currently vacant, and located adjacent to and south of the Kahoma Stream flood control project - between Honoapi'ilani Highway and Front Street, Lahaina, Maui. This property is contained within `Alamihi *Ahupua`a*, Lahaina District (TMK (2) 4-5-008: Portion of 001). Given the location of the project area, Ms. Morgan Davis, State Historic Preservation Division (SHPD) Maui Lead Archaeologist, and Mr. Hinano Rodrigues, SHPD Maui Cultural Historian were contacted. Given that the project area has been previously impacted by land altering activities, it was determined that subsurface testing with a backhoe was appropriate.

A proposal was prepared, and subsequently approved by the landowner's representative. Following a search of the SHPD Maui office file on previously identified burials in Lahaina, fieldwork was initiated. Xamanek Researches, LLC conducted an Archaeological Assessment Survey of this parcel in Lahaina (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 field investigations.

STUDY AREA

The archaeological project area is composed of a 21.556-acre portion of land (TMK: (2) 4-5-008 Portion of 001). The proposed housing development and park area will occupy all of the study area. The survey area is bounded by Kahoma Stream canal on the north, Honoapiilani Highway along the east, Kenui Street along the south and Front Street on the west. The Lahaina Weinberg project area is situated in `Alamihi *Ahupua`a*, Lahaina District, Maui (Figures 1-3). The *makai* portion of the project area is approximately 100 m. (300 ft.) inland from the coastline of the Mala Wharf area.

Portions of the study area are heavily vegetated. Past disturbance activities include recent years of clearing with heavy equipment, construction of informal homeless shelters and campsites, and piles of dirt and related construction debris. This portion of land is generally level with manmade sand dune burms on the west (*makai*) and south boundaries. From west to east, project elevations range from a minimum of 5 ft. AMSL near Front Street to 20 ft. AMSL near Honoapi`ilani Highway.

Natural History

Commonly observed vegetation included *Milo* (*Theopesia populea*) trees, Monkeypod (*Albizia saman*), *koa haole* (*Leucaena leucocephala*) and *Kiawe* (*Prosopis pallida*) trees, as well as Buffel grass (*Cenchrus ciliaris*) and other invasive grass species. Our survey was conducted during the summer season but the project area was still heavily vegetated. Annual precipitation for this arid portion of leeward Maui is typically less than 15 inches (Juvik and Juvik, 1998).

The soils in the general vicinity of the study area are classified as Pulehu series. The particular soil type Pulehu silt loam (PpA) is a type of soil similar to Pulehu clay loam- 0 to 3 percent slopes, except that the texture is silt loam. This soil is used for sugarcane and small acreages are used for home sites. Plants typically have trouble establishing themselves in these soils unless they are irrigated (Foote et al., 1972, p. 169).

The shoreline of this portion of Lahaina typically contained barrier beach sand berms, which at times tended to prevent water from entering the ocean, except in a limited number of places. These physical barriers tended to cause ponds to form inland behind the sand formations, resulting in somewhat marshy conditions in some low lying areas of Lahaina. In recent years (1980s) the US Army Corps of Engineering built the Kahoma Flood Control project, which is the north border of this project area.

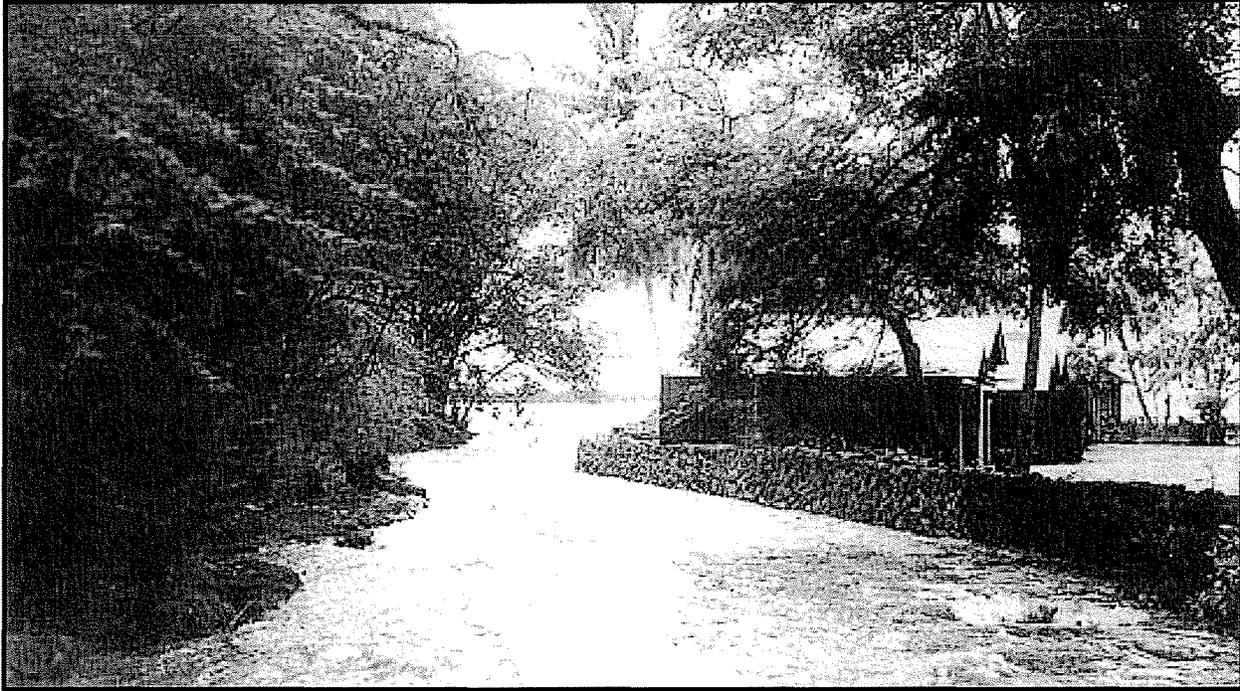


Photo 1: Kahoma Stream prior to U.S. Army Corps of Engineering flood control project c. 1960 (in Kupau, 2001, pg. 105). Photograph was possibly taken from old Kahoma Bridge during the flood.

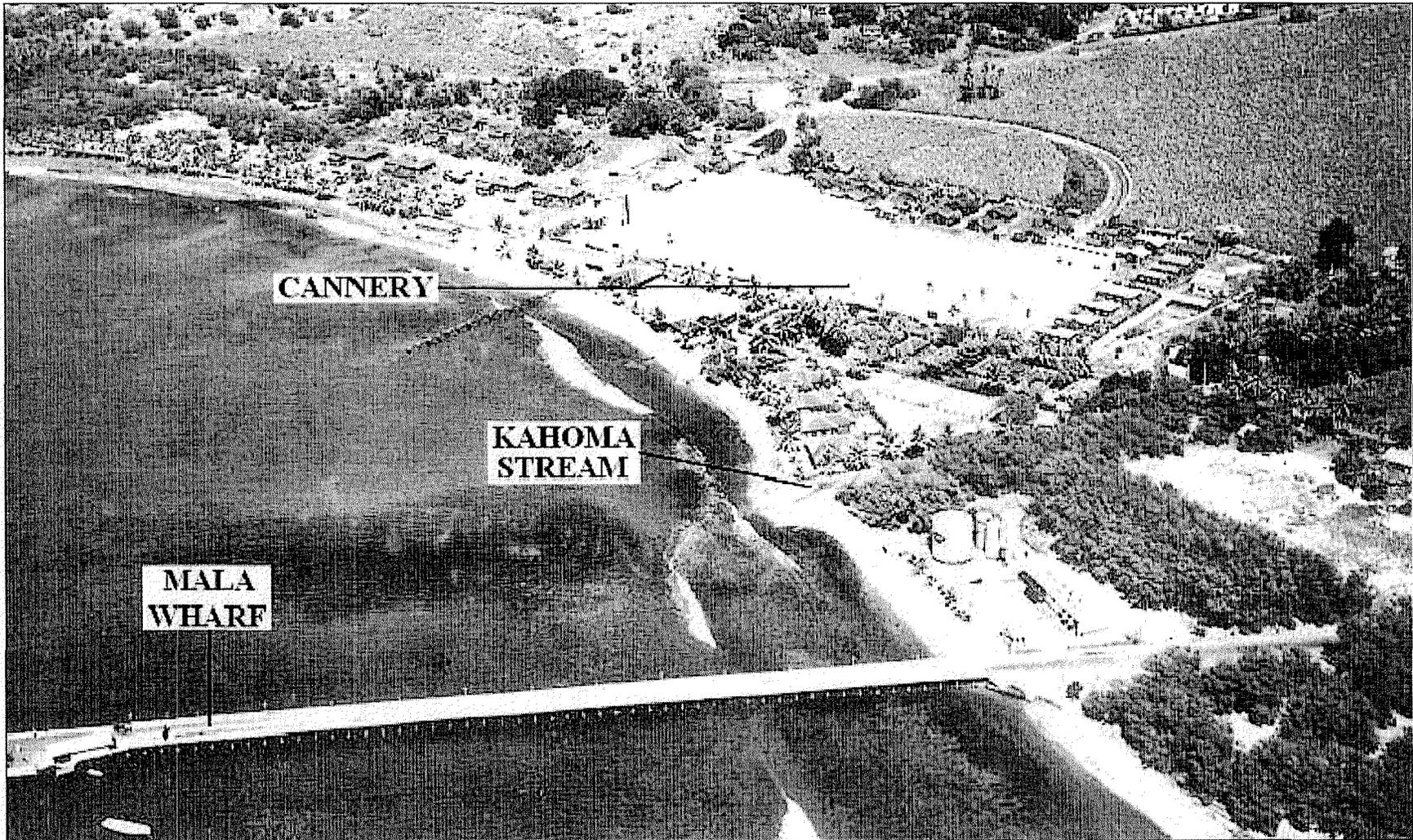


Photo 2: Overall view of the general area from the sea, including former sugarcane lands at upper right to the north of the project area c. 1931 (in Kupau, 2001, pg. 44).

BACKGROUND RESEARCH

Traditional and Historical Background

The project area parcel is located near the boundary of the present Lahaina National Historic Landmark District. This portion of Lahaina, Maui was associated with the former political and social center, which has been indicated by this recognition. In precontact times, Lahaina served as the residence of powerful chiefs — the most notable of whom was Kahekili. The Lahaina District was considered by high chiefs to be a desirable location because of its abundant resources and climate, as well as its proximity to the islands of Lana`i and Moloka`i.

The name - Lahaina - is said to refer to the “cruel sun”, which is probably a reference to the droughts that impacted the surrounding area from time to time (Pukui et al., 1974, p. 127). In precontact times, Lahaina itself was apparently a garden-like area, with taro *lo`i*, irrigation ditches (*`auwai*), and embankments that created a verdant landscape. Brackish-water and fresh water ponds (*loko*) were also present in portions of Lahaina, including the environs near the study area. The largest and most significant of these is Loko o Mokuhinia, which lies about 1.5 km to the south of the project area. Given the limited rainfall on the leeward side of the island, the garden-like quality of much of Lahaina was a testament to the skill and ingenuity of Native Hawaiians.

Precontact period

The project area is located within *Alamihi Ahupua`a*. This small *ahupua`a* was an outer residential area in old Lahaina Town, and lies just to the south of the now channelized Kahoma Stream. The presence of three fishponds, including `Alamihi Pond, in the vicinity as well as numbers of Land Commission Awards indicates that this portion of Lahaina was an important food producing area in earlier times.

Pakala lies to the south of Pu`unoa and was the home of many high ranked chiefs and later on, members of the Royal family. It is sometimes referred to as Kalua`ehu (pit of the red one), which is in reference to the lizard goddess or *mo`o*, associated with the adjacent Loko o Mokuhinia. This lake was traditionally connected with the Pi`ilani family of Maui through the *mo`o*, or lizard—a deity or *`aumakua* that traditionally took female form.

The *mo`o* of Loko o Mokuhinia were known by several names. One name is Kihawahine. This is also the name of the Maui chiefess who was a daughter of Pi`ilani. Here could be part of the connection that establishes the link to the Pi`ilani family. Kihawahine was

the older sister of Kiha-a-Pi'ilani, a future king of Maui. Their sister Pi'ikea married Umi-a-Liloa, the descendents of whom formed the royal line on the island of Hawaii (Klieger et al., 1995a, pp. 20-21). Kihawahine lived most likely in the latter part of the 16th century.¹

Upon the death of Kihawahine, it is said that she was transformed into the *mo`o* named Mokuhinia. Kamakau (1991, p. 85) records that Chiefess Kihawahine was transformed into a *mo`o* named Kalanainu`u. Mary K. Pukui maintains that Kihawahine was deified and made a *mo`o* goddess after her death. This *mo`o* goddess became one of Kamehameha I's favorite goddesses, and served as a "land holder" deity (Klieger et al., 1995a, p. 22). According to Kamakau (1991, P. 85) Kihawahine, as a *mo`o*, had the *kapu moe*, and was the *akua* of the high chiefesses of Maui during Kamehameha I's time.

A possible representation of Kihawahine was recovered from the Island of Hawaii in 1885². It is reported that Kamehameha I carried this image around the islands on the Makahiki circuit. The female image had bleached hair and was once decorated with feathers. Its eyes were inlaid with pearl shell, and human teeth lined the mouth. It is also stated that the image was wrapped in a turmeric-dyed *tapa* cloth (Klieger et al., 1995a, p. 26).

Post-contact period/Early Historic Period

The Kamehamehas in Lahaina

In the latter part of the 18th century a series of battles intended to unify all of the islands ensued, seriously disrupting the landscape and lifestyle of many areas of the archipelago. Lahaina did not escape this destructive struggle. Klieger et al., comment on the warfare (1995a, p. 14):

"In the mid-eighteenth century, Alapa`i-nui of Hawaii went to war against the O`ahu Mo`i Peleioholani on Maui, and focused his energies on Lahaina. The tactics were somewhat unusual—Alapa`i dried up the streams of Kaua`ula, Kahana, and Kahoma (probably the sources of water for Mokuhinia), toppled the terraces and `auwai, and destroyed the productive capabilities of the lo`i system below (Kamakau 1992:74). It is not certain if Lahaina agriculture and aquaculture rebounded between the numerous battles for interisland supremacy. But years after Alapa`i's destructive path, Lahaina productivity still seemed marginal: Portlock confirmed in 1786 that western Maui had been devastated by the wars of unification (cited in Speakman 1978: 72-73). Lahaina then appears to have had little in the way of provisions to offer the passing explorers, perhaps much less to feed itself."

`Alamihi *Ahupua`a* to the south of Kahoma stream was the site of a battle between the chiefs Kauhi`aimokuakama and Kamehameha I just prior to European contact. Kauhi`aimokuakama was the high chief of Maui at the time, and was rebelling against the

¹ Another factor linking the Pi'ilani family with Loko O Mokuhinia, is the location of Pi'ilani's residence, which lies directly *makai* (Klieger et al., 1995b, p. 20-21)

² The image of Kihawahine was drawn by Robert C. Barnfield, and is shown in Klieger et al., 1995a, p. 25.

authority of Kamehameha I. It was during this rebellion, that the Maui chief “seized all the food at `Alamihi Ahupua`a” (Kamakau, 1963, pg. 73). Kamakau goes on to note that enough food was obtained to meet the needs of Kauhi`aimokuakama’s army for his army for a march across Maui (Ibid., pg. 73). Inez Ashdown (in Joerger and Kaschko, 1979) noted that the lower part of Kahoma Stream was called “*Kapa`ulu*” or enclosure of breadfruit, and that this area provided freshwater for `Alamihi Fishpond.³

In 1795, Kamehameha returned to Lahaina to provision his war fleet before continuing on to conquer the islands of Moloka`i and O`ahu. Following the unification of those islands, between the years of 1798 and 1802, Kamehameha I commissioned the construction of a “Brick Palace” which was built at Keawa`iki point in Lahaina. The building was reported to have been built by two foreigners—Mr. Miller and a man named “Black Jack” Keaka. They had been living on Oahu prior to Kamehameha’s invasion of that island in 1796, and following the battle of Nu`uanu, they joined his side. The “Brick Palace” structure was two stories in height, and measured 41 by 15 feet⁴ on the outside.

Kamehameha used the “Brick Palace” as his encampment headquarters during his residence on Maui in the year of 1802, while waiting for the assembly of his fleet of war canoes to carry out the invasion of Kaua`i. Several historians suggest that the building was built as a residence for Queen Ka`ahumanu, but she apparently refused to live in it. She instead preferred to live in a traditional *hale pili* located a few feet to the south. A retinue of about 1,000 people accompanied the King and Queen during their stay. Their encampment probably extended southward to Loko o Mokuhinia.

By this time Lahaina had rebuilt most of its war-ravaged infrastructure, and was once again productive. A large taro pond field *mauka* (inland) of the “Brick Palace” produced this sacred food for the royalty, and is referred to as the Royal Taro Patch in several sources.⁵

After Kamehameha I left Lahaina to wage an unsuccessful battle to gain control of Kaua`i, he established his court in Honolulu, O`ahu. He returned to Lahaina on several occasions. In 1812, Kamehameha stopped to collect tribute at the time of the Makahiki, and to appoint his brother-in-law Kahekili Ke`eaumoku⁶ as governor of Maui (Klieger et al., p. 17).

Captain Louis Claude Desaulles de Freycinet visited the encampment at Keawa`iki in 1819, shortly after the death of Kamehameha. He observed the following (Klieger et al., p. 17):

“We landed at Rahaina and immediately visited the water supply [probably Pahumanamana Stream] and chose a suitable place to set up our observatory. The governor, Keeaumoku, came with us, and allowed us to use the

³ This fishpond was largely filled and silted in at the time of a 1979 study that was carried out by Joerger and Kaschko. The project area appears to be completely within the boundaries of this fishpond (Site 3799).

⁴ Several historians gave the measurements as 40 by 20 feet. The actual measurements were established during archaeological excavations undertaken in 1965 (Fredericksen and Fredericksen, 1965).

⁵ Mr. Akoni Akana, President of the Friends of Moku`ula, and a Hawaiian cultural specialist, says that the reference is because the King himself actually worked taro there, demonstrating to his people the value and sacredness of physical labor (personal communication, 1998).

⁶ He was the brother of wives Ka`ahumanu and Kaheihimalie (Barrere, 1975, p. 23).

platform of a neighboring morai [heiau], and of a red brick house to set up our instruments. The red brick house was built by Tamehameha, who had originally wanted it to be a store, but the construction was so defective that, hardly finished, it began to sag in plain view. To the south was the habitation of the priests, and right next to it, a morai, constructed on a platform of stones, forming a sort of platform on the beach. The governor made our observatory taboo, so that we would not be bothered by curious onlookers. [Freycinet 1827-1839]"

While Kamehameha I moved the center of government to Honolulu, other members of the Royal family remained in Lahaina. Kamehameha I died in 1819, and his son, Liholiho was crowned Kamehameha II. Liholiho's mother, Keopuolani, the last of the female *ali'i* whose power was sacred, continued to reside in Lahaina. In 1823 she died at the age of 54. Prior to her death she had requested a Christian funeral—issuing the strongest prohibitions against all traditional funeral customs—save wailing (Klieger et al., 1995a, p. 33). She was probably entombed at Halekamani, which was located near the beach in the royal compound of Pakala. The Reverend Hiram Bingham wrote that:

"...her remains were deposited in a very tight stone and mud house. Around the house was built a stone wall from 6 to 12 feet thick and from 4 to 10 feet high. This was a great work. The stones were all carried by hand, a distance of about a mile, and then laid in clay."[cited in Klieger et al., 1995a, p. 36]

Other observers noted that mourners formed an encampment around the tomb, in an effort to remain close to the beloved queen. Kaumuali'i, the ruler of Kaua'i and husband of Ka'ahumanu, died in 1823. He had requested prior to his death that he be laid to rest beside his friend, Keopuolani. In 1825, when the bodies of Kamehameha II and his queen, Kamamalu, were returned to the islands following their deaths from measles in England, their coffins were taken ashore at Lahaina. Here they lay in state for a short time—next to the coffin containing the remains of the king's mother. The entourage was joined by Princess Nahi'ena'ena and Kauikeaouli, now King Kamehameha III, for the final funerary trip to Honolulu.

Princess Nahi'ena'ena lived near her mother's tomb, in Pa Halekamani, preferring Lahaina to the capitol in Honolulu. She was married at Waine'e Church in 1835 to her father's daughter's (Kiliwehi) son, a young Big Island chief named Leleiohoku. Following her marriage she then moved to Honolulu, and soon became pregnant. Some said that the child was fathered by Kauikeaouli, as their marriage would have been customary had the missionary influence not been so pervasive. Nahi'ena'ena gave birth to a child who died shortly afterward. She never recovered from the pregnancy, birth and death of her child, and died herself on December 30, 1836. Her body was returned to Lahaina, and a stately funeral procession wound through the town ending at Halekamani. There her remains were deposited next to those of her mother (Klieger et al., 1995a, p. 52).



Photo 3: View of Moku`ula and Mokuhinia pond in c. 1910. From the Hawaii State Archives (in Kupau, 2001, p. 62).

Kamehameha III (Kauikeaouli) immediately began to construct a mausoleum for his beloved sister at Moku`ula, the royal island in Loko o Mokuhinia (Photo 3). When completed her remains and possibly those of her deceased child, along with the remains of Keopuolani and other *ali`i*, were relocated there. Kamehameha III lived on the island for the next eight years—distancing himself from the pressures of government that existed in Honolulu, and allowing others to attend to the affairs of state.

In 1837, a missionary wife named Andelsia Lee Conde wrote about the tomb at Moku`ula:

“...The room was a large chamber elegantly furnished with chairs, tables and large mirrors set under them, beautiful china matting and a small organ upon which he played for our entertainment. Nearly in the center of the room was placed a bedstead nearly the magnitude of 3 common bedsteads. Upon which was a bed neatly spread, and upon this were placed the three coffins, side by side, most splendidly ornamented. Each of these corpses were enclosed in 3 coffins—the first zinc—the second lead and the third or outside one of wood. These were

covered with scarlet silk velvet, put on with a multitude of brass nails—gilded plates, with their names & c. upon them, and various gilded ornaments, that gave us almost the impression but that of a tomb. ...” [cited in Klieger et al., 1995a, p. 55]

King Kamehameha III eventually married Kalama, who bore him two sons, both of whom died somewhere between 1839 and 1842.⁷ The sister of his new *aikane*, Keoni Ana (John Young II) bore Kamehameha III twin boys, although the two were not married in the Christian sense. One of the twins was Albert Kunuiakea Kuka`ilimoku (1851-1903), the only royal child that survived infancy. Although raised by Queen Kalama, the grandson of Kamehameha I was treated with scorn by the Calvinist Christians, even though he served as a House representative in 1880 (Ibid., p. 65).

In 1840, Kamehameha III began building a western-style coral-block “palace” called Hale Pi`ula (House with the Iron Roof). A reference to the structure is found in Thrum’s Almanac (1907, p. 173):

“There was an attempt at a building of a so-called palace which answered for a time as the show place, a name which should properly attach itself to royalty. It was also occupied part of the time by the court of the kingdom. It was more of a curiosity than an adornment. It seemed out of place amid all the tropical profusion and exuberance of natural life to see this building intruding into the atmosphere. With some idea of making the building larger, they undertook to double its length and made a still further blotch on the landscape. Fortunately so far as beauty was concerned it was partly dismantled and never finished and remained quite a conspicuous figure on the beach. However, in later years, they had to transport its stones to the premises of the old for where they now appear in the government building which is much more in harmony with the surroundings.”

The Polynesian, in a July 25, 1846 article, reports that:

“Lahaina contains many excellent and unoccupied houses which would find ready tenants could they be transported to Honolulu. The palace, as a huge graceless, incomplete, two-story building, encircled by a wide verandah...is a monument of a waste of government means which do credit to some old and dissolute monarchy verging to its downfall. Its site is the sandy beach, instead of, as it might have been had taste been consulted, a quarter of a mile back, amid one of the many beautiful groves that give Lahaina so picturesque an appearance. Mr. Baldwin’s church and the adjoining house are most delightfully situated in this respect and are quite unique in their tout ensemble, for Hawaiian scenery. The white turrets of the church peer through the trees most prettily. But this palace, on which work seems to be still going on, is on a scale to accommodate a population in itself, nearly as large of that of Lahaina. The interior is not only

⁷ Named Keaweawe`ulaokalani I and II, these were the last immediate family members of Kamehameha III to be placed in the tomb at Moku`ula (Klieger et al., 1995a, p. 65)

wretchedly arranged as to rooms, but positively mangled; special pains being manifest to prevent ventilation, and make as many ill-shaped and comfortless apartments as possible."

Judging from the comments cited above, few were impressed with the building. By 1848 it was being used as a courthouse—until it was severely damaged by *kauaula* winds in 1858. Some of the remaining stones and coral blocks were incorporated into the Lahaina Court House, which still stands in Lahaina overlooking the small boat harbor (Fredericksen et al., June 1988). Other coral blocks found their way into structures elsewhere in Lahaina.

In 1845 the royal court moved back to Honolulu. Kamehameha III took his trusted friend Keoni Ana and his wife, Julia Alapa`i⁸ along with him. In that same year, upon the death of dowager Queen Kekauluohi--*hanai* mother of Queen Kalama and the last female *kuhina nui*⁹--Kamehameha III appointed Keoni Ana *kuhina nui* (Klieger et al., 1995a, p. 69).

Keoni Ana became the Minister of Interior, and carried out the land reform known as the Mahele in 1848. King Kamehameha III died on December 16, 1854—leaving behind a constitutional government and a totally new land system (Ibid., p. 71).

Mid-1800s and the Great Mahele

In 1848, during the reign of Kamehameha III, the traditional Hawaiian land ownership pattern was replaced with a more Western-style system. The Mahele, or division, separated lands into three major divisions—Crown lands (lands for the king), Government Lands, and Konohiki Lands. If common people, referred to as Native tenants, had lived on and gained subsistence from a parcel of land, they could claim these lands, which came to be known as kuleana.

Land Commission Awards

Lahaina contains numbers of Land Commission Awards, which were granted during the Mahele of 1848. The study area contains 9 LCA awards, listed in the following table. The whole `Alamihi *Ahupua`a* including the fishpond was kept as Crown Land since the land division of 1848. The well-known Hawaiian historian, David Malo was awarded a large portion of `Alamihi *Ahupua`a*. Malo's parcel extended from the fishpond *mauka* and across Front Street, which was at one time referred to as the Government Road. Alamihi Pond is depicted on an early map of the Town of Lahaina. This map was surveyed and drawn by S. E. Bishop in 1884. This map indicates that the fishpond is a portion of LCA 3702, and a portion of the present project area is within part of this LCA.

⁸ Julia Alapa`i is the granddaughter of Alapa`i-nui, the king of Hawaii who ravaged Lahaina in the mid-1700s.

⁹ Kaahumanu was the first, followed by Kina`u. Kekauluohi was appointed *kuhina nui* after the death of Kina`u in 1838. Kekauluohi was the daughter of Kaheiheimalie, who was a sister of Kaahumanu. Kaheiheimalie was married to Ulumaheihei Hoapili, the governor of Maui. Kekauluohi's father was a half-brother of Kamehameha I (Kame`eleihiwa, 1992, p. 125).

Table 1: List of Land Commission Awards contained within the Kahoma Village project area.

<i>LCA#</i>	<i>R.P.#</i>	<i>Awardees</i>	<i>Size and locatton</i>	<i>Land use</i>
3702	1839	<i>D. Malo</i>	<i>11 acres, 3roods, 1rod in Alamūhi, Lahaina</i>	<i>3 apana, and 1house lot</i>
8515	8392	<i>C.Lahilahi</i>	<i>No info available</i>	
6061	1860	<i>Kanemo</i>	<i>5.91 acres Pu'ūnoa, Lahaina</i>	<i>6 apana</i>
6052	1206	<i>Waihokaea and Kenui</i>	<i>1.75 acres in Pu'ūnoa, Lahaina</i>	<i>1 apana</i>
9795G	1888	<i>Ua</i>	<i>1.43 acres in Nakulepo, Lahaina</i>	<i>3 apana</i>
11086	3581	<i>Kaiheekai</i>	<i>1 acre, 1 rood, 23 rods in Puako and Hanakao`o, Lahaina</i>	<i>5 apana</i>
3421B	5604	<i>Kaaa</i>	<i>1.12 acres in Kelawea, Kuhlillea, Lahaina</i>	<i>3 apana</i>
520	5632	<i>Daniel I'i</i>	<i>(Huelo, Hamkuoloa District)</i>	<i>Part 2</i>

Many of Lahaina Land Commission Awards are concentrated in a relatively limited space. For example, 63 are listed on the mauka and makai sides of Front Street, from Baker Street on the north, to Shaw Street on the south—a distance of roughly one mile. Of these all were house lots, a few with associated *lo`i*. One Protestant Mission parcel was described as a canoe house (McGerty, Dunn and Speer, 1998, pp. 20-22).

A second area of LCA concentration to the south of the study area can be found *mauka* (east) of Honoapi`ilani Highway in Waine`e *Ahupua`a*. There are well over 100 LCAs that were granted in this area, prior to it being taken over by Pioneer Mill Company for sugarcane land. The Mahele awards in this area consisted primarily of *lo`i*, *kula* land, and house lots (Fredericksen, 2003). Portions of a number of these awards were contained in the Lahaina Flood Control project area that Xamanek Researches investigated in 2002. Subsurface findings indicated that surface water had been much more readily available prior to the impact of commercial agriculture on natural drainage patterns (Ibid.).

A third concentration of LCAs is found in the vicinity of Kahoma and Kanaha Streams, in the general vicinity of the present project area. Most of these were awarded for *kalo* production (many *lo`i*), *kula* land, farming *mo`o*, and several house lots. It is noteworthy that Handy and Handy (1972, p. 492) write that Lahaina's main taro lands were watered by two large streams, Kanaha and Kahoma, which originated in deep, steep-sided valleys, the sides of which were "too precipitous for terracing". There are also numbers of LCAs in the vicinity of Kahoma Stream and the project area, as well as two fishponds – Loko `Alamihi near the project area and the smaller Loko Aimakalipo to the north. Again, this pre-sugarcane land use pattern is associated with the presence of a stable freshwater source. The overall Lahaina Cannery Mall complex to the north of the project area contains portions of 8 Land Commission Awards as well a part of one moderately sized Land Grant.

Discussion

The significance and sacredness Lahaina was established long before the unification of the islands under Kamehameha I. The Pi'ilani family lived in the Lahaina area, *makai* (west) of *Loko o Mokuhinia*. While the exact location remains somewhat unclear, it is possible that they lived near the location of Kamehameha III's Hale Pi'ula. Another connection to Mokuhinia comes with the legendary transformation of Pi'ilani's daughter into the *mo'o*, Kihawahine. This deity became the *`aumakua* of Kamehameha the Great, who probably carried an image of her with him as he traveled around the island at Makahiki time. Prior to the arrival of Kamehameha, Kahekili had been ruler of all of the islands except for Hawaii. He maintained his home and royal court at Lahaina until his death in 1794.

After Kamehameha made Lahaina the capitol in 1802, the area between the point (Keawa'iki) on which he built the "Brick Palace", and *Loko o Mokuhinia* became the residences of chiefly families associated with the Kamehamehas.

The royal court moved to Honolulu, but Lahaina still remained an important place, especially after the succession of King Kamehameha III to the throne. During the tumultuous times following the deaths of Kamehameha I and II, Kamehameha III often retreated to Lahaina and *Loko o Mokuhinia* and the royal island within the lake—Moku'ula. Kamehameha III built mausoleum for his mother, sister, and other *ali'i* connected with the royal family on this island.

After the death of his sister, he remained in Lahaina until 1845, when the court was permanently moved to Honolulu. Lahaina continued to be the residence of important people throughout the 19th century. King David Kalakaua held title to property north of *Loko o Mokuhinia*, and his heirs kept title to the land for two decades into the 20th century. William Charles Lunalilo (later King Lunalilo) also held title to a property in this area as well as a LCA (8559-B).

In 1832, the missionaries conducted a census stating the population of Lahaina at the time was 4,028 (Schmitt, 1973).

By the mid-1800s, the forces of Christianity and commercialism had transformed the Hawaiian system of social stratification. Social status began to be based on acquired wealth, rather than on birth and rank. Chinese and Japanese laborers were imported to work in the sugar industry, and these immigrant groups settled in ethnic clusters throughout Lahaina.

With the advent of commercial agriculture in Lahaina, as elsewhere in Hawai'i, came the need for freshwater. The sacred *Loko Mokuhinia*, along with other streams in the Lahaina area dried up as water was diverted to irrigate sugarcane fields, as Lahaina shifted to from a governing center to commercial agriculture toward the latter half of the 19th century.

Early historic references to Lahaina District describe a rich agricultural oasis, with *taro*, breadfruit, coconut, and other food crops growing near the coast. *Taro* pond fields were

interspersed with fishponds—and all were watered from streams coming down from the mountains. Handy and Handy, 1972, p. 493) refer to the area as extending “about three leagues¹⁰ in length and one in its greatest breadth. Beyond this all is dry and barren”. The general area around the project area falls within the above noted Handy and Handy watered area.

These early visitors commented on the appearance of Lahaina. Archibald Menzies, a naturalist and surgeon on the Captain George Vancouver’s vessel, HMS Discovery, reported during the 1793 voyage (Handy and Handy, 1972, p. 493):

“March 17. On the forenoon of the 17th, I accompanied Captain Vancouver and a party of officers, with two Niihau women to see the village of Lahaina, which we found scattered along shore on a low tract of land that was neatly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regulated manner with different esculent roots and useful vegetables of the country, and watered at pleasure by aqueducts that ran here and there along the banks intersecting the fields, and in this manner branching through the greatest part of the plantation.”

When Louis de Freycinet visited Lahaina in 1819, J. Arago also commented on the idyllic appearance of Lahaina (Handy and Handy, 1972, p. 493):

“The environs of Lahaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to greater advantage; little pathways sufficiently raised, and kept in excellent condition, serve as communications between the different estates. These are frequently divided by trenches, through which a fresh and limpid stream flows tranquilly, giving life to the plantations, the sole riches of the country.”

Lahaina’s main *taro* lands were watered by two large streams, Kanaha and Kahoma, which originated in deep, steep-sided valleys, which were too steep for agricultural terraces (Ibid., p. 492).

In the early 1840s, a local census indicated that there were 1,096 houses and 3,557 residents in Lahaina. Other details of the survey noted that there were 882 grass houses, 155 adobe structures, and 59 of stone or wood—and the town was home to 528 dogs (Moffat and Fitzpatrick, 1995, p. 75).

Late 1800s Period to Present

Sugarcane cultivation began in West Maui in 1849 when Judge A.W. Parsons established and began operating a sugar mill in Lahaina. It was sold to J.T. Gower about 1850, and in 1852, was sold at auction to O.H. Gulick, along with 1,000 acres of land (HRHP, 1974).

¹⁰ One league equals about 3 miles.

In 1854, a whaling vessel stopped in Lahaina on a return voyage from Tahiti with 2 varieties of sugar cane. These were given to the U.S. Consul, who planted them in his garden. One variety proved to be hardy and productive in the harsh Lahaina climate, becoming known as “Lahaina” cane. It was the predominant variety for the next 50 years (Ibid.).

In 1859, Henry Dickinson, a Lahaina shopkeeper, formed the Lahaina Sugar Company and a year or so later, Pioneer Mill Company was founded by three partners - James Campbell, Henry Turton, and James Dunbar, on land deeded to them by Benjamin Pittman. In 1863, Lahaina Sugar Company was sold to Pioneer Mill Company after going bankrupt. A third plantation was attempted by Lot Kamehameha and partners in 1870, but was also bought out by Pioneer Mill Company a couple of years later, following his death.¹¹ In 1877, a German ex-ship captain, H. Hackfield, took over as manager of the plantation, which represented assets of \$500,000 in 1883 (Simpich, 1974, as cited in Graves, 1993, p. A-5).

Henry Turton, one of the originators of Pioneer Mill Company plantation, received permission from the Minister of the Interior of the Kingdom of Hawaii in May of 1882, to proceed with a railroad, intended to connect distant fields with the mill. It eventually extended north to Napili, and south to Ukumehame, running through portions of the study area. The Maui News reports the closing of this railroad in December of 1952, turning the railway bed into cane haul roads, some of which are still in use today.

In the heyday of sugar production, the mill provided electricity, water, and medical care to not only its workers, but also the town of Lahaina. It ran the largest mercantile on Front Street, Lahaina Dry Goods. The building was said to have been built as a possible refuge for the Kaiser, prior to World War I. Because of the fact that it was controlled by German nationals in 1917--H. Hackfield and Company, the managing agent for Pioneer Mill—it was seized by the government and sold to Americans as America entered World War I. Quickly, the company was renamed American Factors, and later became known as Amfac, Inc.

In the early part of the 20th century, Pioneer Mill controlled c. 12,500 acres of land on the west side of Maui—lands which were considered some of the rockiest of the plantation lands in Hawaii. This rockiness is commented upon in Gilmore’s The Hawaii Sugar Manual:

“Owing to the roughness of the terrain, very little cultivating is ever effected with implements drawn by either tractors or mules. Practically all is done with the hoe. Forty percent of the land is so completely covered with rocks that plowing is impossible, and preparing land for planting is done with pick and shovel.

In these fields the rocks are cleared away and built into a series of stone walls from 5 to 6 feet apart and often 3 feet high. These stone walls form the banks of the cane row; and between these walls the ground is softened up with pick and then planted. The soil in these areas, although extremely difficult to get

¹¹ Lot Kamehameha (Kamehameha V) died in 1872, without naming an heir. His property was inherited by his half-sister Ruth Keelikolani—Princess Ruth.

at, is very fertile and yields as great as from 90 to 100 tons per acre can be secured off such fields (1936: 200, in Haun, 2000, p. 15)."

Obviously, such work was extremely labor-intensive, and a constant flow of immigrants was needed to provide this. The first group to come were the Chinese in the early sugar plantation years, followed a generation later by the Japanese, and finally in the 1920s and 1930s, by the Filipinos.

The plantation was basically a feudal system, which provided for all of the workers needs—from housing, to merchandise, to health care and social activity. In this environment, Waine`e Village was established in the early 1900s. The village contained up to 200 houses in its prime in the 1920s. It continued to house plantation employees throughout the pre- and post-World War II years, until it was slated for destruction. In March 1999, it was announced that Pioneer Mill would cease to plant sugarcane on its vast land holding on the west side of Maui. As each field ripened, it would be harvested, and when all harvest was complete, the mill would be closed down.

The Maui News devoted several pages to the history of Pioneer Mill in its August 29, 1999 issue. At that time, there were 36 homes left standing in Waine`e Village, which made up what was described as the last plantation camp on Maui. The article went on to state: "Until recently, nearly all of the homes were occupied, although...the structures, many of them built in the 1920s, were in poor condition". The site of this former village lies southeast of the project area east of the Honoapi`ilani Highway.¹²

The current project area appears to be just *mauka* of `Alamihi fishpond. In 1889 Pioneer Mill Company had a lease on a portion of the land of Alamihi for 15 years; when the Provisional Government became the Republic of Hawai`i in 1894 the Crown Lands became public lands. After the Hawaiian Islands were annexed by the United States in 1898 the Commissioner of public lands reported that 60 acres of land and the fishpond remained of the Crown Lands in and around the town of Lahaina. Changes to the Alamihi pond occurred when the government road (probably Front Street) was built in 1908 and when Mala Wharf was built in 1920 to 1922. These were dramatic changes to Alamihi Fishpond (Joerger and Kaschko, September 1979). An 1884 map by S. E. Bishop of the Town of Lahaina shows Alamihi Pond, which indicates that this fishpond was not completely filled until after the mid-1880s (see Figure 4).

Previous Archaeological Research

There are a number of previous archaeological studies that have been done in the Lahaina area since the inventory in the late 1920s and early 1930s by Walker (see Table 2, Figure 3, and previous archaeological works below). The first archaeological work in the Lahaina area was the inventory of religious structures compiled by Winslow Walker in 1929 and 1930 (Walker, 1931). He listed 3 *heiau* in the Lahaina environs—Wailehua *heiau*, located at Makila Beach in southern Lahaina (Site 50-50-03-6), Halekumukalani *heiau*, located in the Puehuhunui cane fields above

¹² Waine`e Village was demolished in 2000 and has been designated SIHP No. 50-50-3-5042.

Lahaina (Site 50-50-03-7), and Apahua *heiau* (Site 50-50-03-08) located in the cane fields above Waianae.

Wailehua *heiau* is the structure that was dismantled at the death of Queen Keopuolani (Major et al., 1995, p. 13). The stones were carried from its location at the shoreline to the tomb, Halekamani, which held the remains of the queen until they were redeposited in the mausoleum on Moku'ula. Wailehua *heiau* is described as measuring 130 by 80 feet in Thrum (1909), and was said to have been built by Kauhi-ai-moku-kama, the son of Kekaulike, in or around 1738 (Walker, 1931 p. 109).

Halekumukalani *heiau* was a small sacrificial structure (*luakina*) in the cane fields above (*mauka*) of the Pioneer Mill Company railroad. It was totally destroyed at the time of Walker's survey (Ibid.). Apahua *heiau* is another structure that has been totally destroyed by cane cultivation. According to Thrum, it was built by "... Hua-nui, about 50 years later than Hua-a-Pohaku-kaina (Ibid.).

Brick Palace of Kamehameha I

In 1965, Xamanek Researches (Fredericksen and Fredericksen, 1965) undertook a project to determine the nature and location of the "Brick Palace" of King Kamehameha I on Keawa'iki point. This structure was built between 1798 and 1802, calling on the help of 2 foreigners who were in Kamehameha's entourage. With the aid of several historical documents, the location of the building was narrowed to an area immediately *makai* of the Lahaina Library. A *heiau* was said to have existed near the mouth of Pahumanamana Stream, and probably served as the location for the structure. Finds from subsurface testing included the foundation of the brick building. It measured about 41 feet by 15 feet.

The remaining brick walls were one to four courses in height, and the bricks had been arranged in what was called "British bond". The bricks were not imported, but rather manufactured of local clays, probably from the nearby *taro* pond field, sometimes identified as the "Royal Taro Patch". They were primitively fired, resulting in rather poor quality bricks—some under-fired and some over-fired. Shapes were not always consistent.

The structure was built on a stone platform, probably the unnamed *heiau*, which had been paved with small, waterworn pebbles. The bricks were bonded with a pinkish-colored, poor quality mortar, which was produced by burning coral to lime, and mixing that lime with beach sand and soil. Because of the lack of a solid foundation, the brick structure began to crack and sag, almost immediately after its completion. Consequently, to cover the cracks, the outside of the building was covered with a lime and sand plaster sometime in the 1820s or 1830s.

The archaeological findings corroborated historical observations in terms of the general location, and the nature of the construction. However, the true size of the building was somewhat different from historical records, as most described the structure as measuring 20 by 40 feet.

In 1969 Xamanek Researches re-excavated the "Brick Palace" walls to determine what portions, if any, were still in a state of preservation that was good enough for public display.

Additional excavation was also undertaken in the interior of the structure, in order to obtain additional archaeological details and information. Portions of the walls that were still reasonably intact were prepared for display. In the northwest corner of the structure there were 3 to 4 courses of brick that were still *in situ*, and in a good state of preservation. These were exhibited within an enclosure, which was covered with Plexiglas. Unfortunately, the prevailing public attitude at that time was not focused on history or preservation, and within a few months of completion of the exhibit, vandals had broken the Plexiglas dome covers, exposing the contents. Subsequently, deterioration of the architectural remains of the palace within the display areas took place (Fredericksen and Fredericksen, February 1970).

Hale Pi`ula

In 1988, Xamanek Researches had the opportunity to conduct subsurface testing at Armory Park—the general location of Hale Pi`ula, the large stone and coral-block “palace”. King Kamehameha III began construction of this structure in 1840. Portions of the park that were covered with paved parking and buildings could not be tested at the time. The foundation of the structure was not located, but a large cairn containing masses of burned coral was located on the *makai* portion of the study parcel. This probably represented a “lime kiln” which produced the lime that was used in the construction of the building. It was predicted that the foundation of the building lies somewhere under either the concrete slab on which the modern buildings are situated, or under the parking lot near Front Street (Fredericksen et al., November 1988).

Other archaeological studies in Lahaina Town

The Aus project (Site 1797) was primarily data recovery and the monitoring of a large excavation for the basement parking area of a business office building on TMK 4-6-09: 21. The finds were almost exclusively historic, and were analyzed and placed into 4 historic periods: Late 18th to Early 19th Century; Mid-to-Late 19th Century; Early 20th Century; and Recent. The earliest artifacts consisted of a mix of historic and indigenous artifacts that would be expected at that transitional time period. The indigenous artifacts include, *leho he`e* (octopus lures), a stone bowl probably used for preparing bait, and adze fragments. Mixed with these were fish debris, and 4 flared-lip case gin bottle portions. Also a hobnail-embossed ink well, typical of those used in the late-18th century, was recovered. It was in 2 pieces, each found in a different part of the study area. The other time periods were represented by bottles, porcelain and crockery, which were dated by style, trademarks and manufacture technique (Fredericksen et. al., June 1989).

Scientific Consulting Services carried out a monitoring program during the Front Street Renovation project that was undertaken in 1997 and 1998 (McGerty, Dunn and Spear, October 1998). The project involved placement of underground utilities, which required extensive subsurface disturbance. The entire project stretched from Lahainaluna Road to Shaw Street. Many precontact and historic sites, and several precontact burials were encountered during the project work. The findings document a subsurface cross section of Lahaina town.

In January 1999, during part of the restoration of the Lahaina Courthouse, an archaeological investigation was carried out by Cultural Surveys Hawaii. The Maui Cultural Resources Commission and SHPD had requested an inventory survey, prior to any subsurface

disturbance. However, the process was not followed, which resulted in monitoring being the original fieldwork at the site (Borthwick and Hammatt, May 1999, p. 1).

A subsurface testing phase of the subsequent inventory survey was worked out between SHPD and CSH, which consisted of the excavation of 4 backhoe trenches, sampling various areas of the Courthouse grounds. It had been assumed that the entire parcel consisted of historic fill. However, it was soon discovered that a precontact substratum was present, in which artifacts such as adzes, coral and urchin abraders, and volcanic glass were located. Radiometric dating placed this occupation at c. AD 1420 to 1660 (Ibid., p. 44). The site is designated as Site 4754.

Moku`ula

Extensive work was conducted in 1993, by Bishop Museum archaeologists Steve Clark and Paul Klieger. They initiated an archaeological inventory survey and test excavations at the site of King Kamehameha III's residence and family tomb on the island of Moku`ula (Klieger et al, 1995a). The abstract (Ibid., p. xviii) states:

"The site appears to have been very important to Kamehameha III, descended from both Maui and Hawai`i Island families. As few meters west of Moku`ula is the site of the Lahaina palace of the great Maui mo`i Pi`ilani of the sixteenth century, as well as the official palace of Kamehameha III, Hale Piula. Recent historical and archaeological inventory and survey research (Phase I) has rediscovered the location of Moku`ula under Malu `ulu o Lele Park. Archaeological excavations have shown that many architectural and other cultural features from the period of royal residence on Moku`ula are very well preserved. Data further indicate that although the fishpond of Mokuhinia is most likely natural, having been in existence for thousands of years, the island appears to have been largely man-made, probably in the early nineteenth century".

Human remains were located in three test units. The remains of an articulated human right foot were identified in a location about 50 meters south of the Royal Tomb on Moku`ula. The presence of metal nails suggests that it was contained in a coffin. Another possible casket burial was located directly within the tomb location. It was not tested to determine whether human remains were still present (Klieger and Clark, 1995b).

Loko o Mokuhinia and environs

In 1995, the Bishop Museum conducted an inventory survey on a parcel located *mauka* of Loko o Mokuhinia (TMK: 4-6-07: 13). Surface and subsurface investigations located two sites—the buried remains of a habitation area and possible pond field (Site 4118), and a plantation-style house possibly dating to 1908 (Site 4119), which was still occupied at the time of the inventory survey (Major et al., 1995). The subsurface habitation area produced domestic artifacts such as bottles, ceramic sherds and metal consistent with a late 19th or early 20th century house site (Ibid., p. 57).

Another parcel, located on the northern shore of Loko o Mokuhinia, was inventoried by Xamanek Researches in October 1998 (Fredericksen and Fredericksen, October 1999). Subsurface testing located a precontact site remnant (Site 4690)—which yielded a radiometric date of occupation at between AD 1475 and 1665. An historic wall was also documented, that appears to have been an LCA boundary wall—one of the few remaining in Lahaina. Several coral blocks are incorporated into the structure, and may have originated from Hale Pi`ula.

An inventory survey of the Kaua`ula Development Parcel to the south of the study parcel was conducted by PHRI in November 1999. A total of 15 backhoe trenches and one 50 by 50-cm. shovel test were used to test for the potential presence of buried prehistoric deposits on this 230-acre parcel (Haun, 2000, p. 6). Three agricultural sites were located. Two were interpreted as late precontact sites, which may have been continually used into the late 1800s, and the third was considered to be historic and associated with sugarcane activity.

The site of the West Side Resource Center, the location of which lies southeast of the project area was surveyed in mid-2000. The site was part of the last sugarcane village on Maui—Waine`e Camp, which was torn down in the late 1990s. Subsurface testing did not yield any evidence of significant cultural material. The area seems to have been impacted by past sugarcane cultivation, and by the construction and recent demolition of Waine`e Camp. One site, associated with the camp was identified—Site 5042 (Fredericksen and Fredericksen, November 2000).

In July and August 2000, Xamanek Researches undertook a monitoring program at Kamehameha III Elementary School grounds, situated just south of the courthouse on the coast. During the project, 10 *in situ* burials were located, along with numerous disturbed graves and a habitation site (Sites 4982, 4983, 4984). The burials were preserved in place, and the disturbed human remains reinterred on the property per the direction and with the assistance of the MLIBC. Radiometric analysis dated the earliest finds from the 16th century (Fredericksen and Fredericksen, November 2001).

A parcel located on the northern side of Loko o Mokuhinia was inventoried by Xamanek Researches in October 1998 (Fredericksen and Fredericksen, October 1999). Subsurface testing below a gravel parking lot located a precontact site remnant (Site 50-50-03-4690) that yielded a radiometric date of occupation at between AD 1475 and 1665. An historic wall was also documented, and appears to have been a largely rebuilt LCA boundary wall—one of the few remaining in Lahaina. A coral block was incorporated in this wall.

Xamanek Researches carried out an archaeological inventory survey on a parcel along Front Street in 2002. This earlier survey tested the property with six backhoe trenches. One previously unidentified historic property, Site 50-50-03-5203, was located during this work. This site consisted of four post-contact refuse pits and a pavement that were likely associated with a former house that was on this property until the 1960s. Adequate information was recovered from this post-contact site and no further work was deemed necessary for Site 5203.

Xamanek Researches also conducted an inventory survey for the proposed Lahaina Watershed Flood Control project in 2002. This inventory survey examined a corridor that was c.

100 m wide by 3.2 km long. The study area contained portions of about 40 Land Commission Awards and was most recently used for commercial sugarcane production. During the course of this survey, it became clear that much of the project area had formerly contained stream meanders and was apparently well watered. While our subsurface testing program did encounter any evidence of intact traditional agricultural and/or habitation deposits, we did locate one *in situ* burial below the former plow zone. This burial was designated SIHP No. 50-50-03-5239. The site remains significant under both Criterion "d" for its information content and Criterion "e" because of its importance to Native Hawaiians (Fredericksen and Fredericksen, 2003).

Studies near Kahoma Stream (see Table 2 and Photo 3)

The Kahoma Stream area lies north of the studies noted above. The stream area has been the focus of several archaeological investigations over the years, beginning in 1973 and continuing into the mid-1990s. The bulk of these studies were part of the necessary work for the federally funded Kahoma Stream Flood-Control Project, which heavily modified the original stream and adjacent areas in Mala.

The Kahoma System was first documented by a walk-through survey conducted by Robert J. Hommon (1973). This complex lies about 1.25 km from the Mala coastline area. Subsequent work was undertaken on the site complex in 1974 by the B.P. Bishop Museum. The Kahoma System was mapped and more thoroughly documented during this more intensive survey phase. The site primarily consists of some 36 agricultural terraces. In addition, a stone-lined *auwai* and an earthen ditch, 7 cement structures and four free-standing walls were also documented. The terraces were interpreted as likely precontact features, while the other features were either post-contact or of an indeterminate age (Connelly, 1974).

A second agricultural system was partially documented c. 250 further inland from the Kahoma System, but outside of the Lahaina Watershed Flood-Control project area. This larger complex was estimated to cover an area of approximately 100 by 100 meters between Kahoma and Kanaha Streams. This agricultural complex is known as the Haia Terrace System and was not fully investigated because of time constraints (Ibid.).

A large burial mound covering an area of c. 20 by 80 meters was noted near the mouth of Kahoma Stream at the time of the 1974 B.P. Bishop Museum survey, but not investigated because of time constraints (Ibid.). This site was located an estimated 25-50 meters inland from the shoreline, near Mala Wharf and across the street from the Chinese cemetery.¹³ Additional work was conducted in the Mala Wharf area by Davis (1974), Sinoto (1975), Hammett (1978), and Joerger and Kaschko (1979).

¹³ The shoreline in the Mala Wharf area has been subjected to erosive wave action for numbers of years, possibly because much of the general coastline has been "hardened" with rock walls, etc. Erik Fredericksen recalls as a child growing up in Lahaina Town in the mid-to late 1960s that burials would periodically erode from the dune area of the Chinese Cemetery as well as the dune area beyond this cemetery. While some of these burials were clearly post-contact ones, several were likely precontact/traditional burials. This pattern of erosion and exposure by high surf episodes continues to this day.

The burial site area noted above and a nearby fishpond were more fully investigated in 1977-1978 by H. Hammatt. This archaeological investigation with monitoring was conducted in order to mitigate impacts associated with the construction of the Mala Wharf Boat Ramp facility. The project identified a ditch that may have once connected `Alamihi Fishpond with Kahoma Stream to the north.¹⁴ In addition, some 90 burials were removed that were associated with a cultural deposit in a portion of the impacted sand dune.

Jenson (1988) carried out an archaeological investigation near `Alamihi Fishpond. A series of 8 backhoe trenches were utilized in this study to investigate the area south of the fishpond. This work did not yield any significant findings. This earlier work was carried out on the current project area.

The Kahoma Complex (Site 50-50-03-1203) is located about 2.7 km from the coast. This site complex was first recorded in 1978, and consisted of a rock shelter and 38 petroglyphs. Barrera (1989) relocated this site and recorded additional features. Jenson (1989) located and recorded habitation and agricultural features in the vicinity of Site 1203. This second site also included 13 probable burial features and a large stone cairn/marker.

An archaeological assessment survey was undertaken by SCS on a 16.8 acre parcel to the northwest (*mauka*) of the project area in the adjacent Makila *Ahupua`a* in 2005. This assessment survey utilized 15 backhoe trenches to sample the project area. Subsurface results suggested that the entire study area had been previously heavily impacted by various earthmoving activities. No significant material culture remains or remnant subsurface cultural deposits were encountered during this assessment survey (Pickett and Dega, 2005).

Xamanek Researches, LLC conducted an inventory survey on a portion of the nearby Lahaina Cannery Mall property in the fall of 2006 (Fredericksen, 2006). One previously unrecorded subsurface site remnant, Site 50-50-03-6078, was located during testing of the project area. This site consists of a subsurface cultural layer that ranges from 10-20 cm in thickness in tested areas. Based on the artifact assemblage recovered during testing, this site was interpreted as a late precontact site that was utilized into the mid-1800s. This site retains its importance for its information content under Criterion "d". In addition, a previously established native Hawaiian burial preservation area, Site 4722, retains its significance assessment under Criterion "d" and Criterion "e". Based on the presence of the two sites noted above, precautionary archaeological monitoring was recommended for the mall area. The Site 4722 preservation area was previously expanded and will be maintained by the property owner.

More recently, Scientific Consultant Services, Inc carried out a monitoring program on a nearby property to the west of the project area in 2008 for the Lahaina Waste Water Pump Station project (Pestana and Dega, September 2008). Two previously unidentified subsurface site remnants, 50-50-03-6524 and 6525, were identified during monitoring of the excavation activities. Site 6524 is composed of post-contact material cultural remains (refuse), and Site 6525 consists of isolated human bone fragments, which were collected by the SHPD.

¹⁴ `Alamihi Fishpond was filled in during work associated with the overall Mala Wharf Boat Ramp facility project. The Mala boat storage facility is situated on a portion of the filled `Alamihi Fishpond.

Xamanek Researches LLC carried out an inventory survey on the adjacent property to the south of the above noted parcel in 2009. The property, owned by the County of Maui, was originally proposed for the location of a recycling center. One site, an early 20th century refuse disposal area was documented in the inventory survey. This site was designated SIHP No: 50-50-03-6524. Following results of the fieldwork, archaeological monitoring was recommended. However, the overall recycling project for this locale was abandoned, because of community concerns about potential site generated noise, etc. The recycling center was subsequently located at the Lahaina Civic Center complex.

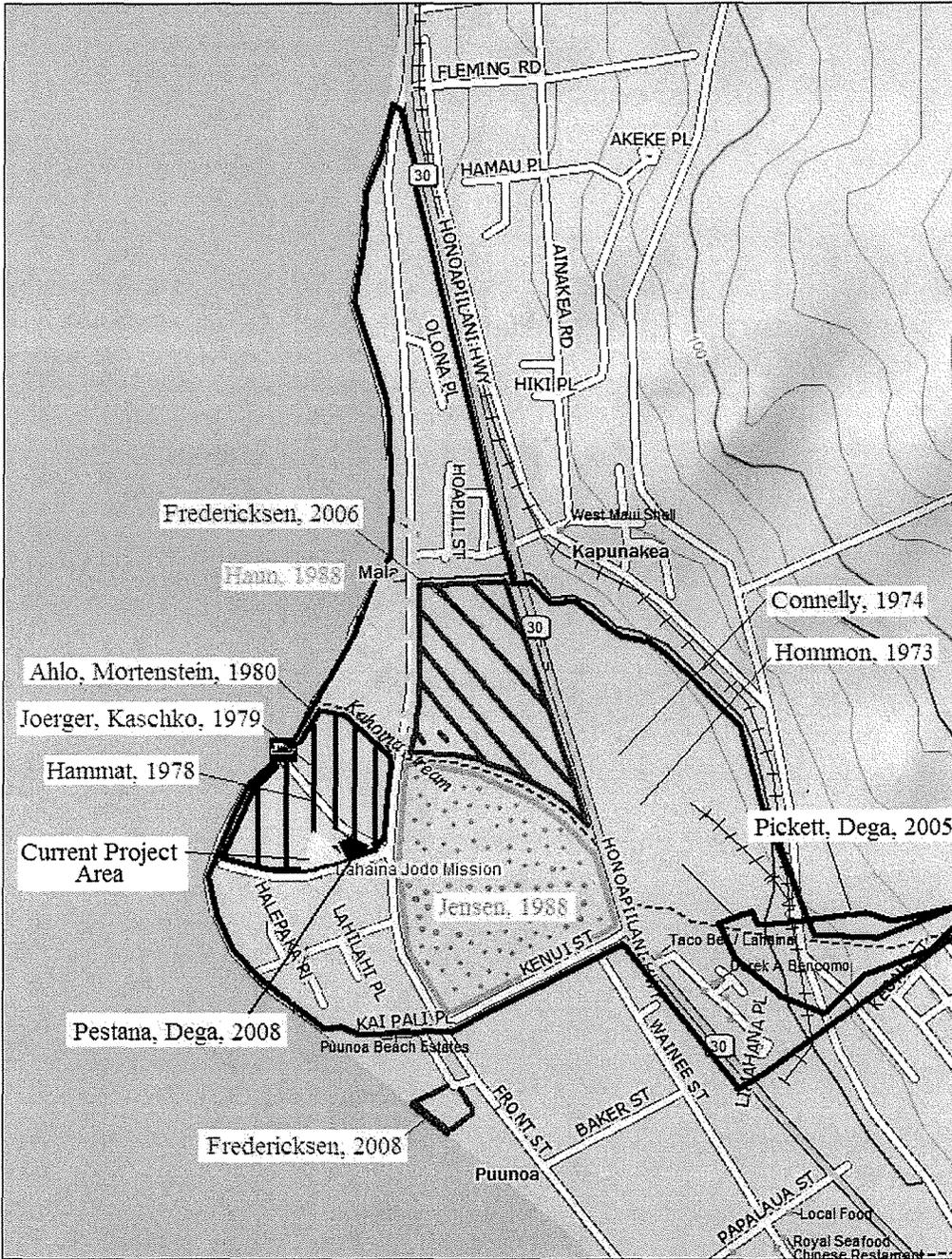
Based on our background research, it is likely that the above parcels lie in a portion of the former `Alamihi Pond. This pond was previously assigned State Site 50-50-03-3799. It appears that the pond was filled in the first half of the 20th century (along with other low lying areas and ponds in Lahaina).

Table 2: Previous Archaeological work in the vicinity of the project area.

AUTHORS	LOCATION	FINDINGS
Borthwick, et. al., 1999	Lahaina Courthouse – TMK: 4-6-01: 9	Precontact Site 4754, between the ages of AD 1420 – 1660.
Fredericksen, Erik – 2000, 2001, 2002, 2005	TMK: 4-6-02: 13 and 14, King Kamehameha III, Front Street	Various sites both precontact and post contact, precontact burials
Fredericksen, Frey, 2008	Same as above	One habitation site, post-contact site
Fredericksen and Madeus, 2009	Mala Wharf area	One post-contact refuse site, Site 6524
Fredericksen and Fredericksen, 1965, 1970	“Brick Palace”	King Kamehameha I royal home
Fredericksen and Fredericksen, October 1999	Loko O Mokuhinia, Lahaina	Precontact site remnant (Site 4690) dating between AD 1475 - 1665
Fredericksen and Fredericksen, August 2000	TMK: 4-6-08: por 4,	Previously disturbed human remains – Site 4978.
Fredericksen and Fredericksen, November 2000	Waine’e Camp – Site 5042	Subsurface testing revealed negative results – Historic Plantation Era Housing Development
Fredericksen et al., 1988	Armory Park – Hale Pi`ula	
Fredericksen et al., 1989	TMK: 4-6-09: 021 Aus Project	Site 1797 – early historic and precontact burials
Fredericksen et al., August 1989, March 1990	Plantation Inn	
Fredericksen et al., October 1989	Malu-ulu-O-Lele Park	Historic refuse
Fredericksen, et al., November 1988	AUS Historic Site #15	
Haun, 2000	TMK: 2-4-02: 4 & 2-4-03: 1, Kaua`ula Stream	3 agricultural sites, two late precontact, 1 historic associated with the sugarcane plantation era
Kleiger, et al., 1995b	Moku`ula, King Kamehameha III residence and family tomb	Human remains (post contact)
Major et al., 1995	TMK: 4-6-07: 13	

Table 2: continued.

McGerty, et al., 1998	Front Street Lahaina -TMK: 4-5-01: 2; 4-6-07, 08, 09 – Lahainaluna to Shaw Streets	Precontact and historic sites and precontact burials, great representation of the subsurface cross section of Lahaina Town.
Pestana and Dega, September 2008	TMK 4-5-04: 036	Post-contact Site 6524 and Human bone fragments Site 6525
Walker, 1931	Island wide survey	State Inventory of Sites.



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MN (10.0° E)

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Data Zoom 14-0

Figure 4: Previous archaeological studies in the vicinity of the Kahoma Village project area (Note: the labeled Current Project Area is a 2009 study on a nearby parcel [Fredericksen and Madeus, 2009], Jensen, 1988 is the location of the current Kahoma Village AAS project).

Settlement Patterns

This part of west Maui was much different in appearance in precontact times than it is today. There are numerous modified drainage systems in West Maui that represent a likely pattern for the Lahaina region. In the higher elevations within the valleys are *lo`i* and *`auwai* systems, built and maintained for the production of *kalo*. In the areas at lower elevations, where much of the moisture dissipated into large alluvial fans, dry land cultivation took place. Along the coast where settlements occurred, it appears that people concentrated on exploitation of marine resources. In Lahaina, several fishponds existed as well. These inland ponds were formed because the sand beach deposits formed parallel to the shore and kept the run-off water from reaching the sea. Hawaiians took advantage of this natural feature, and utilized the ponds for the production of fish. The most prominent of the fishponds was *Loko o Mokuhinia*, around which intensive taro and breadfruit cultivation occurred. Dotted among the fishponds and taro pond fields, on higher ground, were the homes of the people who worked the land. Two fishponds are depicted on a S.E. Bishop 1884 map and the project area is located on top of one of the fishponds (*Loko Alamihī*) and one (*Loko Aimakalipo*) lies to north of the study area on the north bank of Kahoma Stream.

In discussing the settlement patterns of Lahaina, Klieger et al. (1995a) state:

"We theorize that for most of Lahaina's past, the majority of habitation was along the beach, with secondary habitation/garden sites located inland along the shorelines of the fishponds. Intensive wetland taro production continued mauka of the coastline for about a kilometer or so. Terraced fields continued up a few of the more prominent West Maui streams, and these lands probably included at least temporary habitation sites. Kula or open areas along the lower slopes of the mountains were probably ideal for raising dryland taro and sweet potato."

In post-contact times, Lahaina became the center of the Hawaiian Monarchy. Kamehameha I spent time there, between battles of conquest. His son, Kamehameha III resided in Lahaina in preference to Honolulu. Kamehameha I's wife, the sacred Keopuolani and his daughter, Nahi`ena`ena were buried there. Many high status individuals connected with the monarchy in one way or another lived in Lahaina, even after the official capitol of the kingdom was moved to Honolulu in 1845. King David Kalakaua and his heirs held title to a parcel, two decades into the 20th century.

With the introduction of sugarcane cultivation in the 1870s, and the importation of foreign labor to work in the plantation, the character of Lahaina changed. *Loko o Mokuhinia* began to dry up as water was diverted for irrigation. *Kuleana* land grants changed hands as plantation workers became affluent enough to purchase land from Hawaiians willing to sell. Commercial development became a driving force that would continue and intensify through the 20th century. H.P. Baldwin originally formed the Honolua Ranch Co. to raise cattle and coffee in the late-1880s. The ranch's second manager, D.T. Fleming, experimented with pineapple and found that pineapple grew well in this portion of Maui. The original cannery was constructed in about 1912 in Honolua. This facility was utilized for about six years, before the commercial

operation was moved to Lahaina near Mala Wharf. The Lahaina Cannery was constructed to process the successful pineapple crop. About four years later, Honolua Ranch Co. was incorporated as Baldwin Packers, Ltd (Fredericksen, 2006; Kupau, 2001). The “new” Baldwin Packers Cannery was fully in use by 1920 and continued to be utilized until Baldwin Packers’ merger with Maui Pineapple Company in 1962. The Cannery facility was subsequently utilized for storage and office space by small businesses and individuals in Lahaina until the mid-1980s, when it was demolished. The present Lahaina Cannery Mall Complex was essentially built on the footprint of the former Baldwin Packers Cannery facility.

The construction of Mala Wharf, a fixture of Lahaina Town since its completion in about 1922, impacted the nearby `Alamihi Fishpond. An access road to the wharf was installed across the central portion of this inland pond and the pond was subsequently filled (in Joerger and Kaschko, 1979, pg 10).¹⁵ Mala Wharf (Site 50-50-03-1599), which was used on an intermittent basis to load raw sugar from Pioneer Mill onto Matson ships, was periodically repaired until about 1941. The wharf was subsequently abandoned because of unsafe conditions. The remnants of this historic structure now comprise a popular underwater dive attraction.

Predicted Findings

Given the location of the study area, subsurface habitation sites associated with precontact and/or post-contact periods could be present in this portion of Lahaina. Potential finds could include material culture remains such as midden deposits, charcoal remnants, cooking pits, waterworn pebbles, stone features and the like would characterize such sites. Precontact agricultural site remnants could also be present in this area. Finally, it is noteworthy that human burials have been previously identified on the nearby Lahaina Cannery Mall property to the north and in the Mala Wharf area to the west. As such, the possibility exists that isolated and/or clustered human burials and/or previously disturbed human remains could be contained within untested portions of the current 21.556-acre project area.

¹⁵ The coauthor recalls driving to Mala Wharf with my father, Walter M. Fredericksen, on several occasions in the late-1960s and crossing the still then somewhat marshy filled fishpond area.

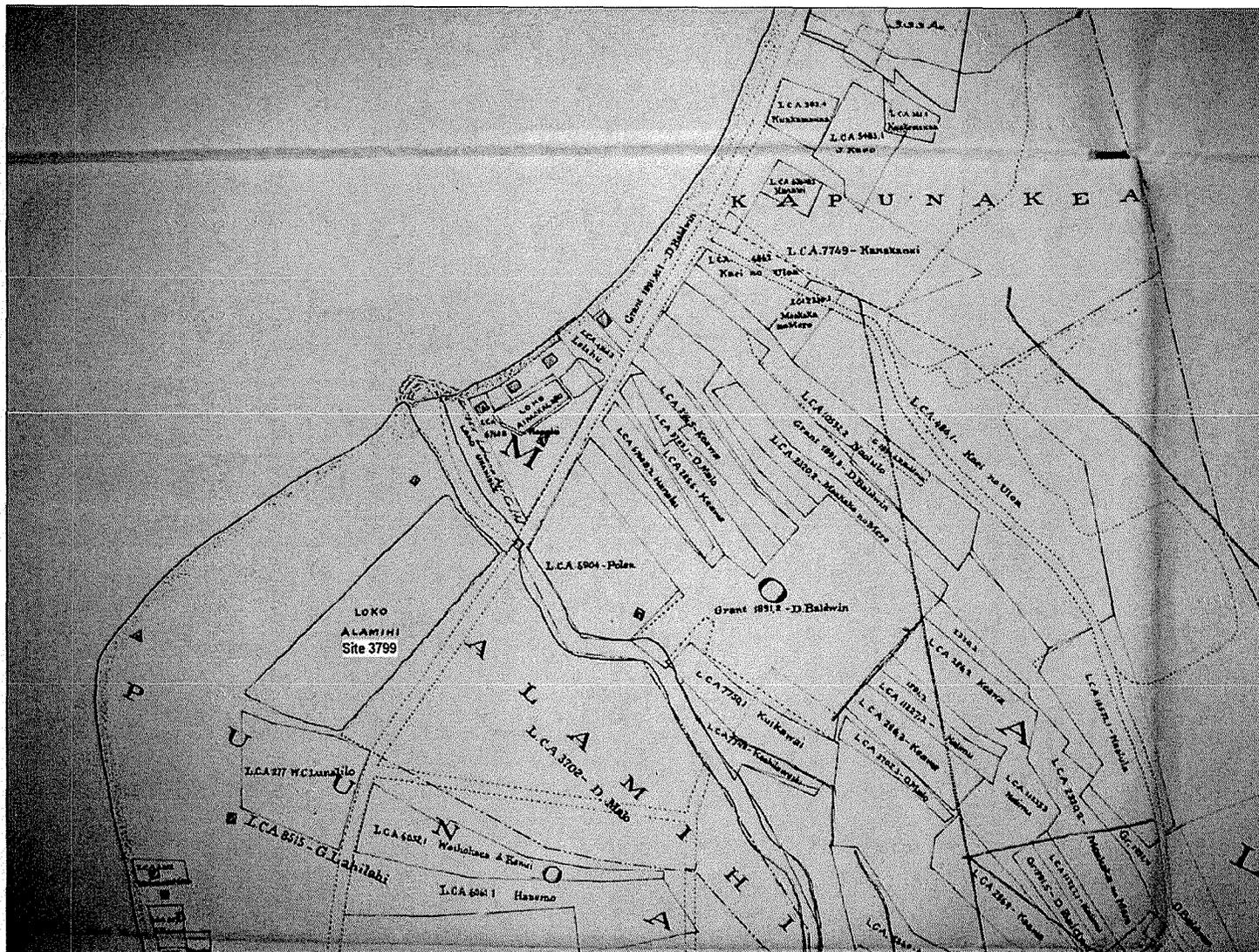


Figure 5: Portion of 1884 S.E. Bishop map, showing location of nearby Site 3799, *Loko`Alamahi* and *Loko Aimakalipo* and LCAs.

FIELD METHODS

Per the direction of Mr. Jay Nakamura, landowner's representative, Xamanek Researches, LLC conducted an archaeological assessment survey on a 21.556-acre portion of land in Lahaina, Maui (TMK: (2) 4-5-008: Portion of 001). The proposed housing project will occupy most of the subject parcel. This portion of land is bounded by the realigned Kahoma Stream flood canal on the north, Honoapiilani Highway along the east, Kenuei Street along the south and Front Street on the west. The proposed housing project is situated in 'Alamihi *Ahupua'a*, Lahaina District, Island of Maui, TMK: (2) 4-5-008: Portion 001). The archaeological fieldwork was conducted by Marco Molina, B.A., and supervisory archaeologist Jennifer J. Frey, B.A. The project was under the direction and supervision of the field director and principal investigator Erik Fredericksen (SHPD Permit # 07-11). Our fieldwork was conducted on 2 June, 7 July, and 15-17 August 2011.

The archaeological investigation consisted of a 100% surface survey and thirty, mechanically excavated backhoe test trenches (BTs) on portions of the project area. This project area is disturbed and heavily vegetated. As noted above, the study area is on TMK: [2] 4-5-008: Portion of 001. The project area is currently occupied by up to 30 homeless campsites.

The pedestrian inspection of the project area was accomplished through systematic sweeps oriented east to west on the parcel. The walkover started from the north and moved to the south. No surface features were encountered during this surface inspection, which was undertaken on in June and July 2011. It was at this time that numbers of informal campsites were noted, and the landowner's representative contacted. Mr. Jimmy Nakamura, Stanford Carr Development LLC, subsequently coordinated with the Maui Police Department, and was on site during our subsurface testing to help ensure that there were no problems with temporary residents on the parcel. Subsurface testing included 30 backhoe test trenches that were excavated on the project area during our inventory survey. The backhoe trenches were placed randomly throughout the project area in the clear and accessible areas. There were areas that were inaccessible due to the presence of large old growth trees, heavy vegetation, push piles, and homeless camps.

All backhoe trenches were recorded, photographed, and documented and placed on the project area topographic map. The trench locations were drawn using metric tape and compass technique, as well as by using reference points such as large tree clusters, access roads, etc. Project notes, maps, and photographs are stored on site at our facility in Pukalani, Maui.

RESULTS OF FIELDWORK

This project was undertaken to document all historic properties on the 21.556-acre portion of land before construction of the Kahoma Village project is granted. The survey was also designed to assess the effect of proposed development activities or other construction activities on cultural resources present on the property and would result in the production of a report designed to satisfy SHPD requirements prior to construction permitting. Previous archaeological studies that were conducted in the general vicinity are included in the background section.

This assessment survey utilized 30 backhoe trenches that were placed in accessible portions of the project area (APPENDIX C). At least one trench was excavated within each LCA on the project area. The Assessment Survey did not identify any significant surface cultural remains. In addition, there was no evidence of intact cultural deposits present in tested portions of the project area.

Subsurface Testing Results

As previously mentioned above, there were 30 backhoe test trenches (BTs) excavated on the study area to assess the soil stratigraphy. These test trenches were c. 5 m in length by 0.85 m in width, and up to 2.8 m deep. All 30 of the backhoe trenches were placed accessible areas and excavated systematically throughout the project area. See APPENDIX B for more profiles and photos of the backhoe trenches that are not directly discussed in this section.

Table 3: Summary of Backhoe Trench Test Results

BT#	Length X depth ¹⁶	Stratigraphy	cmbs ¹⁷	Remarks
1	5.0 x 1.6	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam, moist water table	0-35 30-75 70-150 150-160	Layer I: topsoil with grass roots Layer II: sticky when wet, the layer between the disturbed topsoil and original Layer III. Layer III: very silty, sticky when wet, no inclusions or rocks Layer IV: this layer is at the top of the water table, very sticky clay, no rock. All layers sterile.
2	5.0m x 1.75	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown, (7.5YR3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam, moist water table	0-30 30-80 70-160 160-175	Layer I: topsoil with grass roots Layer II: inclusions of dark brown sandy stains (7.5YR3/3) Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, no rock All layers sterile
3	5.0m. x 1.7	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer IIa: dark brown (7.5YR 3/4), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Water table	0-40 40-70 70-80 80-170	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer IIa: sticky clay loam, no rocks or inclusions Layer III: silty, sticky when wet, no inclusions or rocks All layers sterile
4	5.0m. x 1.8	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer Ia: dark yellowish brown (10YR4/4), silty loam Layer II: dark brown, (7.5YR3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam, moist water table	0-40 40-70 70-120 120-170 170-180 180<	Layer I: topsoil with grass roots Layer Ia: silty loam, no rocks Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, no rock All layers sterile

¹⁶ In meters

¹⁷ cmbs = Centimeters below surface

Table 3: Summary of Backhoe Trench Results (cont.)

BT#	Length x depth	Stratigraphy	cmbs	Remarks
5	5.0 x 1.5	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer IIa: dark brown (7.5YR 3/4), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam	0-30 30-75 70-80 80-150	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III. Layer IIa: silty loam, no rocks or inclusions Layer III: silty, sticky when wet, no inclusions or rocks All layers sterile
6	5.0 x 1.85	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer V: gray sand (10YR5/1), within the water table	0-60 60-170 170-185	Layer I: disturbed topsoil, rocky, PVC pipe, grass roots Layer II: sticky when wet, interface layer between II and III Layer V: fine gray sticky sand within the water table All layers sterile
7	5.0 x 1.8	Fill material Layer II: dark brown, (7.5YR3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam	0-75 70-140 140-180	Fill material of rock, loam and some trash Layer II: sticky when wet, interface layer between II and III Layer III: silty sticky when wet, no inclusions or rocks. All layers sterile
8	5.0 x 1.9	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam, moist Water table	0-10 10-50 50-140 140-180 180-190<	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, no rock All layers sterile
9	5.0 x 2.2	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam	0-40 40-120 115-220	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks All layers sterile
10	5.0 x 2.1	Fill material Layer Ia: dark yellowish brown (10YR4/4), silty loam River rock and coarse sand	0-80 70-210 110-200	Fill Material Layer Ia: silty loam, contains a intrusion layer of river rock, pebbles and coarse sand All layers sterile

Table 3: Summary of Backhoe Trench Results (cont.)

BT#	Length x depth	Stratigraphy	cmbs	Remarks
11	5.0 x 2.8	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam	0-30 30-280	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III All layers sterile
12	5.0 x 2.8	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer Ia: dark yellowish brown (10YR4/4), silty loam River Rock	0-30 30-270 270-280	Layer I: topsoil with grass roots Layer Ia: silty loam, very few rocks River rock and pebbles All layers sterile
13	5.0 x 2.0	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer III: dark brown (10YR 3/3), sticky clay loam Coarse river sand	0-30 30-180 180-200	Layer I: topsoil with grass roots Layer III: silty, sticky when wet, no inclusions or rocks All layers sterile
14	5.0 x 2.1	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Pebbles, coarse river sand (10YR4/3) Layer IV: very dark grayish brown (10YR 3/2), clay silt loam, moist	0-30 30-80 80-130 130-180 180-210	Layer I: topsoil with grass roots Layer II: : sticky when wet, interface layer between II and III, few rocks and canine tooth found in the layers Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, no rock
15	5.0 x 2.2	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam River pebbles	0-40 40-80 80-200 200-220	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks All layers sterile
16	5.0 x 2.2	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer Ia: dark yellowish brown (10YR4/4), silty loam Layer III: dark brown (10YR 3/3), sticky clay loam	0-30 30-60 60-80 80-220	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer Ia: silty loam, very few rocks Layer III: silty, sticky when wet, no inclusions or rocks All layers sterile

Table 3: Summary of Backhoe Trench Results (cont.)

BT#	Length x depth	Stratigraphy	cmbs	Remarks
17	5.0 x 2.6	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam	0-90 90-115 100-260	Layer I: topsoil, fill material, trash Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks All layers sterile
18	5.0 x 1.9	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam, moist	0-30 30-100 100-180 180-190	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, no rock All layers sterile
19	5.0 x 1.8	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam, moist	0-30 30-100 90-150 150-180	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, no rock All layers sterile
20	5.0 x 2.0	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam, moist	0-30 30-90 90-190 190-200	Layer I: topsoil with grass roots Layer II: interface layer between II and III, clay sewer pipe fragment Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, no rock All layers sterile
21	5.0 x 1.6	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam	0-30 30-140 130-160	Layer I: topsoil with grass roots Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, no rock All layers sterile

Table 3: Summary of Backhoe Trench Results (cont.)

BT#	Length x depth	Stratigraphy	cmbs	Remarks
22	5.0 x 2.0	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam	0-30 30-60 60-180 180-200	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, no rock All layers sterile
23	5.0 x 2.0	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam	0-25 20-40 40-190 180-200	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, not rock All layers sterile
24	5.0 x 1.4	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam	0-30 30-40 40-100 100-140	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, not rock All layers sterile
25	5.0 x 1.6	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam	0-30 20-100 100-150 150-160	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, not rock All layers sterile
26	5.0 x 1.6	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion Layer II: dark brown (7.5 YR 3/3), silty clay loam Layer III: dark brown (10YR 3/3), sticky clay loam Layer IV: very dark grayish brown (10YR 3/2), clay silt loam,	0-20 20-30 30-150 150-160	Layer I: topsoil with grass roots Layer II: sticky when wet, interface layer between II and III Layer III: silty, sticky when wet, no inclusions or rocks Layer IV: very sticky clay, not rock Recent trash dump in all layers but IV

BT#	Length x depth	Stratigraphy	cmbs	Remarks
27	5.0 x 1.7	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion	0-20	Layer I: topsoil with grass roots
		Layer III: dark brown (10YR 3/3), sticky clay loam	20-160	Layer III: silty, sticky when wet, no inclusions or rocks
		Layer IV: very dark grayish brown (10YR 3/2), clay silt loam	160-170	Layer IV: very sticky clay, not rock All layers sterile
28	5.0 x 1.9	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion	0-70	Layer I: topsoil with grass roots
		Layer II: dark brown (7.5 YR 3/3), silty clay loam	70-150	Layer II: sticky when wet, interface layer between II and III
		Layer III: dark brown (10YR 3/3), sticky clay loam	140-180	Layer III: silty, sticky when wet, no inclusions or rocks
		Layer IV: very dark grayish brown (10YR 3/2), clay silt loam	180-190	Layer IV: very sticky clay, not rock All layers sterile
29	5.0 x 1.6	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion	0-30	Layer I: topsoil with grass roots
		Layer II: dark brown (7.5 YR 3/3), silty clay loam	20-100	Layer II: sticky when wet, interface layer between II and III
		Layer III: dark brown (10YR 3/3), sticky clay loam	90-150	Layer III: silty, sticky when wet, no inclusions or rocks
		Layer IV: very dark grayish brown (10YR 3/2), clay silt loam	150-160	Layer IV: very sticky clay, not rock All layers sterile
30	5.0 x 1.5	Layer I: dark yellowish brown (10 YR 3/4), silty loam w/ 10-20% rock inclusion	0-30	Layer I: topsoil with grass roots
		Layer II: dark brown (7.5 YR 3/3), silty clay loam	30-100	Layer II: sticky when wet, interface layer between II and III
		Layer III: dark brown (10YR 3/3), sticky clay loam	1-140	Layer III: silty, sticky when wet, no inclusions or rocks
		Layer IV: very dark grayish brown (10YR 3/2), clay silt loam	140-150	Layer IV: very sticky clay, not rock All layers sterile

Backhoe Test Trenches (BT-1 through BT-30)

There were 30 backhoe trenches utilized to test the subsurface deposit in the project area. The trenches were used to determine the presence/absence of cultural deposits and to assess the soil stratigraphy in the study area. These trenches were c. 5 m in length by 0.85 m in width by up to 2.8 m deep. Five of the 30 backhoe trenches yielded evidence of Kahoma Stream and one trench contained marine sand, but no cultural material was present in any of the 30 backhoe trenches. Testing verified that portions of this project area have been disturbed by land clearing and more recent activities associated with the placement of construction debris piles, and the construction of homeless campsites.

All 30 trenches were distributed in the accessible portions of the property that were clear of trees, heavy vegetation, bulldozer piles of construction material, as well as areas that contained relatively elaborate homeless camps. There were four common strata that were encountered in nearly all of the trenches. The stratigraphic layers in the trenches were similar across the project area. These trenches are discussed below. Refer to APPENDIX A for additional profiles and photographs of backhoe trenches not contained in this section.

Backhoe Trenches 1, 2, 7-9, 11, 14, 15, 17-30

These trenches were excavated in the same manner, throughout the project area. These backhoe trenches did not yield any pre- or post-contact significant material cultural remains. This group of BT's was excavated to depths of 130-280 cmbs. Representative strata are discussed below:

Layer I (0-70 cmbs)	10YR 3/4, dark yellowish brown; silty topsoil; inclusions include roots and other organic materials, very few cobbles and pebbles; contains no cultural materials. In some trenches this layer contained some recent fill material and trash.
Layer II (10-170 cmbs)	7.5Y/R 3/3, dark brown silty clay loam, very few rocks, this layer was partially disturbed but above the original layer (LIII); contains no cultural materials
Layer III (30-260 cmbs)	10YR 3/3, dark brown, sticky clay loam; no inclusions or rocks; contains no cultural materials
Layer IV (100-210cmbs)	10YR 3/2, very dark grayish brown, clay silt loam, very moist, no rocks or inclusions, beginning of the water table; contains no cultural materials

Layers III-IV were sterile and contained no cultural material. Layer II was an interface layer, which was disturbed in some of the trenches and contained post-contact refuse. Noted culture material included modern glass fragments, PVC pipe, a canine tooth, and a modern ceramic pipe fragment. The final layer, Layer IV, was located at the beginning of the water table

in some trenches. Refer to APPENDIX B for additional profiles and photographs of backhoe trenches in this group. Refer to APPENDIX C for backhoe trench test locations on the parcel.

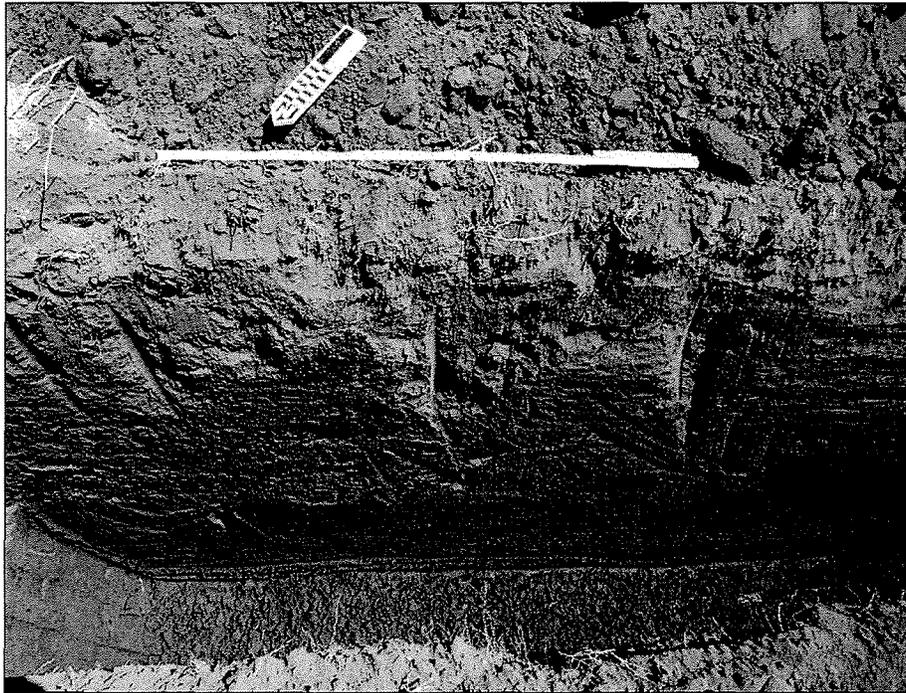


Photo 4: Representative photo of Backhoe Trench 9, southwest profile.

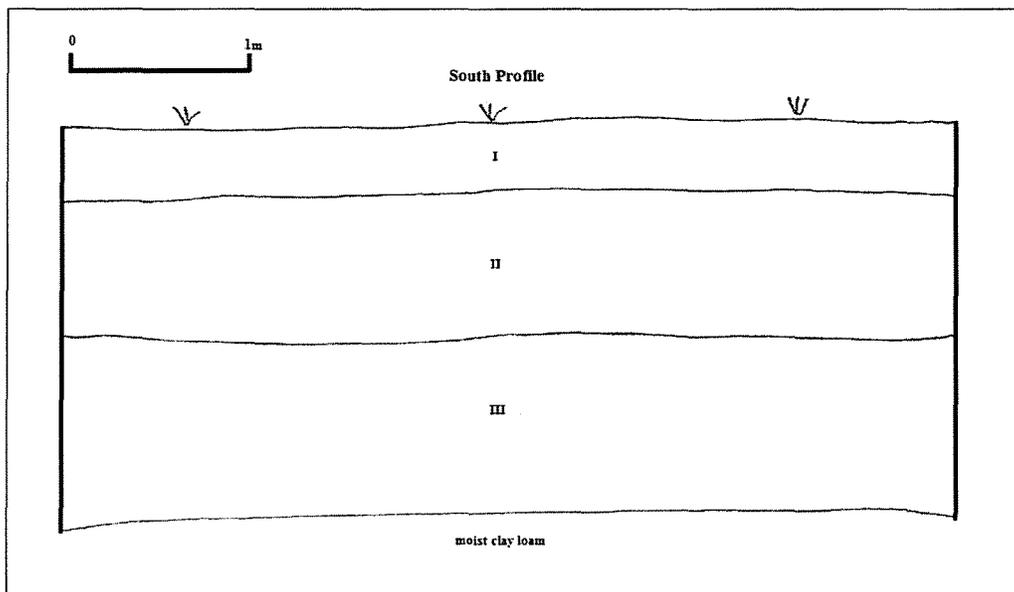


Figure 6: Representative profile of Backhoe Trench 9, south profile.

Backhoe Trenches-3-6, 10, 12, 16

These BTs were excavated in the same manner throughout the project area. BTs 4, 10, 12 and 16 contained a Layer Ia; BTs 3 and 5 contained a layer IIa; while BT 6 contained a Layer V. None of these BTs yielded any significant material culture remains. Refer to APPENDIX A for additional profiles and photographs of backhoe trenches in this group.

Layer Ia (30-210 cmbs)	10YR 4/4, dark yellowish brown; silty loam; contains no cultural materials
Layer IIa (70-80 cmbs)	7.5Y/R 3/4, dark brown; silty clay loam; no rocks or inclusions, contains no cultural materials
Layer V (170-185 cmbs)	10YR 5/1, gray coarse sand, include a few coral cobbles; contains no other cultural materials

No cultural material remains were encountered in any of the three layers.

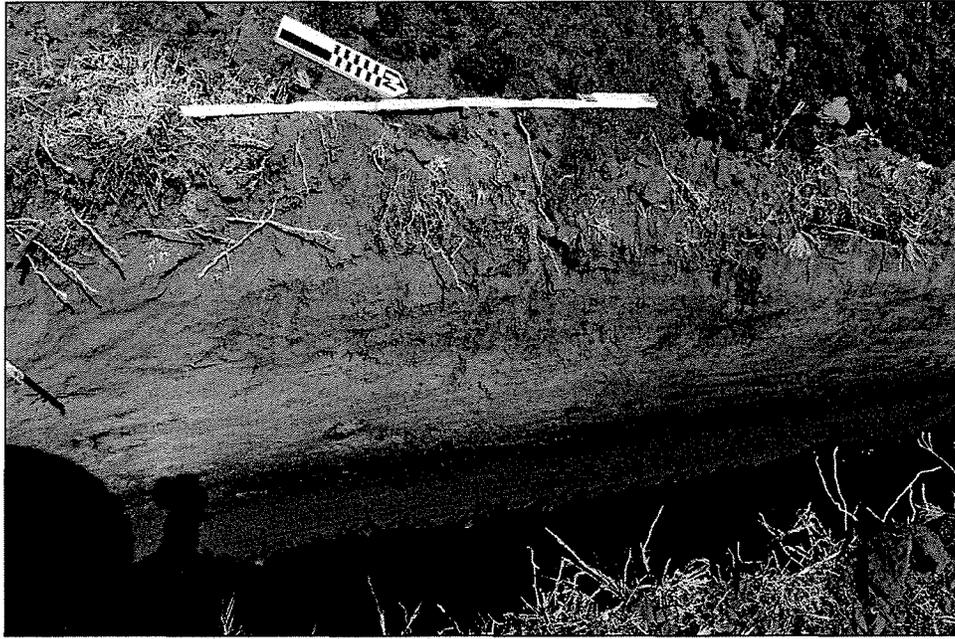


Photo 5: Backhoe Trench 4, west profile showing Layer Ia.

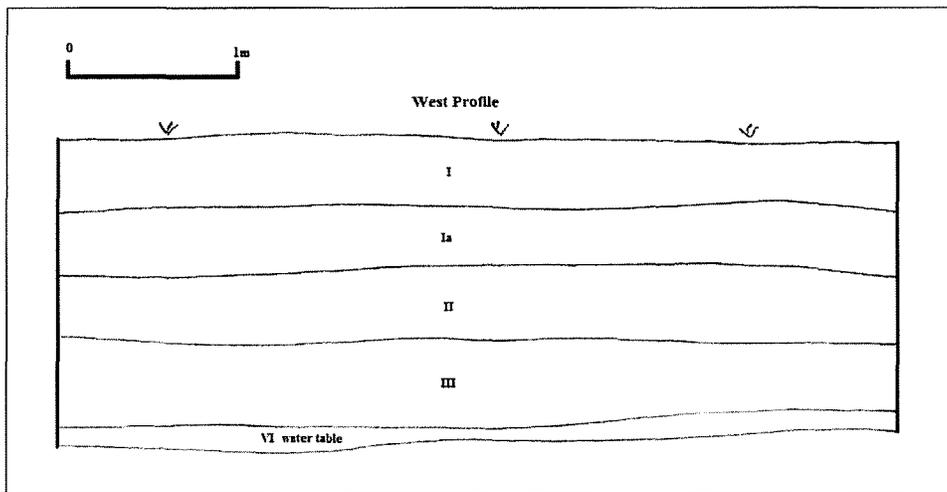


Figure 7: BT 4, west profile.



Photo 6: Backhoe Trench 5, south profile, showing Layer IIa.

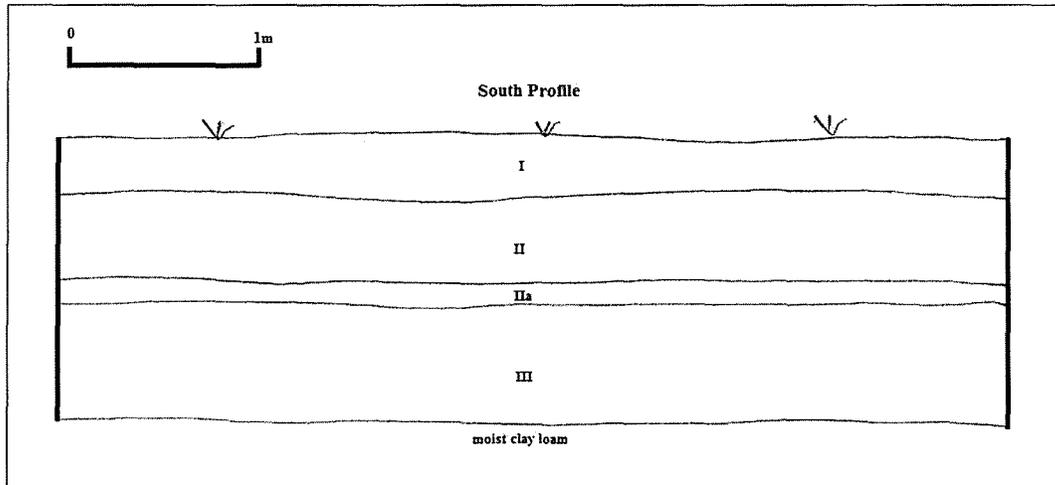


Figure 8: BT 5, south profile.



Photo 7: Backhoe Trench 6, east profile, the only trench with Layer V.

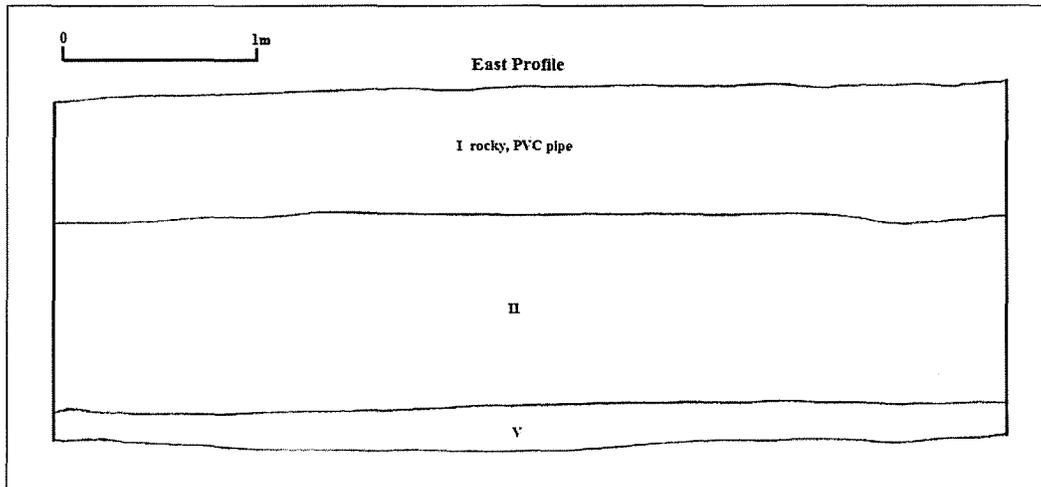


Figure 9: BT 6, east profile.

SUMMARY AND CONCLUSIONS

Summary

Thirty backhoe trenches were placed throughout the 21.556-acre piece of property and excavated systematically in the accessible areas. The stratigraphic layers were mostly consistent throughout the project area. Layers I and II appeared to have been previously disturbed, while Layers III - Layer V appeared to be the original layers with very little inclusions of rocks or roots. Five of the BT's contained alluvial deposits, suggesting that Kahoma Stream may have meandered through portions of the project area in the past. There was no evidence of significant material culture remains or subsurface site remnants located in any of the 30 backhoe trenches that were excavated within the subject parcel. One trench on the *makai* (west) side of the project area contained sand deposits.

Conclusions

The results of the assessment survey of the project area generally conform to most of the expectations derived from the historical and archaeological background research. Project expectations did not include locating evidence of traditional or precontact surface features because this area has been heavily impacted by post-contact activities associated with filling 'Alamihi Pond, residential development, road construction, and other purposes. However, this survey did expect to discover precontact and/or post-contact subsurface cultural deposits. Given the location of the project area, there was a possibility that post-contact and/or precontact human burials and/or previously disturbed human remains could be encountered.

Mitigation Recommendation

Based on the proximity of the shoreline and Kahoma Stream, and the presence of 9 Land Commission Awards, archaeological monitoring is recommended for all future earth disturbance activities on the subject parcel. Human burials have been documented on nearby parcels, some of which have been substantially disturbed (i.e. the Lahaina Cannery Mall; Site 4722). This form of mitigation will help to ensure that inadvertent discoveries are properly mitigated. Ms. Morgan Davis, Maui SHPD Lead Archaeologist, through previous consultation, has concurred that archaeological monitoring is the appropriate form of mitigation for this proposed development.

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APPENDIXES A - C

**APPENDIX A: Site Plan of the planned Kahoma Village development,
Lahaina, Maui**

APPENDIX B - Additional photos and profiles for the BTs that are not discussed in the Subsurface Testing Section

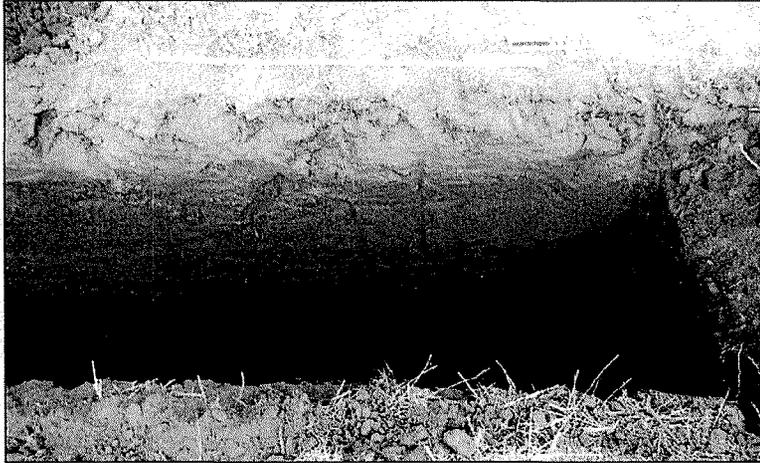


Photo 8: Backhoe Trench 1, west profile.



Photo 9: Backhoe Trench 2, west profile.



Photo 10: Backhoe Trench 3, west profile.

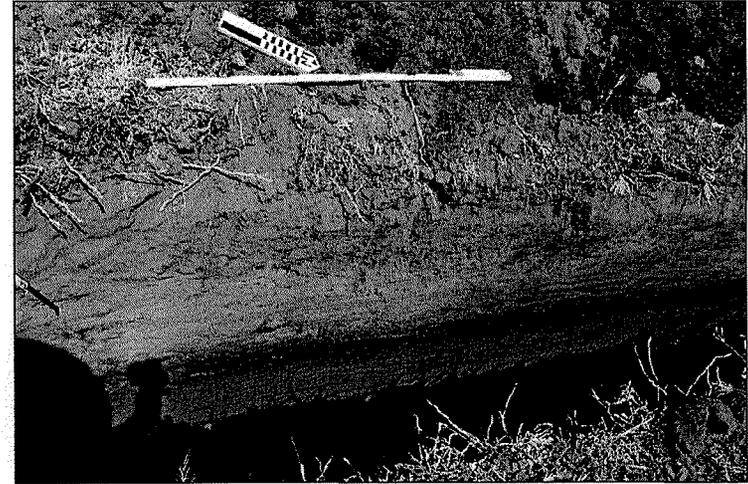


Photo 11: Backhoe Trench 4, west profile.



Photo 12: Backhoe Trench 5, south profile.



Photo 13: Backhoe Trench 6, east profile.



Photo 14: Backhoe Trench 7, east profile.



Photo 15: Backhoe Trench 8, east profile.

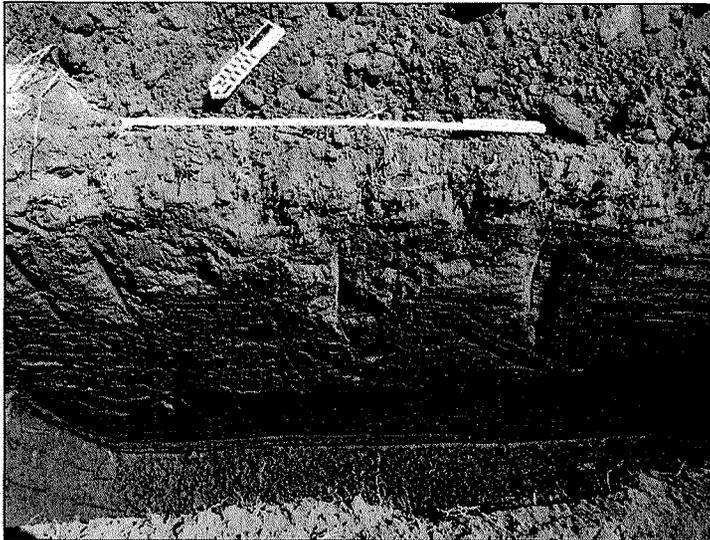


Photo 16: Backhoe Trench 9, south profile.



Photo 17: Backhoe Trench 10, southwest profile.



Photo 18: Backhoe Trench 11, west profile.



Photo 19: Backhoe Trench 12, southwest profile.

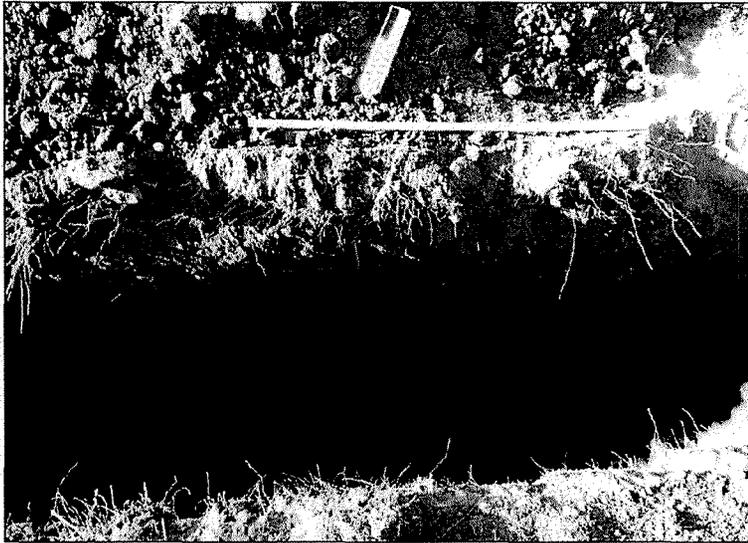


Photo 20: Backhoe Trench 13, south profile.



Photo 21: Backhoe Trench 14, east profile.



Photo 22: Backhoe Trench 15, west profile.



Photo 23: Backhoe Trench 16, west profile.



Photo 24: Backhoe Trench 17, west profile.



Photo 25: Backhoe Trench 18, south profile.

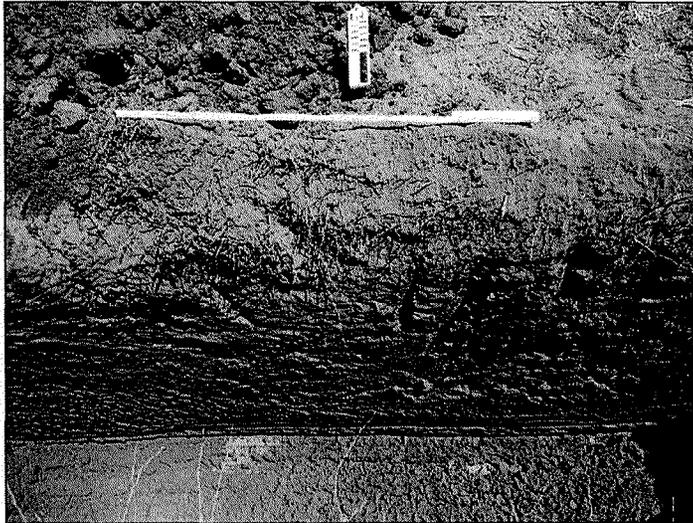


Photo 26: Backhoe Trench 19, north profile

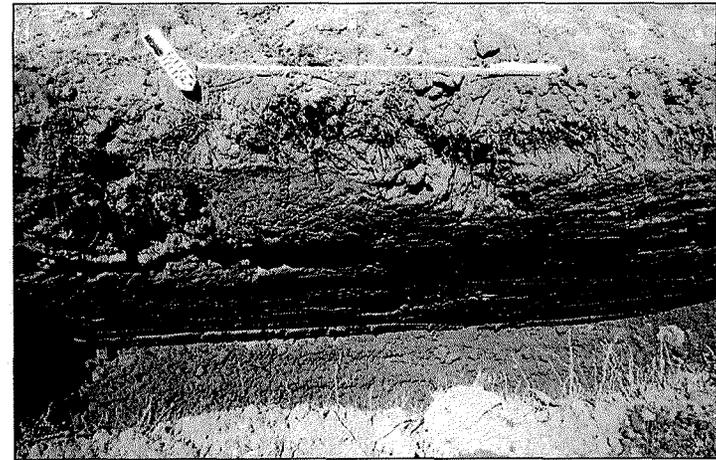


Photo 27: Backhoe Trench 20, southwest profile.

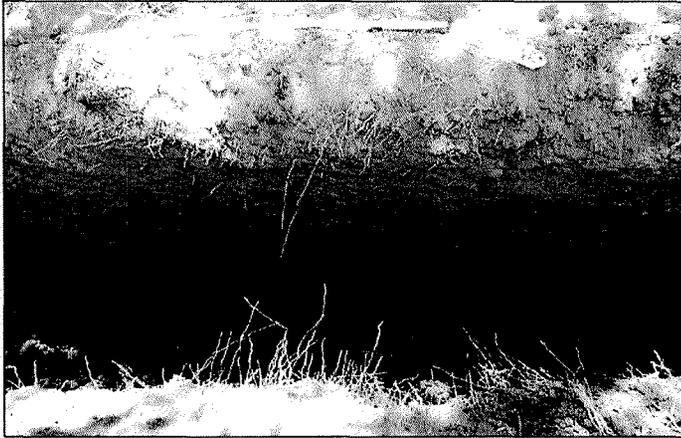


Photo 28: Backhoe Trench 21, west profile.



Photo 29: Backhoe Trench 22, east profile.

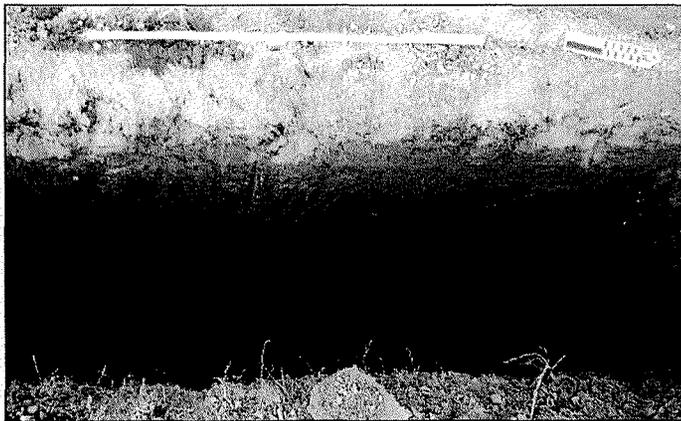


Photo 30: Backhoe Trench 23, west profile.



Photo 31: Backhoe Trench 24, north profile.

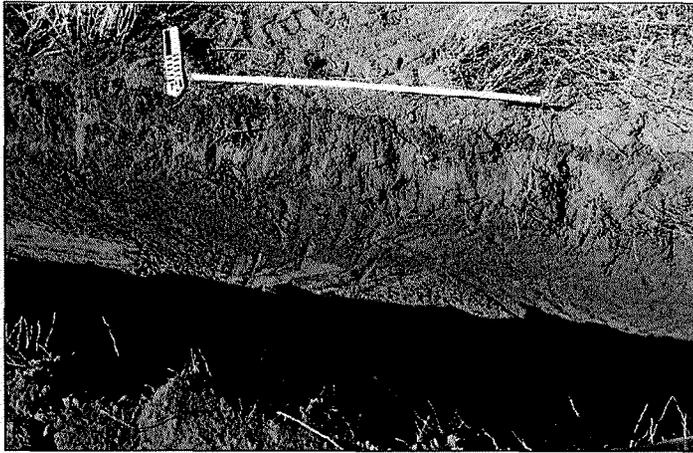


Photo 32: Backhoe Trench 25, south profile.



Photo 33: Backhoe Trench 26, northwest profile.

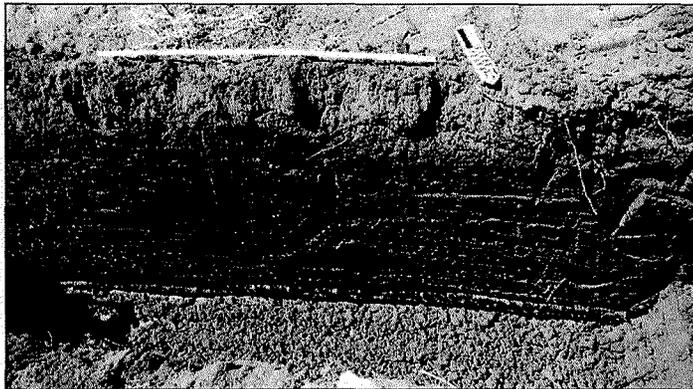


Photo 34: Backhoe Trench 27, south profile.

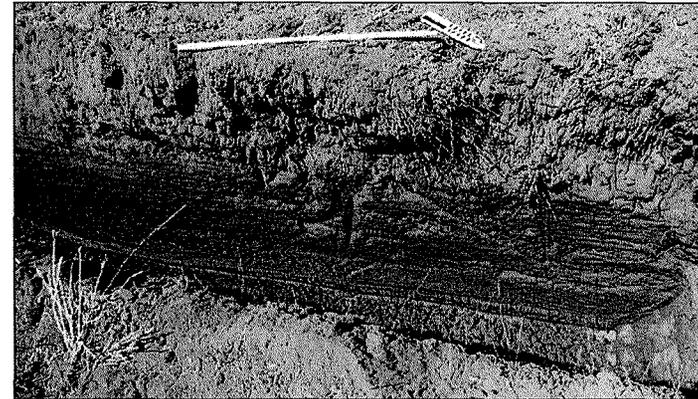


Photo 35: Backhoe Trench 28, west profile.

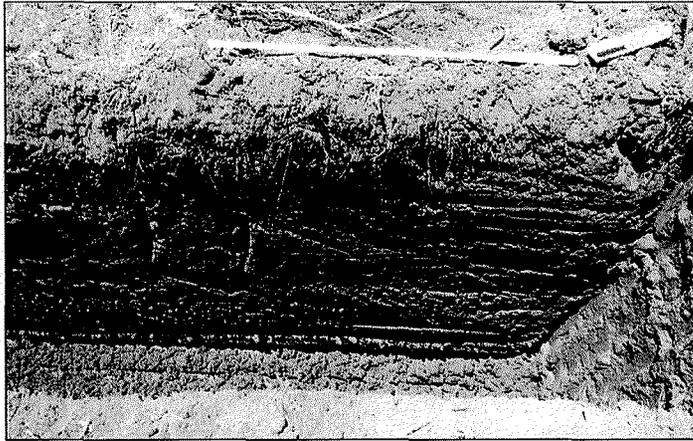


Photo 36: Backhoe Trench 29 west profile.

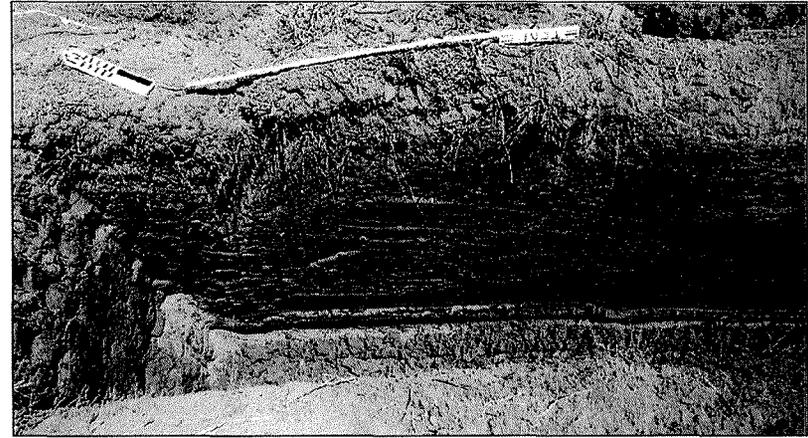


Photo 37: Backhoe Trench 30, east profile.

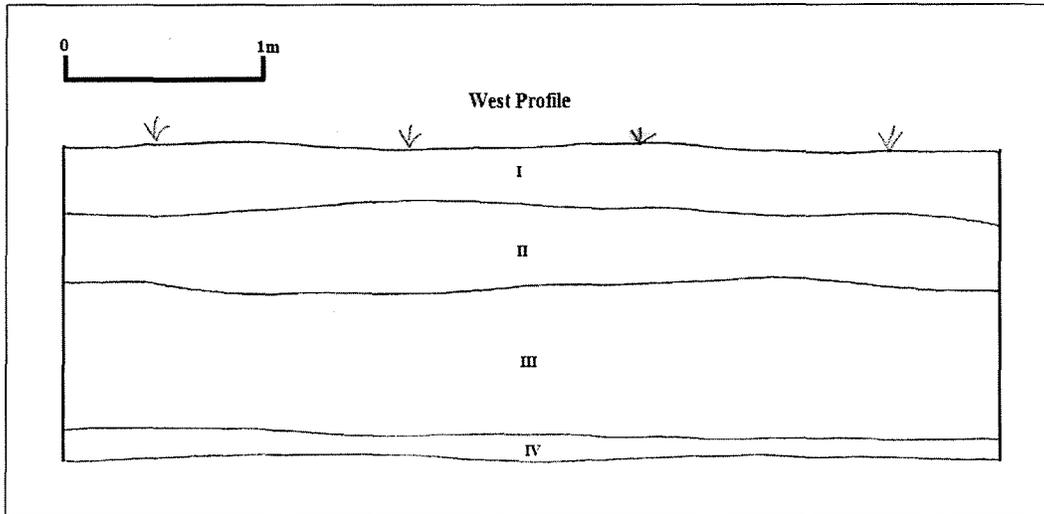


Figure 10: Backhoe Trench 1, west profile.

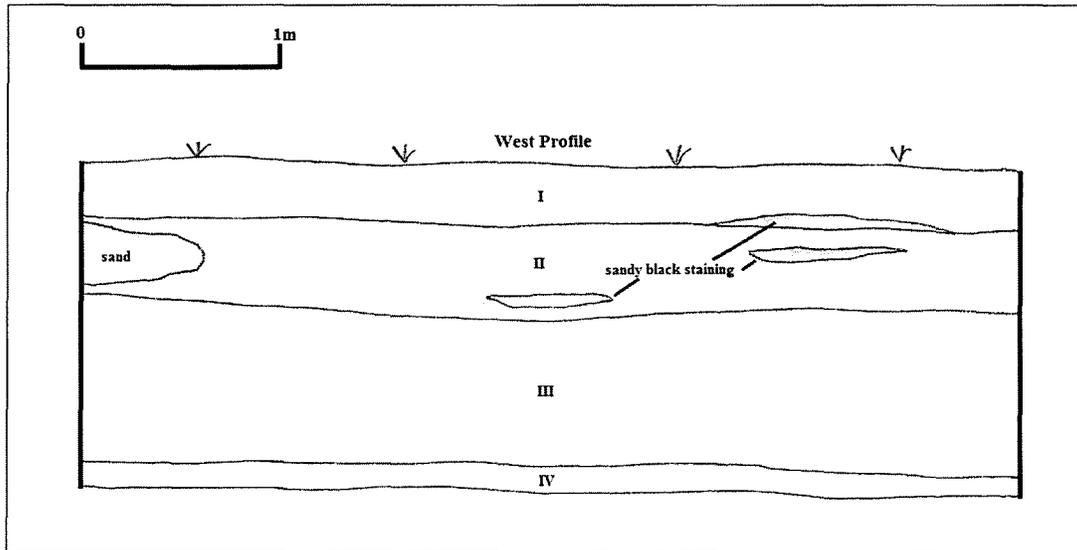


Figure 11: Backhoe Trench 2, west profile.

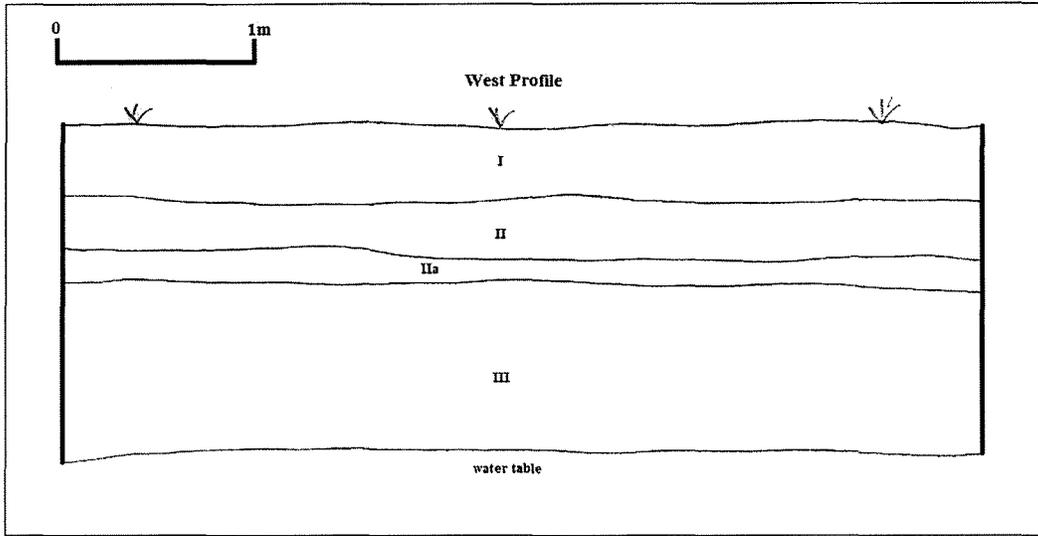


Figure 12: Backhoe Trench 3, west profile.

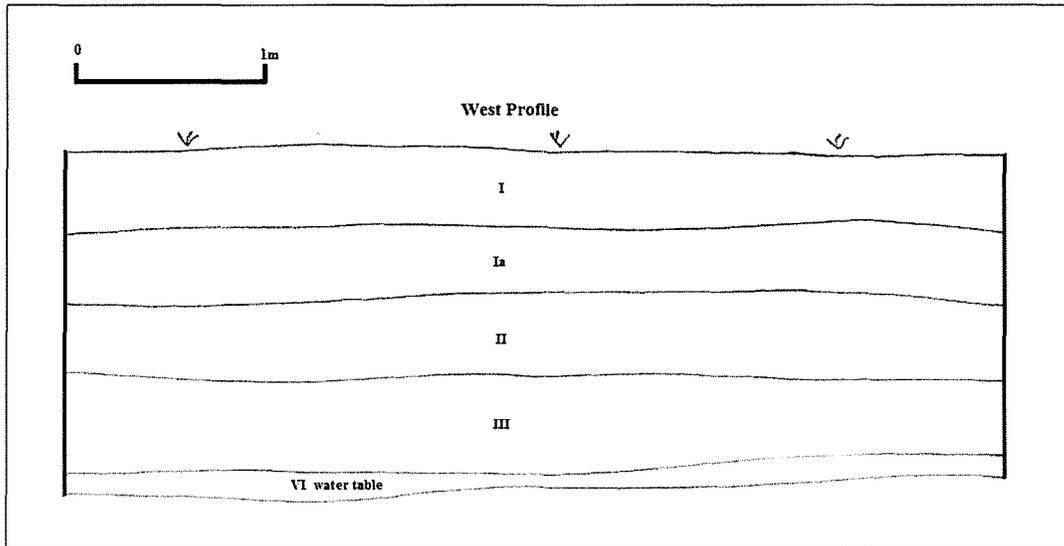


Figure 13: Backhoe Trench 4, west profile.

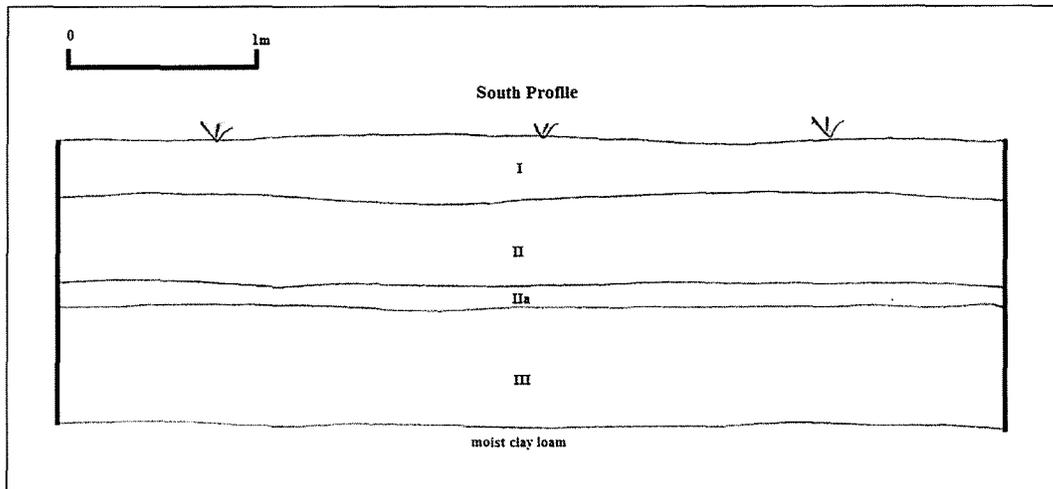


Figure 14: Backhoe Trench 5, south profile.

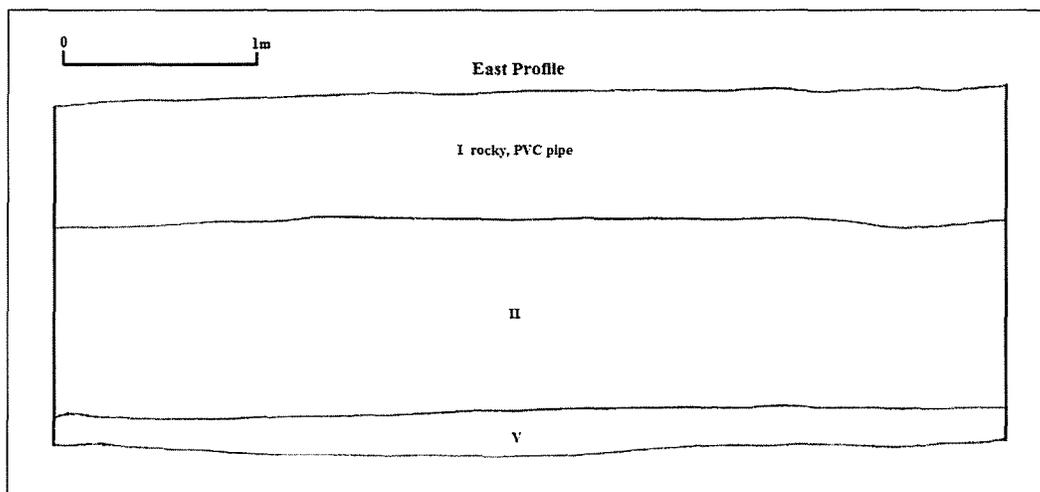


Figure 15: Backhoe Trench 6, east profile.

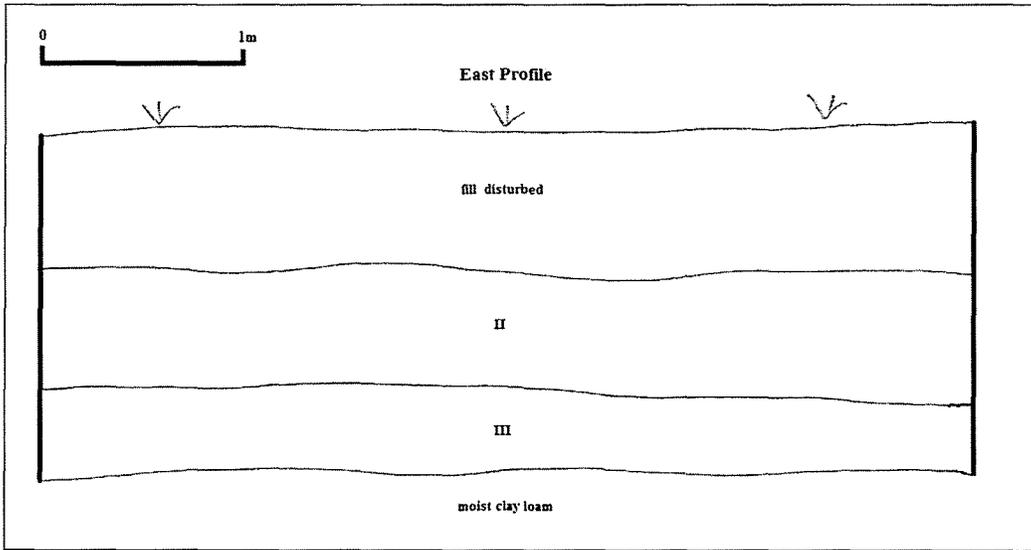


Figure 16: Backhoe Trench 7, east profile.

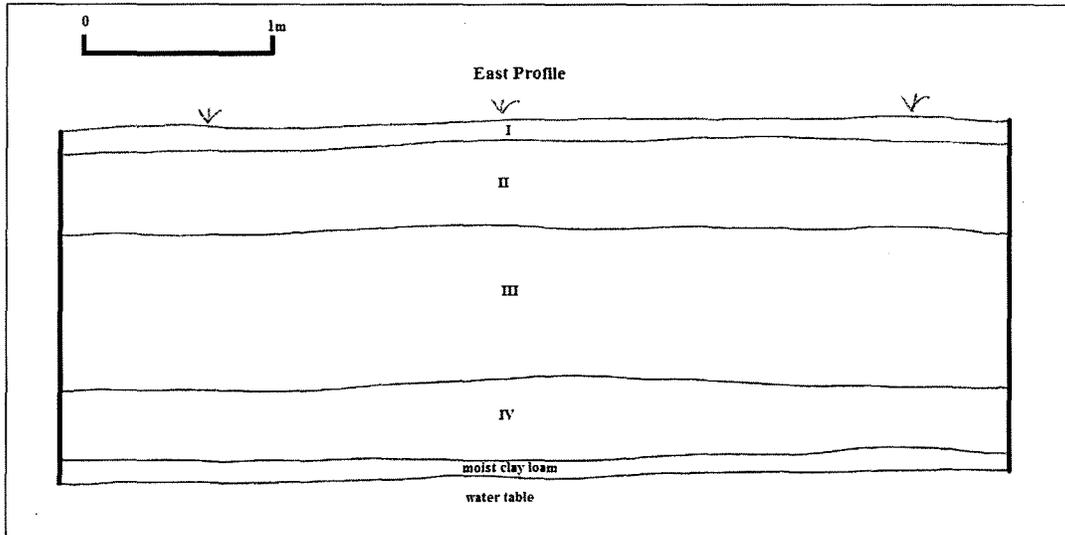


Figure 17: Backhoe Trench 8, east profile.

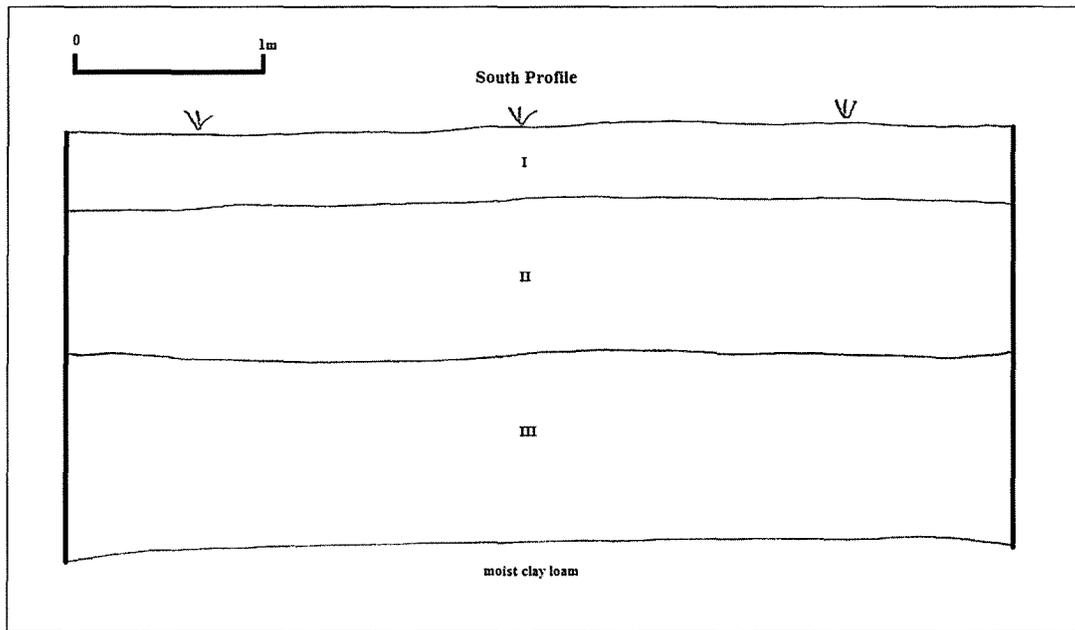


Figure 18: Backhoe Trench 9, south profile.

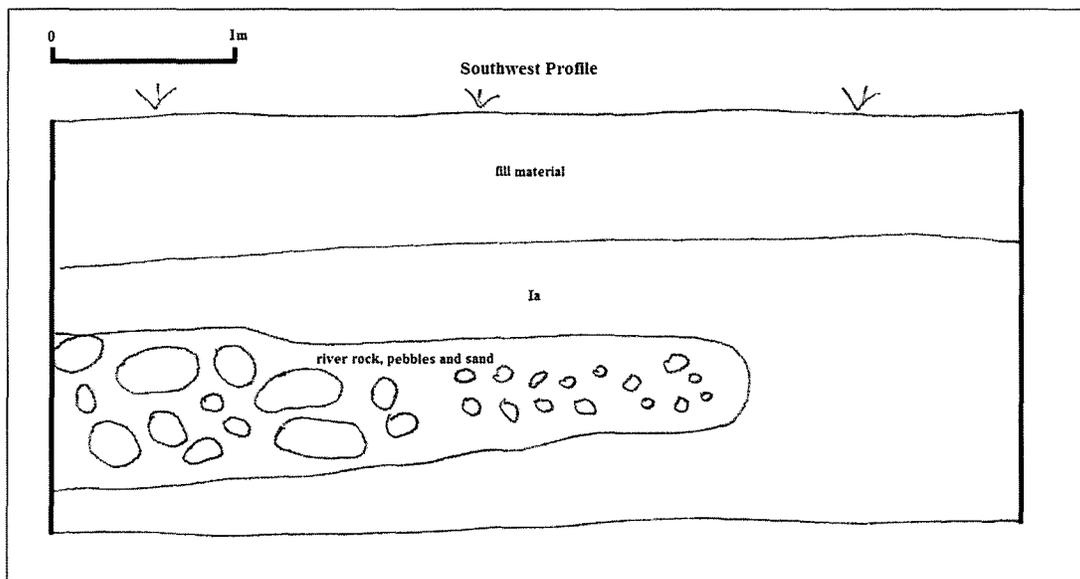


Figure 19: Backhoe Trench 10, southwest profile.

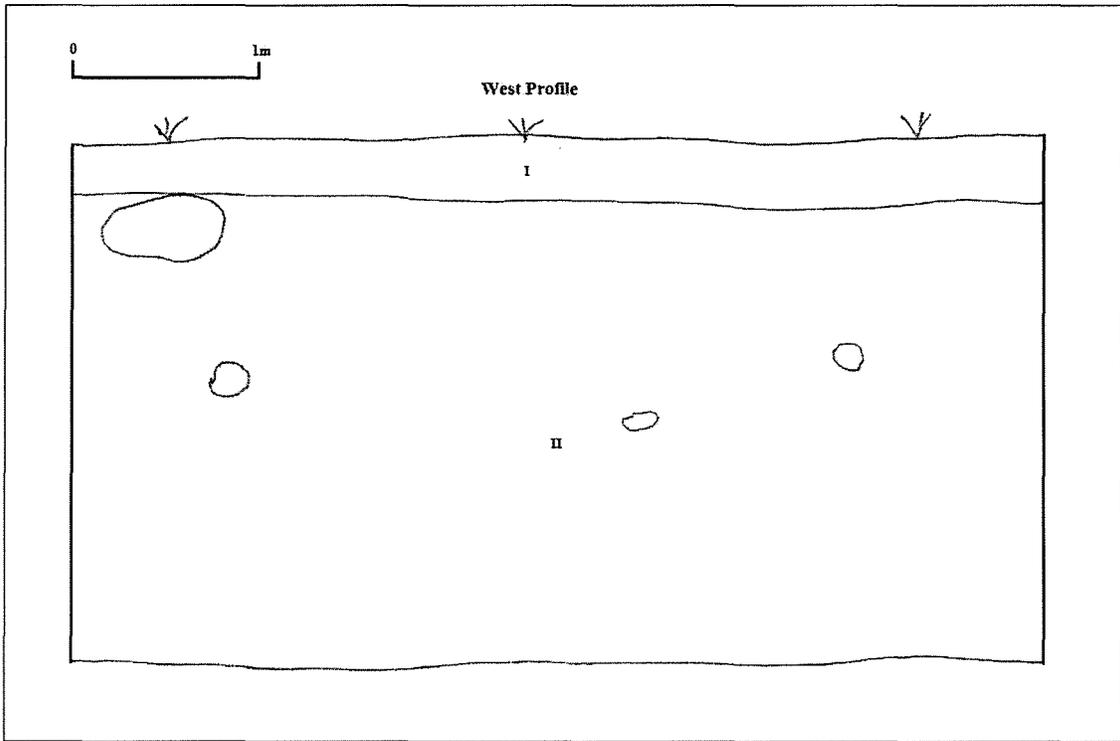


Figure 20: Backhoe Trench 11, west profile.

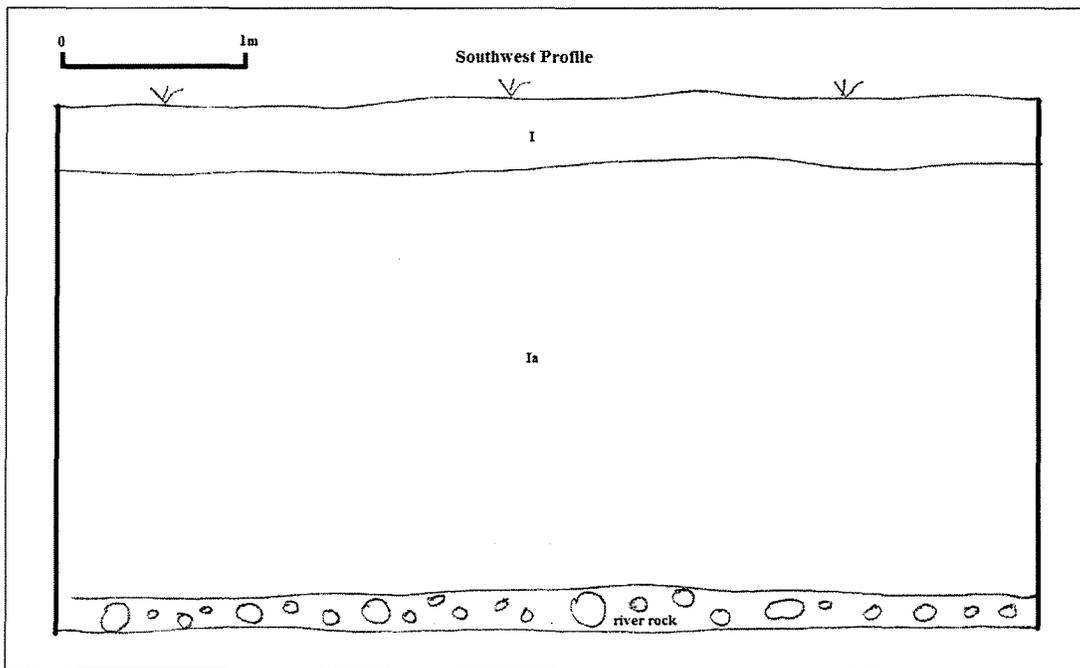


Figure 21: Backhoe Trench 12, southwest profile.

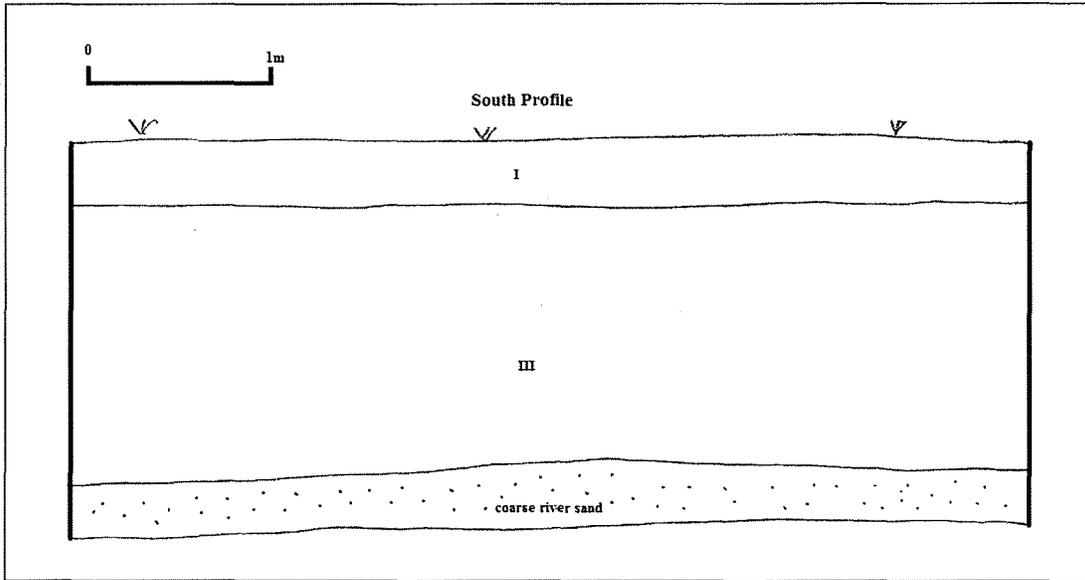


Figure 22: Backhoe Trench 13, south profile.

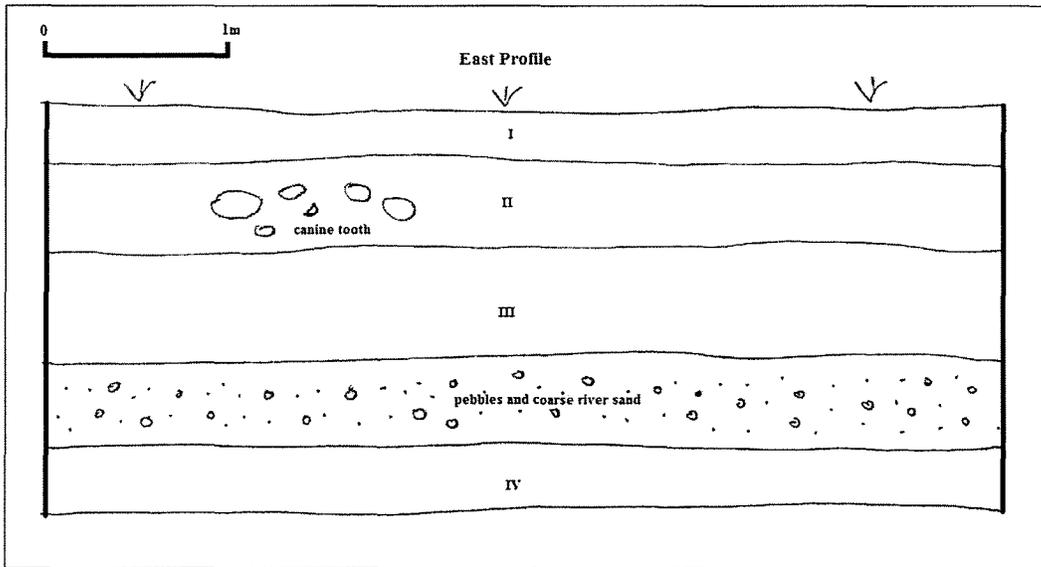


Figure 23: Backhoe Trench 14, east profile.

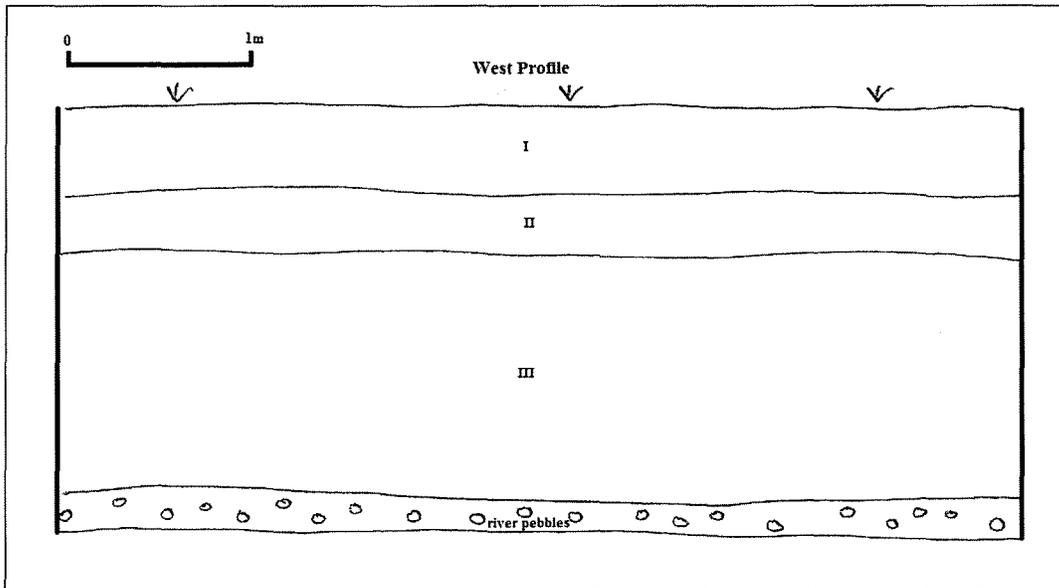


Figure 24: Backhoe Trench 15, west profile.

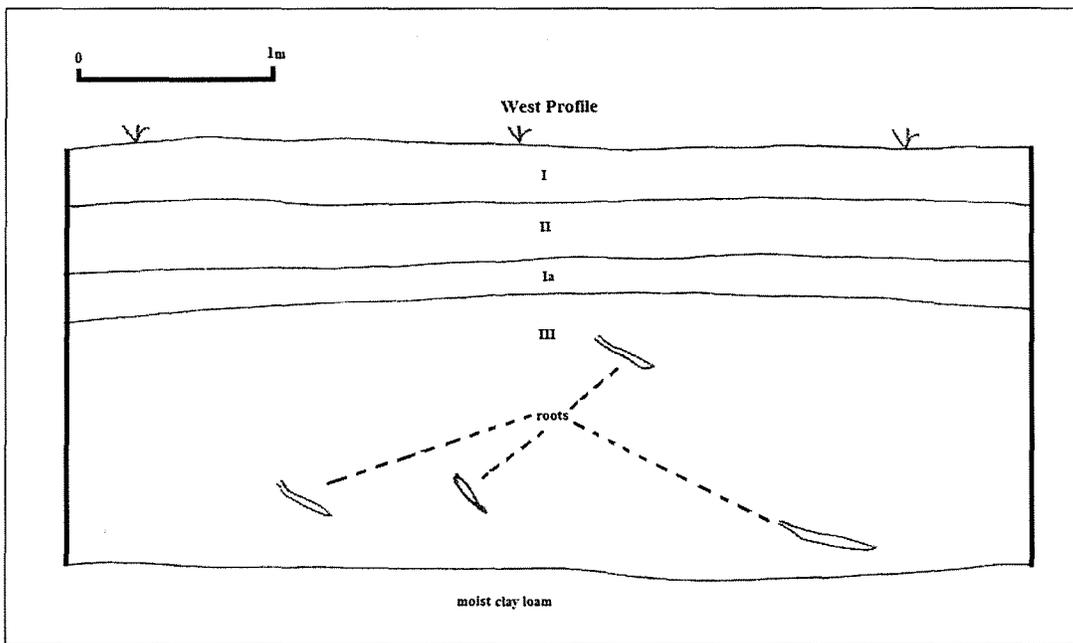


Figure 25: Backhoe Trench 16, west profile.

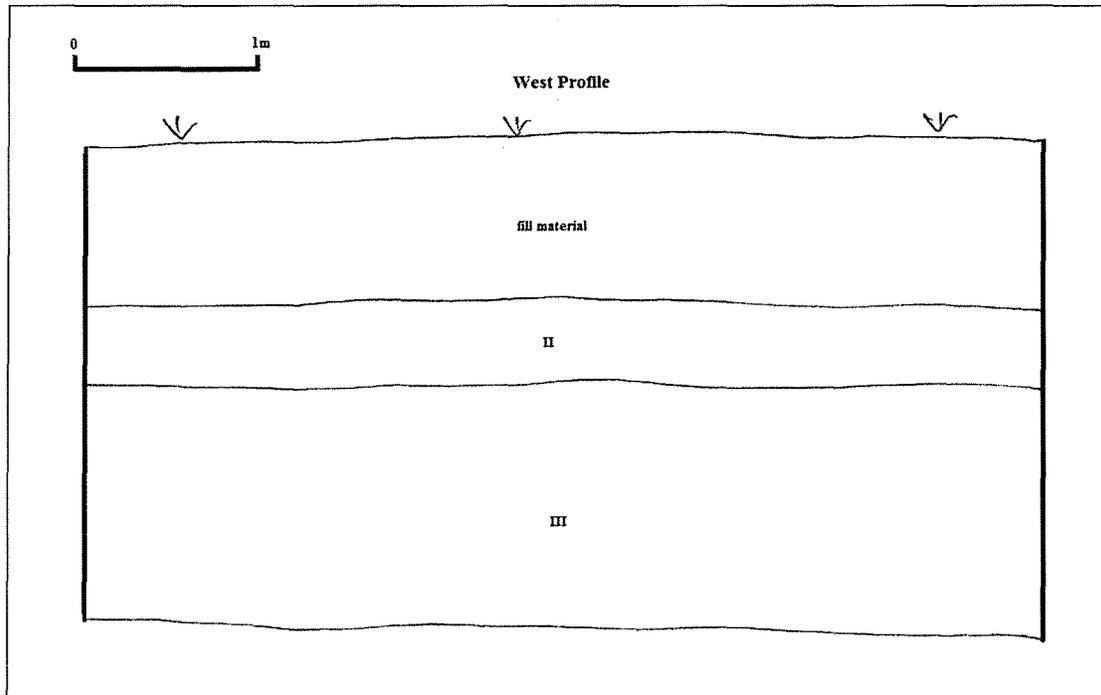


Figure 26: Backhoe Trench 17, west profile.

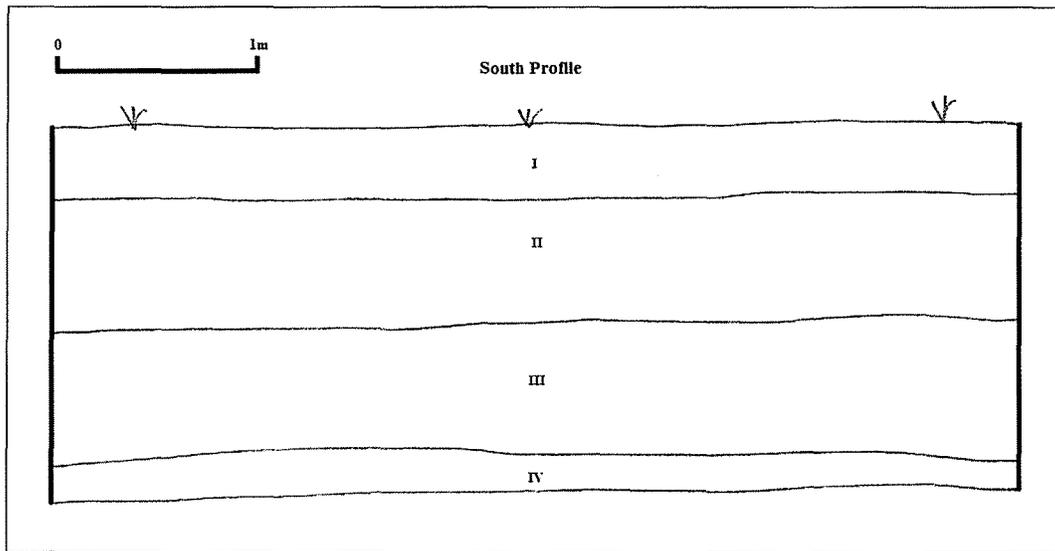


Figure 27: Backhoe Trench 18, south profile.

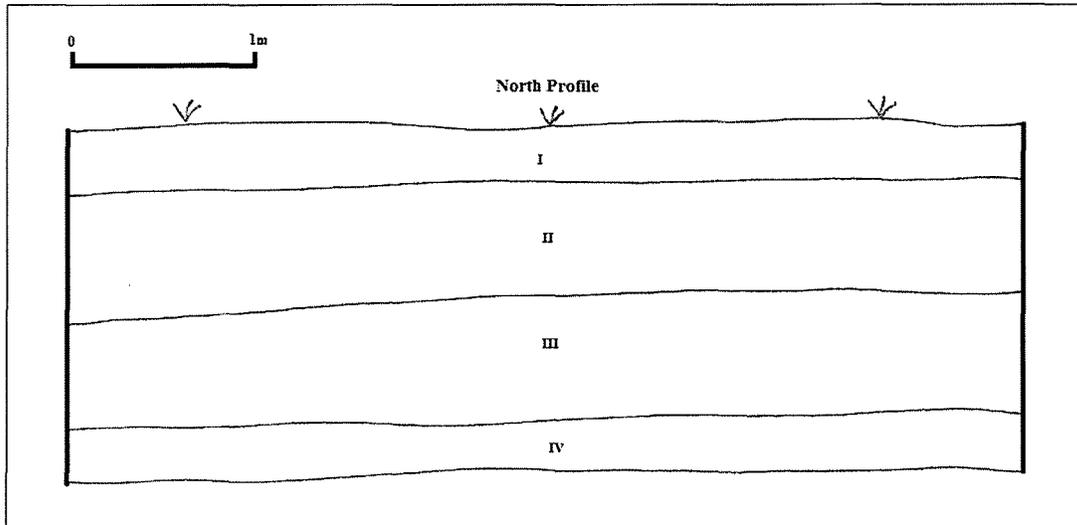


Figure 28: Backhoe Trench 19, north profile.

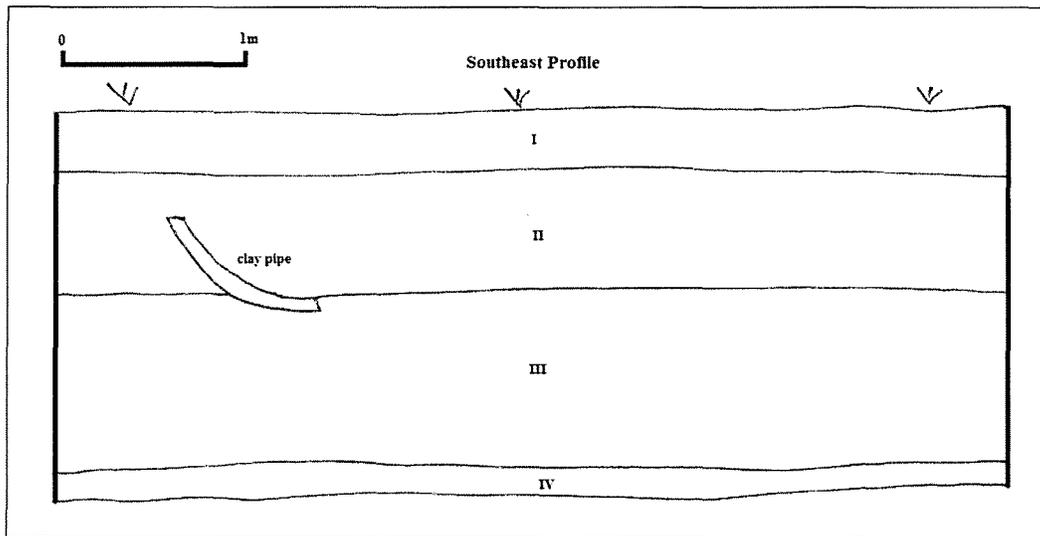


Figure 29: Backhoe Trench 20, southeast profile.

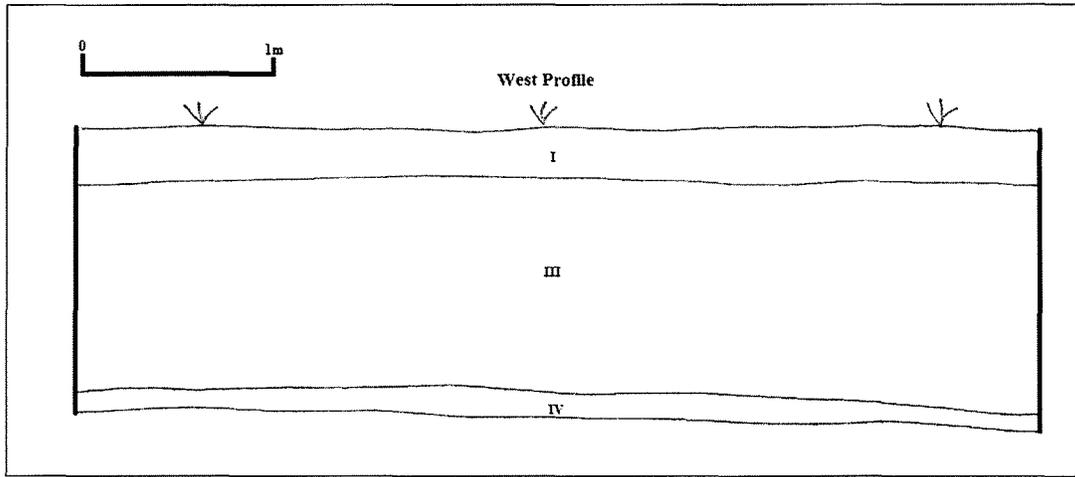


Figure 30: Backhoe Trench 21, west profile.

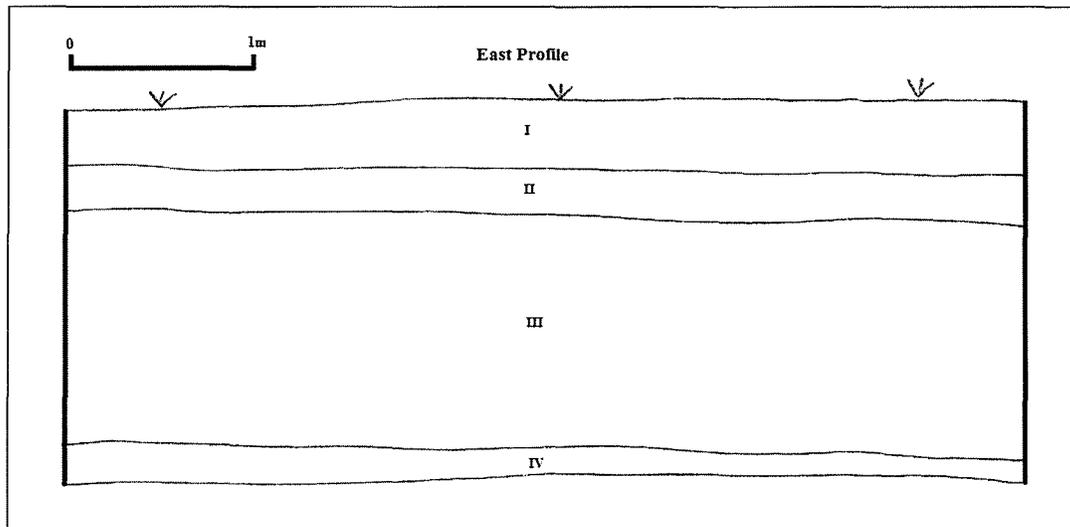


Figure 31: Backhoe Trench 22, east profile.

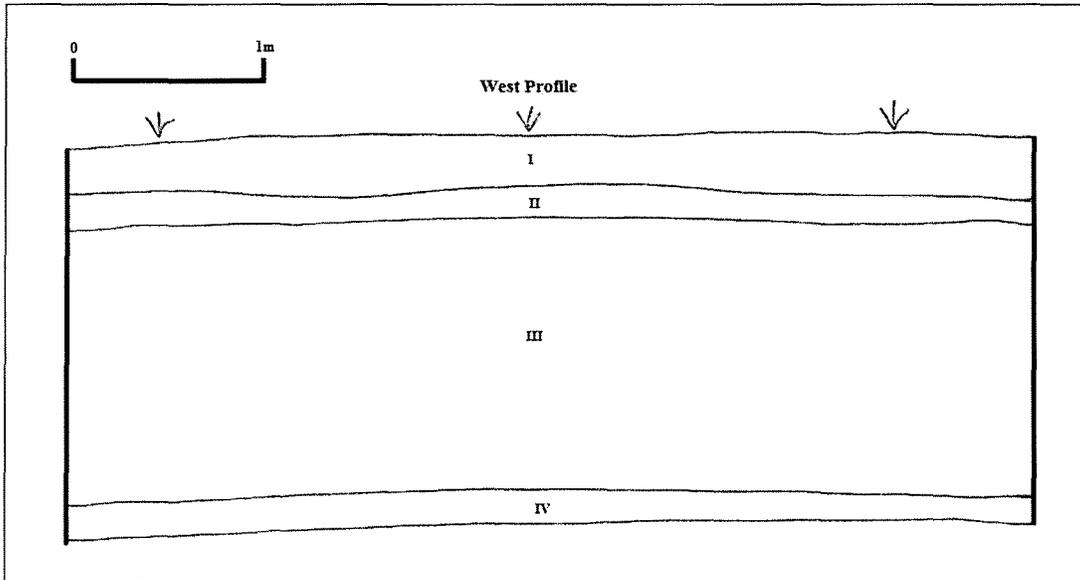


Figure 32: Backhoe Trench 23, west profile.

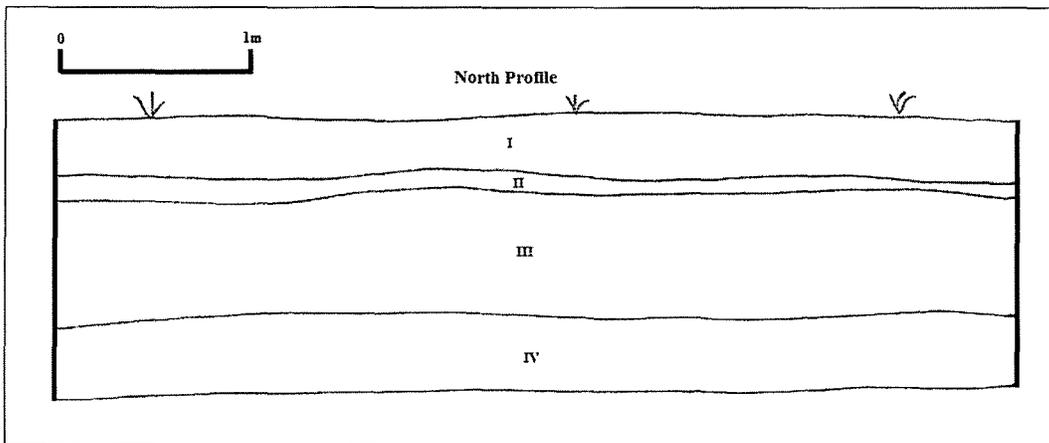


Figure 33: Backhoe Trench 24, north profile.

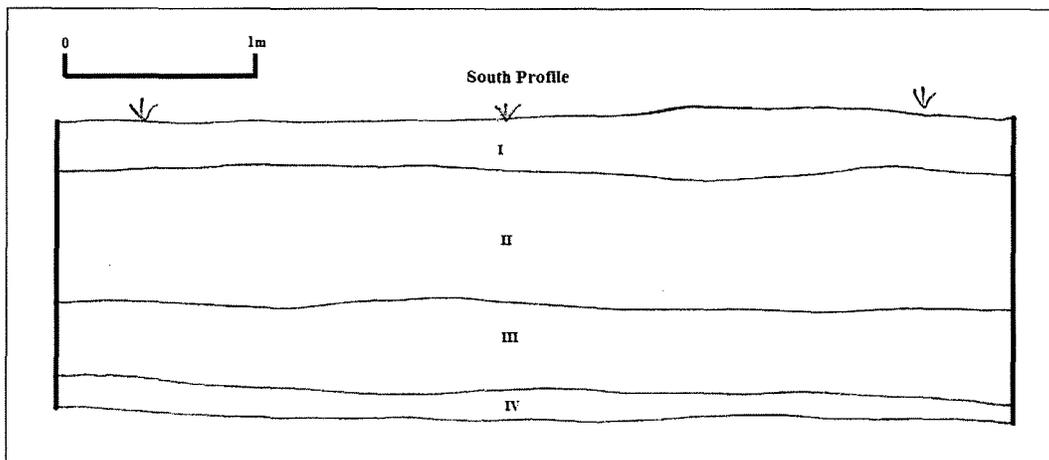


Figure 34: Backhoe Trench 25, south profile.

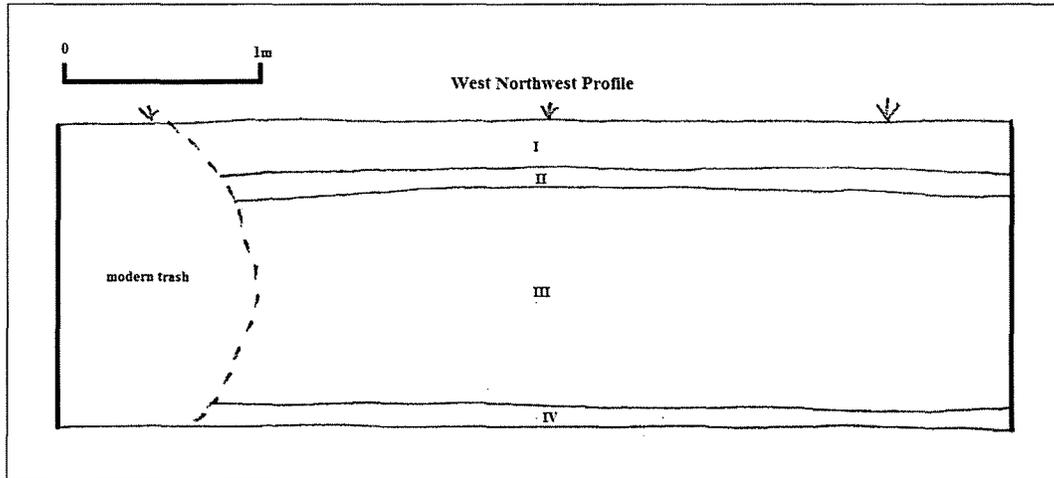


Figure 35: Backhoe Trench 26, west northwest profile.

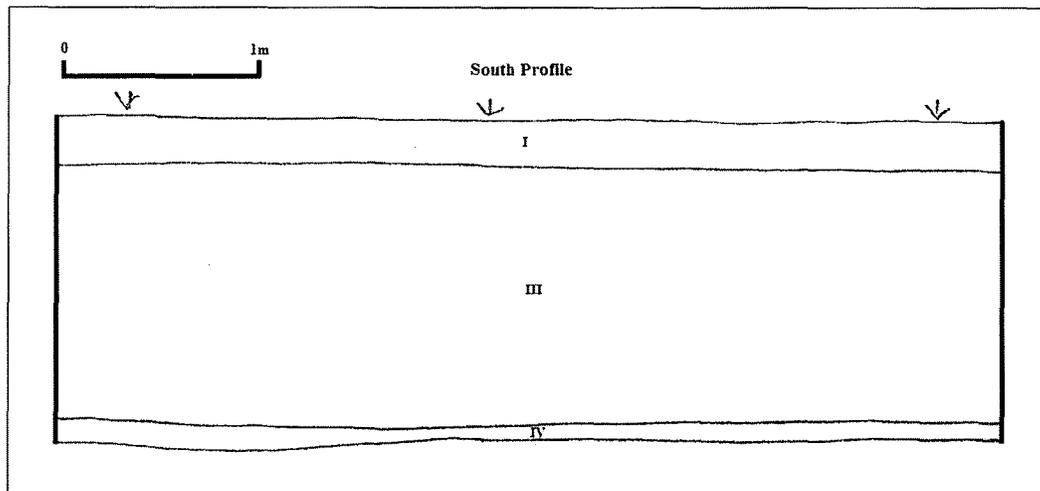


Figure 36: Backhoe Trench 27, south profile.

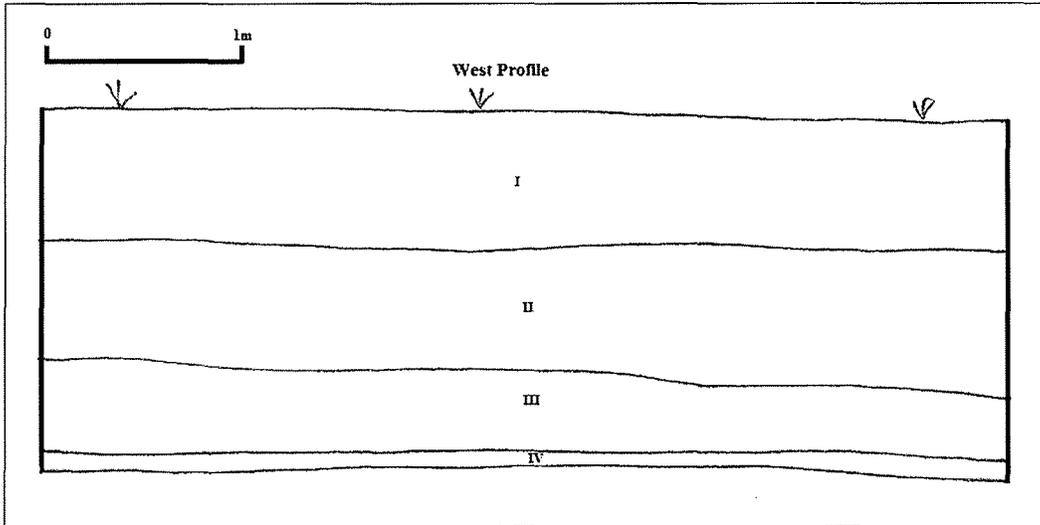


Figure 37: Backhoe Trench 28, west profile.

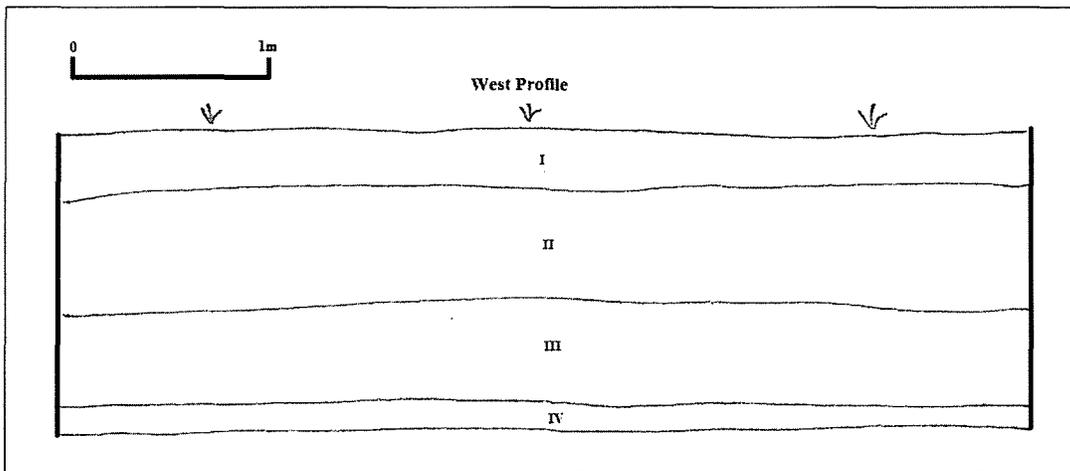


Figure 38: Backhoe Trench 29, west profile.

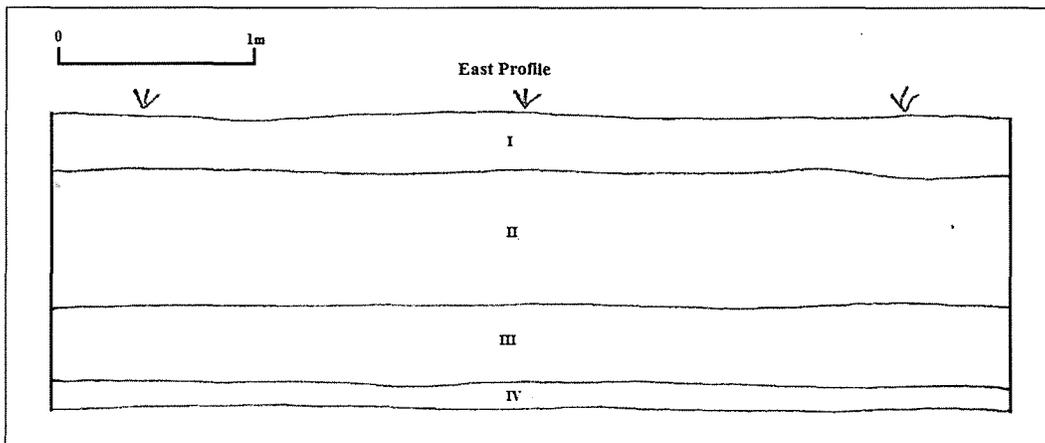


Figure 39: Backhoe Trench 30, east profile.

APPENDIX C – Locations of BT 1 through BT 30

APPENDIX F.

Cultural Impact Assessment

CULTURAL IMPACT ASSESSMENT
For the
PROPOSED
Kahoma Village Project

November 2011



Hana Pono, LLC - PO Box 2039 Wailuku, HI 96793 – hanapono@gmail.com

CULTURAL IMPACT ASSESSMENT
For the
PROPOSED
Kahoma Village Project

TMK: (2) 4-5-08:01

Prepared for:
Stanford Carr Development, LLC
Honolulu, Hawaii

Prepared by:
Hana Pono, LLC
PO Box 2039
Wailuku, Maui, Hawai'i 96793

November 2011

Management Summary

Report	Cultural Impact Assessment for the proposed Kahoma Village residential project
Date	November 2011
Project Location	County of Maui; Lahaina district (modern), Lahaina Moku, Alamihi Ahupua'a, TMK: (2) 4-5-08: 01
Acreage	Approx. 21.6 acres
Ownership	Harry & Jeannette Weinberg Foundation
Owners Agent	Stanford Carr Development, LLC.
Project Description	A residential subdivision of 203 units with multi-family and single-family homes and a community park. The project is bordered by Front St., Honoapiilani Hwy, Kenui St. and the channelized Kahoma stream.
Region of Influence	Alamihi ahupua'a, Puunoa ahupua'a, Lahaina Moku, Lahaina district, Maui
Agencies Involved	SHPD/DLNR, Maui County Council, Maui Planning Commission
Environmental Regulatory Context	The undertaking is subject to both State and County zoning regulations, and other environmental regulations
Results of Consultation	No known cultural resources located directly on project parcel, interviewees recall the area as being used for cane or unused for their lifetimes. More mauka in the valley, interviewees know of agricultural terraces, lo'i kalo, and burial sites.
Recommendations	<ul style="list-style-type: none"> • Cultural Training for all workers • Cultural advice when necessary and for related activities • Additional community involvement

Cultural Summary

The project parcel sits in the Alamihi ahupua'a, named after a productive fishpond located makai of the subject parcel, filled primarily with mullet; it is on the southern edge of the Kahoma stream, one of the formerly perennial streams in the Lahaina district, and was formerly a very productive agricultural area prior to the sugarcane plantations and railroads. Due to its proximity to the flood-prone Kahoma stream the chances of iwi kupuna (burial sites) are lower than in other areas, but the possibility should not be ruled out. To our knowledge, there have been no traditional agricultural or religious practices exercised in the parcel in recent years. The area sits as an open space among the Lahaina cannery mall, the Honoapiilani Highway, Front Street, and the condominium complexes and residential homes of Lahaina.



Figure 1: Looking mauka at project area from Front Street at Kahoma Stream

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Introduction

At the request of Stanford Carr Development, LLC, Hana Pono, LLC has completed a report for the Cultural Impact Assessment of the proposed Harry and Jeanette Weinberg Kahoma Village project located at Tax Map Key number: TMK: (2) 4-5-08: 01. This study was completed in accordance with State of Hawaii Chapter 343, HRS, and the State of Hawaii Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts (1997).

Guiding Legislation for Cultural Impact Assessments

It is the policy of the State of Hawaii under Chapter 343, Hawaii Revised Statutes, to alert decision makers about significant environmental effects that may occur due to actions such as development, re-development, or other actions taken on lands. Articles IX and XII of the State Constitution, other state laws, and the courts of the state require the promotion and preservation of cultural beliefs, practices, and resources of native Hawaiians and other ethnic groups.

The Guidelines for Assessing Cultural Impacts, as adopted by the Environmental Council, State of Hawaii 1997 and administered by the Office of Environmental Quality Control, including HAR Title 11 Chapter 200-4(a), include effects on the cultural practices of the community and state. The Guidelines also amend the definition of "significant effect" to include adverse effects on cultural practices.

Goal and Purpose

The goal of this study is to identify any and all Native Hawaiian, traditional, historical, or otherwise noteworthy practices, resources, sites, and beliefs attached to the project area in order to analyze the impact of the proposed development on these practices and features. Consultations with lineal descendents or kupuna (Hawaiian elders) with knowledge of the area in gleaned further information are a central part of this study.

Scope

The scope of this report compiles various historical, cultural and topographical accounts and facts of the project area and its adjacent ahupua'a. "The geographical extent of the inquiry should, in most instances, be greater than the area over which the proposed action will take place. This is to ensure that cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment. An ahupua'a is usually the appropriate geographical unit to begin an assessment of cultural impacts of a proposed action, particularly if it includes all of the types of cultural practices associated with the project area. In some cases, cultural practices are likely to extend beyond the ahupua'a and the geographical extent of the study area should take into account those cultural practices." (OEQC, Guidelines for Assessing Cultural Impacts, 1997).

Data will be compiled beginning with the first migrations of Polynesians to the area, progressing through the pre-contact period of Hawaiian settlement, containing data on the post-contact period, through to the current day and any cultural practices or beliefs still occurring in the project area. Hawaiian kupuna with ties to the area will be interviewed on their knowledge of the area and its associated beliefs, practices, and resources. Additionally, any other individuals

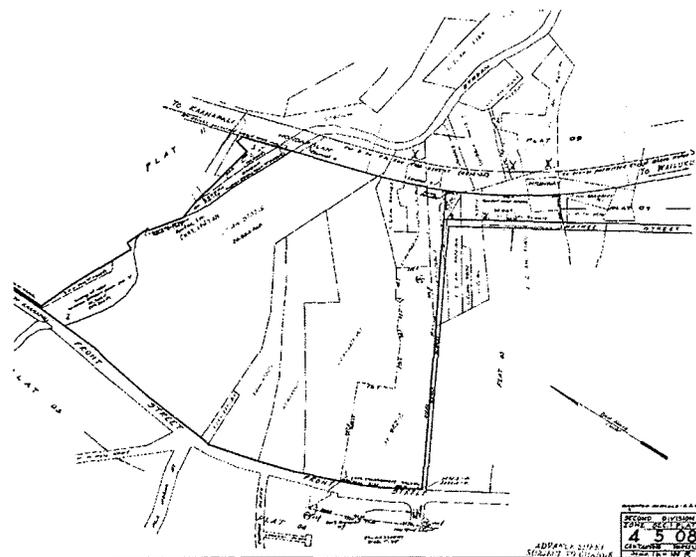
or organizations with expertise concerning the types of cultural resources, practices and beliefs found within the geographical area in question will be consulted.

Project Area

The project is located in the State of Hawaii, County of Maui, at Tax Map Key number: (2) 4-5-08: 01. At approximately 21.6 acres, the project is situated on currently unused agricultural lands with the Kahoma stream flood control its northern boundary, Kenui Street its southern boundary and enclosed by Honoapiilani Highway to the East and Front Street to the West.

The island of Maui is comprised of twelve traditional land districts, called moku. Each moku is made up of numerous ahupua'a, smaller land divisions wherein a self-inclusive community could find all the things needed for a satisfactory life. Usually these ahupua'a ran from the heights of the mountain peak to the edge of the outer reef like a giant pie slice, although many ahupua'a did not fit this template. Of Maui's twelve Moku, three of them cover the mass of Mauna Kahalawai, those being Lahaina, Ka'anapali, and Wailuku. The three divisions converge at the summit of the Mauna Kahalawai (West Maui Mountains), named Pu'u Kukui, one of the wettest places on earth with rainfall averaging close to 400 inches a year.

Lahaina Moku, which extends on its Southeastward end to Keanapa'akai near the modern day McGregor's point and on its northern end at Keka'a also known as Blackrock, is made up of numerous ahupua'a that did not fit the "pie slice" concept. The Alamihi ahupua'a is one of these which is a coastal ahupua'a with no access to any mauka kula lands (upland open country). It seems that the Alamihi ahupua'a was centered on an inland fishpond (now filled in) that was located makai of Front Street and mauka of the cemetery adjacent to Mala Wharf, Pu'u Piha cemetery. The ahupua'a directly adjacent to Alamihi on the south is Puunoa 1, that along with Puunoa 2 and 3 are the coastal ahupua'a that had a mauka counterpart. These ahupua'a that did not fit the "pie slice" model were termed *lele*, meaning to fly or jump, and could be associated with the idea that one had to jump from one to the other across another ahupua'a in order to obtain a full subsistence.



Approach & Method

The approach taken in this study was two-fold. Foremost, historical, involving as appropriate, a review of: mahele (land division of 1848), land court, census and tax records, previously published or recorded ethnographic interviews and oral histories; community studies, old maps and photographs and other archival documents. Secondly, an in-depth study involving oral interviews with living persons with ties, either lineal or cultural, to the project area and the surrounding region.

Objectives

The objectives of the Cultural Impact Assessment are as follows:

- to compile and identify historical and current cultural uses of the project area,
- to identify historical and current cultural beliefs & practices associated with project area,
- To assess the impact of the proposed action on the cultural resources, practices, and beliefs.

Tasks

Data gathered combined oral interviews of knowledgeable kupuna and families/individuals with long-standing ties to the area with all available written and recorded background information.

Archival Research

All sources of historical written data, old maps, and literature were culled for information.

Oral Interviews

Tasks completed for oral interviews included: identification of appropriate individuals to be interviewed, determination of legitimate ties to project area and surrounding region, interview recorded in writing and by digital audiocassette, transcription of interview, compilation of pertinent data.

Level of Effort Undertaken

Interviewees are contacted and selected for inclusion in this report based on a sliding scale of legitimate authority based on the following characteristics: lineal descendents, cultural descendents, traditional practitioners, cultural practitioners, knowledgeable area residents of Hawaiian ancestry, knowledgeable concerned citizens. Every effort is made to obtain the highest quality interviewees and determination of appropriate individuals follows this criteria.

Historical & Current Cultural Resources & Practices

First migrations

Traditional stories start with the creation chant called “Kumulipo.” The Kumulipo brings darkness into light. Embedded in this all-encompassing chant is the tale of the coming of the Hawaiian Islands through the mythical stories of Pele and another demigod named Maui who, with his brothers, pulls up all the islands from the bottom of the sea. Geologically speaking, the island of Maui formed in six separate volcanic “series” beginning with the Wailuku Volcanic

Series (WVS) that formed the mass of Mauna Kahalawai. The WVS took Mauna Kahalawai up to 6 kilometers in height whereupon the summit collapsed forming a sunken crater that would later become the back of Iao Valley. The two later eruptions that finished the volcanic creation of Mauna Kahalawai were the Honolua Volcanic Series and the Lahaina Volcanic Series (Kyselka & Lanterman, 22). The forces of nature and time took their toll on this newly formed land carving steep valleys into the mountainside. The streams of Kahoma and Kanaha were created by such forces, both creating steep valley walls and washing out fertile soil into the alluvial plains between the uplands and the shoreline.

The occupation of the Hawaiian archipelago after its mythical creation came in distinct eras starting around 0 to 600 A.D. This was the time of migrations from Polynesia, particularly the Marquesas. Between 600 and 1100 A.D. the population in the Hawaiian Islands primarily expanded from natural internal growth on all of the islands. Through the course of this period the inhabitants of the Hawaiian Islands grew to share common ancestors and a common heritage. More significantly, they had developed a Hawaiian culture and language uniquely adapted to the islands of Hawai'i which was distinct from that of other Polynesian peoples (Fornander, 222).

Between 1100 and 1400 A.D., marks the era of the long voyages between Hawai'i and Tahiti and the introduction of major changes in the social system of the Hawaiian nation. The chants, myths and legends record the voyages of great Polynesian chiefs and priests, such as the high priest Pa'ao, the ali'inui (Head Chief) Mō'ikeha and his sons Kiha and La'amaikahiki, and high chief Hawai'iloa. Traditional chants and myths describe how these new Polynesian chiefs and their sons and daughters gradually appropriated the rule over the land from the original inhabitants through intermarriage, battles and ritual sacrifices. The high priest Pa'ao introduced a new religious system that used human sacrifices, feathered images, and enclosed heiau (temples) to facilitate their sacred religious practices. The migration coincided also with a period of rapid internal population growth. Remnant structures and artifacts dating to this time suggest that previously uninhabited leeward areas were settled during this period.

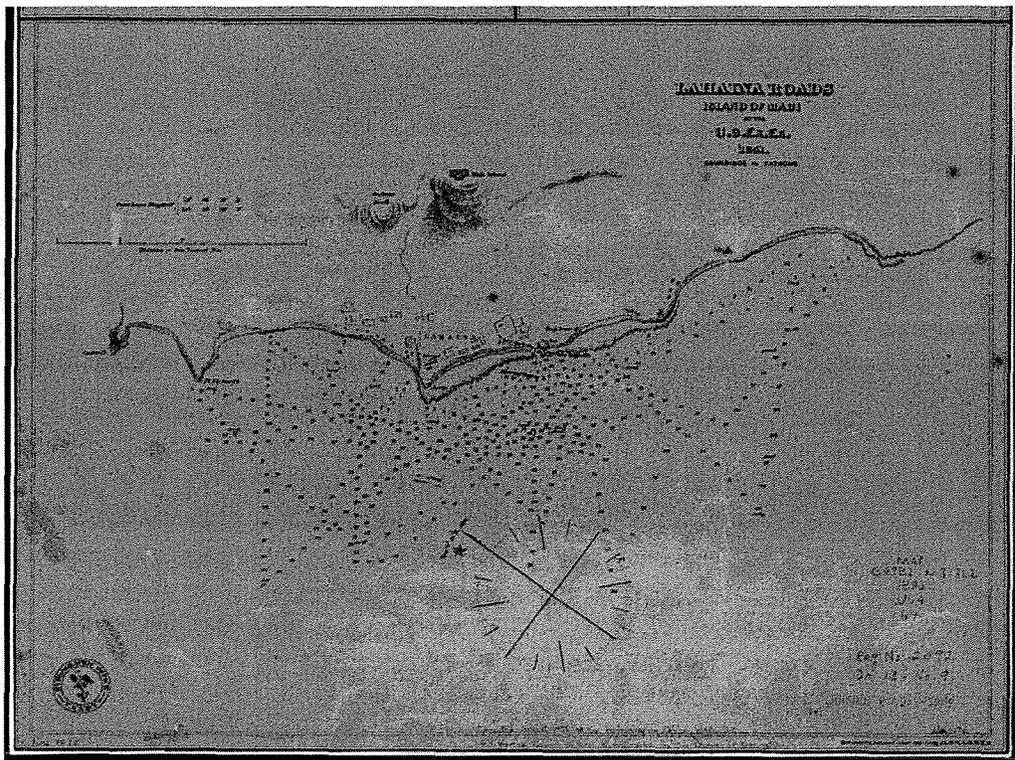
Settling of Lahaina Moku & related Ahupua'a

From the first arrivals to these islands Lahaina was a favored place to live by chiefs and commoners alike, owing to its fertile fishing grounds, excellent areas to farm near the streams, and favorable weather. One of the earliest Western travelers to Lahaina, Captain Vancouver brought with him a naturalist, Menzies, who described what he saw of the area during their stay there in 1793, a short 14 years after Captain Cook's first arrival:

Here our conductors importuned us to dine, and a pig being killed and got ready, together with yams and sweet potatoes, we partook of a hearty meal, after which we conducted our journey, and soon entered the verge of the woods where we observed the rugged banks of a large rivulet that came out of the chasm cultivated and watered with great neatness and industry. Even the shelving cliffs of rock were planted with esculent roots, banked in and watered by aqueducts from the rivulet with as much art as if their level had been taken by the most ingenious engineer. We could not indeed but admire the laudable ingenuity of these people in cultivating their soil with so much economy. The indefatigable labor in making these little fields in so rugged a situation, the care and industry with which they were transplanted, watered and kept in order, surpassed anything of the kind we had ever seen before. It showed in a conspicuous manner the ingenuity of the

inhabitants in modifying their husbandry to different situation of soil and exposure, and it was with no small degree of pleasure we here beheld their labor rewarded with productive crops. March 17. On the forenoon of the 17th, I accompanied Captain Vancouver and a party of officers, with the two Niihau women, to see the village of Lahaina, which we found scattered along shore on a low tract of land that was neatly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regular manner with different esculent roots and useful vegetables of the country, and watered at pleasure by aqueducts that ran here and there along the banks intersecting the fields, and in this manner branching through the greatest part of the plantation. These little fields were transplanted in a variety of forms, some in rows, in squares, in clumps and others at random; some according to their nature were kept covered with water, while others were with equal care kept dry by gathering earth around them in little hills. In short, the whole plantation was cultivated with such studious care and artful industry as to occupy our minds and attention with a constant gaze of admiration during a long walk through it, in which we were peacefully accompanied by a numerous group of natives that continued very orderly and peaceful the whole time (Handy et al, 492).

This glowing description of Lahaina in the late 18th century was not hyperbole and was most likely very true to form and as it had been for hundreds of years. The valleys of Kahoma, Kanaha, Kauaula, and Olowalu among others were filled with lo'i wherever there was enough water to sustain the flood-style irrigation of wetland lo'i. Wherever lo'i kalo was not found, those areas would have been used to grow dryland taro, sugarcane, sweet potato, coconut, banana, and the breadfruit that the area was famous for.



Map of Lahaina Roads, depicting Kahoma stream, settlements along the coast, water depth in fathoms, Pu'u Laina, and Pu'unoa point from 1841 (USHO, 1841, corrected 1879).

In fact, the area was so known for its cultivation of the breadfruit tree, 'ulu in Hawaiian, that one of the original names for the Lahaina area was called Lele, and the famous saying of the area was "Ka Malu Ulu o Lele", the shade of the breadfruit trees at Lele (Handy, 190). Handy goes on to give his interpretation of why the Lahaina area was such a favored place for the people, Ali'i and commoners alike,

Lahaina district was a favorable place for the high chiefs of Maui and their entourage for a number of reasons: the abundance of food from both land and sea; its equable climate and its attractiveness as a place of residence; it had probably the largest concentration of population, with its adjoining area of eastern and northeastern, West Maui, "The Four Streams," and with the people living on the western, southwestern and southern slope of Haleakala; and its propinquity to Lanai and Molokai (Handy et al., 492).

The Lahaina area cemented its prominence in the history of Hawaii's ali'i with the long and prosperous reign of Pi'ilani, who ruled the islands in the 1500's. Pi'ilani was the ali'i who had the vision to create the Alaloa, a road that circumnavigated the island of Maui, the only island to possess such a path. The road was later finished by his son, Kihapi'ilani. In the time of Pi'ilani, before Lahaina was the name of that area, the entire side of Maui was called Honoapi'ilani, meaning, "the bays belonging to Pi'ilani" (Sterling, 37).

Place Names Associated With This Area

The Hawaiian culture places a particular importance on place-names. Throughout Polynesia, cultures are for the most part ocean-based, surviving and building their cultures around the bounty of the sea. While Hawaiians share common history with all Pacific peoples, because of the unique factors of these high-islands, their culture turned decidedly more land-oriented than many other Pacific cultures. The abundant access to fresh water sources, fertile soil, relative lack of reef and reef fish compared to older south pacific islands all contributed to their formation of a completely unique and distinct culture; a culture that placed a high inherent value on land and landforms, landscapes and their relationship to people's lives. Dr. George Kanahale puts to words the Hawaiian's view of place-names,

In the case of the traditional Hawaiian, for example, almost every significant activity of his life was fixed to a place. No genealogical chant was possible without the mention of personal geography; no myth could be conceived without reference to a place of some kind; no family could have any standing in the community unless it had a place; no place of any significance, even the smallest, went without a name; and no history could have been made or preserved without reference, directly or indirectly, to a place. So, place had enormous meaning for Hawaiians of old" (Kanahale, 175).

The place-names related to the project area carry the same weight as what Kanahale speaks of. They convey a sense of permanency and continuity. They hint at ancient stories and modern events and through an in-depth look at the place-names in the area we learn what was important to those people living in those times and the forces that shaped their lives.

Lahaina

The name Lahaina is a relatively recent name for the land that has also been called Lele and Honoapi'ilani. The name Lahaina stems from the time of the chief Hua, lord of the region around 965A.D. There are multiple versions of the story but most speak to Hua condemning to

death his kahuna, named Luaho'omoe, who proceeded to cast a curse on the lands of Hua. The Kahuna caused the streams to wither away and the clouds to not drop rain on the lands of Hua so that drought and famine spread through the land. This is why it takes the name Lahaina, La=sun Haina=cruel or merciless. This is also where the 'Olelo No'eau, "Rattling are the bones of Hua in the sun" comes from, as after his death, his people left his bones to bleach in the sun as a reminder of the chief's ill-fated decision.

Lele

The ancient name for Lahaina, perhaps in recognition of all the ahupua'a lele in the area. The saying of old was *ka malu ulu o Lele*, the breadfruit shade of Lele (Handy, 190).

Honoapi'ilani

Literally, the bays of the chief Pi'ilani. The entire western side of Maui was named for Chief Pi'ilani who ruled Maui during the early 1500's and had two sons who carried on after his death. It was Pi'ilani who started the Alaloa, or the King's trail, that circumnavigates the island.

Kahoma

In place names of Hawai'i, Kahoma is translated as "the thin one". Pukui translates it as, disappointed, thin or flabby, hollow (as cheeks). Also, as to hold a canoe to its course in rough seas, and as the beat of a paddle on the side of a canoe, although many of these definitions are not used with frequency (Pukui & Elbert, 66). Because of the valley's proximity to Lahainaluna school, many people including one of our interviewees had grown up referring to Kahoma valley and stream as Lahainaluna.

Alamihi

The small ahupua'a in which the project is located was centered on an inland loko i'a, long defunct and filled in, which had no access to mauka lands. It could have been named for the alamihi crab, "A common black crab (Metopograpsus thukuhar). Also 'elemihi, 'elepī. 'Alamihi 'ai kupapa'u, corpse-eating black crab [a scavenger] (Pukui), which would have most likely been found within the fishpond. Walker, in a talk with a Lahaina resident J.K. Napaepae, spoke of this pond calling it "Alanuhi", but saying, "The pond at Mala had the name, Alanuhi [Alamihi]. It was used principally for mullet. It is now filled with rubbish and crossed by the road leading out to Mala wharf (Sterling, 28).

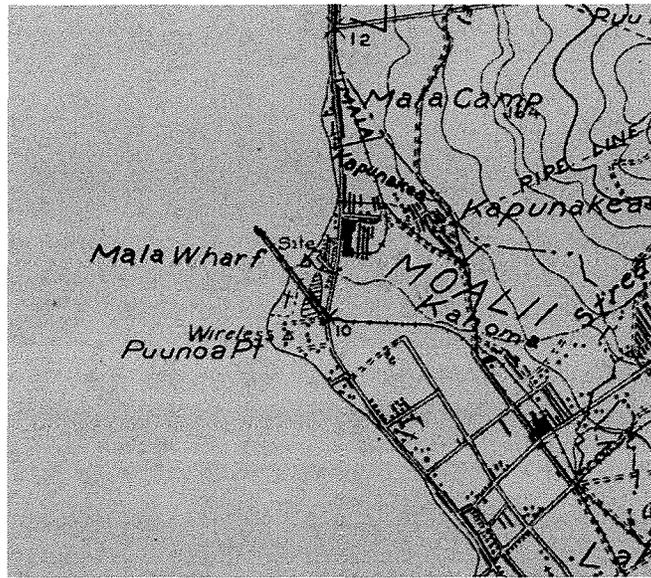
Traditional Hawaiian Uses & Practices

Lele, Honoapiilani, Lahaina has one of the most storied pasts of any district in Hawaii. This picturesque leeward area has many accessible perennial streams, a protective reef and a white sand beach that made this area very popular for living before the high chiefs of Maui and Hawaii called it their home. But especially during the reign of Pi'ilani, through to Kamehameha III, Lahaina became the home of royalty. The pond of Mokuhinia had the chiefly island of Moku'ula built in the middle of it, the waters protected by the mo'o goddess Kihawahine.

The Lahaina area was once a very agriculturally productive area, as the first Western visitors noted, with a garden-like appearance divided with ingenuity and industriousness by the native inhabitants. Using the then-perennial watercourses of Kahoma, Kanaha, and Kauaula, miles upon miles of aqueducts spanned the lowlands, watering a quilt-work pattern of wet and dryland taro, sweet potato, banana, breadfruit, and other crops. Enough foodstuffs were harvesting from the Lahaina region to feed all the native residents and the warrior and ali'i class that lived in the region. Handy relates that the majority of Lahaina was watered by two streams, Kahoma and Kanaha, "which run far back into deep valleys whose sides were too precipitous for terracing" (Handy, 492).

A famous battle started between the sons of chief Kekaulike, Kamehamehanui and Kauhiaimokuakama, caused long term damage to the agricultural production of the region. Kamehamehanui, was overthrown in an uprising by his brother Kauhi and fled to Hawai'i Island with the chief of that island, Alapainui. Once their forces are amassed a year later Kamehamehanui and Alapainui's combined forces landed in Lahaina and went to war with the forces of Kauhi and the chief of O'ahu at that time Peleioholani. Kamakau relates that Alapai, "employed the unusual method in warfare of drying up the streams of Kaua'ula, Kanaha, and Mahoma [Kahoma] (which is the stream near Lahainaluna). The wet taro patches and the brooks were dried up so that there was no food for the forces of Kauhi or for the country people" (Kamakau, 73). Combined with the battles perpetrated by Kalaniopu'u then Kamehameha against Kahekili, Lahaina was slowly stripped of resources used by marauding forces who then became the chiefs of the area.

The amount of LCA's (Land Court Award) in the project area, 9 in total, attest to the ancient agricultural capabilities of the area. It is also most likely that due to the frequent flash flooding in the winter months prior to the channelization of the stream; farmers had to be very careful about when they planted their crops in order to not lose them to heavy rains. The majority of the project parcel rests on a Land Court Award given to the famous Hawaiian historian David Malo (LCA# 3702).



Inset of 1923 USGS map showing project area, mala wharf, and boundaries of the filled-in Alamihi fishpond and surrounding area (USGS, 1923).

Towards the ocean and across Front Street was the inland fishpond of Alamihi, for which the area is named. This fishpond traditionally was used for mullet but was nearly defunct by the time of Western contact and was filled in to make the road to Mala wharf in the early 1900's.

Post-Contact Historical Uses & Practices

The arrival of outsiders beginning with Captain Cook in 1778 coincided with massive internal changes to the ruling class as old rulers slowly gave way to the next generation of young chiefs. Kahekili had long held rule over all of the islands except Hawaii Island, ruling de facto over Maui, Molokai, Lanai and Oahu, and using an arrangement through marriage to secure the fealty of Kauai. Meanwhile Kamehameha was pursuing dominion over Hawaii island even while Kalaniopu'u still reigned supreme.

But with the death of Kalaniopu'u and Kamehameha usurping power from his cousin Keoua to control all of Hawaii island this was soon to change. Kamehameha's march across the island chain continued on to Maui where he ravaged Lahaina, much as Kalaniopu'u had done a few years earlier, but this was to gain food and water for his journey to Molokai and Oahu (Fornander, 250). After consolidating his rule over the islands, Kamehameha returned to Lahaina to set up his seat of government for the Kingdom of Hawaii. "Lua'ehu [a portion of Lahaina around Moku'ula] was the home of royal persons until the capital of Hawai'i Nei was transferred to Honolulu under King Kamehameha III. Of all villages on Maui, and perhaps in all the islands here, Lele was the place of coming-and-going. Its noted harbor called Ke-awa-iki was visited by people from all the islands and its noted Surf of U-o saw many a contest among champions" (Ashdown, 33).

Also with the reign of Kamehameha and an increase in foreign ships coming in was the short-lived Sandalwood trade and then the whaling era. The first American whaling ships, the Bellina

and the Equator, arrived in 1819, the same year Kamehameha died, and only a little more than a year before the first missionaries arrived. But the whaling days were short lived too and the Lahaina whaling industry took its final dive in 1860 with the improvement of the petroleum industry and kerosene fuel, and finally the improvement of San Francisco as a full-service port that was just as easily accessible to whalers in Northern waters (LHRP 1960, 19-21).

The area of Alamihi ahupua'a and surrounding area during this time was used principally as an agricultural zone, with native tenants supplying their own needs as well as those of the visiting ships and monarchy. As noted previously, the presence of 9 LCA's in the project parcel, including the large LCA #3702 given to David Malo that included the Alamihi fishpond, is evidence of the agricultural history of this area. There are also LCA's located on the Eastern side of Kahoma stream as well continuing mauka until the land becomes too steep to farm or too difficult to transport water to. Until the development of sugar plantations in Lahaina, this form of land use would have been the norm.

In 1860 Pioneer Mill was started by three business partners, James Dunbar, Henry Turton, and James Campbell; and through a series of events they acquired all the other start-up sugar plantations on the westside, including that of Lahaina Sugar Company and one started by Kamehameha V before his untimely death. They petitioned the government for a railroad to easily transport the sugar cane and in 1920 started construction of the Mala wharf as a hoped for alternative to Keawaiki for larger ships that could not fit in that small port. This involved the final filling in of the long-defunct Alamihi fishpond and a railroad that ran through the project area, taking cane and pineapples from Pioneer Mill and the Lahaina Cannery, located across Kahoma stream, onto Matson ships docked off of the wharf.

Current Uses, Practices, & Resources of Project Area

The project parcel has sat unused for nearly 50 years since the building of Honoapiilani Highway separated it from the rest of the mauka cane lands. For a time the Pioneer Mill railroad ran through the parcel on its way to Mala Wharf, but that too disappeared with the progression of cane transportation. None of our interviewees noted any cultural practices or uses directly on the project parcel although many of them note that they themselves or family they know still access the mauka Kahoma lands and burial sites. These mauka sites, the agricultural complex known as the Kahoma complex, and the Haia cemetery among others are approximately 2 miles inland from the project parcel.

As noted in the Flora and Fauna survey, due to the presence of the wild tobacco plant, a common habitat for the endangered Blackburn Sphinx moth, there is the possibility of their presence on site during their active months. Also, with the cementing and channelization of the Kahoma stream by the United States Army Corps of Engineers (USACE) in 1990 it drastically altered the natural habitat in the project area and surrounding vicinities (Shun, 91).

There has been no active taro or other traditional agricultural cultivation on the project area for upwards of 100 years due to the sugarcane plantations use of the land and diversion of the water that used to flow perennially down Kahoma and Kanaha streams. And, no interviewees identified

any cultural practices or resources that they or other families they know utilize in the project area.

Synthesis of Archival, Literary, & Oral Accountings

The project area resides in the historically rich and storied district of Lahaina, once the seat of government for Maui chiefs like Pi'ilani in the 1500's and carried on through the reign of Kamehameha III and the Kingdom of Hawaii. The project parcel sits on the edge of the Lahaina Historic district in what were formerly very fertile agricultural lands. The Alamihi fishpond makai of the parcel and the presence of pre-contact burials at Pu'u Piha cemetery near Mala wharf all indicate this area as one of pre-contact habitation and cultivation.

The century of attempts at sugarcane and pineapple production in the area along with their related needs for water and transportation of product have left the project parcel devoid of previously available natural resources or native flora and fauna. The channelization of Kahoma stream in 1990 by the USACE and the mass diversion of surface water along with a decrease in rainfall have contributed to further changes to the natural environment of the area.

Interviewees do not directly identify any known family burials in the project parcel but previous archaeological work in the general area would indicate the possibility of isolated or grouped pre-and-post contact remains being found.

Potential Effects of Development & Proposed Recommendations

The project parcel has a long history associated with it, both in itself and as it relates to its near surroundings and the entire ancient village of Lahaina. The presence of multiple LCA's, proximity to a formerly perennial watercourse, pre-contact burial sites, and formerly productive fishpond all indicate its cultural history. The change in land ownership forced by the Mahele of 1848, the introduction of large scale sugarcane production, depletion of surface water in the streams, and construction of Mala wharf all contributed to the decline of the project area as a viable agricultural plot. This depletion of agricultural viability has been shown in its recent usage, or lack thereof.

As with any other development, there is the rapidly increasing cumulative effect of the hardening of the landscape and depletion of open space. Care should be taken with any grading, grubbing or other work that involves digging or moving earth due to the possible presence of cultural features underground. And also a few more detailed recommendations follow.

Cultural Training

It is recommended that all workers have some base cultural knowledge of the history of the Lahaina region, the Alamihi region, and the possibility of finding cultural features under the surface. This should include all surveyors, operators, foremen's, managers, and archaeologists.

Cultural Advice

In order to assure the cultural integrity of the project, a qualified cultural specialist should participate in various cultural-related activities. Activities would include the development and implementation of the cultural orientation for construction personnel, advice concerning inadvertent finds and related protocol, and any other cultural concerns during the length of the project.

Community Involvement

It is recommended that additional opportunities for the surrounding community to learn more about the project and have an opportunity to contribute to the overall discussion be provided. This community involvement can be undertaken during the public meetings when the project is being reviewed by the Maui Planning Commission and the Maui County Council.



Figure 2: Looking mauka from Kahoma Stream on Front Street, Pu'upa'upa'u in background.

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1841 Lahaina Roads-Island of Maui 1841. [map]. Scale not given. U.S.Ex.Ex. 1841.

Appendix A: Description of Interviews

George Kahumoku

Although George Kahumoku is not a lineal descendant of the project area, he has been a cultural practitioner on the lands surrounding the project area for many years. George is considered a knowledgeable resident of Lahaina. He worked as a teacher at Lahainaluna High School and used to take his students down to an area mauka of the project area to farm. He is known in the community because he used to feed 20-80 students using the workforce of Lahainaluna students and the crops from their farm. He has lived in the Lahaina area his entire adult life and is well known and respected among the elders of the Kahoma community.

George recalls that he used to go down into the valley and visit with the families. They were raising basic donkeys and goats and they had some lo'i. He remembers that the 'auwai (canal) used to run to Lahainaluna, but when the plantation closed the 'auwai stopped running.

He talked about the stone walls in the Kahoma area. He expressed that because of the stone structures, it is evident that people used to live there. They had terraces for dry-land taro or sweet potato and walls for the mala (gardens). But when the donkeys came in, all of those walls were destroyed.

Malihini Keahi

Malihini is a lineal descendant of larger Kahoma area, not specific to the targeted project site. Her ties to the area are from her grandfather, Kapaliueloa Haiakekai and her grandmother Meleana Maka'aha Pu'upu'u. Malihini has been a Lahaina resident her entire life. She practices the Hawaiian lifestyle of sharing Aloha through her employment at Ka'anapali Beach Hotel.

Malihini remembers the Kahoma area of her childhood as being plentiful with orchard trees in the valley. Amongst the orchard trees (lemon, orange, apple and mango) also had medicine (mamaki and ti). There was an old donkey trail coming down from Lahainaluna that ran down the side of the mountain and into the project area. The last time she tried to access that trail was about ten years ago, it was degraded at that time.

Malihini spoke of a few ahu (alters) mauka (upland) from the project area, these sites are being cared for by the neighborhood families—Kelepa 'Ohana, Uncle David Sharp and her family. Malihini moved back to her family land in the late 70's with the goal of making a learning place for the Hawaiian children and even the kupuna so everyone could see how the 'auwai gives water to Lahaina- her grandfather was brought from Kahikinui to Lahaina to care for the watershed and her goal for the property was to restore for educational purposes. But things are different now than when she was growing up.

Her biggest concern is that she wonders who the low-income housing is intended for. Her interpretation of the County's low-income housing guidelines is that people's income is far below the standard and won't be able to qualify for this housing.

Charles Makekau

Charlie is a lineal descendant of land about two miles from the project area. The Makekau's are long-time Kahoma residents. Charles's great-grandparents, the Pukahia's, owned a great deal of land in the mauka Kahoma area. Their family had several lo'i there. His grandmother was Annie Lo'e Paniani.

Charlie remembers traveling from the family land to the project area, which is about 2.5 miles away. The lower part of Kahoma used to flood a lot, so that land wasn't used as much. He remembers his grandparents and uncles talking about all of the lo'i that used to be around there. His family stories contain references to the lo'i because that is what the people used to talk about the most and his family used to own those lo'i.

He personally remembers them growing sugarcane from Lahainaluna all the way down to Front Street. They used to call the whole area Lahainaluna, they knew the proper name was Kahoma, but it was easier for them to call it Lahainaluna. Charlie talked about the locomotive that ran through the area to bring sugar cane down to Mala Wharf. He also talked about the passenger ship that used to come in.

Appendix B: Interview Transcripts

Interview: George Kahumoku

By Keli'i Tau'a

July 11, 2011

KT: Keli'i Tau'a

GK: George Kahumoku

GK: Aloha Keli'i!

KT: *Hui*.

GK: Okay, can.

KT: Okay, great. The purpose of me wanting to talk story with you—you basically retired from Lahainaluna High School, right?

GK: Yes, I've retired already. We just started something called the Institute of Hawaii Music; The University of Hawaii Maui College, yes.

KT: Well, because of that connection, one of the things that my partner and I do, who's Kimokeo Kapahulehua, is that we do cultural assessments for developers who want to develop land there; and we did one for Kahoma back, maybe, six years ago, but now, Weinberg wants to build another low income housing up there in Kahoma. So, our *kuleana (responsibility)* is part of this report. We just talk story with people who have lived in the surrounding area for a period of time, such as you. So, may I continue?

GK: Sure!

KT: Okay, so, during the time that you were up in Lahainaluna, did you ever go *holoholo (traveling)* down the streams, Kahoma stream?

GK: Yes, I did, many times.

KT: Can you recall what you saw there?

GK: Well, a lot of times we went to, you know, there was some *'aina (land)* in the valley, some of the family's own, so I would go down to visit some of the families; they were raising basic donkeys, had some small *lo'i (irrigated terrace)* growing, and plenty goats that some of the families were raising inside of the valley, you know.

KT: Yeah.

GK: And, I actually went down to connect up one water pipe so that I would have water for my *kalo (taro)* over there (*both laughs*). Yeah, I was the pipe sitter, so I went up to the valley and connect one pipe so that we would get free water instead of paying for the water, you know.

KT: Yeah.

GK: I hooked up the water to the *lo'i* at Lahainaluna. They had—before it used to come to a ditch, yeah? And, comes down and it closed up the ditch.

KT: Right.

GK: So, I just went up to the hot water and just went hook up the old two inch water pipe with PVC pipe, and we had water again.

KT: Right on. You know that Pu'u Kukui is the second wettest place in Hawaii?

GK: Yes.

KT: You know, so, you guys get a lot of rainfall. For the people that live *makai* (*seaside*), I mean, no excuse that the reservations steal all the water over there.

GK: Yeah, I remember that time when the *'auwai* (*canal*) used to run, yeah, to Lahainaluna.

KT: Yeah.

GK: And, when the plantation closed the *'auwai* didn't run anymore.

KT: Yeah.

GK: I used to go up and get my own water from that place, just make my own water line, you know.

KT: What year you taught, did you—

GK: I taught there from 1992...

KT: Oh!

GK: Yeah, all the way to 2010. December is the last day I taught school over there. I think January fourth, 2011 was my last day officially.

KT: Wow.

GK: Lahainaluna. January fourth, the first day of school; I retired that day, 2011.

KT: One of the things I've noticed, because two of my elder brothers who already passed away who attended Lahainaluna, Lahainaluna really developed and I was always proud of that. Although, they always teased me 'cause I went to Kamehameha, but—

GK: I went to Kamehameha, too, for thirteen years. I went from kindergarten, yeah. I was starting 195...5, I think, I went to Kamehameha, all the way to 1969. So, maybe, thirteen years, I think, or in 54's. Anyways, I went up there from kindergarten all the way up to, you know, to high school. But, the thing is I also taught for Kamehameha for a number of years; I ran the alternative head in Kona, 'cause Hale Pono, yeah.

KT: Yeah, that's right.

GK: And, the reason I stay with—you know, I was asked to transfer over to Kamehameha Schools up in Kula—but, the reason I stayed there is because I felt like there's more tradition there, and I wanted to reach more kids, you know, not many of Hawaiian ancestry, but I felt like it's going to have a better chance to reach all kinds of nationalities. Got kids that are Tongans, Hawaiians, Haoles, you know, Filipino kids...

KT: Yep.

GK: ...Vietnamese, that's why I'm still at Lahainaluna because I was asked to go back and teach at Kamehameha at the new Maui campus, yeah. But, I'm still at Lahainaluna, I just liked the

program better, you know, and I stayed all the way, but I've just recently retired because I was offered to teach at the University. I was teaching at the University for a couple years already, just part time, and then they've asked me to come on full-time, and that's why I've moved on. We wrote a numeral grant and got funded, so that's why we've worked on that.

KT: So, you teach out at Lahaina? Or you come all the way to Kahului?

GK: No, no, actually I have a home in Hawaiian Homes in Leali'i in Lahaina, but, before that I also bought some *'aina* in Kahakuloa. So, as soon as I left the cliffs at Kahakuloa, which is about nine miles from Wailuku, so for me—yeah, because I was coming all the way from Kahakuloa, Wailuku side, *mauka (upland)*, to Lahaina every day, but I'd take the back road, you know, so this way it was closer for me to stay at Kahakuloa to Kahului at the new University. It's only like a twenty minute drive, about nine miles to Wailuku town, not all the way in the village, about three miles in the village in the mountains, not in the valley, yeah.

KT: Uh-huh.

GK: So, that's why I stay here.

KT: Turn back to the area that we are making a cultural study on. Did you ever see—I had indicate that, although, I personally didn't experience, I found in documents, a *heiau (temple)* down in Kahoma. Did you find that to be true? Did you find a *heiau* down there?

GK: That there was a *heiau* down there?

KT: Yeah.

GK: What I saw is just that there were many stone walls; I couldn't see that there were, you know, I don't know if it was a *heiau* or not, but, to me it looked like there were people living there before because there were stone walls. At first, it showed that they had lots of *lo'i*, you know, in the olden days, and even *mala (garden)*, some *mala* places, places with mala. But, those were destroyed, you know, had donkeys going all over the stone and wires, and also the goats—all of them destroying. But, you could see the basic foundation of what looked like the lineament of stones, and there were people living there, and there were also plantings that tell that there were Hawaiians there, like, a little bit of kukui nut, and lots of...look like it was dry land; could've been sweet potato, or even taro, but it was done *mala* style, not the *lo'i* style. If you want some—oh, the *heiau*, I didn't recognize it as a *heiau*. It looked more like to me like just some plants.

KT: When I was a teaching at Baldwin, I always used to hear about your works over there through Elnette.

GK: Oh, yeah, because the thing is I was always working with the kids, and we studied some *lo'i*, but, I also studied some mala, too, you know. I actually had a two-acre garden at one time with everything: Hawaiian herbs, plants, we get basil, everything, and I was feeding almost twenty to eighty kids a day out of the garden.

KT: Wow.

GK: I've planted pumpkin, potato, taro, lots of squashes, you know, lots of Japanese squashes. And, then sometimes I would kill cows, or even kill pigs, and I would smoke 'em; so, I would have smoked meat and...eggplants, smoked and cabbage, smoked meat and whatever, you know. Green papaya—

KT: You must've made them happy (*laughs*).

GK: Oh, the kids used to like to—I thought special motivation, which is like all of the grandpa's kids that's *kolohe (rascal)*, so, in fact, a lot of those kids knew about those areas better than I did, because the kids are from the families, eh. Get the 'Aihue's over there, and then had the—oh, I can see the kids face, but the name, I forget. They married the Needsman, I think was, yeah?

KT: Wow.

GK: They were married to the Needsman, and the Keahi's. They all had '*aina* up in that place. In fact, I still got students who still got—I can remember their names, I mean their face, but I forgot the names.

KT: Yeah, yeah.

GK: But, they're all related to the Keahi's, and, yeah.

KT: So, how old are you now?

GK: I'm sixty years old. I'm still young still yet (*laughs*).

KT: Oh, I'm still your *kupuna*, then (*laughs*).

GK: Yeah, yeah, yeah. What year did you graduated from high school?

KT: '60.

GK: (*Surprised*) '60?!

KT: '60, then I went to Church College, La'ie, now BYU Hawaii, Koluaha over there, surf every day, so, I finally decided to go away. When you were in Kamehameha, did you ever know Dr. Hamlen?

GK: No, but, I was close with this guy called Dr. Mitchell. Remember Dr. Mitchell?

KT: Right.

GK: Yeah, Mitchell started the University down at the Bishop Hall, yeah? And, he and I were very, very close. In fact, I used to go his house and help him clean his swimming pool, pull weeds in his yard, all kind down in Haiku. He and I were really close. I was also close with Tutu Kawena because that was my great-grandmother's first cousin. Yeah, I was close with Kawena, too. I was the last class to graduate from—remember we used to have classes in a, I don't know if you were there, but, there was this place down at the Bishop Hall, yeah, all the things went down at Bishop Hall. So, I was the last class with Mrs. McKlenin. Remember, she was the only Hawaiian teacher I had at Kamehameha Schools?

KT: Yeah.

GK: Wow. So, that goes way back, probably 1958. I was eight years old at that time, '58, like that.

KT: (*Laughs*) Good for you. I didn't know you were a Kamehameha grad. I thought you were always Big Island.

KT: I appreciate the time.

Interview: Malihini Keahi

By Keli'i Tau'a

July 20, 2011

KT: Keli'i Tau'a

MK: Malihini Keahi

MK: Aloha

KT: Aloha. So, I'm just going to get right into it, hopefully not too long. So, immediately can you give me your full name?

MK: My full name is Malihini Keahi Heath.

KT: What are your family ties to Kahoma area?

MK: My family ties to Kahoma is the "Hai-a-ke-kai," his name was Ka-palli-ue-loa Hai-a-ke-kai, and *tutuwahine*'s (grandmother) name was Mele-ana-ma-ka-'aha-pu'u-pu'u.

KT: Okay, before you continue can you slowly spell both of their names so we can document it properly? First, grandpa:

MK: Okay, their name's, Ka-pali-ue-loa: K-A-P-A-L-I-U-E-L-O-A, Haia: H-A-I-A, Kekai: K-E-K-A-I. And, Meleana: M-E-L-E-A-N-A, Maka'aha: M-A-K-A-A-H-A, Pu'upu'u: P-U-U-P-U-U.

KT: You kidding me? Grandma Tau'a who came with Reverend Ellis in 1823 is—his name was Matapuupuu.

MK: I know. That's where *Tau'a* comes in. I know that.

KT: Oh, my golly.

MK: Keli'i, and that's where we find the two of us in the Tuamotus before Bora; they come from the Tuamotus, and then Bora was just a *puka* (hole, empty spot) to come home to Kahikinui.

KT: Yep.

MK: I know that. So, our family up there in Tuamotu is Tau'a.

KT: At that time when he got baptized they named him Tau'a, but prior to that he was Matapuupuu.

MK: Makapuupuu?

KT: Yep. Presently, aren't there any families living in the Kahoma area?

MK: 'A'ole (no). There is a cousin, they live right by this one, and she is married to Han Michael. Her mother is a Keahi, and that was my father's sister.

KT: Do you know of any significant cultural sites in the target area?

MK: I only know of just Kahoma side where, you know, before in that valley it used to have a lot of orchard trees, and then those days—I mean plentiful. See, you got to come from Lahainaluna High School on the orchard field from there, and you take the donkey trail. Yeah? So, you take the trail alongside the mountain and then you go down onto the property, and all up in there had

orchard trees when I was a little girl. I mean, orchard, lemon, orange, apple, plenty mango, but plenty medicine, too, yeah. Up there we used to get *mamaki*, *mamaki* ti leaf; and now, I think, should have plenty bushes; then they were lots and dry up there. Last time I went was maybe ten years ago when we had some reunion and we went *mauka* (upland) to the cemetery, and then *mauka* up that, and then we'd picked medicine, (we'd picked *mamaki*), but the trail was all bust up, and we went to the left side; we'd never go to the right side, we went to Kahoma side.

KT: So, in my first report, it was brought to my attention that there were many taro *lo'i* terraces that were there. During the time you were growing up did you see any of them?

MK: 'Ae (yes), 'ae.

KT: Were there any *heiaus* (temple) or so up there, or *ahus* that the 'ohana (family) just gave honor to?

MK: There was an *ahu* to the left of—it's *mauka*, and to the left between the *pali* because the *palis* are for the Kalepa 'ohana. They have *kuleana* (responsibility) in there, and to the back of their property there is one. And then, *mauka* by my *tutu*'s place, there is another altar, but the *kahawai* damaged some of the areas. I'm not sure if it wiped it out, and that's before you get to the intake, and just directly across from where the gate starts. It controls the water to the ditch, the *kahawai*, the ditch, not the stream, yeah? There was another altar to the left of that, but I don't know how the diversion of water—because it was a huge one. One was visible at one point because the Farden family, Uncle David Sharp, had *kuleana* up there, and as you come up from the *pali* land, well, where their *hale* (house) was, this huge boulder came down one night after heavy rain. Luckily they weren't home; they were in town, and this boulder fell right on their *hale*, and I think the boulder is still there. But, with that heavy rain, it wiped out that one *heiau* just above us, just across of the intake. But, see, in the map it doesn't state that there is one.

KT: Yeah, which is good because *mali'a na po'e malihini* (probably the is going to dig up all the other stuffs, and there goes cultural history of things. And saying that, were you ever led into an area below where there was still petroglyphs carved into the wall?

MK: That would be *mauka*. Yes, so, Kahoma side of the valley. As you come to this big filling after this big rain, when you come to the drain go around on the side of that mountain, and when you come alongside that mountain it's a little further up, and this is where you'll see the ledges where it's cut into the mountain where our *tutu* was known to have climbed. Along there had petroglyphs. I had writings, but I don't know if it's still there, or, you know, but that was old.

KT: Well, I don't think the building of these low-income housing will infringe on the area, but our assignment is to cover these surrounding areas. What about native birds or animals? Were they ever found, or—

MK: I don't know if they're frequent there anymore, but then in the old days, the only one he would get was the yellow or the red. Barely saw that he got anything else. In those days the only one that he would gather from Keopuolani is the red and the yellow. And that's all we knew of him, what he was for her, as far as having anything that may have come with the wind, or if there were something that came down very suddenly. And at that time, when we were living up there, I want to say that it was '80 to '85, that even at that time the caves up *mauka* was just something to be held, I think, because you would see the 'io (hawk), you know, you would see the hawk, you would see the owl, you know, the *pueo* (owl), but you would never see the red

or the yellow, the 'i'iwi. How he had manage to acquire that for Keopuolani, that would only be the time of, maybe, when they'd shed and when they go into that cave and apparently gather them, but as far as seeing these birds no. I only see the hawk.

KT: Do you have concerns about this development?

MK: I have concerns to health, you know, in everything we have managed to be able to grow, however, we were raised on what exists today, and there are still the damages of health. There's so many of our tutu that—we may have been talking about eating fish and all of that, but in the surroundings that is just within the area, a lot of them are dying from lung or heart failures, or problems like that. It still bothers me because the land has been so abused in the hundreds of years. In fact, it has, so I'm concerned of what kind of houses they're going to build on something that's already inundated by their fast growth of sugar in all these years, and not just of the surroundings of what we had, but what existed in one point at time. But, it's how we can get back to it, and how we can make a healthy environment. My concerns are the people that are at play, or this chess that we're playing, you know, with the king and queen. We are the pawns, so I'm worried on what legacy do we leave our children, what legacy do we leave on the marking point? For some people they mark the sugar, the smoke stack of the marking point, but even though my father worked for them for a long time to raise all of us it hardens my heart to even feel the fact that it did not take care of them, and for the fact that today what we have has just been an inch off of many homes. You don't see that openness, you don't see that greenery, like, for instance, Hawaiian Homes in Leiali'i, oh my goodness! Who gave them the permission to put monkey pod trees on the property? I mean, to plant it all around the area, and it's so terrible that tree, and why not make something they can grow and eat from? But then, of course now, all of this takes place on the fact that now we have a say in what we want, that self-sufficient. I see concerns, but I'm just one mouse; I'm just one person. I'm worried that, I mean, there's nothing affordable. To me, in my *hale*, because it's built by a cousin of mine for forty-five thousand, and that was a fact. He was using discounts and having a license to be able to build a house. Then why are we paying seventeen-hundred dollars in mortgage at Hawaiian Homes? To me, nothing's affordable especially if they can't pay from out of their pockets and they've got to make bank loans, and the way the banks are today, you're not dealing with your local banks, you're dealing with mainland mortgagers, you know. And, the mainland market is the same as affected; they took the money that they're getting from the people and are using their interest outside countries to make an extra seven percent more, or whatever you want to call it. So, I don't know, I only know that our people who were born and raised here, the people who live here today, are all still responsible for one another, and are responsible for what comes in. The sediment of having this low-income housing development...what is deploying in all of this? Are they trying to do well, or just in a little while?

KT: I like that you are having the same kind of concerns. In this recording it is to share those concerns by someone who is connected to the area, and we'll have it transcribed and then we can look it over and we'll submit it to make sure that we documented the right things that you said. The whole reason for doing cultural assessments is to have the people voice their opinions about the situation at hand. So, as I pointed out, I didn't want to take your whole evening, I've asked all of the questions that I've wanted to complete. If there's any other thing you want to say you can say it at this time. If not you'll hear back from me when we've got it transcribed.

MK: Well, I really want to be able—and I don't mean to sound selfish, but in a way I want to be able to help other people, *our* people in a different way. I am all for that; I am so for that. One

of my biggest concerns is, or what I really wanted to do in this lifetime without having any repercussion, is to go back home to that particular area. As I've told you, we were trying to do that, but I've mixed everything in the last forty years. I started living up there between '79 and '83 or '85, and it was, like, a big difference to what it is today. I just wanted to go home and make, like, an open *hale* and make it a learning place so our children, or even our kupunas who hasn't seen it forever, can see how the '*auwai* from the earth gives water to the people of Lahaina. That water intake—like I've said, my tutu was brought from Kahikinui from birth by canoe with Kamehameha to what we call Kanaha, that valley that we called when growing up, back to Kahoma to be raised by Keopuolani as her feather gatherer, but we didn't know why there is only one Haiakekai when everybody else was in Hana, so we had to keep it ourselves and found out that there were all the hundreds of us, and they were all Haias. We didn't know that until we had our first reunion in '83. And, when we had that reunion we realized that he had many siblings, and we found out that he was the number nine out of eight-teen. Only he was in Lahaina, so in Lahaina his job was to just take care of the water shed. By taking care of the water shed he would be able to give and take water from there and loose the water to the people of Lahaina so they would be fed. Then, of course, the play of business came in. So, we need to revive it. He spoke about it in chants, but he was known by a lot of men, like, Uncle Eddie Chang them, like, when they ran away from school. They didn't run away for much because they had gotten caught and had to work, but they remembered my tutu walking out of that valley with the *kalo* on his back. Downhill wasn't too bad, but then he went right to the *poi* factory, and that was for exchanges and whatnot: kerosene, or whatever it was in the old days, then he'd hiked back home. They said he was *so* big. I only have one picture of him, and it's very old, and it's been recopied and copied over, but I have one of him and my *tutuwahine*. During that time he managed to put on a suit. The picture that I have of him has him wearing a suit.

KT: As I echoed before, we as *kanaka maoli* are in the same dilemma and it behooves us. I was at my urologist today and I picked up a magazine about Cassius Clay, otherwise known as Muhammad Ali, and he shared to not dwell on what's back, but look at the future, think positive, and do positive things.

MK: Yeah, I agree with him.

KT: Think positive, do positive, and strive for the future for us, *na keiki o ka 'aina*, for the children of Hawaii.

MK: '*Ae*. Yes, I agree with him. I will support as long as it's people benefits, but in a good way. People can afford it, and if they have enough money to be able to afford it and not lose it. To be affordable would be able to, like, not suffer the thought of, "No more money for grocery, but can pay their rent." That kind of stuff. You want them to be able to do it all. Some people aren't that fortunate to have jobs or able to benefit themselves in many ways, like, putting money on the side. Low-income housing, that kind of people can't afford all of that. They can probably have a *hale*, but for how long? We need to create something self sufficient, and then make some money on the side for the sake of who they are and where they live. If our land can grow *kalo*, though not everybody eat *kalo*, but the land can grow bananas, and many people eat that. We can grow vegetables and we can sell and make a market, like, how we did in the old days. Thank God we make our own *poi*. I can't believe how much we sell our *poi* out there for! Nobody can afford. We made *pa'i 'ai*, but it's so nice that we can be able to give *pa'i 'ai*, and go take a few to someone's *lu'au* and say, "Hau'oli la hanau ia 'oe," and see that smile on their face. It's amazing, I mean, if my babies make their own *pa'i 'ai* I'd look upon them and be proud of them

because mainly they've been helping friends making poi and dried fish and they'd sell them for ten dollars at the door so his friend can pay his rent back. I look at them and say, "Will you help mommy pay her mortgage?" They laugh, but say, "Don't worry mom, we'll help." But, I'm just amazed. That's what they do door to door. It's a blessing, but not everybody can do that, so how can we make everybody do that?

KT: Well, Malihini, we don't have all the answers, but to dialogue with others we'll continue to dig up answers that will contribute to the whole. So as I promise, I didn't want this to go on and on, and I appreciate you spending the time with me. And, I'll get back to you when I get the transcription completed.

MK: Okay, *maopopo* (I understand).

KT: Mahalo.

Interview: Charles Makekau
By Kimokeo Kapahulehua & Chelsea Tau'a
August 23, 2011

KK: Kimokeo Kapahulehua

CT: Chelsea Tau'a

CM: Charles Makekau

KK: You were born over there, in Kahoma?

CM: No. I was born up there, Kilauea Village...no, no, wait...I was born up by a place called Pae'ohe.

KK: Pae'ohe?

CM: Yeah, Pae'ohe is below the village of Kilauea, the original camp, or name. Pae'ohe is a little piece of land that's owned by Alice Aki Estate and the Makekau's child, and it used to be a little Aussie; that's my dad's sister who was married to an Aussie. That's why they call that Pae'ohe. That's the only grave sites they had, until some people have tremendous ideas...let me tell this short story. At Pae'ohe, there were one, two, three, four, five grave sites, and across from that grave site there was an entrance which I never knew, and my dad never knew. Oh! I know why. The Aki family—you know the Aki?

KK: Yeah. You know Willy Aki, the bus driver?

CM: No. This is Sam Aki. You've ever heard of Sam Aki?

KK: No.

CM: Or Alice Aki? She's married to Shimamura? She lives in Hali'imaile.

KK: Okay, I know that.

CM: I think she's my third cousin, but we grew up together. Anyways, the Aki's got together and excavated the grave sites and moved them to Waiola Church. *(Sighs)* I couldn't believe what they did, but they did it. One is that they are all sick when they've excavated those grave sites. They used a backhoe on the back side of the box estimating that it was the side of the box, and the edges were broken on the sides of the box and whatever contents had had been dropped out of there. And, after they were satisfied they tried to cover it, but there was not enough dirt. Several days later I went up there to check the grave site. The coffins were exposed; they were not covered fully, or they were not excavated fully. I just found that and said, "Aw, *(Scoffs)*," because one of the grave sites was my grandfather, but they said there was no males. My grandfather was buried up there, Charles Kele Makekau. And, that street that leads up that area is called Kale. That was named after him. It all depends on how you accept it. Oh, I know why. I wanted to call my cousin, call her husband and I got a hold of the operator and said, "I'm going to kill you, you son of a bitch," but, I only followed orders, and that's the truth. But, I know

why. They put fresh dirt and cover it over, but I'm still not satisfied because the box—the coffins—are still in there, and it's not me who's going to suffer, but it's somebody else. That was it. Ask me about Kahoma.

CT: Tell me. You were explaining about where you were born. How far away is that from Kahoma Village. Sort of, like, the next right up if you go?

CM: No. There would be about one, two—about two miles.

CT: About two miles. So, when you were a kid did you ever go up to the Kahoma area to play?

CM: Yes, to visit. Well, the first time I ever went up there was with my dad and my cousin. My dad's name is Samuel.

CT: Makekau?

CM: Samuel Na'ohuleiloa Makekau, son of Charles Kele Makekau.

CT: Kele? K-E-L-E?

CM: Yeah. My cousin, David Shump, is older than me. Pae'ohe, like I said, is about two and a half miles away from Kahoma and where we visited a long time because over there had several taro patches. Those patches were owned by the Pukahia's, which were my dad's grandparents. That was to be his mother, Annie Lo'e Paniani. She owned most of the land in Kahoma, and there were other people that owned several there.

CT: When we did research about this area we've heard that it used to flood a lot. It was a flooding area when the '*auwai (ditch)* got full and eventually flood that area. Did it affect the *lo'i* (taro patch) that was there?

CM: Where?

CT: In Kahoma.

CM: Of course, when it rains because it would always be flooding.

CT: Did they have *lo'i* in that one area or no?

CM: Oh, yeah, it had all the way down until Keanui.

CT: Okay. So, you have family in Kahoma. There was your dad's grandparents that had the *lo'i* there.

CM: No more anymore. Just my grandmother and one more family. I think this was her *tutu*, my grandmother's *tutu*, which are the Puka'ia's.

CT: They're the ones who had the *lo'i*?

CM: Yeah, they had the *lo'i*, and my grandmother Paniani. Let me ask you...why all the questions?

CT: They want to develop residential housings in that Kahoma area that used to be the flood plain. It's going to be low-income housing. What happens now, and I forgot which governor it was, but two or three governors back they made a law that said, "With any new development you have to do an environmental impact assessment, and part of that environmental impact assessment is a cultural impact assessment. So, what we do, or *hana pono*, with Kimokeo and Kumu Tau'a, is that we research where they want to make the development, and we make sure that there isn't something that's culturally significant that will be ruined if they go through while making the houses. So, part of the questions are to find out your relationship with the area so we can find out if you have lineal ties or cultural ties to the area that's going to be developed, and to find out stories of the area that needs to be documented for the future, and to make sure that we're not going to allow them to destroy something that shouldn't be destroyed.

CM: Okay. One of my family's wife, from mauka to makai, were the Paniani's, and the other end is the Makekau's. But, the Makekau's are not from Maui. There was one that married my great grandmother who is, or was, a Swenton. Well, actually, she is a Keaka. When the grave site was dug out, there was a headstone and I think that's what it said. I told my cousin to pick it and it's marble. When I took it off I put it on the side, but the name is still on it. Actually, she was a Makekau because she did marry.

CT: Where did the Makekau's come from?

CM: My grandfather came from the Big Island, Kona side.

CT: Kona, Big Island.

CM: There were two brothers, and his name was Makekau, but I don't know his first name—Able. He changed his name several times. He just comes at random for that.

CT: But, he kept Makekau?

CM: That was a Makekau. That's where the Makekau's came from.

CT: He married your great, great grandmother and came to Lahaina?

CM: No, he married my great grandmother.

CT: So, the Makekau's came to Maui in your great grandmother's time?

CM: They came from Moloka'i.

CT: Okay. Let's start a different line of questions. You know Kahoma, the area where there was *lo'i*, and below that there was that area where there was the flood plain. That's where they're going to build the housing. In that area, can you think of any cultural sites, any *heiau* (temple), any places that people would worship, or just the *lo'i*?

CM: I don't think so because they started to cultivate sugar from old Lahainaluna all the way down to Front Street.

CT: Right. That was after the *lo'i*, right? Did they had the *lo'i* first and then put in the sugar?

CM: Yeah because I tried on the plantation about two or three years ago, my brother and I. My great grandmother and her brothers owned *lo'i* which was our source back then. That's mine!

CT: Oh. How?! How is that yours?

CM: Well, my grandmother sold her *lo'i* into a *hale* (house). This is where they built the hale. Her two brothers—I forgot their names—they owned most of the property, and my grandmother also owned some properties. Her original property was sold to the Haoles for twenty dollars. Then the Haole's wanted more, so she sold more properties for two dollars and fifty cents. In the meantime, her brothers also owned properties somewhere. Apparently, they may have sold some properties, but there was no word of it.

CT: No record.

CM: So, my grandparents moved up to the point which I call Pae'ohe where I was also born and lived. All the plantations from windward all the way *makai* to the area of Kamaka were all taro.

CT: *Lo'i*? Not dry land, but *lo'i*?

CM: Yeah because Kahoma provided abundance of water. I know because I used to swim in the *kahawai*, the water, until the plantation got a little dam. Damn you! There is a ditch that runs in front of Lahainaluna School. Well, that's where it takes the water, and there's that little dam that diverts the water into that ditch and provides water to all of the sugar for many years. Occasionally, we would have good rain and then it would go over the dam, and then you'd be seeing us swimming for about two weeks in the small or *big* hole.

CT: So, Kahoma, in the dictionary, Kahoma means thin, or hollow. Do you know why that area is called Kahoma?

CM: No.

CT: But, was it always called that from when you were a small kid?

CM: Yeah, I always knew it as Kahoma, but there was a mother named Napu Kahoma. On the left side, I think this was the water that comes from the crater side, the top side, and cuts through there which was called Kanaha.

CT: Kanaha?

CM: Kanaha. That's where the mud, the water, would come.

CT: The red water, right?

CM: Okay, the confusion is Kahoma. For us it was always Lahainaluna, always. We didn't call it Kahoma, but we'd call it Lahainaluna, Lahainaluna/Kanaha. It was easier for us, but maybe we just didn't know.

CT: So, when you heard that they might use that area for low-income housing, do you have any concerns about them building there?

CM: Well, I know only from one section because from that section below there will be housing. The land from *mauka* of Kahoma where the bridge will be build is going to be negative because it's the area is too small in Kahoma. But, from where the bridge is, it's coming from across and all the way down to the shopping area; it goes across to the left side and all the way down.

CT: That's all for housings?

CM: Yeah. That was the plan for years, but the people—Weinberg—had the plan for a purpose.

CT: Right; and they changed the plan now for low-income housings. Might be some apartments, but I think they are all residential low-income housing.

CM: Yeah, the whole area is low-income. What's the definition?

CT: That's a good question. There's a thin line, you know, people who don't make more than this much but make at least this much; that sort of low-income because you still have to be able to qualify for a loan and pay for a house, but for people who live here in Hawaii; not mainlanders. Just for people may live in the houses that they buy. Not investors.

CM: We can see because that area was designated, actually it was a sugar cane. That area is where the locomotive went through to take the finish product of the sugar down to Mala. There used to be a stink ship that used to come in, and there used to be a passenger ship that came in.

CT: All at Mala, yeah?

CM: I was a little boy when I last saw the ship because they were afraid of it because it was so huge that it would hit the wall. So, they've stopped, but they used to anchor away from the wall and brought them in inside, like...

CT: Like a dingy, a small boat?

CM: Across of Front Street there used to be nothing but trees.

CT: Kiawe?

CM: Kiawe, the solar. No can afford; too expensive, it's five thousand and we'd only make fifty cents a day.

CT: A bit junk, yeah?

CM: The whole area over there was Weinberg's. It had a sign. Yes, it was cultivated with taro.

CT: Taro and sugar cane.

CM: Lahaina is abundant with hotels.

CT: Yep, all hotels.

CM: Do you know this woman, Medeiros? She also sat with me and did an interview.

CT: Same project?

CM: Almost, but as I am, I refused to sign it because I told her I don't have any concerns, but I'm concerned about accuracy. I really can't remember a lot, but I only can remember what I said. Am I accurate, I don't know, but I'm not going to say, "No."

CT: I think the purpose of us interviewing you isn't—because we have records, right, we can go back and read all the royal patents, we can read all the records on how the land was sold. We can read all the records on how the boundaries are. We can read records that are written, but the reason we come and talk to you is because sometimes what you remember in what was written, the stories about where the *lo'i* was and the families that were there. So, your information is just an addition to what is written to help us get a better idea of what that land was all about.

CM: Okay. The lawyers were all that I remember of the old folks talking about it. I cannot see the lawyers over there.

CT: No.

CM: I saw cane fields. I saw the mill. I saw the locomotives going back and forth with trucks and field workers. *Lo'i* are the stories that I've gathered from the old folks who talked about it because we used to own all of the properties over there.

CT: Those are the stories that are written that we need to perpetuate. That's why we come to talk to you because what you were told from the *kupuna* needs to be passed down to the next generation. So, whatever you remembered of them saying is what we need to make sure the younger people hear too.

CM: One of the guys told me, "Uncle, you know that train over there by Kahoma? I got this feeling somebody wants the '*ohana* to take him out because that train is right on top of him." So, I told him, "Why don't you go and help him then?" He said, "Oh that is your '*ohana*." I said, "Well, go and dig him out and tell me where he stay," then I would tell him, "Good luck." (*Both chuckles*). But, he's a good man, and he's a bus driver. Then I said, "Don't worry about it. I'll think about it and I'll talk to the family." I talked to him one time and I said, "Let it go; they'll put concrete right over him." There is no Makekau's over there. He said, "How do you know." I said, "Because the land over there was owned by our great grandmother, the Keka'a's, not the Makekau's. After that I made him happy. The Makekau's lived higher than the mills and all the way down to the valley of Keka'a, but then the land was exchanged or sold because all the maps that I've looked had new things. Most of the land was under my grandmother, my great grandmother and her brothers, but those lands were all passed on. My grandmother's grandma is Annie Lo'e, so that's why you cannot call me humbug at taro patching because that's her middle name.

CT: *Lo'i* or *Lo'e*?

CM: *Lo'e*. So, people ask me, "What is your last name? *Lo'e*? Sure, taro patch." (*Both laughs*) I said no, not necessarily. Hawaiian has a lot of meaning, simple words. One little word, so people said, "Taro patch? Well, she must own a lot of taro patches, big one, small ones," but she sold most of them, or exchanged. With her last name Paniani is when we've made a claim.

Coming to Lahaina, where Puamana is, up *mauka* there is a claim for money because they've put in a storm drain. So, they condemned the land and we said, "Hey, that's our property." But, the funniest part is that it's a Paniani, and I looked for her name: Henrietta Paniani. That's my aunty; my grandmother's sister. I was pulling out all of the maps I was working on, but I just couldn't find them. I said, "It's uncanny! How could a name disappear when their name appears on a square—on the map?" Henrietta Paniani.

CT: Not on your map? The family maps?

CM: No, it should've been recorded. I looked all over for it, but I know there were some people who knew but have not seen it, and they are our relatives because they are Paniani's. But, that's okay, never mind.

APPENDIX G.

Existing Views from Front Street/Honoapiilani Highway



View across project site from Front Street towards
Honoapiilani Highway



Existing view from the project site towards Honoapiilani Highway

APPENDIX H.

Preliminary Drainage Report

Preliminary Drainage Report

for

Kahoma Village

Lahaina, Maui, Hawaii

TMK: (2) 4-5-008: 001

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EXHIBITS

- E-1 Topographic Map of Existing Conditions
- E-2 Proposed Site Plan
- E-3 Soil Conservation Service Soil Survey Map and Description (3 pages)
- E-4 Flood Insurance Rate Map Community Panel No. 150003 0361E
- E-5 Lahaina Town Drainage Master Plan
- E-6 Conceptual Drain Plan
- E-7 Conceptual Grading and Construction BMP Plan
- E-8 Conceptual Construction BMP Details
- E-9 Location Map

APPENDIX A – Preliminary Drainage Calculations

I. Project Description

The proposed project is located in Lahaina on Front Street, adjacent to Kahoma Stream and is designated as Tax Map Key (2) 4-5-008: 01. The project site has an area of 21.6 acres and is zoned A-1 Apartment District. See Exhibit E-1 Topographic Map of Existing Conditions and E-9 for Location Map.

The surrounding properties are well-established residential and commercial properties.

The proposed residential project will consist of approximately 203 various residential units with parking and 3 park areas totaling 1.75 acres. Road widening, frontage and utility improvements will be as required for the development. See Exhibit E-2 Proposed Site Plan.

II. Topography

The property consists of mostly barren land with trees and brush. The ground generally slopes in a westerly direction toward Front Street. The existing elevations range between 5 and 20 feet above mean sea level (MSL).

Land Use

The land is currently vacant. The real property tax records indicate this parcel was used for cane waste disposal and has never been developed.

Soils

The soils in this area are described as Ewa silty clay loam (EaA) and Pulehu silt loam (PpA) by the Soils Conservation Service. Runoff is very slow for Ewa silty clay loam and the erosion hazard is very slight. Pulehu silt loam is found on alluvial fans, stream terraces and in basins. The permeability is moderate, runoff is slow and the erosion hazard is no more than slight. See Exhibit E-3 for the Soil Survey Map and Descriptions.

III. Flood Hazard

The subject property is located in Zone X as indicated on the current September 25, 2009 Flood Insurance Rate Map (FIRM), Community Panel No. 150003 0361 E and therefore is not subject to the requirements of the Flood Hazard District Ordinance, Chapter 19.62 of the Maui County Code. The Kahoma Stream is indicated as Zone A, which has no determined base flood elevation. See Exhibit E-4 Flood Insurance Rate Map.



IV. Existing Drainage Conditions

The Kahoma Stream is adjacent to the project site to the north and serves a drainage basin of 5.4 square miles. Improvements to the Kahoma Stream were completed in 1990, which has eliminated floods due to overtopping of the stream. There is one drainage system along Front Street that discharges into the ocean. This system is identified as Line W in Exhibit E-5, Lahaina Town Drainage Master Plan.

An 18" pipe culvert exists at the southeast corner of the subject property. It conveys flow from south to north under Kenui Street and discharges into the subject property. Along Kenui Street an existing drainline, with a series of catch basins, discharges runoff in the direction of Front Street. As shown on Exhibit E-5, Lahaina Town Drainage Master Plan, Line U shown on Ala Moana Street and Line A shown on Front Street are future off-site drainage system improvements.

The preliminary calculated surface runoff discharge (50-year, 1-hour storm) for the existing project site is approximately 17.5 cfs. There are dirt berms around most of the perimeter of the property that limit the amount of runoff downstream. If any discharge were to occur, it would be at the intersection of Front Street and Kenui Street.

V. Proposed Drainage Plan

Stormwater Management

The overall goal of storm water management is to mitigate the adverse impact of new construction on the environment. Stormwater management can generally be separated into two areas:

1. Management of the quantity of stormwater runoff: preventing increased flows and volumes leaving the site on the downstream watercourses.
2. Management of the quality of stormwater runoff: prevention of contaminants such as silt, trash, hydrocarbons, heavy metals, and pesticides from leaving the site through stormwater runoff.

Stormwater Quantity

The increase in peak flow and runoff volume is a function of the increase in impervious areas associated with the proposed improvements. The preliminary calculated surface runoff discharge (50-year, 1-hour storm) for the proposed project site is approximately 53.4 cfs. The increase in runoff from the proposed improvements is approximated at 35.9 cfs. The net increase in runoff detention volume from the proposed improvements is 34,000CF. See Appendix-A for preliminary drainage calculations.



The County of Maui requires that the peak flow and total volume of storm runoff from the project site have no adverse impact on adjacent or downstream properties. In order to ensure that runoff due to the proposed improvements are adequately mitigated, a complete analysis of the existing and proposed off-site as well as on-site drainage systems will be completed during the design phase.

In the event the existing drainage systems are inadequate, upgrades to the County infrastructure may be necessary and/or on-site systems may be required. Upgrades to the county system may include installation of Line U. See Exhibit E-5 for Lahaina Town Drainage Master Plan.

Potential on-site drainage systems will collect runoff via grated inlets, catch basins and swales. On-site drainage systems will detain peak flows and volumes, as necessary, through linear infiltration (perforated drainage pipe) and/or a depressed detention/retention basin. Due to the elevation of the project site relative to the ground water level, opportunities for underground storage for storm water may be limited. See Exhibit E-6 for Conceptual Drain Plan.

Stormwater Quality

The quality of stormwater leaving the site is also a concern. Stormwater quality degrades with urban development and increased impervious surfaces, because various pollutants are introduced into the stormwater runoff.

The first half-inch of runoff during a storm is referred to as the Water Quality Volume (WQV) or the "first-flush" volume. This portion of the runoff from a storm contains measurably more suspended solids plus other contaminants per cubic foot than would be expected in runoff occurring later in the storm.

In order to mitigate the quality of runoff, the drainage system would incorporate permanent Best Management Practices (BMP's). Examples of permanent BMP would be scheduled street sweeping in order to reduce litter and other constituents from collection on the pavement, thereby avoiding the litter and other materials from being washed into the storm drain system. Other examples include detention basins and underground infiltration facilities. A full assessment of all available BMP's would be provided during design of the project to optimize water quality benefits. See Exhibit E-6 for the Conceptual Drain Plan.

During construction of the proposed improvements, temporary Best Management Practices (BMP's) will be utilized to prevent erosion and the release of sediment and other pollutants to storm drains, waterways, and adjacent properties. See Exhibit E-7 for the Conceptual Grading and Construction BMP Plan.



VI. Conclusion

The proposed improvements for this project will result in a net increase of approximately $Q_{50} = 35.9$ cfs of storm water runoff and a total runoff detention volume of 34,000CF.

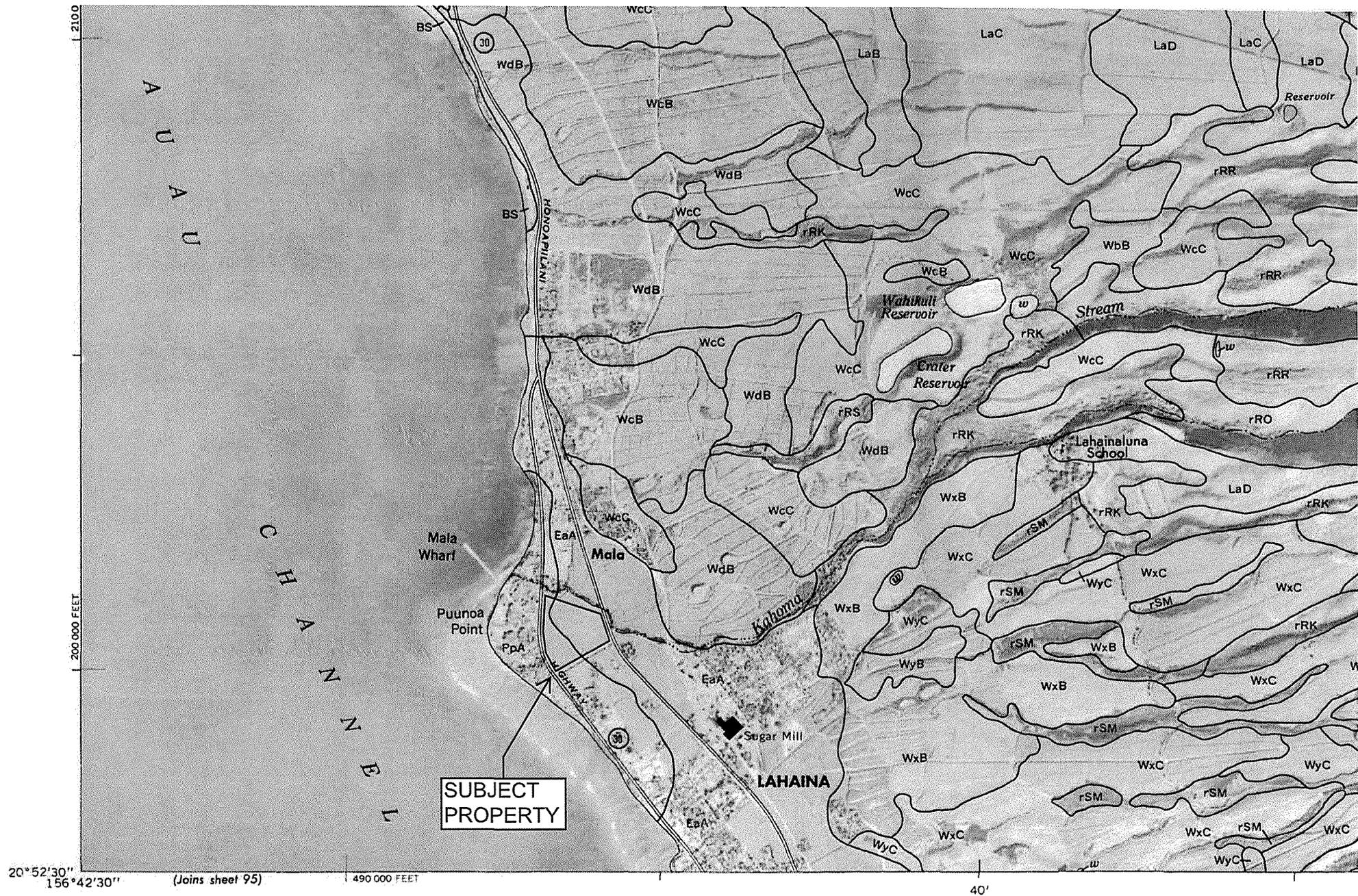
The proposed on-site drainage plan will collect surface runoff. The runoff will either be discharged to existing drainage systems or detained on-site or some combination of both. Determination of the drainage system will be made during the design phase.

Therefore, it is our professional opinion that the proposed development is not expected to have a significant adverse effect on the existing downstream properties.

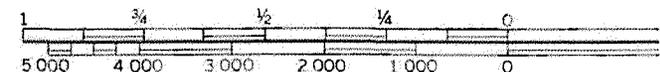
VII. References

1. *Rules for the Design of Storm Drainage Facilities in the County of Maui, Chapter 4, Title MC-15*, Department of Public Works and Waste Management, County of Maui, State of Hawaii, July 1995
2. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, United States Department of Agriculture Soil Conservation Service, August 1972
3. *Flood Insurance Rate Map, Maui County, Hawaii*, National Flood Insurance Program, Federal Emergency Management Agency, Federal Insurance Administration, June 1981

Exhibits



E-3 Soil Conservation Service Soil Survey Map and Description



effervesce strongly with hydrogen peroxide; clear, wavy boundary. 3 to 6 inches thick.

B21—18 to 45 inches, dark reddish-brown (2.5YR 3/4) silty clay loam, dark red (2.5YR 3/6) when dry; weak, fine and very fine, subangular blocky structure; hard, friable, sticky and plastic; plentiful very fine and fine roots; many, fine and very fine, tubular pores; common, medium, tubular pores, and few, coarse, tubular pores; weak, patchy pressure cutans on ped faces; few reddish-yellow and yellow sand grains; common, very fine, black concretions that effervesce strongly with hydrogen peroxide; neutral; diffuse, wavy boundary. 25 to 28 inches thick.

B22—45 to 60 inches, dark-red (2.5YR 2/5) silty clay loam, dark red (2.5YR 3/6) when dry; moderate, medium and fine, subangular blocky structure; hard, friable, slightly sticky and plastic; plentiful fine and very fine roots; many, fine and very fine, tubular pores and few, medium, tubular pores; many, thin, patchy coatings that are nearly continuous with depth; many sand grains; many, very fine, black concretions that effervesce strongly with hydrogen peroxide; neutral.

The depth to coral limestone or gravelly alluvium ranges from 50 to more than 60 inches. In some areas cobblestones and stones occur on the surface and in the surface layer. The A and B horizons range from 5YR to 2.5YR in hue and, when moist, from 2 to 3 in value and from 3 to 5 in chroma. The texture of the A horizon is silty clay loam or silty clay. The structure in the B horizon ranges from weak to moderate.

This soil is used for sugarcane, truck crops, and pasture. (Capability classification IIe if irrigated, IVc if nonirrigated; sugarcane group 1; pineapple group 2; pasture group 2)

Ewa silty clay loam, 0 to 3 percent slopes (EoA).—On this soil, runoff is very slow and the erosion hazard is no more than slight. In a few places small, gently sloping areas were included in mapping.

This soil is used for sugarcane and homesites. (Capability classification I if irrigated, IVc if nonirrigated; sugarcane group 1; pineapple group 1; pasture group 2)

Ewa silty clay loam, 6 to 12 percent slopes (EoC).—On this soil, runoff is slow to medium and the erosion hazard is slight to moderate. Included in mapping were a few small areas that are strongly sloping.

This soil is used for sugarcane and pasture. (Capability classification IIIe if irrigated, IVe if nonirrigated; sugarcane group 1; pineapple group 3; pasture group 2)

Ewa silty clay loam, moderately shallow, 0 to 2 percent slopes (EmA).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except that the depth to coral limestone is 20 to 50 inches. Runoff is very slow, and the erosion hazard is no more than slight. Included in mapping were a few small areas less than 20 inches deep.

This soil is used for sugarcane, truck crops, and pasture. (Capability classification IIi if irrigated, IVi if nonirrigated; sugarcane group 1; pineapple group 1; pasture group 2)

Ewa silty clay loam, moderately shallow, 2 to 6 percent slopes (EmB).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except that the depth to coral limestone is 20 to 50 inches. Included in mapping were small areas less than 20 inches deep.

This soil is used for sugarcane, truck crops, and pasture. (Capability classification IIe if irrigated, IVi if nonirrigated; sugarcane group 1; pineapple group 2; pasture group 2)

Ewa cobbly silty clay loam, 0 to 3 percent slopes (EoA).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except that it is cobbly on the surface. Runoff is very slow, and the erosion hazard is no more than slight.

Most of this soil is used for sugarcane. A small acreage is used for pasture. (Capability classification IIi if irrigated, IVi if nonirrigated; sugarcane group 1; pasture group 2)

Ewa cobbly silty clay loam, 3 to 7 percent slopes (EoB).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except that it is cobbly on the surface. Included in mapping were a few small, stony areas.

Most of this soil is used for sugarcane. A small acreage is used for pasture. (Capability classification IIe if irrigated, IVi if nonirrigated; sugarcane group 1; pasture group 2)

Ewa silty clay, 0 to 3 percent slopes (EsA).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except for the texture of the surface layer. Runoff is very slow, and the erosion hazard is no more than slight.

This soil is used for sugarcane. (Capability classification I if irrigated, IVc if nonirrigated; sugarcane group 1; pineapple group 1; pasture group 2)

Ewa silty clay, 3 to 7 percent slopes (EsB).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except for the texture of the surface layer.

Most of this soil is used for sugarcane. A small acreage is used for pasture. (Capability classification IIe if irrigated, IVc if nonirrigated; sugarcane group 1; pineapple group 2; pasture group 2)

Ewa cobbly silty clay, 3 to 7 percent slopes (EtB).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except for the texture of the surface layer. Cobblestones in the surface layer interfere with tillage but do not make intertilled crops impracticable.

This soil is used for sugarcane. (Capability classification IIe if irrigated, IVi if nonirrigated; sugarcane group 1; pineapple group 2; pasture group 2)

Ewa stony silty clay, 0 to 2 percent slopes (EwA).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except for the texture of the surface layer. Surface stones interfere with tillage but do not make intertilled crops impracticable. Runoff is very slow, and the erosion hazard is no more than slight. Included in mapping were a few small areas where the texture of the surface layer is silty clay loam.

This soil is used for sugarcane, truck crops, and pasture. (Capability classification IIi if irrigated, IVi if nonirrigated; sugarcane group 1; pasture group 2)

Ewa stony silty clay, 2 to 6 percent slopes (EwB).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except for the texture of the surface layer. Stones in the surface layer interfere with tillage, but not enough to make intertilled crops impracticable. Included in mapping were a few small, nonstony areas where the texture of the surface layer is silty clay loam.

This soil is used for sugarcane and pasture. (Capability classification IIe if irrigated, IVi if nonirrigated; sugarcane group 1; pasture group 2)

and Waialua soils. Also included were small areas of gravelly, stony, and gently sloping soils.

In a representative profile the surface layer is dark-brown clay loam about 21 inches thick. This is underlain by dark-brown, dark grayish-brown, and brown, massive and single grain, stratified loam, loamy sand, fine sandy loam, and silt loam about 39 inches thick. Below this is coarse, gravelly or sandy alluvium. The soil is neutral in the surface layer and neutral to mildly alkaline below the surface layer.

Permeability is moderate. Runoff is slow, and the erosion hazard is no more than slight. The available water capacity is about 1.4 inches per foot in the surface layer and subsoil. In places roots penetrate to a depth of 5 feet or more. Low areas are subject to flooding.

Representative profile: Island of Oahu, lat. 21°34'38" N. and long. 158°09'51" W.

Ap1—0 to 7 inches, very dark brown (10YR 2/2) clay loam, dark brown (10YR 3/3) when dry; weak, fine and medium, granular structure; hard, friable, sticky and plastic; abundant very fine and fine roots; common, fine and very fine, interstitial pores; few rounded pebbles; slight effervescence with hydrogen peroxide; neutral; gradual, smooth boundary. 5- to 8 inches thick.

Ap2—7 to 21 inches, very dark brown (10YR 2/2) clay loam, dark brown (10YR 3/3) when dry; weak, fine and medium, subangular blocky structure; hard, friable, sticky and plastic; abundant very fine and fine roots; common, fine and very fine, interstitial pores and common, fine, tubular pores; slight effervescence with hydrogen peroxide; neutral; abrupt, wavy boundary. 9 to 14 inches thick.

IIC1—21 to 33 inches, dark-brown (10YR 3/3) loam, dark brown (10YR 4/3) when dry; massive; slightly hard, very friable, slightly sticky and slightly plastic; plentiful fine roots; common, very fine and fine, tubular pores; neutral; abrupt, wavy boundary. 8 to 12 inches thick.

IIIC2—33 to 37 inches, very dark grayish-brown (10YR 3/2) loamy sand, dark grayish brown (10YR 4/2) when dry; single grain; loose when dry or moist, non-sticky and nonplastic; few fine roots; porous; mildly alkaline; abrupt, wavy boundary. 0 to 6 inches thick.

IVC3—37 to 47 inches, dark-brown (10YR 3/3) fine sandy loam, dark brown (10YR 4/3) when dry; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; common, fine, tubular pores; mildly alkaline; abrupt, wavy boundary. 8 to 10 inches thick.

VC4—47 to 60 inches, dark-brown (10YR 3/3) silt loam, brown (10YR 5/3) when dry; massive; slightly hard, friable, sticky and plastic; few fine roots; common, fine, tubular pores; mildly alkaline.

The main variation is in the range in thickness and texture of the layers in the C horizon. The thickness of the layers ranges from less than 1 inch to more than 12 inches. The texture ranges from sand to silty clay loam. Throughout the profile, the soil ranges from 10YR to 7.5YR in hue, from 2 to 3 in value when moist and 3 to 5 when dry, and from 1 to 3 in chroma when moist or dry. Gravel is common on the surface and is scattered throughout the profile.

This soil is used for sugarcane, truck crops, and pasture. (Capability classification I if irrigated, IVc if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu cobbly clay loam, 0 to 3 percent slopes (PtA).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that it is cobbly.

This soil is used for sugarcane. Small acreages are used for pasture. (Capability classification IIi if irrigated, IVs if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu cobbly clay loam, 3 to 7 percent slopes (PtB).—On this soil, runoff is slow and the erosion hazard is slight. Included in mapping were small areas that have thin, stratified layers of sand and gravel at a depth of 20 to 36 inches.

This soil is used for sugarcane. Small acreages are used for pasture. (Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu stony clay loam, 2 to 6 percent slopes (PuB).—On this soil, there are sufficient stones to hinder tillage but not enough to make intertilled crops impracticable. Runoff is slow, and the erosion hazard is slight.

This soil is used for sugarcane, truck crops, and pasture. Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu very stony clay loam, 0 to 12 percent slopes (PvC).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that as much as 3 percent of the surface is covered with stones. Runoff is slow to medium, and the erosion hazard is slight to moderate. Workability is difficult because of the stones.

This soil is used for pasture and wildlife habitat. (Capability classification IVs, nonirrigated; sugarcane group 1; pasture group 2)

Pulehu silt loam, 0 to 3 percent slopes (PpA).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam. This soil is used for sugarcane. Small acreages are used for homesites. (Capability classification I if irrigated, IVc if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu silt loam, 3 to 7 percent slopes (PpB).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam. Runoff is slow, and the erosion hazard is slight. Included in mapping were small areas underlain by coral sand at a depth of 20 to 36 inches.

This soil is used for sugarcane. (Capability classification IIe if irrigated, IVc if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu cobbly silt loam, 0 to 3 percent slopes (PrA).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam and there are many cobblestones on the surface. In a few places cobblestones are common throughout the profile. Included in mapping were small areas underlain by coral sand at a depth of 20 to 36 inches.

This soil is used for sugarcane and pasture. (Capability classification IIi if irrigated, IVs if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu cobbly silt loam, 3 to 7 percent slopes (PrB).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam, and the surface layer is cobbly. Runoff is slow, and the erosion hazard is slight. Included in mapping were small areas underlain by coral sand at a depth of 20 to 36 inches.

This soil is used for sugarcane. Small areas are used for pasture. (Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu sandy loam, 2 to 6 percent slopes (PoB).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes,



FLOOD HAZARD ASSESSMENT REPORT



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD ZONE DEFINITIONS

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

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

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

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

OTHER FLOOD AREAS

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

PROPERTY INFORMATION

COUNTY: MAUI
TMK NO: (2) 4-5-008-001
PARCEL ADDRESS: FRONT ST
 LAHAINA, HI 96761
FIRM INDEX DATE: SEPTEMBER 25, 2009
LETTER OF MAP CHANGE(S): NONE
FEMA FIRM PANEL(S): 1500030361E
PANEL EFFECTIVE DATE: SEPTEMBER 25, 2009

PARCEL DATA FROM: MAY 2012
IMAGERY DATA FROM: MAY 2005

IMPORTANT PHONE NUMBERS

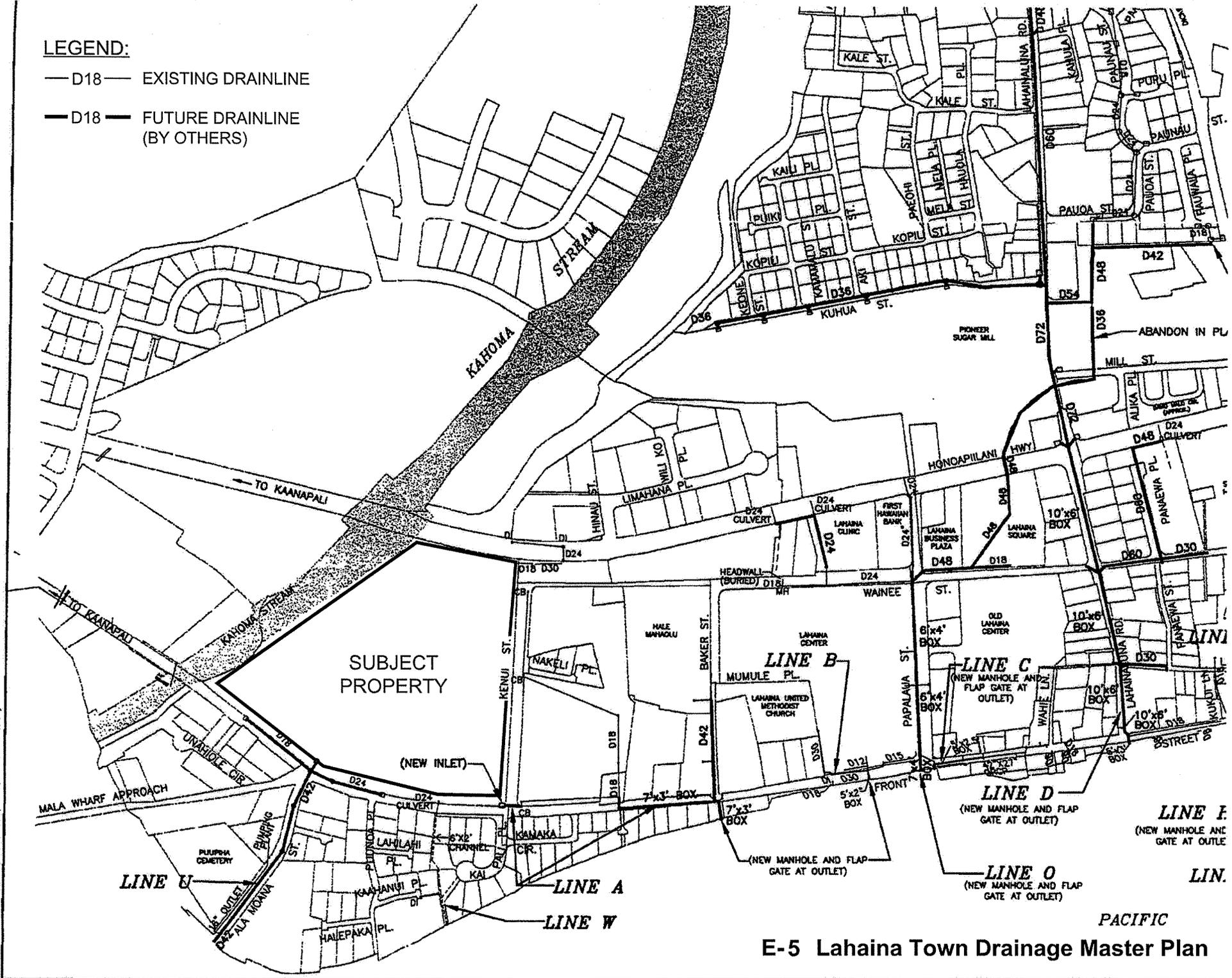
County NFIP Coordinator
 County of Maui
 Francis Cerizo, CFM (808) 270-7771
State NFIP Coordinator
 Carol Tyau-Beam, P.E., CFM (808) 587-0267

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

Preliminary DFIRM Disclaimer: If this map has been identified as "PRELIMINARY", please note that it is being provided for commenting purposes only and is not to be used for official/legal decisions or regulatory compliance.

LEGEND:

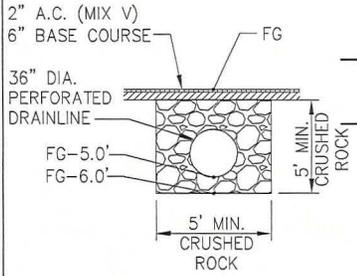
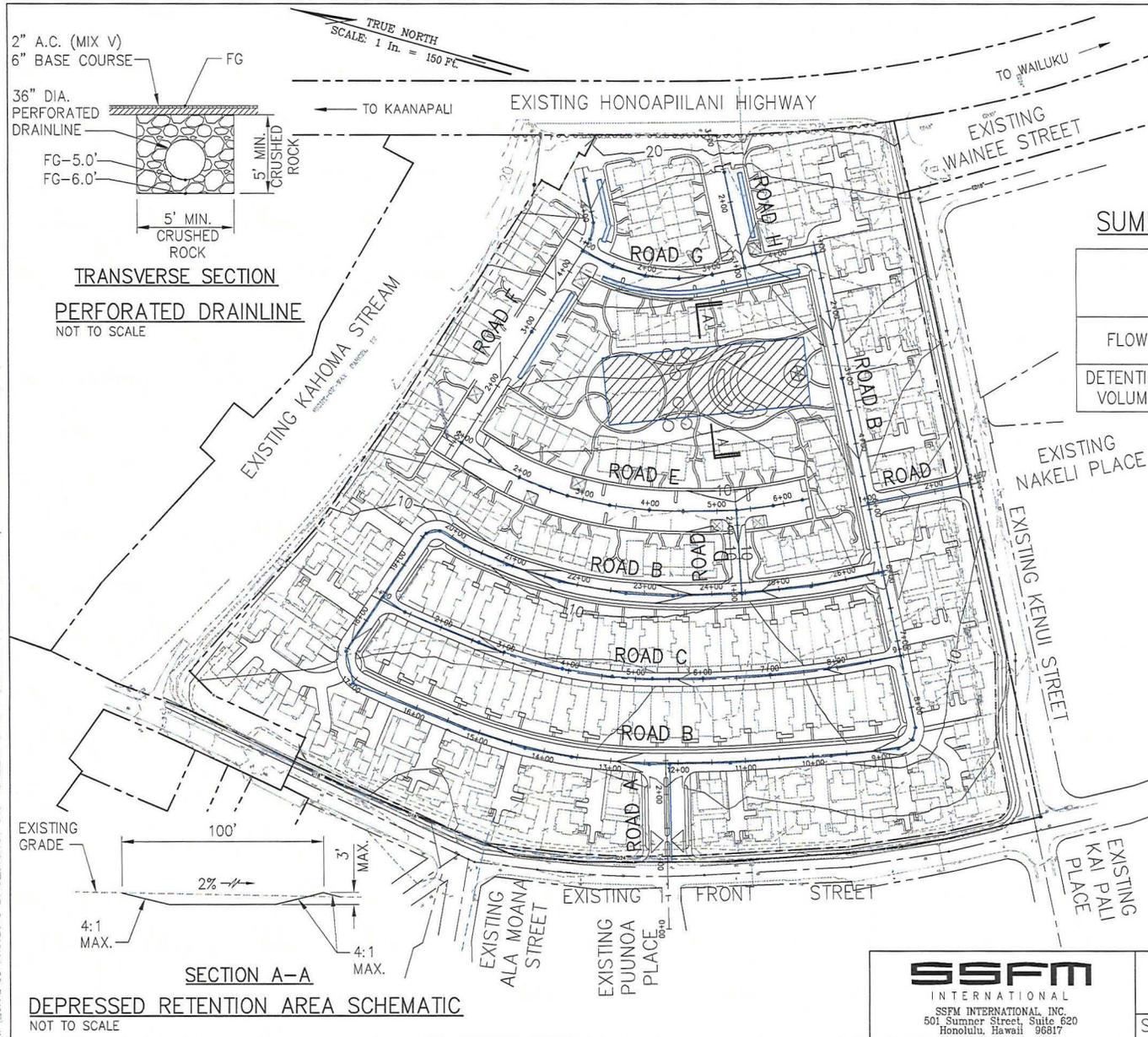
- D18 — EXISTING DRAINLINE
- D18 — FUTURE DRAINLINE (BY OTHERS)



E-5 Lahaina Town Drainage Master Plan

Thu, 17 Mar 2005 - 2:23pm
 M:\Lombos Drainage\200272050 Mapis\Map\Sheet\Enroll 4 010503.dwg

W:_CHIL 3D PROJECTS 2010_08\5,000 SCD WEINBERG LAHAINA EXHIBITS PER-PDR EXHIBITS.E 13 DRAIN PLAN.DWG 8/30/12 11:53 CED



SUMMARY OF IMPROVEMENTS:

1. 58 DRAIN MANHOLES
2. 5,100 LINEAR FEET PERFORATED DRAINLINE
3. 590 LINEAR FEET PERFORATED DRAINLINE
 - STORAGE CAPACITY = 5,000 CF
4. DEPRESSED DETENTION BASIN = 0.69 ACRES
 - STORAGE CAPACITY = 50,000 CF

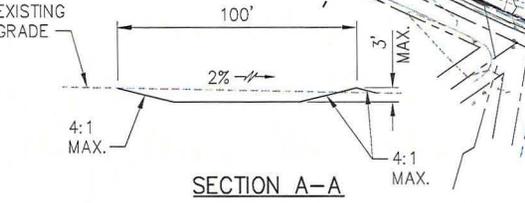
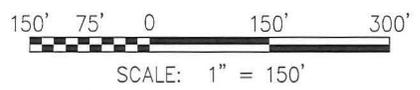
SUMMARY OF STORM WATER RUNOFF:

	EXISTING	PROPOSED	NET INCREASE	POTENTIAL DETENTION CAPACITY
FLOW	17.5 CFS	53.4 CFS	35.9 CFS	45.0 CFS
DETENTION VOLUME	0 CF	34,000 CF	34,000 CF	55,000 CF

LEGEND:

- PROPERTY LINE
- - - ROAD CENTERLINE
- 10— FINISH GRADE
- - -10- - - EXISTING GRADE
- - - - - EXISTING EASEMENT
- - - - - FENCE
- DRAINLINE
- DRAIN MANHOLE
- PERFORATED DRAINLINE
- DEPRESSED DETENTION BASIN
- - - - - FUTURE DRAINLINE (BY OTHERS)

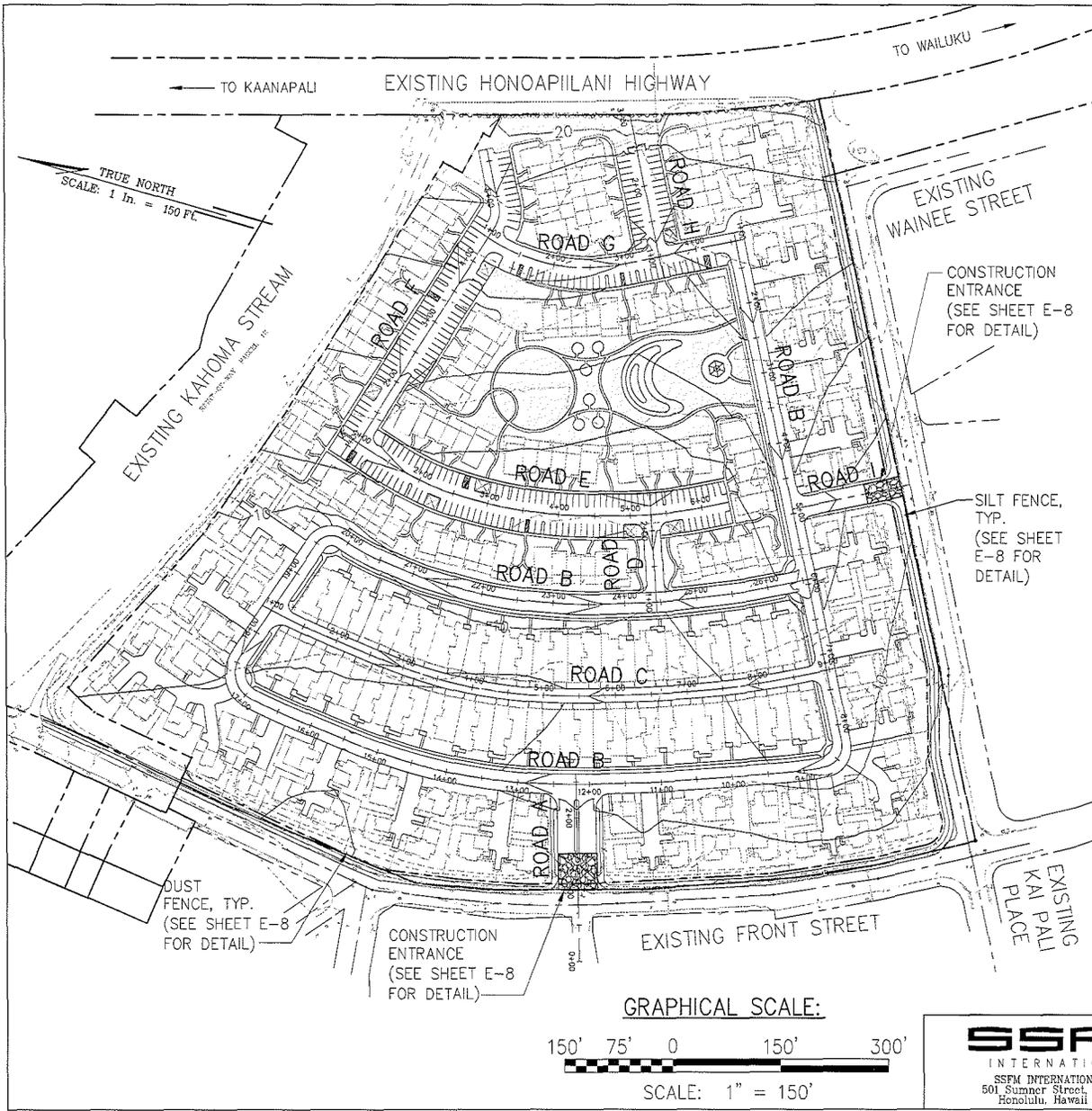
GRAPHICAL SCALE:



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INTERNATIONAL
SSFM INTERNATIONAL, INC.
501 Sumner Street, Suite 620
Honolulu, Hawaii 96817

EXHIBIT – CONCEPTUAL DRAIN PLAN Weinberg Lahaina – Residential Development		SHEET E-6
SCALE: 1" = 150'	DATE: 8/30/2012	

WEINBERG LAHAINA EXHIBIT 15 BMP PLAN DWG 06/10/12 11:43 260



EROSION CONTROL NOTES AND BEST MANAGEMENT PRACTICES (BMPs):

1. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY CLEARING AND GRUBBING WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
2. CONSTRUCTION SHALL BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF CLEARED SURFACE AREA.
3. ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY.
4. PROVIDE CONSTRUCTION ENTRANCE FOR EACH INGRESS AND EGRESS.
5. PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION SHALL BE APPLIED AS SOON AS PRACTICAL AFTER FINAL GRADING.
6. STORM WATER FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED BY USING APPROPRIATE CONTROL MEASURES AS PRACTICAL.
7. ALL BMPs SHALL BE CONSTRUCTED AND OPERATIONAL PRIOR TO MASS GRADING PHASE.
8. INSTALL INLET PROTECTION DEVICES AROUND ALL NEW CATCH BASINS AND DRAIN INLETS.
9. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION FOR NEWLY CONSTRUCTED DRAIN INLETS AND CATCH BASINS, PER DETAILS #3/C3.12 AND #7/C3.12, DURING CONSTRUCTION AND UNTIL CONSTRUCTION AREA IS STABILIZED AND FINAL GRADES ARE ACHIEVED.

CONCEPTUAL EARTHWORK:

DISTURBED AREA = 21.6 ACS.
 EXCAVATION = 3,000 CU. YD.
 EMBANKMENT = 35,000 CU. YD.

LEGEND:

- PROPERTY LINE
- - - - - ROAD CENTERLINE
- 10—— FINISH GRADE
- · - · - · - EXISTING GRADE
- · - · - · - EXISTING EASEMENT
- x - x - x - FENCE
- x - x - x - SILT FENCE
- o - o - o - DUST FENCE

GRAPHICAL SCALE:



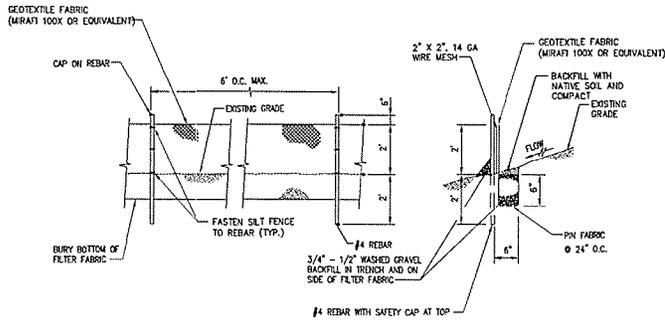
SCALE: 1" = 150'

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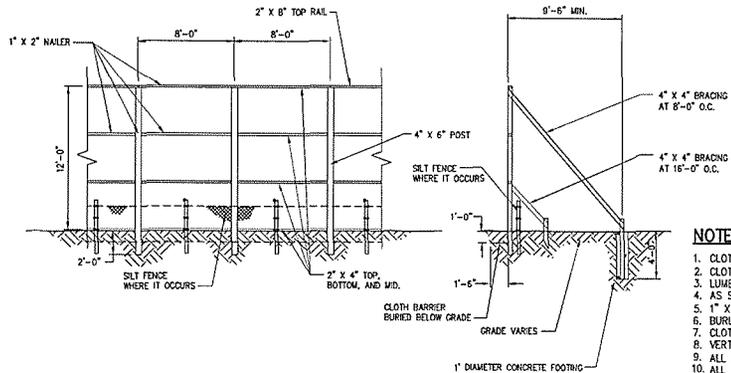
EXHIBIT
CONCEPTUAL CONSTRUCTION GRADING AND BMP PLAN
 Weinberg Lahaina - Residential Development
 SCALE: 1" = 150' DATE: 8/10/2012

SHEET
E-7

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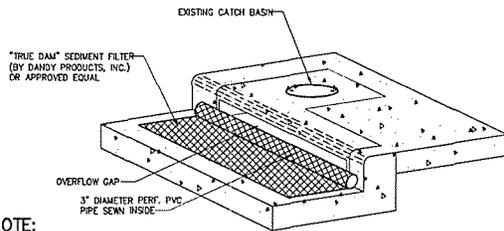


1 SILT FENCE DETAIL
E-B NOT TO SCALE



2 DUST FENCE DETAIL
E-B NOT TO SCALE

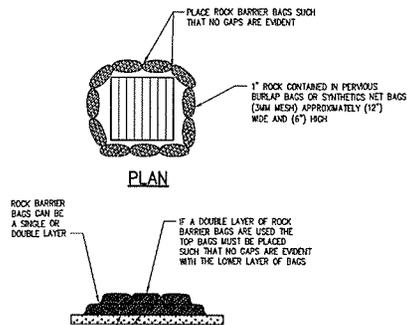
- NOTES:**
1. CLOTH BARRIER NOT SHOWN IN FRONT VIEW
 2. CLOTH BARRIER TO BE A "WOVEN GEOTEXTILE" OR "NURSERY SHADE"
 3. LUMBER SIZES ARE NOMINAL INCHES
 4. AS SHOWN CLOTH TO BE BURIED AT BASE TO INDICATED DIM.
 5. 1" X 2" CLOTH BARRIER CAPS TO BE NAILED 12" O.C.
 6. BURLAP IS NOT ACCEPTABLE AS THE CLOTH BARRIER
 7. CLOTH TO HAVE NO HORIZONTAL SEAMS
 8. VERTICAL SEAMS TO BE MADE OVER UPRIGHTS ONLY
 9. ALL SEAMS TO BE CAPPED WITH MINIMUM OF 1" X 2"
 10. ALL JOINTS TO BE SECURELY FASTENED BY MECHANICAL MEANS



NOTE:

IN THE EVENT OF ABOVE NORMAL RAINFALL, CONTRACTOR SHALL REMOVE INLET PROTECTION AND REPLACE AFTER EVENT HAS PASSED.

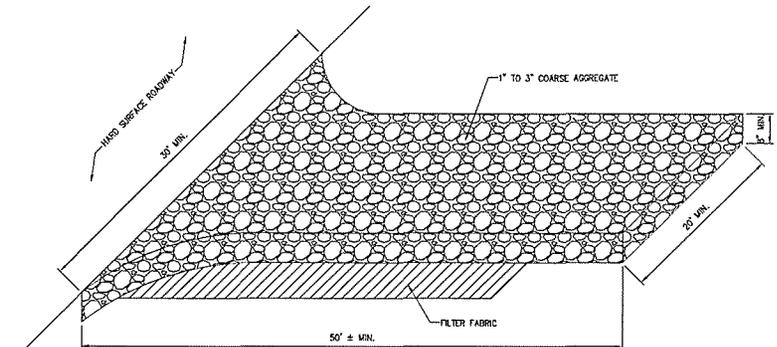
3 TEMPORARY CATCH BASIN PROTECTION
E-B NOT TO SCALE



NOTE:

IN THE EVENT OF ABOVE NORMAL RAINFALL, CONTRACTOR SHALL REMOVE INLET PROTECTION AND REPLACE AFTER EVENT HAS PASSED.

4 GRATED INLET PROTECTION
E-B NOT TO SCALE



NOTE:

ALL POINT OF EGRESS AND INGRESS TO THE SITE SHALL BE PROTECTED WITH A STABILIZED CONSTRUCTION ENTRANCE.

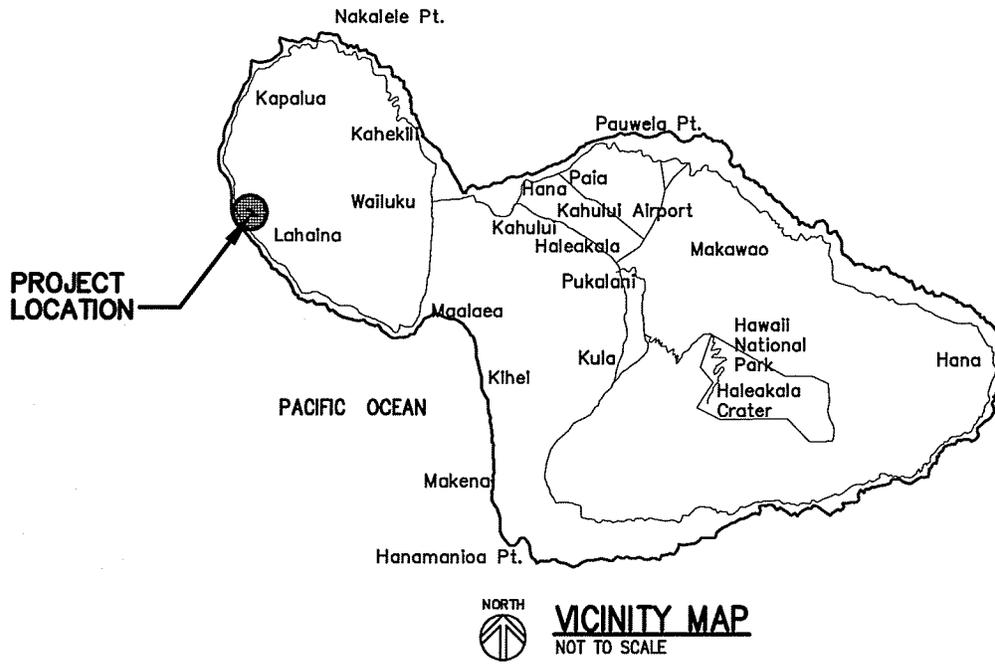
5 STABILIZED CONSTRUCTION ENTRANCE
E-B NOT TO SCALE

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Weinberg Lahaina - Residential Development

SCALE: 1" = 150' DATE: 8/10/2012

SHEET
E-8



**WEINBERG LAHAINA
LOCATION MAP**



Appendix – A

Preliminary Drainage Calculations

HYDROLOGIC CALCULATIONS: EXISTING CONDITIONS

1. 50-Yr. - 1 Hr. Rainfall:

R(50 Yr.-1Hr.): 2.0 in.

2. Total Area:

Area (Ac.): 21.56

3. Runoff Coefficients:

Use 0.30 for Unimproved areas in Table 2 of County of Maui Drainage Standards

Drainage Area	Area (acres)	Length (ft)	S (%)	C	t _c (min)	I (in/hr)	Q (cfs)
1	21.56	1000	5.00%	0.30	34.00	2.70	17.46

Total Runoff: 17.46 cfs

HYDROLOGIC CALCULATIONS: PROPOSED IMPROVEMENTS

1. 50-Yr. - 1 Hr. Rainfall:

R(50 Yr.-1Hr.): 2.00

2. Total Area:

Area 1(Ac.): 21.56

3. Runoff Coefficients:

Use 0.55 for Residential areas in Table 3 of County of Maui Drainage Standards

Drainage Area	Area (acres)	Length (ft)	S (%)	C	t _c (min)	I (in/hr)	Q (cfs)	
1	21.56	1000	5.00%	0.55	8	4.50	53.36	
Total Runoff:							53.36	cfs

IDF CURVE DETENTION DESIGN CALCULATIONS (based off Rational Method)

Design Data

Drainage Area = A =	21.60 acres
Developed Runoff Coefficient = C =	0.55
Design Storm =	50 year
One Hour Rainfall = i =	2.00 inches
Present Peak Discharge = QOUT =	17.46 cfs
Developed Peak Discharge = QIN =	53.36 cfs
QOUT / QIN =	0.33
Outflow Adjustment Coefficient = k =	0.90

Storm Duration, minutes	Correction Factor	Rainfall Intensity, in./hr.	Runoff Volume, cu. ft.	Outflow Volume, cu. ft.	Storage Volume, cu. ft.
T	f	I = fi	CIAT	kQOUTT	(4) - (5)
(1)	(2)	(3)	(4)	(5)	(6)
5	2.5575	5.115	18,382	4,714	13,668
10	2.0576	4.115	29,578	9,428	20,150
11	2.0135	4.027	31,838	10,371	21,467
12	1.9689	3.938	33,963	11,314	22,649
13	1.9244	3.849	35,962	12,257	23,705
14	1.8807	3.761	37,849	13,200	24,649
15	1.8381	3.676	39,633	14,143	25,490
16	1.7971	3.594	41,333	15,085	26,248
17	1.7578	3.516	42,956	16,028	26,928
18	1.7205	3.441	44,517	16,971	27,546
19	1.6855	3.371	46,035	17,914	28,121
20	1.6529	3.306	47,520	18,857	28,663
21	1.6227	3.245	48,985	19,800	29,185
22	1.5946	3.189	50,429	20,742	29,687
23	1.5684	3.137	51,855	21,685	30,170
24	1.5438	3.088	53,260	22,628	30,632
25	1.5206	3.041	54,646	23,571	31,075
30	1.4184	2.837	61,168	28,285	32,883
31	1.3997	2.799	62,373	29,228	33,145
32	1.3814	2.763	63,544	30,171	33,373
33	1.3635	2.727	64,680	31,114	33,566
34	1.3459	2.692	65,780	32,057	33,723
35	1.3287	2.657	66,849	32,999	33,850
36	1.3118	2.624	67,885	33,942	33,943
37	1.2953	2.591	68,893	34,885	34,008
38	1.2792	2.558	69,875	35,828	34,047
39	1.2634	2.527	70,828	36,771	34,057 Peak
40	1.2479	2.496	71,753	37,714	34,039
45	1.1754	2.351	76,033	42,428	33,605
50	1.1103	2.221	79,802	47,142	32,660
55	1.0521	2.104	83,180	51,856	31,324
60	1.0000	2.000	86,249	56,570	29,679
65	0.9534	1.907	89,082	61,285	27,797
70	0.9118	1.824	91,749	65,999	25,750
75	0.8748	1.750	94,313	70,713	23,600
80	0.8419	1.684	96,817	75,427	21,390
85	0.8127	1.625	99,300	80,141	19,159
90	0.7870	1.574	101,817	84,856	16,961
95	0.7645	1.529	104,401	89,570	14,831
100	0.7450	1.490	107,092	94,284	12,808
105	0.7283	1.457	109,926	98,998	10,928
110	0.7143	1.429	112,947	103,712	9,235
115	0.7028	1.406	116,180	108,427	7,753

APPENDIX I.

Preliminary Traffic Impact Analysis Report

PRELIMINARY

Kahoma Village

Lahaina, Maui

Traffic Impact Analysis Report

August 2012

Prepared for

Stanford Carr Development, LLC

Prepared by

SSFM
INTERNATIONAL

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I. INTRODUCTION

The proposed Kahoma Village development is situated on a 21.6 acre property located in the town of Lahaina on the island of Maui. The project site is bordered by Honoapi'ilani Highway, Kahoma Stream, Front Street, and Kenui Street as shown in Figure 1. This development addresses the need for housing as economic recovery occurs and buyers look at purchasing homes, as well as to accommodate future population growth. The development provides a mix of residential housing types for a variety of income groups, especially those in the low-income, moderate-income and gap-group. Included are 101 single family units, 102 multi-family units and an open park area. The anticipated site plan of the proposed development (revised August 2012) is provided in Figure 2.

The area surrounding the development includes residential single family and multi-family homes, commercial retailers, schools, churches, gas stations, and restaurants including luau hula shows. Several large shopping centers exist in the vicinity of the development with Lahaina Cannery Mall (makai of Honoapi'ilani Highway) and Lahaina Gateway (mauka of Honoapi'ilani Highway) located immediately to the north. These shopping centers include grocery stores, specialty shops, banks, book stores, offices and restaurants. To the south, along Front Street, is the start of the commercial waterfront. This area includes specialty shops, restaurants, historical sites, the Maui Theater, Lahaina Harbor, and scenic views of the ocean and other islands. This area attracts high volumes of tourists daily.

Ho'onanea and Opukea are two recently constructed condominium townhome developments located mauka of Honoapi'ilani Highway. Maui Community College – Lahaina Education Center is located on the south side of Kenui Street, across from the development. Nearby shoreline access is available makai of the intersection of Front Street and Kenui Street, off of a private road. Additionally, off of Mala Street and Ala Moana Street is access to Mala Boat Ramp and Baby Beach.



Island of Maui

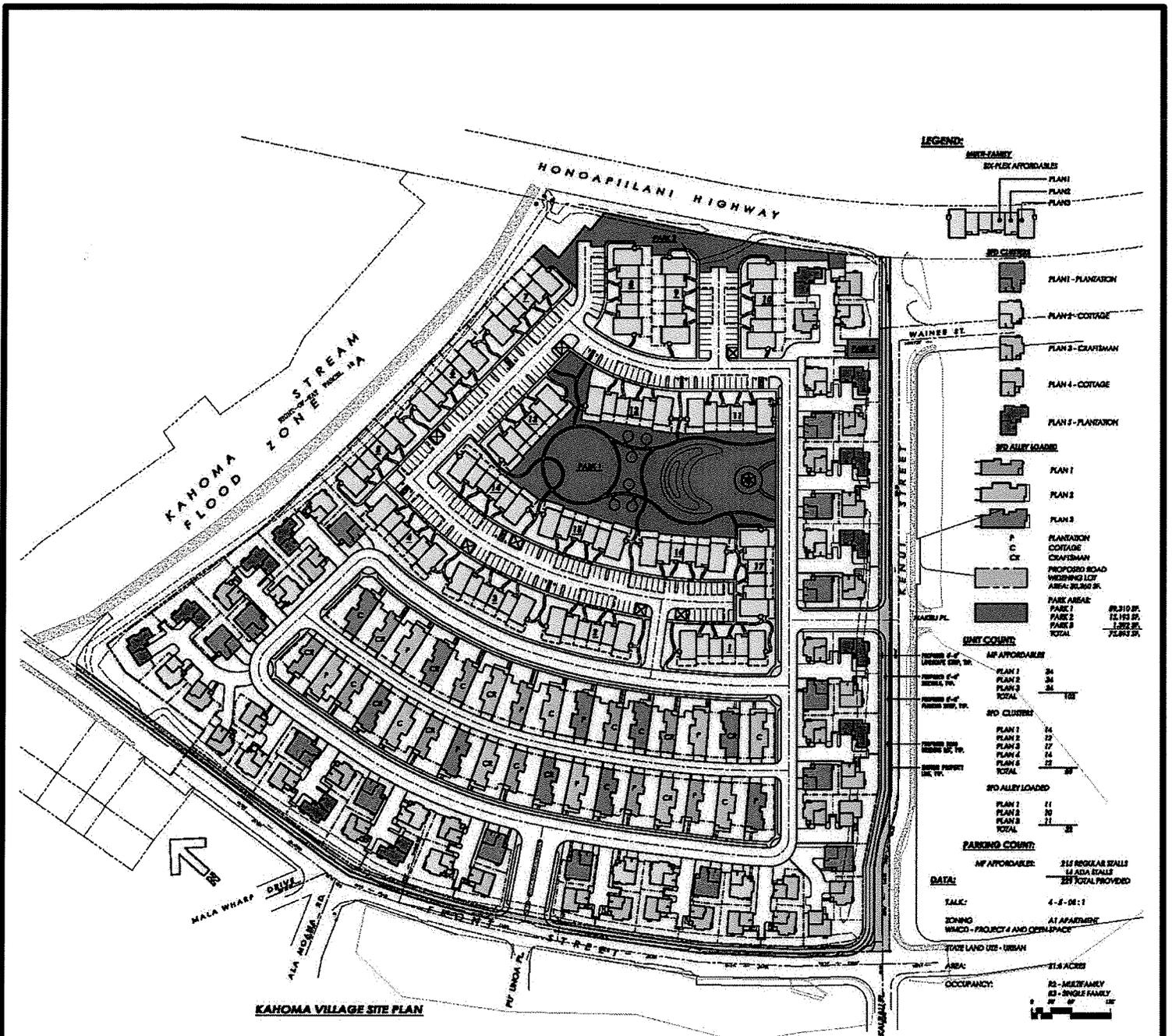


Legend

 Study Intersections

Figure 1: Project Location Map
Kahoma Village





Source: Alakea Design Group, LLC (Revised August 2012)

Figure 2: Project Site Plan
Kahoma Village

II. EXISTING (2011) TRAFFIC CONDITIONS

A. Geometric Configuration

1. Roadway Configuration

Honoapi'ilani Highway (State Highway Route 30) is a four-lane primary urban arterial that travels along the west coast of Maui. In the study area, the speed limit along this section of road is 40 mph. Makai of the development in the study area, Front Street is a 20 mph two-lane collector running parallel to the highway. Traveling mauka-makai and intersecting these streets are the following two-lane collectors: Kapunakea Street, Kenui Street, and Papalaua Street.

2. Intersection Configuration

Access to the proposed development will be through driveways along Front Street across from Pu'unoa Place and along Kenui Street across from Nakeli Place. Vehicles accessing the development are expected to travel through the following significant study intersections:

- 1) Honoapi'ilani Highway and Kapunakea Street
- 2) Honoapi'ilani Highway and Kenui Street
- 3) Honoapi'ilani Highway and Papalaua Street
- 4) Front Street and Kenui Street

Existing (2011) lane configurations for the study intersections are shown in Figure 3.

At the signalized intersection with Kapunakea Street, Honoapi'ilani Highway has a left turn lane, a single through lane and a shared through/right turn lane for the northbound and southbound approaches. The left turn movements from these approaches have protected traffic signal phasing. There are no acceleration or deceleration lanes for right turning vehicles along Honoapi'ilani Highway. The makai-bound approach on Kapunakea Street has a left turn lane and a shared through/right turn lane while the mauka-bound approach has a shared through/left turn lane and a right turn lane. During the peak hours, vehicles from the minor street approaches were observed running red lights. This is potentially due to the time allocated for these movements not allowing for all queued vehicles to clear the intersection. Pedestrian crosswalks and push-buttons exist for crossings along the north, mauka and makai legs of the intersection. It was observed that the north leg crossing was heavily used by pedestrians with few pedestrians using the mauka and makai leg crossings.

Approximately 0.4 miles south of Kapunakea Street, Honoapi'ilani Highway intersects Kenui Street at a right in right out (RIRO) T-intersection. Although left turns at this intersection are restricted, some motorists were observed making these turns. The mauka-bound approach on Kenui Street is a single channelized turn lane with stop sign control and no acceleration lane. The posted speed along Kenui Street is 20 mph. Along Honoapi'ilani at Kenui Street, the northbound approach has two through lanes and the southbound approach has one through lane and one shared through/right turn lane. Pedestrians and bicyclists were seen using the eight-foot shoulder along the makai side of Honoapi'ilani Highway. A marked pedestrian crossing exists across Kenui Street.

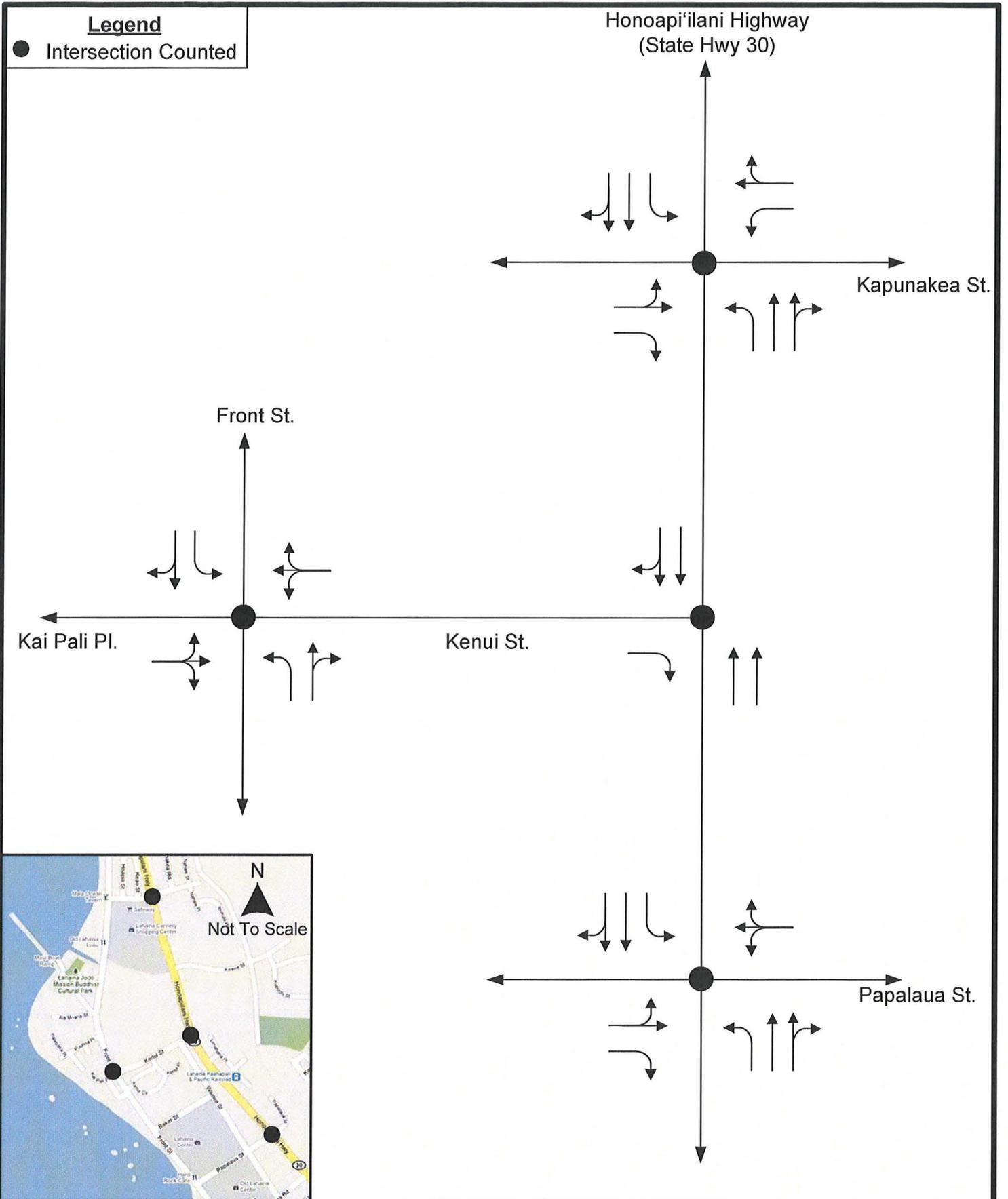


Figure 3: Existing (2011) Lane Configuration

Kahoma Village

At the makai end of Kenui Street is the two-way stop controlled (TWSC) intersection with Front Street and Kai Pali Place, which is a private road. The makai-bound approach on Kenui Street and mauka-bound approach on Kai Pali Place are stop controlled, with one lane for all turning movements. The northbound and southbound approaches of Front Street each have a left turn lane and a shared through/right turn lane. A marked pedestrian crosswalk exists on the mauka leg and a raised crosswalk exists on the south leg of the intersection. Sidewalks are present along the mauka side of Front Street and south side of Kenui Street. Vehicles were observed to park along Kenui Street, accessing the beach access off Kai Pali Place. Along Kenui Street, there are marked parking stalls along the curbed south side of the street and unmarked parking along the north side where the development is proposed.

Honoapi'ilani Highway intersects Papalaua Street approximately 0.3 miles south of its intersection with Kenui Street. At this signalized intersection, the northbound and southbound approaches of Honoapi'ilani Highway each have a left turn lane, a single thorough lane and a shared through/right turn lane. The mauka-bound approach of Papalaua Street has a shared through/left turn lane and a right turn lane. The makai-bound approach of Papalaua Street has one lane for all turning movements. Left turns from the northbound and southbound approaches have protected traffic signal phasing. The mauka-bound and makai-bound approaches are permitted. Pedestrian crossings are marked, and pedestrian push-buttons exist along the south, mauka and makai legs of the intersection.

Although vehicles may also travel through the following intersections, these were not included as study intersections for the following reasons:

- 1) Kenui Street and Nakeli Place/Project Driveway – No significant impact is expected to vehicles entering/exiting the project or traveling along Kenui Street.
- 2) Front Street and Puunoa Place/Project Driveway – No significant impact is expected to vehicles entering/exiting the project or traveling along Front Street.
- 3) Waine'e Street at Kenui Street - This is located mauka from one of the development driveways although it will remain a minor intersection with no significant change in operation expected.
- 4) Waine'e Street at Papalaua Street - Vehicles coming from the south are anticipated to make right turns at this intersection, not significantly impacting the intersection operations.
- 5) Front Street at Kapunakea Street - No significant impact is expected at this intersection resulting from vehicles leaving the development and continuing north along the highway.
- 6) Front Street at Malf Wharf Drive/Ala Moani Road - No significant impact is expected at this intersection resulting from vehicles leaving the development and continuing north along the highway.
- 7) Front Street and Lahaina Cannery Mall driveway –Traffic progressing northbound along Front Street could potentially delay southbound left turns into the mall although a left-turn lane exists for that movement minimizing delay to southbound through traffic.
- 8) Honoapi'ilani Highway and Keawe Street – Future operations are likely to change at this intersection due to the construction of initial phases of the Lahaina Bypass. Any impact at this intersection from development traffic will be insignificant.

- 9) Honoapi'ilani Highway and Lahainaluna Road – Any school related traffic will be minimal, largely during the AM peak hour, and thus were not considered a significant impact on intersection operations.

B. Volumes

1. 24-hour Volumes

24-hour traffic counts in the area, from data collected by Hawai'i Department of Transportation (HDOT) in 2009, are shown in Table 1.

Table 1: 2009 Average Daily Trip along Honoapi'ilani Highway

Traffic Station Location along Honoapi'ilani Highway:	Average Daily Trips
North of Kapunakea Street	35,500
South of Papalaua Street	33,800

2. Peak Hour Volumes

Turning movement counts were taken during the AM and PM peak periods, as noted from HDOT data, from 6:00–8:00am and 3:00–5:00pm on Tuesday, April 26, 2011 and Wednesday, April 27, 2011. The weekday AM and PM peak hours were determined to be 7:00-8:00am and 3:45-4:45pm respectively at intersections along Honoapi'ilani Highway and 7:00-8:00am and 3:15-4:15pm at the intersection of Front Street at Kenui Street/Kai Pali Place. Existing (2011) peak hour traffic counts at the intersections are shown in Figure 4. Detailed traffic count data can be referenced in Appendix A.

3. Multi-modal Volumes

Pedestrians and bicycles were observed in and around the project area and were counted during the intersection peak hour counts included in Appendix A. County of Maui busses travel in the surrounding area and bus stops exist adjacent to the project site.

Legend

- Intersection Counted
- # (#) AM (PM) Peak Hour Traffic Volume (veh/hr)

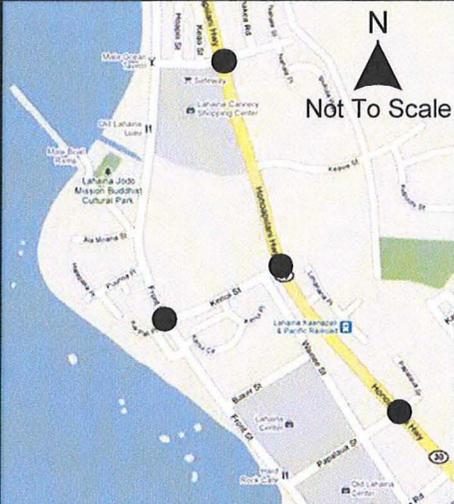
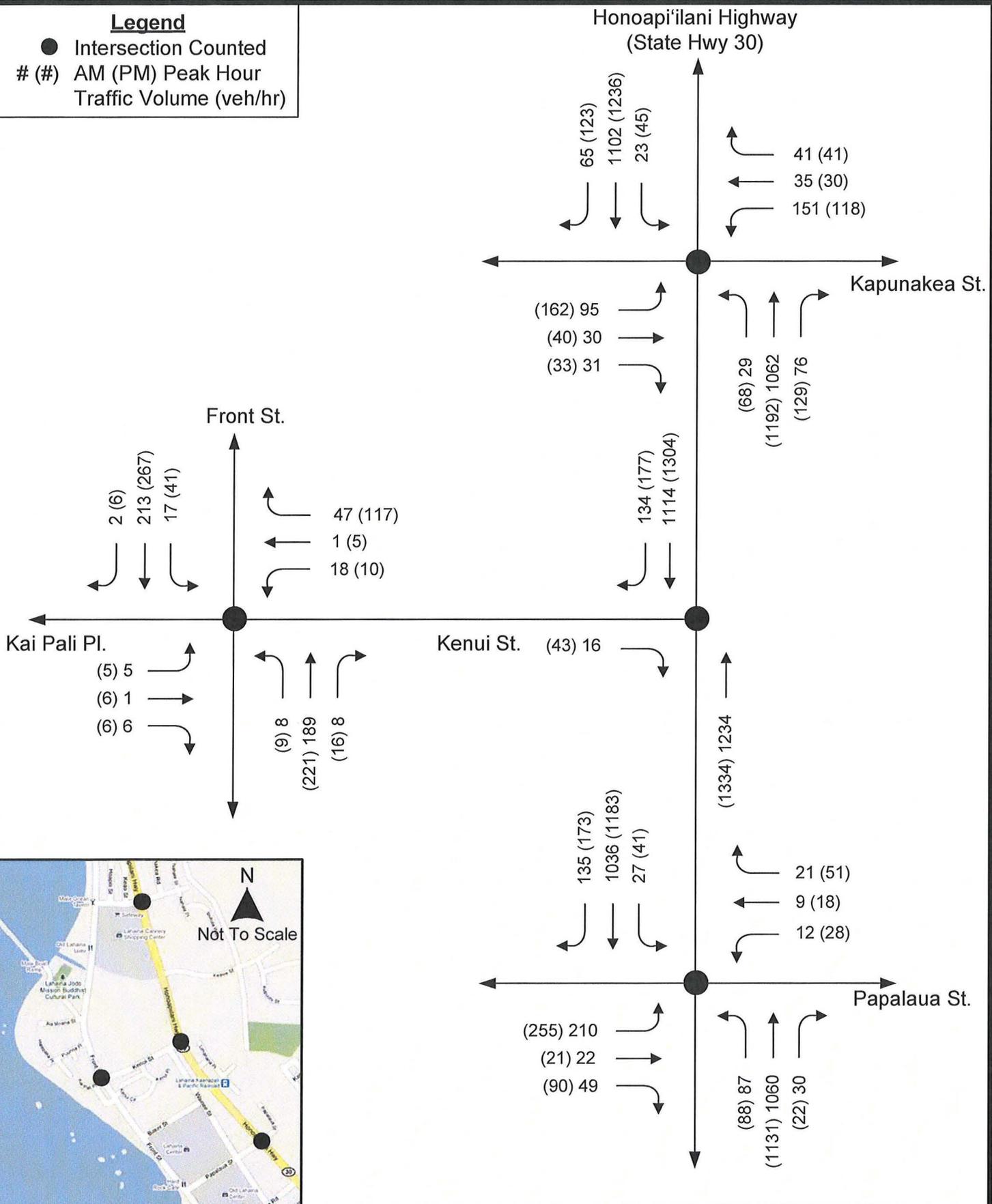


Figure 4: Existing (2011) Peak Hour Volumes

Kahoma Village



C. Operations

1. Methodology

Level of service (LOS) is an operational analysis rating system used in traffic engineering to measure the effectiveness of roadway operating conditions. LOS at intersections measures the seconds of delay per vehicle as compared to a vehicle operating in ideal, unobstructed conditions. LOS for roadway segments measures congestion along a corridor as determined by specific roadway type. There are six LOS ranging from A to F. LOS A is defined as being the least interrupted flow conditions with little or no delays, whereas LOS F is defined as conditions where extreme delays exist. Guidelines from the *Hawai'i Statewide Uniform Design Manual* (HDOT, 1980) state that an appropriate LOS for an urban State arterial, the functional classification of Honoapi'ilani Highway, is LOS C or better. A *Policy on Geometric Design of Highways and Streets* (AASHTO, 2011) guidelines suggest a LOS of C or D for this surrounding area road type. No LOS guidelines exist from the County of Maui although according to A *Policy on Geometric Design of Highways and Streets* (AASHTO, 2011) guidelines, LOS D or better is appropriate for urban collectors, which is the functional classification of Front Street.

a) Roadway Segments

LOS of roadway segments was determined using peak hour directional volume analysis in the *Quality/Level of Service Handbook* (FDOT, 2009) (see Appendix C) which is based on the methodologies of the *Highway Capacity Manual (HCM)* (TRB, 2000). This analysis can be used to gauge capacity along individual roadway segments, per surrounding area and roadway type.

According to the *U.S. Census* (USCB, 2010), the population of Lahaina was slightly greater than 11,700. For the purpose of determining the roadway segment LOS, Lahaina is classified as an urban area. This is defined in the *Quality/LOS Handbook* (FDOT, 2009) as "a place with a population between 5,000 and 50,000 and not within an urbanized area." For arterial facility analysis in downtown areas, the general recommendation is that the facility be at least one mile.

The roadway segmental analysis evaluates the Honoapi'ilani Highway corridor as a four-lane, undivided, Class II signalized arterial in an urban area. Class II arterials are defined as roadways with speed limits of 35 to 45 mph and an average signal density of 2.0 to 4.5 signals per mile. In the study area, there are four signalized intersections along the one mile corridor of Honoapi'ilani Highway. On either side of the study area, Honoapi'ilani Highway has lower signal density which results in a different class of arterial. This results in higher volume limits and therefore better operations for similar traffic volumes.

b) Signalized Intersections

The LOS analysis for signalized intersections is based on average total vehicle delay based on the methodologies of the *HCM* (TRB, 2010), as shown in Table 2. High numbers of vehicles passing through the intersection, long cycle lengths, inappropriate signal phasing, or a poor signal progression can result in long delays, and consequently poor LOS.

Table 2: LOS Criteria for Signalized Intersections

Average Control Delay (s/veh)	LOS by v/c Ratio	
	≤1.0	>1.0
≤ 10.0	A	F
>10 and ≤20	B	F
>20 and ≤35	C	F
>35 and ≤55	D	F
>55 and ≤80	E	F
>80	F	F

Source: HCM (TRB, 2010)

Another measure of intersection delay is the volume to capacity (v/c) ratio. This is the ratio of the volume of traffic utilizing the intersection compared to the maximum volume of vehicles that can be accommodated by the intersection during a specific period of time. A v/c ratio under 0.85 means the intersection is operating under capacity and excessive delays are not experienced. An intersection is operating near its capacity when v/c ratios range from 0.85 to 0.95. Unstable flows are expected when the v/c ratio is between 0.95 and 1.0. Any v/c ratio greater than or equal to 1.0 indicates that the intersection is operating at or above capacity which results in a LOS F. A traffic movement can have a poor LOS but low v/c which suggests that the traffic volumes along that movement are low but have to wait a long time to make the movement. This is common for low volume protected turn movements or side streets that have to wait through a long cycle length for their split to come up.

c) Unsignalized Intersections

As stated in the HCM (TRB, 2010), LOS for a two-way stop-controlled (TWSC) intersection is determined by the measured control delay, as shown in Table 3, and is defined for each minor movement, not for the intersection as a whole. Vehicles traveling along the major, free-flow road, of a TWSC intersection, proceed through with minimal delay. Those vehicles approaching the intersection along the minor movement (side-street) are controlled by a stop sign and thus experience delay attributable to the volume of vehicles passing along the free-flow road and the gaps available.

Table 3: LOS Criteria for Unsignalized Intersections

Average Control Delay (s/veh)	LOS by v/c Ratio	
	≤1.0	>1.0
≤ 10.0	A	F
>10 and ≤15	B	F
>15 and ≤25	C	F
>25 and ≤35	D	F
>35 and ≤50	E	F
>50	F	F

Source: HCM (TRB, 2010)

2. Roadway Analysis

Table 4 provides the Existing (2011) roadway segmental LOS along Honoapi'ilani Highway using the peak hour directional volumes. Both roadway segments are currently operating at undesirable LOS. Roadway segmental analysis for Honoapi'ilani Highway is provided in Appendix C.

Table 4: Existing (2011) Roadway Segmental LOS

Honoapi'ilani Highway between:	Roadway Segmental LOS	
	Northbound	Southbound
Kapunakea Street and Kenui Street	D	D
Kenui Street and Papalaua Street	D	D

3. Intersection Analysis

The operational analysis used *Synchro 7* traffic modeling software. Existing (2011) LOS and v/c operations at the signalized intersections of Honoapi'ilani Highway at Kapunakea Street and Papalaua Street are appropriate during the peak hours, as shown in Table 5. Similarly, the operations at the unsignalized intersections are also appropriate. Existing (2011) analysis reports are in Appendix B.

Table 5: Existing (2011) LOS

Signalized Intersections			AM			PM		
			Int LOS	v/c	Delay (sec/veh)	Int LOS	v/c	Delay (sec/veh)
Honoapi'ilani Highway at Kapunakea Street			C	0.63	25.9	C	0.66	24.7
Honoapi'ilani Highway at Papalaua Street			C	0.73	24.4	C	0.78	28.8
Unsignalized Intersections	Approach	Mvmt	AM			PM		
			App LOS	v/c	Delay (sec/veh)	App LOS	v/c	Delay (sec/veh)
Honoapi'ilani Highway at Kenui Street	Mauka-bound	Right	B	0.04	14.5	C	0.13	17.1
Front Street at Kenui Street/ Kai Pali Place	Northbound	Left	A	0.01	7.7	A	0.01	7.9
	Southbound	Left	A	0.01	7.7	A	0.04	7.9
	Mauka-bound	Left	B	0.03	11.9	C	0.05	15.2
	Makai-bound	Left	B	0.11	11.1	B	0.22	11.7

Vehicles were observed to queue in the southbound direction along Honoapi'ilani Highway at several intersections during the PM peak period. At the intersection with Papalaua Street, this was observed to potentially be a result of the southbound left turn at Lahainaluna Road. Queuing was also observed for the mauka-bound left turn movement from Papalaua Street at the intersection with Honoapi'ilani Highway. This caused backup into the through-lane resulting in congested operations along this segment of road and at the intersection of Waine'e Street and Papalaua Street. This is potentially caused by the close proximity of the two intersections as well as the existence of commercial driveways along the road segment which increases the number of conflicting movements. With the closely spaced intersections, coordination of the signal timing is crucial for optimal operations. The time allocated for the minor streets may not be sufficient to clear vehicles within a cycle.

III. FUTURE (2017) WITHOUT PROJECT

Future conditions were evaluated for the year 2017, the anticipated year Kahoma Village is expected to be completely built out and fully occupied.

A. Geometric Configuration

1. Roadway Configuration

A major roadway improvement currently under construction in the surrounding area is the Lahaina Bypass. It is a proposed four-lane highway running parallel to Honoapi'ilani Highway, between Honokowai and Launiupoko, alleviating congestion experienced on the current highway as documented in the *Lahaina Bypass FSEIS Record of Decision* (ATA, 2003). Although the construction of Lahaina Bypass is currently underway, the full build-out and operation of the Lahaina Bypass is happening in five phases. Phase 1A (Keawe Street Extension to Lahainaluna Road) and Phase 1B-1 (Lahainaluna Road to Hokiokio Place) are already active in construction and are expected to open by mid-2012. A Draft EA for the modified southern terminus, including Phase 1B-2 (Hokiokio Place to Launiupoko), is underway and therefore construction is not expected to be complete by 2017. Phase 1C (Keawe Street to Ka'anapali Connector) has a target advertise date of May 2014 although construction funds have not yet been programmed therefore this was not considered to be completed by the time of this project's future build. Phase 1D (Ka'anapali Connector to Honokowai) is presently not on the 10-year STIP and therefore not considered likely to be completed by 2017.

2. Intersection Configuration

No additional roadway improvements are anticipated at the study intersections along Honoapi'ilani Highway or Front Street prior to the future completion year 2017, as confirmed through research into the Hawai'i Statewide Transportation Improvement Program (STIP) as well as inquiries with HDOT and County of Maui (COM). Future (2017) Without Project lane configurations are assumed to be similar to existing lane configurations.

B. Volumes

1. Background Growth

Background growth was applied to Existing (2011) volumes to determine the future traffic volumes for 2017. Comparing HDOT historical data taken along Honoapi'ilani Highway from 1999 to 2009, growth was found to be negligible. Studies completed for surrounding developments, *Traffic Impact Report for the Kahoma Residential Development* (WO, 2007) and the *Traffic Impact Assessment Report for Villages of Leiali'i Affordable Housing Project* (F&P, 2010), used an average annual growth of 1.6% along Honoapi'ilani Highway. This is in line with forecasted growth through 2020 as noted in the *Maui Long Range Land Transportation Plan (MLRLTP)* (HDOT, 1997). To account for the natural increase in population within the adjacent areas, the cumulative growth rate of 1.6% was applied to the Existing (2011) through volumes along Honoapi'ilani Highway and Front Street.

a) Surrounding Area Development

Traffic volumes generated from developments within the surrounding area anticipated to be occupied by 2017 were also considered for the future traffic volume projections. These were researched through

the State of Hawai'i Office of Environmental Quality Control website. A map of the future developments in the north district of West Maui, as provided by County of Maui Long Range Planning Division (COM-LRPD), was also referenced (see Appendix D). The status of each future development was discussed with COM-LRPD to determine the probability of a development being completed before 2017. Several developments listed here as "Recently Constructed" may not be fully built out and occupied due to the downturn in the economy. The increase in traffic volume as a result of these developments is accounted for in the background growth applied along the highway. The other developments anticipated to be fully constructed and occupied by 2017 in the surrounding area are shown in Table 6. Project related trips for the following developments were taken from the respective traffic reports or calculated using *Trip Generation 8th Edition* (ITE, 2008) rates which are based on projected tenant land use and size of the development.

Table 6: Surrounding Area Developments

Future Development	Description
Department of Hawaiian Home Lands, Villages of Leialii, Phase 1B	<ul style="list-style-type: none"> • 253 single family units • Proposed completion by 2015 • DHHL has forward momentum
Kahoma Residential Housing	<ul style="list-style-type: none"> • 70 single family units and 25 multi-family rental units • Anticipated to be completed prior to 2017
Waine'e Street Commercial Center	<ul style="list-style-type: none"> • 6,200 square feet, two-story commercial building • Possible completion by 2015 (no action since 2008)
Lahaina Cannery Mall Expansion	<ul style="list-style-type: none"> • Four new buildings with 33,000 square feet of retail, office, restaurant and maintenance space • Possible completion by 2015 (approved in 2007)

b) Surrounding Area Construction

Besides roadway resurfacing, the only project slated for construction in the surrounding area in the next five years is the Lahaina Bypass. The *Lahaina Bypass FSEIS* (ATA, 2003) report stated that upon final build-out of the Bypass, at the intersection of Keawe Street, equal volumes of traffic will utilize the Bypass as compared to Honoapi'ilani Highway. With only Phase 1A and Phase 1B-1 being constructed by 2017, the benefit of utilizing the Bypass for through-traveling traffic may be negated due to the longer travel distances between Keawe Street and Hokiokio Place (Bypass = 3.1 miles, Honoapi'ilani = 2.1 miles). Although during peak periods, utilizing the Bypass may still be advantageous due to the congestion along Honoapi'ilani Highway resulting from high volumes and traffic signals. With these conditions, in 2017 it was projected that the traffic utilizing the first two phases of the Bypass would be comprised of vehicles traveling between Lahainaluna Road and Keawe Street as well as a percentage of through-traveling vehicles wanting to avoid congestion along Honoapi'ilani Highway. In total, this resulted in a 25% reduction in through-traveling vehicles between Keawe Street and Hokiokio Place.

2. Future Without Project Traffic

Future (2017) Without Project traffic volumes considered the background growth, related development trip projections, and impact of Phase 1A and Phase 1B-1 of the Lahaina Bypass opening between Lahainaluna Road and Hokiokio Place. Figure 5 provides the Future (2017) Without Project peak hour volumes which were rounded to the nearest five vehicles.

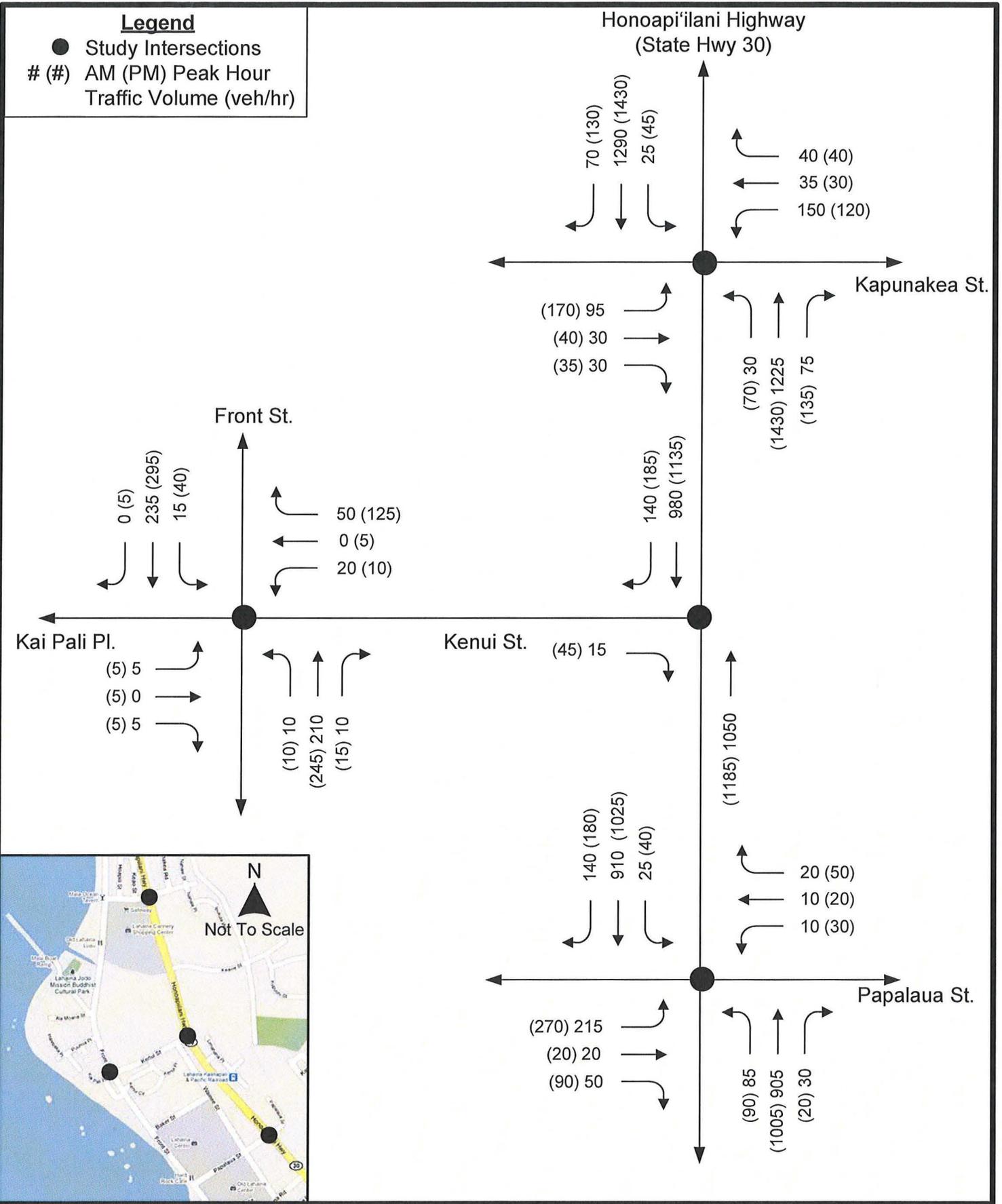


Figure 5: Future (2017) Without Project Peak Hour Volumes

Kahoma Village

C. Operations

1. Roadway Analysis

In the study area, roadway segments along Honoapi'ilani Highway are largely expected to operate at conditions similar to Existing (2011) although LOS is expected to worsen along the northbound approach between Kapunakea Street and Kenui Street (see Table 7). With the opening of Lahaina Bypass Phase 1A and Phase 1B-1, some traffic between Lahainaluna Road and Keawe Street is assumed to divert from Honoapi'ilani Highway. Upon completion of additional phases, LOS along Honoapi'ilani Highway should improve. Appendix C includes the segmental analysis for Future (2017) Without Project conditions.

Table 7: Future (2017) Without Project Roadway Segmental LOS

Honoapi'ilani Highway between:	Roadway Segmental LOS	
	Northbound	Southbound
Kapunakea Street and Kenui Street	F	D
Kenui Street and Papalaua Street	D	D

2. Intersection Analysis

The signalized and unsignalized intersection LOS and v/c ratio are shown in Table 8 for Future (2017) Without Project. Intersection operations are expected to remain similar to Existing (2011) conditions. There were slight increases in v/c ratios for some time periods, but all are still operating under capacity levels. A slight decrease in v/c ratios for the intersection of Honoapi'ilani Highway at Papalaua Street is attributed to some traffic diverting to the open sections of the Lahaina Bypass. The signalized and unsignalized analysis reports for Future (2017) Without Project conditions are located in Appendix E.

Table 8: Future (2017) Without Project LOS

Signalized Intersections			AM			PM		
			Int LOS	v/c	Delay (sec/veh)	Int LOS	v/c	Delay (sec/veh)
Honoapi'ilani Highway at Kapunakea Street			C	0.70	27.9	C	0.71	28.2
Honoapi'ilani Highway at Papalaua Street			C	0.67	27.0	C	0.77	31.0
Unsignalized Intersections	Approach	Mvmt	AM			PM		
			App LOS	v/c	Delay (sec/veh)	App LOS	v/c	Delay (sec/veh)
Honoapi'ilani Highway at Kenui Street	Mauka-bound	Right	B	0.04	13.5	C	0.12	15.5
Front Street at Kenui Street/ Kai Pali Place	Northbound	Left	A	0.01	7.8	A	0.01	8.0
	Southbound	Left	A	0.01	7.8	A	0.04	7.9
	Mauka-bound	Left	B	0.02	12.4	C	0.05	16.6
	Makai-bound	Left	B	0.13	11.5	B	0.24	12.2

IV. FUTURE (2017) WITH PROJECT

A. Geometric Configuration

The Future (2017) With Project roadway configuration at the study intersections is expected to be similar to the Future (2017) Without Project conditions.

B. Volumes

1. Trip Generation

In determining the Future (2017) With Project volumes, project related trips were added to the Future (2017) Without Project volumes. Project related volumes were calculated for the peak hours using *Trip Generation 8th Edition* (ITE, 2008) rates provided in Table 9 which are based on projected land use and size of the development. These rates are determined through numerous studies conducted to record the number of vehicles proceeding to and from the different types of land use developments. The resulting project related trips during the AM and PM peak hours are shown in Table 10.

Table 9: Trip Generation Rates/Formula

Land Use [ITE Code]	Independent Variable	Average Rate	
		AM Peak Hour	PM Peak Hour
Single Family [210]	Dwelling Unit (DU)	0.75	1.01
Residential Condo/Townhouse (Multi Family) [230]	Dwelling Unit (DU)	0.44	0.52

Table 10: Project Related Trips

Land Use [ITE Code]	Size	Project Trips			
		AM Peak Hour		PM Peak Hour	
		Enter	Exit	Enter	Exit
Single Family [210]	101 DU	19	57	64	38
Residential Condo/ Townhouse [230]	102 DU	8	37	36	18
Total Project Trips	203 DU	27	94	100	56

2. Trip Distribution/Assignment

It was assumed that vehicles travelling from the south will access the development by turning left onto Papalaua Street and right on Waine'e Street until they reach Kenui Street. For vehicles accessing the development from the north, they will turn onto Kenui Street from Honoapi'ilani Highway. Vehicles exiting the development and heading north were assumed to use Kapunakea Street to access Honoapi'ilani Highway. Vehicles exiting the development and heading south are anticipated to use the Kenui Street intersection to enter the highway. Distribution of entering and exiting vehicles was

determined using existing and projected traffic generators and intersection approach distribution. The distributed project related trips during the AM and PM peak hours are shown in Figure 6.

Project trips were added to the Future (2017) Without Project traffic volumes for the resulting Future (2017) With Project traffic volumes and are shown in Figure 7.

3. Modal Choice

The proximity of Kahoma Village to commercial centers and leisure activities encourages use of alternative forms of transportation such as walking, biking, and public transit which would result in a reduction of total vehicle trips. This reduction was not included in the trip generation calculations so as to provide for the most conservative analysis.

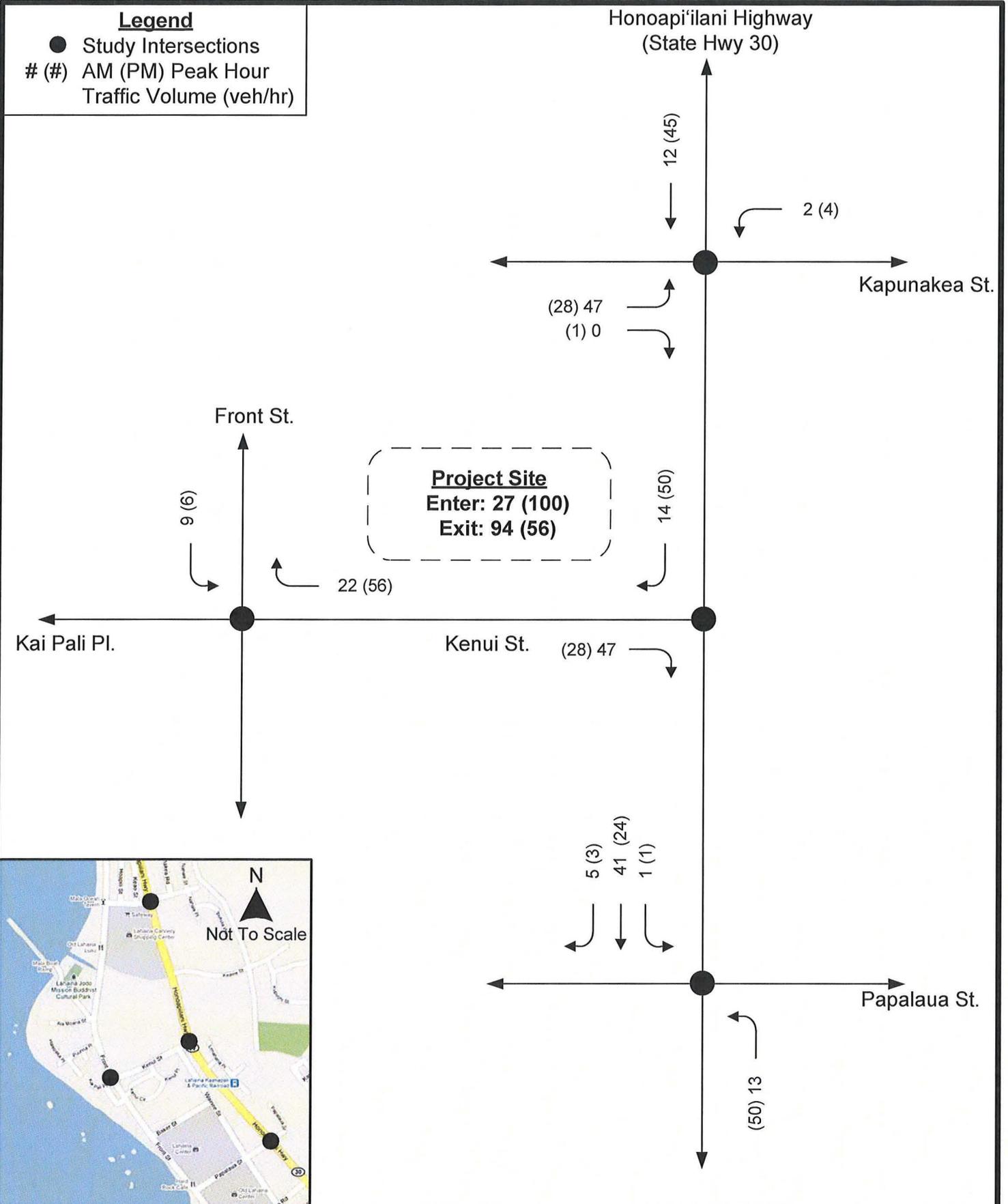


Figure 6: Project Related Trips

Kahoma Village

Legend

- Intersection Counted
- # (#) AM (PM) Peak Hour Traffic Volume (veh/hr)

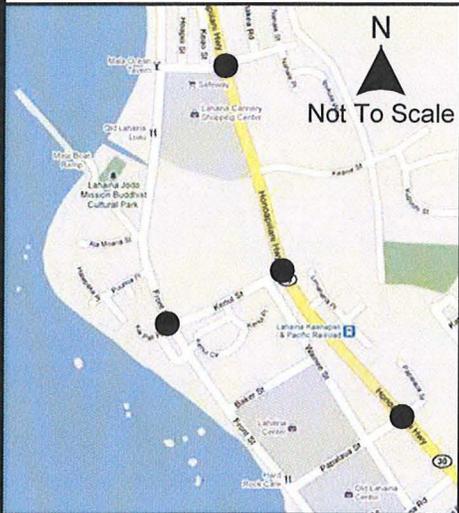
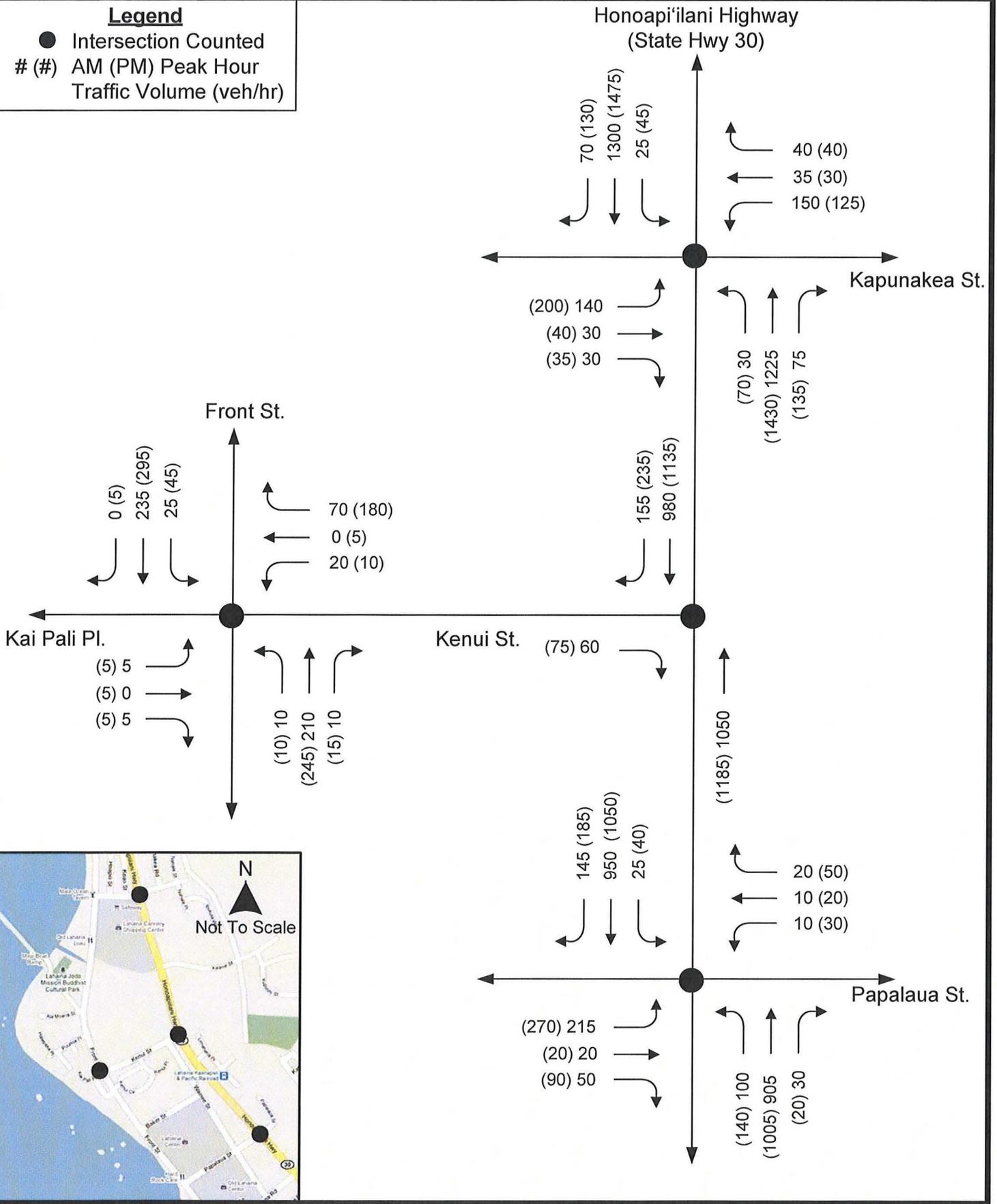


Figure 7: Future (2017) With Project Peak Hour Volumes

Kahoma Village



C. Operations

1. Roadway Analysis

Future (2017) With Project conditions along Honoapi'ilani Highway will continue to operate at undesirable LOS as shown in Table 11. These poor operations are similar to Future (2017) Without Project conditions. Appendix C provides the detailed roadway segmental analysis.

Table 11: Future (2017) With Project Roadway Segmental LOS

Honoapi'ilani Highway between:	Roadway Segmental LOS	
	Northbound	Southbound
Kapunakea Street and Kenui Street	F	D
Kenui Street and Papalaua Street	D	D

2. Intersection Analysis

Table 12 provides LOS and v/c ratios for the study intersections along Honoapi'ilani Highway and Front Street. The signalized intersections of Honoapi'ilani Highway at Kapunakea Street and Honoapi'ilani Highway at Papalaua Street will continue to operate at similar conditions to Future (2017) Without Project with insignificant increases in v/c at the signalized intersections. The signalized and unsignalized intersections will continue to operate at conditions similar to Future (2017) Without Project with minimal increases in delay. The signalized and unsignalized analysis reports for Future (2017) With Project conditions are located in Appendix F.

Table 12: Future (2017) With Project LOS

Signalized Intersections			AM			PM		
			Int LOS	v/c	Delay (sec/veh)	Int LOS	v/c	Delay (sec/veh)
Honoapi'ilani Highway at Kapunakea Street			C	0.73	30.0	C	0.78	32.0
Honoapi'ilani Highway at Papalaua Street			C	0.70	26.7	C	0.78	31.5
Unsignalized Intersections	Approach	Mvmt	AM			PM		
			App LOS	v/c	Delay (sec/veh)	App LOS	v/c	Delay (sec/veh)
Honoapi'ilani Highway at Kenui Street	Mauka-bound	Right	B	0.15	14.8	C	0.21	17.1
Front Street at Kenui Street/ Kai Pali Place	Northbound	Left	A	0.01	7.8	A	0.01	8.0
	Southbound	Left	A	0.02	7.8	A	0.04	8.0
	Mauka-bound	Left	B	0.02	13.0	C	0.06	18.2
	Makai-bound	Left	B	0.16	11.5	B	0.32	12.8

The intersection of Honoapi'ilani Highway at Papalaua Street currently experiences congestion that may be alleviated through optimized traffic signal timing and coordination with the adjacent traffic signals. Consideration should be given to increasing the minor street signal timing, or changing to split phases,

to limit conflicts and clear out more vehicles during a cycle. Despite the increased turning volumes at Honoapiʻilani Highway and Kenui Street, acceleration and deceleration lanes do not exist along the highway in the study area and therefore are not suggested for inclusion here. Addition or replacement of pavement marking and signage at this intersection may help notify approaching motorists of the vehicular and pedestrian movements at the intersection.

V. SUMMARY

Upon project completion and build-out in 2017, traffic generated from Kahoma Village is expected to have an insignificant impact on the study intersections and roadway network in and around Lahaina. Existing intersection operations along Honoapi'ilani Highway and Front Street in the study area currently operate at appropriate LOS and are expected to maintain appropriate operations in 2017. Optimization of traffic signals along Honoapi'ilani Street in the project area would help to alleviate existing and future side street queuing. Addition or replacement of pavement marking and signage at Honoapi'ilani Street and Kenui Street may help notify approaching motorists of the vehicular and pedestrian movements at the intersection. No other intersection improvements are suggested as a result of impact from the Kahoma Village generated traffic.

Existing road segment LOS along Honoapi'ilani Highway is undesirable with slightly worsening conditions in 2017 as a result of projected increases in volume in the area. Opening of the first two phases of the Lahaina Bypass is expected to alleviate some of the congestion along Honoapi'ilani Highway between Lahainaluna Road and Keawe Street by reducing traffic volumes traveling along this section of the corridor. Future opening of additional phases of the Lahaina Bypass will serve to alleviate further congestion by providing a more direct bypass of congestion in Lahaina.

VI. REFERENCES

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APPENDIX A

Manual Peak Period Traffic Counts

SSFM International

501 Sumner Street, Suite 620
Honolulu, HI 96817

File Name : 110426 Kapunakea_Hwy AM
Site Code : 00000000
Start Date : 4/27/2011
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Honoapi'ilani Hwy Southbound					Kapunakea St. Westbound					Honoapi'ilani Hwy Northbound					Kapunakea St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
06:00 AM	4	93	8	0	105	7	1	2	4	14	4	103	2	0	109	9	4	3	0	16	244
06:15 AM	0	131	20	0	151	21	6	8	2	37	7	138	3	0	148	6	6	5	0	17	353
06:30 AM	0	149	13	0	162	14	4	13	1	32	1	170	11	1	183	16	5	5	0	26	403
06:45 AM	6	205	15	5	231	30	4	9	3	46	2	184	9	0	195	20	9	5	0	34	506
Total	10	578	56	5	649	72	15	32	10	129	14	595	25	1	635	51	24	18	0	93	1506
07:00 AM	7	266	18	0	291	41	9	3	2	55	13	247	15	0	275	19	5	9	0	33	654
07:15 AM	7	282	17	0	306	42	11	14	5	72	3	231	11	1	246	22	8	8	0	38	662
07:30 AM	7	340	18	4	369	48	7	13	6	74	6	303	23	0	332	24	7	6	0	37	812
07:45 AM	2	214	12	2	230	20	8	11	4	43	7	281	27	1	316	30	10	8	0	48	637
Total	23	1102	65	6	1196	151	35	41	17	244	29	1062	76	2	1169	95	30	31	0	156	2765
Grand Total	33	1680	121	11	1845	223	50	73	27	373	43	1657	101	3	1804	146	54	49	0	249	4271
Apprch %	1.8	91.1	6.6	0.6		59.8	13.4	19.6	7.2		2.4	91.9	5.6	0.2		58.6	21.7	19.7	0		
Total %	0.8	39.3	2.8	0.3	43.2	5.2	1.2	1.7	0.6	8.7	1	38.8	2.4	0.1	42.2	3.4	1.3	1.1	0	5.8	
Unshifted	33	1648	117	11	1809	216	48	68	27	359	39	1612	94	3	1748	137	53	49	0	239	4155
% Unshifted	100	98.1	96.7	100	98	96.9	96	93.2	100	96.2	90.7	97.3	93.1	100	96.9	93.8	98.1	100	0	96	97.3
Bank 1	0	22	1	0	23	2	0	4	0	6	0	22	5	0	27	2	0	0	0	2	58
% Bank 1	0	1.3	0.8	0	1.2	0.9	0	5.5	0	1.6	0	1.3	5	0	1.5	1.4	0	0	0	0.8	1.4
Bank 2	0	10	3	0	13	5	2	1	0	8	4	23	2	0	29	7	1	0	0	8	58
% Bank 2	0	0.6	2.5	0	0.7	2.2	4	1.4	0	2.1	9.3	1.4	2	0	1.6	4.8	1.9	0	0	3.2	1.4

Start Time	Honoapi'ilani Hwy Southbound					Kapunakea St. Westbound					Honoapi'ilani Hwy Northbound					Kapunakea St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	

Peak Hour Analysis From 06:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:00 AM

07:00 AM	7	266	18	0	291	41	9	3	2	55	13	247	15	0	275	19	5	9	0	33	654
07:15 AM	7	282	17	0	306	42	11	14	5	72	3	231	11	1	246	22	8	8	0	38	662
07:30 AM	7	340	18	4	369	48	7	13	6	74	6	303	23	0	332	24	7	6	0	37	812
07:45 AM	2	214	12	2	230	20	8	11	4	43	7	281	27	1	316	30	10	8	0	48	637
Total Volume	23	1102	65	6	1196	151	35	41	17	244	29	1062	76	2	1169	95	30	31	0	156	2765
% App. Total	1.9	92.1	5.4	0.5		61.9	14.3	16.8	7		2.5	90.8	6.5	0.2		60.9	19.2	19.9	0		
PHF	.821	.810	.903	.375	.810	.786	.795	.732	.708	.824	.558	.876	.704	.500	.880	.792	.750	.861	.000	.813	.851

SSFm International

501 Sumner Street, Suite 620
Honolulu, HI 96817

File Name : 110426 Kapunakea_Hwy PM
Site Code : 00000000
Start Date : 4/26/2011
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Honoapi'ilani Hwy. Southbound					Kapunakea St. Westbound					Honoapi'ilani Hwy. Northbound					Kapunakea St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
03:00 PM	7	281	18	0	306	16	5	12	7	40	15	261	32	0	308	44	10	7	0	61	715
03:15 PM	8	274	25	0	307	29	6	7	4	46	13	295	15	0	323	44	10	8	0	62	738
03:30 PM	9	283	21	3	316	18	15	9	9	51	14	276	31	0	321	34	11	7	0	52	740
03:45 PM	6	303	29	3	341	27	9	7	11	54	16	309	25	3	353	37	10	14	1	62	810
Total	30	1141	93	6	1270	90	35	35	31	191	58	1141	103	3	1305	159	41	36	1	237	3003
04:00 PM	11	325	32	0	368	34	8	12	2	56	18	296	37	0	351	42	12	5	0	59	834
04:15 PM	10	342	26	1	379	28	6	13	8	55	15	299	37	1	352	40	10	5	0	55	841
04:30 PM	18	266	36	0	320	29	7	9	4	49	19	288	30	0	337	43	8	9	0	60	766
04:45 PM	12	264	30	5	311	36	11	11	11	69	20	270	30	3	323	31	15	14	0	60	763
Total	51	1197	124	6	1378	127	32	45	25	229	72	1153	134	4	1363	156	45	33	0	234	3204
Grand Total	81	2338	217	12	2648	217	67	80	56	420	130	2294	237	7	2668	315	86	69	1	471	6207
Apprch %	3.1	88.3	8.2	0.5		51.7	16	19	13.3		4.9	86	8.9	0.3		66.9	18.3	14.6	0.2		
Total %	1.3	37.7	3.5	0.2	42.7	3.5	1.1	1.3	0.9	6.8	2.1	37	3.8	0.1	43	5.1	1.4	1.1	0	7.6	
Unshifted	80	2303	207	12	2602	214	67	80	56	417	130	2265	235	7	2637	311	84	68	1	464	6120
% Unshifted	98.8	98.5	95.4	100	98.3	98.6	100	100	100	99.3	100	98.7	99.2	100	98.8	98.7	97.7	98.6	100	98.5	98.6
Bank 1	1	16	5	0	22	1	0	0	0	1	0	15	0	0	15	0	1	1	0	2	40
% Bank 1	1.2	0.7	2.3	0	0.8	0.5	0	0	0	0.2	0	0.7	0	0	0.6	0	1.2	1.4	0	0.4	0.6
Bank 2	0	19	5	0	24	2	0	0	0	2	0	14	2	0	16	4	1	0	0	5	47
% Bank 2	0	0.8	2.3	0	0.9	0.9	0	0	0	0.5	0	0.6	0.8	0	0.6	1.3	1.2	0	0	1.1	0.8

Start Time	Honoapi'ilani Hwy. Southbound					Kapunakea St. Westbound					Honoapi'ilani Hwy. Northbound					Kapunakea St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	

Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:45 PM

03:45 PM	6	303	29	3	341	27	9	7	11	54	16	309	25	3	353	37	10	14	1	62	810
04:00 PM	11	325	32	0	368	34	8	12	2	56	18	296	37	0	351	42	12	5	0	59	834
04:15 PM	10	342	26	1	379	28	6	13	8	55	15	299	37	1	352	40	10	5	0	55	841
04:30 PM	18	266	36	0	320	29	7	9	4	49	19	288	30	0	337	43	8	9	0	60	766
Total Volume	45	1236	123	4	1408	118	30	41	25	214	68	1192	129	4	1393	162	40	33	1	236	3251
% App. Total	3.2	87.8	8.7	0.3		55.1	14	19.2	11.7		4.9	85.6	9.3	0.3		68.6	16.9	14	0.4		
PHF	.625	.904	.854	.333	.929	.868	.833	.788	.568	.955	.895	.964	.872	.333	.987	.942	.833	.589	.250	.952	.966

SSFM International

501 Sumner Street, Suite 620
Honolulu, HI 96817

File Name : 110426 Kenui_Front AM
Site Code : 00000000
Start Date : 4/27/2011
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Front St. Southbound					Kenui St. Westbound					Front St. Northbound					Kai Pali Pl. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
06:00 AM	5	20	0	0	25	1	0	4	0	5	0	11	1	4	16	0	0	0	0	0	46
06:15 AM	1	15	0	0	16	3	0	2	0	5	0	13	0	3	16	1	1	1	1	4	41
06:30 AM	3	22	0	0	25	3	1	10	0	14	0	21	2	4	27	1	0	0	0	1	67
06:45 AM	4	24	0	0	28	4	0	13	0	17	0	23	1	8	32	1	0	1	0	2	79
Total	13	81	0	0	94	11	1	29	0	41	0	68	4	19	91	3	1	2	1	7	233
07:00 AM	5	61	1	1	68	2	0	7	0	9	2	26	1	5	34	2	0	1	2	5	116
07:15 AM	5	64	0	2	71	5	0	7	0	12	1	33	0	7	41	1	1	2	2	6	130
07:30 AM	4	53	0	0	57	7	0	12	0	19	2	62	3	12	79	0	0	1	3	4	159
07:45 AM	3	35	1	1	40	4	1	21	0	26	3	68	4	8	83	2	0	2	0	4	153
Total	17	213	2	4	236	18	1	47	0	66	8	189	8	32	237	5	1	6	7	19	558
Grand Total	30	294	2	4	330	29	2	76	0	107	8	257	12	51	328	8	2	8	8	26	791
Apprch %	9.1	89.1	0.6	1.2		27.1	1.9	71	0		2.4	78.4	3.7	15.5		30.8	7.7	30.8	30.8		
Total %	3.8	37.2	0.3	0.5	41.7	3.7	0.3	9.6	0	13.5	1	32.5	1.5	6.4	41.5	1	0.3	1	1	3.3	
Unshifted	29	283	2	4	318	29	1	72	0	102	8	252	12	51	323	7	2	8	8	25	768
% Unshifted	96.7	96.3	100	100	96.4	100	50	94.7	0	95.3	100	98.1	100	100	98.5	87.5	100	100	100	96.2	97.1
Bank 1	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
% Bank 1	0	1	0	0	0.9	0	0	0	0	0	0	0.8	0	0	0.6	0	0	0	0	0	0.6
Bank 2	1	8	0	0	9	0	1	4	0	5	0	3	0	0	3	1	0	0	0	1	18
% Bank 2	3.3	2.7	0	0	2.7	0	50	5.3	0	4.7	0	1.2	0	0	0.9	12.5	0	0	0	3.8	2.3

Start Time	Front St. Southbound					Kenui St. Westbound					Front St. Northbound					Kai Pali Pl. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	5	61	1	1	68	2	0	7	0	9	2	26	1	5	34	2	0	1	2	5	116
07:15 AM	5	64	0	2	71	5	0	7	0	12	1	33	0	7	41	1	1	2	2	6	130
07:30 AM	4	53	0	0	57	7	0	12	0	19	2	62	3	12	79	0	0	1	3	4	159
07:45 AM	3	35	1	1	40	4	1	21	0	26	3	68	4	8	83	2	0	2	0	4	153
Total Volume	17	213	2	4	236	18	1	47	0	66	8	189	8	32	237	5	1	6	7	19	558
% App. Total	7.2	90.3	0.8	1.7		27.3	1.5	71.2	0		3.4	79.7	3.4	13.5		26.3	5.3	31.6	36.8		
PHF	.850	.832	.500	.500	.831	.643	.250	.560	.000	.635	.667	.695	.500	.667	.714	.625	.250	.750	.583	.792	.877

Peak Hour Analysis From 06:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:00 AM

SSFM International

501 Sumner Street, Suite 620
Honolulu, HI 96817

File Name : 110426 Kenui_Front PM
Site Code : 00000010
Start Date : 4/26/2011
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Front St. Southbound					Kenui St. Westbound					Front St. Northbound					Kai Pali Pl. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
03:00 PM	14	54	2	1	71	1	0	26	0	27	0	56	1	20	77	1	1	0	17	19	194
03:15 PM	10	63	1	2	76	2	2	28	0	32	3	60	4	4	71	0	2	3	5	10	189
03:30 PM	11	59	2	1	73	2	2	24	0	28	4	49	3	5	61	3	1	1	10	15	177
03:45 PM	11	71	2	0	84	3	0	37	0	40	0	46	4	6	56	0	0	2	2	4	184
Total	46	247	7	4	304	8	4	115	0	127	7	211	12	35	265	4	4	6	34	48	744
04:00 PM	9	74	1	3	87	3	1	28	0	32	2	66	5	9	82	2	3	0	8	13	214
04:15 PM	11	66	1	0	78	3	0	27	0	30	2	49	1	4	56	1	2	2	2	7	171
04:30 PM	10	63	0	0	73	5	0	25	1	31	0	54	0	12	66	1	0	0	4	5	175
04:45 PM	10	68	3	2	83	3	1	26	0	30	1	66	6	4	77	1	3	0	5	9	199
Total	40	271	5	5	321	14	2	106	1	123	5	235	12	29	281	5	8	2	19	34	759
Grand Total	86	518	12	9	625	22	6	221	1	250	12	446	24	64	546	9	12	8	53	82	1503
Apprch %	13.8	82.9	1.9	1.4		8.8	2.4	88.4	0.4		2.2	81.7	4.4	11.7		11	14.6	9.8	64.6		
Total %	5.7	34.5	0.8	0.6	41.6	1.5	0.4	14.7	0.1	16.6	0.8	29.7	1.6	4.3	36.3	0.6	0.8	0.5	3.5	5.5	
Unshifted	80	509	12	9	610	22	6	218	1	247	12	440	24	64	540	9	12	8	53	82	1479
% Unshifted	93	98.3	100	100	97.6	100	100	98.6	100	98.8	100	98.7	100	100	98.9	100	100	100	100	100	98.4
Bank 1	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8
% Bank 1	0	1	0	0	0.8	0	0	0	0	0	0	0.7	0	0	0.5	0	0	0	0	0	0.5
Bank 2	6	4	0	0	10	0	0	3	0	3	0	3	0	0	3	0	0	0	0	0	16
% Bank 2	7	0.8	0	0	1.6	0	0	1.4	0	1.2	0	0.7	0	0	0.5	0	0	0	0	0	1.1

Start Time	Front St. Southbound					Kenui St. Westbound					Front St. Northbound					Kai Pali Pl. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
03:15 PM	10	63	1	2	76	2	2	28	0	32	3	60	4	4	71	0	2	3	5	10	189
03:30 PM	11	59	2	1	73	2	2	24	0	28	4	49	3	5	61	3	1	1	10	15	177
03:45 PM	11	71	2	0	84	3	0	37	0	40	0	46	4	6	56	0	0	2	2	4	184
04:00 PM	9	74	1	3	87	3	1	28	0	32	2	66	5	9	82	2	3	0	8	13	214
Total Volume	41	267	6	6	320	10	5	117	0	132	9	221	16	24	270	5	6	6	25	42	764
% App. Total	12.8	83.4	1.9	1.9		7.6	3.8	88.6	0		3.3	81.9	5.9	8.9		11.9	14.3	14.3	59.5		
PHF	.932	.902	.750	.500	.920	.833	.625	.791	.000	.825	.563	.837	.800	.667	.823	.417	.500	.500	.625	.700	.893

Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:15 PM

SSFM International

501 Sumner Street, Suite 620
Honolulu, HI 96817

File Name : 110426 Kenui_Hwy AM
Site Code : 0000020
Start Date : 4/27/2011
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Honoapi'ilani Hwy. Southbound					Westbound					Honoapi'ilani Hwy. Northbound					Kenui St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
06:00 AM	0	96	5	0	101	0	0	0	0	0	0	134	0	0	134	0	0	7	0	7	242
06:15 AM	0	144	7	0	151	0	0	0	0	0	0	155	0	0	155	0	0	3	0	3	309
06:30 AM	0	162	8	0	170	0	0	0	0	0	0	229	0	0	229	0	0	6	0	6	405
06:45 AM	0	233	22	0	255	0	0	0	0	0	0	201	0	0	201	0	0	4	0	4	460
Total	0	635	42	0	677	0	0	0	0	0	0	719	0	0	719	0	0	20	0	20	1416
07:00 AM	0	283	23	0	306	0	0	0	0	0	0	272	0	0	272	0	0	4	0	4	582
07:15 AM	0	318	47	0	365	0	0	0	0	0	0	286	0	0	286	0	0	5	0	5	656
07:30 AM	0	312	35	0	347	0	0	0	0	0	0	329	0	0	329	0	0	6	0	6	682
07:45 AM	0	201	29	0	230	0	0	0	0	0	0	347	0	0	347	0	0	1	0	1	578
Total	0	1114	134	0	1248	0	0	0	0	0	0	1234	0	0	1234	0	0	16	0	16	2498
Grand Total	0	1749	176	0	1925	0	0	0	0	0	0	1953	0	0	1953	0	0	36	0	36	3914
Apprch %	0	90.9	9.1	0		0	0	0	0	0	0	100	0	0		0	0	100	0		
Total %	0	44.7	4.5	0	49.2	0	0	0	0	0	0	49.9	0	0	49.9	0	0	0.9	0	0.9	
Unshifted	0	1719	174	0	1893	0	0	0	0	0	0	1894	0	0	1894	0	0	35	0	35	3822
% Unshifted	0	98.3	98.9	0	98.3	0	0	0	0	0	0	97	0	0	97	0	0	97.2	0	97.2	97.6
Bank 1	0	12	0	0	12	0	0	0	0	0	0	17	0	0	17	0	0	1	0	1	30
% Bank 1	0	0.7	0	0	0.6	0	0	0	0	0	0	0.9	0	0	0.9	0	0	2.8	0	2.8	0.8
Bank 2	0	18	2	0	20	0	0	0	0	0	0	42	0	0	42	0	0	0	0	0	62
% Bank 2	0	1	1.1	0	1	0	0	0	0	0	0	2.2	0	0	2.2	0	0	0	0	0	1.6

Start Time	Honoapi'ilani Hwy. Southbound					Westbound					Honoapi'ilani Hwy. Northbound					Kenui St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	283	23	0	306	0	0	0	0	0	0	272	0	0	272	0	0	4	0	4	582
07:15 AM	0	318	47	0	365	0	0	0	0	0	0	286	0	0	286	0	0	5	0	5	656
07:30 AM	0	312	35	0	347	0	0	0	0	0	0	329	0	0	329	0	0	6	0	6	682
07:45 AM	0	201	29	0	230	0	0	0	0	0	0	347	0	0	347	0	0	1	0	1	578
Total Volume	0	1114	134	0	1248	0	0	0	0	0	0	1234	0	0	1234	0	0	16	0	16	2498
% App. Total	0	89.3	10.7	0		0	0	0	0	0	0	100	0	0		0	0	100	0		
PHF	.000	.876	.713	.000	.855	.000	.000	.000	.000	.000	.000	.889	.000	.000	.889	.000	.000	.667	.000	.667	.916

Peak Hour Analysis From 06:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 07:00 AM

SSFM International

501 Sumner Street, Suite 620
Honolulu, HI 96817

File Name : 110426 Kenui_Hwy PM
Site Code : 0000010
Start Date : 4/26/2011
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Honoapi'ilani Hwy. Southbound					Westbound					Honoapi'ilani Hwy. Northbound					Kenui St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
03:00 PM	0	299	37	0	336	0	0	0	0	0	0	266	1	0	267	0	0	16	0	16	619
03:15 PM	0	299	47	0	346	0	0	0	0	0	0	323	1	0	324	0	0	9	0	9	679
03:30 PM	0	301	38	0	339	0	0	0	0	0	0	339	0	0	339	0	0	7	0	7	685
03:45 PM	0	314	48	2	364	0	0	0	0	0	0	334	0	0	334	0	0	11	0	11	709
Total	0	1213	170	2	1385	0	0	0	0	0	0	1262	2	0	1264	0	0	43	0	43	2692
04:00 PM	0	322	38	1	361	0	0	0	0	0	0	329	0	0	329	0	0	13	0	13	703
04:15 PM	0	370	54	0	424	0	0	0	0	0	0	311	0	0	311	0	0	13	0	13	748
04:30 PM	0	298	37	0	335	0	0	0	0	0	0	360	0	0	360	0	0	6	0	6	701
Grand Total	0	2203	299	3	2505	0	0	0	0	0	0	2262	2	0	2264	0	0	75	0	75	4844
Apprch %	0	87.9	11.9	0.1		0	0	0	0	0	0	99.9	0.1	0		0	0	100	0		
Total %	0	45.5	6.2	0.1	51.7	0	0	0	0	0	0	46.7	0	0	46.7	0	0	1.5	0	1.5	
Unshifted	0	2179	294	3	2476	0	0	0	0	0	0	2234	2	0	2236	0	0	71	0	71	4783
% Unshifted	0	98.9	98.3	100	98.8	0	0	0	0	0	0	98.8	100	0	98.8	0	0	94.7	0	94.7	98.7
Bank 1	0	11	4	0	15	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	25
% Bank 1	0	0.5	1.3	0	0.6	0	0	0	0	0	0	0.4	0	0	0.4	0	0	0	0	0	0.5
Bank 2	0	13	1	0	14	0	0	0	0	0	0	18	0	0	18	0	0	4	0	4	36
% Bank 2	0	0.6	0.3	0	0.6	0	0	0	0	0	0	0.8	0	0	0.8	0	0	5.3	0	5.3	0.7

Start Time	Honoapi'ilani Hwy. Southbound					Westbound					Honoapi'ilani Hwy. Northbound					Kenui St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 04:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	0	314	48	2	364	0	0	0	0	0	0	334	0	0	334	0	0	11	0	11	709
04:00 PM	0	322	38	1	361	0	0	0	0	0	0	329	0	0	329	0	0	13	0	13	703
04:15 PM	0	370	54	0	424	0	0	0	0	0	0	311	0	0	311	0	0	13	0	13	748
04:30 PM	0	298	37	0	335	0	0	0	0	0	0	360	0	0	360	0	0	6	0	6	701
Total Volume	0	1304	177	3	1484	0	0	0	0	0	0	1334	0	0	1334	0	0	43	0	43	2861
% App. Total	0	87.9	11.9	0.2		0	0	0	0	0	0	100	0	0		0	0	100	0		
PHF	.000	.881	.819	.375	.875	.000	.000	.000	.000	.000	.000	.926	.000	.000	.926	.000	.000	.827	.000	.827	.956

SSFM International

501 Sumner Street, Suite 620
Honolulu, HI 96817

File Name : 110426 Papalaua_Hwy AM
Site Code : 00000020
Start Date : 4/27/2011
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Honoapi'ilani Hwy. Southbound					Papalaua St. Westbound					Honoapi'ilani Hwy. Northbound					Papalaua St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
06:00 AM	4	89	19	0	112	0	1	2	0	3	10	101	2	1	114	10	2	5	4	21	250
06:15 AM	1	131	17	0	149	3	2	2	0	7	11	157	1	1	170	15	0	12	0	27	353
06:30 AM	2	153	25	1	181	1	0	3	0	4	7	181	6	1	195	25	3	9	0	37	417
06:45 AM	4	203	18	2	227	1	0	1	0	2	20	190	1	1	212	24	0	8	1	33	474
Total	11	576	79	3	669	5	3	8	0	16	48	629	10	4	691	74	5	34	5	118	1494
07:00 AM	7	246	33	0	286	0	3	4	0	7	14	256	6	5	281	34	6	11	2	53	627
07:15 AM	2	275	47	1	325	4	2	1	0	7	21	230	5	3	259	46	6	11	5	68	659
07:30 AM	10	326	27	0	363	3	3	5	0	11	26	281	8	0	315	60	6	15	2	83	772
07:45 AM	8	189	28	0	225	5	1	11	0	17	26	293	11	1	331	70	4	12	4	90	663
Total	27	1036	135	1	1199	12	9	21	0	42	87	1060	30	9	1186	210	22	49	13	294	2721
Grand Total	38	1612	214	4	1868	17	12	29	0	58	135	1689	40	13	1877	284	27	83	18	412	4215
Apprch %	2	86.3	11.5	0.2		29.3	20.7	50	0		7.2	90	2.1	0.7		68.9	6.6	20.1	4.4		
Total %	0.9	38.2	5.1	0.1	44.3	0.4	0.3	0.7	0	1.4	3.2	40.1	0.9	0.3	44.5	6.7	0.6	2	0.4	9.8	
Unshifted	38	1571	209	4	1822	17	11	29	0	57	126	1613	39	13	1791	275	25	82	18	400	4070
% Unshifted	100	97.5	97.7	100	97.5	100	91.7	100	0	98.3	93.3	95.5	97.5	100	95.4	96.8	92.6	98.8	100	97.1	96.6
Bank 1	0	22	4	0	26	0	0	0	0	0	1	37	1	0	39	2	0	0	0	2	67
% Bank 1	0	1.4	1.9	0	1.4	0	0	0	0	0	0.7	2.2	2.5	0	2.1	0.7	0	0	0	0.5	1.6
Bank 2	0	19	1	0	20	0	1	0	0	1	8	39	0	0	47	7	2	1	0	10	78
% Bank 2	0	1.2	0.5	0	1.1	0	8.3	0	0	1.7	5.9	2.3	0	0	2.5	2.5	7.4	1.2	0	2.4	1.9

Start Time	Honoapi'ilani Hwy. Southbound					Papalaua St. Westbound					Honoapi'ilani Hwy. Northbound					Papalaua St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	7	246	33	0	286	0	3	4	0	7	14	256	6	5	281	34	6	11	2	53	627
07:15 AM	2	275	47	1	325	4	2	1	0	7	21	230	5	3	259	46	6	11	5	68	659
07:30 AM	10	326	27	0	363	3	3	5	0	11	26	281	8	0	315	60	6	15	2	83	772
07:45 AM	8	189	28	0	225	5	1	11	0	17	26	293	11	1	331	70	4	12	4	90	663
Total Volume	27	1036	135	1	1199	12	9	21	0	42	87	1060	30	9	1186	210	22	49	13	294	2721
% App. Total	2.3	86.4	11.3	0.1		28.6	21.4	50	0		7.3	89.4	2.5	0.8		71.4	7.5	16.7	4.4		
PHF	.675	.794	.718	.250	.826	.600	.750	.477	.000	.618	.837	.904	.682	.450	.896	.750	.917	.817	.650	.817	.881

Peak Hour Analysis From 06:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:00 AM

SSFM International

501 Sumner Street, Suite 620
Honolulu, HI 96817

File Name : 110426 Papalaua_Hwy PM
Site Code : 00000010
Start Date : 4/26/2011
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Honoapi'ilani Hwy. Southbound					Papalaua St. Westbound					Honoapi'ilani Hwy. Northbound					Papalaua St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
03:00 PM	9	256	37	4	306	7	5	7	0	19	24	276	9	5	314	56	4	22	3	85	724
03:15 PM	15	255	64	0	334	6	10	17	0	33	25	276	10	0	311	61	4	21	5	91	769
03:30 PM	5	249	47	2	303	7	6	14	0	27	26	279	7	2	314	62	8	33	4	107	751
03:45 PM	10	270	49	1	330	5	3	8	0	16	22	308	3	2	335	55	7	27	2	91	772
Total	39	1030	197	7	1273	25	24	46	0	95	97	1139	29	9	1274	234	23	103	14	374	3016
04:00 PM	16	283	49	1	349	7	11	20	0	38	29	263	8	5	305	68	5	21	2	96	788
04:15 PM	10	329	47	2	388	9	2	15	0	26	23	269	6	4	302	70	5	22	4	101	817
04:30 PM	5	301	28	0	334	7	2	8	0	17	14	291	5	2	312	62	4	20	3	89	752
04:45 PM	16	282	42	4	344	2	7	11	0	20	21	282	6	1	310	43	0	35	4	82	756
Total	47	1195	166	7	1415	25	22	54	0	101	87	1105	25	12	1229	243	14	98	13	368	3113
Grand Total	86	2225	363	14	2688	50	46	100	0	196	184	2244	54	21	2503	477	37	201	27	742	6129
Apprch %	3.2	82.8	13.5	0.5		25.5	23.5	51	0		7.4	89.7	2.2	0.8		64.3	5	27.1	3.6		
Total %	1.4	36.3	5.9	0.2	43.9	0.8	0.8	1.6	0	3.2	3	36.6	0.9	0.3	40.8	7.8	0.6	3.3	0.4	12.1	
Unshifted	86	2225	363	14	2688	50	46	100	0	196	184	2244	54	21	2503	477	37	201	27	742	6129
% Unshifted	100	100	100	100	100	100	100	100	0	100	100	100	100	100	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Honoapi'ilani Hwy. Southbound					Papalaua St. Westbound					Honoapi'ilani Hwy. Northbound					Papalaua St. Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	10	270	49	1	330	5	3	8	0	16	22	308	3	2	335	55	7	27	2	91	772
04:00 PM	16	283	49	1	349	7	11	20	0	38	29	263	8	5	305	68	5	21	2	96	788
04:15 PM	10	329	47	2	388	9	2	15	0	26	23	269	6	4	302	70	5	22	4	101	817
04:30 PM	5	301	28	0	334	7	2	8	0	17	14	291	5	2	312	62	4	20	3	89	752
Total Volume	41	1183	173	4	1401	28	18	51	0	97	88	1131	22	13	1254	255	21	90	11	377	3129
% App. Total	2.9	84.4	12.3	0.3		28.9	18.6	52.6	0		7	90.2	1.8	1		67.6	5.6	23.9	2.9		
PHF	.641	.899	.883	.500	.903	.778	.409	.638	.000	.638	.759	.918	.688	.650	.936	.911	.750	.833	.688	.933	.957

APPENDIX B

Analysis Reports Existing (2011) Conditions

HCM Signalized Intersection Capacity Analysis
 10: Kapunakea St & Honoapiilani Hwy

Existing (2011) AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↗	↖	↗	↖	↖	↗		↖	↗	
Volume (vph)	95	30	31	151	35	41	29	1062	76	23	1102	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.92		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1794	1583	1770	1712		1770	3504		1770	3510	
Flt Permitted		0.72	1.00	0.61	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1338	1583	1130	1712		1770	3504		1770	3510	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	112	35	36	178	41	48	34	1249	89	27	1296	76
RTOR Reduction (vph)	0	0	25	0	26	0	0	5	0	0	4	0
Lane Group Flow (vph)	0	147	11	178	63	0	34	1333	0	27	1368	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		42.6	42.6	42.6	42.6		3.6	79.8		3.6	79.8	
Effective Green, g (s)		42.6	42.6	42.6	42.6		3.6	79.8		3.6	79.8	
Actuated g/C Ratio		0.30	0.30	0.30	0.30		0.03	0.57		0.03	0.57	
Clearance Time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		407	482	344	521		46	1997		46	2001	
v/s Ratio Prot					0.04		c0.02	0.38		0.02	c0.39	
v/s Ratio Perm		0.11	0.01	c0.16								
v/c Ratio		0.36	0.02	0.52	0.12		0.74	0.67		0.59	0.68	
Uniform Delay, d1		38.1	34.1	40.2	35.2		67.7	20.9		67.5	21.2	
Progression Factor		1.00	1.00	1.00	1.00		1.02	0.97		1.00	1.00	
Incremental Delay, d2		2.5	0.1	5.5	0.5		35.6	1.0		11.7	1.3	
Delay (s)		40.5	34.2	45.7	35.7		104.9	21.1		79.2	22.5	
Level of Service		D	C	D	D		F	C		E	C	
Approach Delay (s)		39.3			42.3			23.2			23.6	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: Kapunakea St & Honoapiilani Hwy

Existing (2011) PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↗	↖	↗	↖	↖	↗		↖	↗	
Volume (vph)	162	40	33	118	30	41	68	1192	129	45	1236	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.91		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791	1583	1770	1702		1770	3487		1770	3491	
Flt Permitted		0.72	1.00	0.50	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1339	1583	926	1702		1770	3487		1770	3491	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	167	41	34	122	31	42	70	1229	133	46	1274	127
RTOR Reduction (vph)	0	0	25	0	30	0	0	7	0	0	7	0
Lane Group Flow (vph)	0	208	9	122	43	0	70	1355	0	46	1394	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		37.3	37.3	37.3	37.3		7.5	76.9		6.8	76.2	
Effective Green, g (s)		37.3	37.3	37.3	37.3		7.5	76.9		6.8	76.2	
Actuated g/C Ratio		0.28	0.28	0.28	0.28		0.06	0.57		0.05	0.56	
Clearance Time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		370	437	256	470		98	1986		89	1970	
v/s Ratio Prot					0.03		c0.04	0.39		0.03	c0.40	
v/s Ratio Perm		c0.16	0.01	0.13								
v/c Ratio		0.56	0.02	0.48	0.09		0.71	0.68		0.52	0.71	
Uniform Delay, d1		41.9	35.6	40.7	36.3		62.7	20.5		62.5	21.3	
Progression Factor		1.00	1.00	1.00	1.00		1.27	0.70		1.00	1.00	
Incremental Delay, d2		6.1	0.1	6.2	0.4		15.1	1.0		2.1	1.5	
Delay (s)		47.9	35.7	47.0	36.6		94.6	15.3		64.6	22.8	
Level of Service		D	D	D	D		F	B		E	C	
Approach Delay (s)		46.2			43.1			19.1			24.1	
Approach LOS		D			D			B			C	

Intersection Summary

HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 20: Kenui St & Honoapiilani Hwy

Existing (2011) AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↘	
Volume (veh/h)	0	16	0	1234	1114	134
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	17	0	1341	1211	146
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1954	678	1357			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1954	678	1357			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	56	395	503			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	17	671	671	807	549
Volume Left	0	0	0	0	0
Volume Right	17	0	0	0	146
cSH	395	1700	1700	1700	1700
Volume to Capacity	0.04	0.39	0.39	0.47	0.32
Queue Length 95th (ft)	3	0	0	0	0
Control Delay (s)	14.5	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	14.5	0.0		0.0	
Approach LOS	B				

Intersection Summary					
Average Delay			0.1		
Intersection Capacity Utilization		45.1%		ICU Level of Service	A
Analysis Period (min)			15		

HCM Unsignalized Intersection Capacity Analysis
 20: Kenui St & Honoapiilani Hwy

Existing (2011) PM Peak



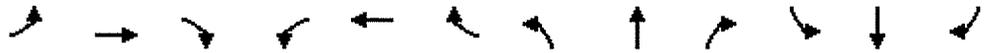
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↖		↑↑	↓↘	
Volume (veh/h)	0	43	0	1334	1304	177
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	45	0	1390	1358	184
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2145	771	1543			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2145	771	1543			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	87	100			
cM capacity (veh/h)	42	343	426			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	45	695	695	906	637
Volume Left	0	0	0	0	0
Volume Right	45	0	0	0	184
cSH	343	1700	1700	1700	1700
Volume to Capacity	0.13	0.41	0.41	0.53	0.37
Queue Length 95th (ft)	11	0	0	0	0
Control Delay (s)	17.1	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	17.1	0.0		0.0	
Approach LOS	C				

Intersection Summary					
Average Delay			0.3		
Intersection Capacity Utilization	51.7%		ICU Level of Service	A	
Analysis Period (min)	15				

HCM Unsignalized Intersection Capacity Analysis
30: Kai Pali PI & Front St

Existing (2011) AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↖		↗	↖	
Volume (veh/h)	5	1	6	18	1	47	8	189	8	17	213	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	6	1	7	20	1	53	9	215	9	19	242	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	569	524	243	526	520	219	244			224		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	569	524	243	526	520	219	244			224		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	95	100	93	99			99		
cM capacity (veh/h)	398	448	796	451	450	820	1322			1345		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	14	75	9	224	19	244						
Volume Left	6	20	9	0	19	0						
Volume Right	7	53	0	9	0	2						
cSH	537	664	1322	1700	1345	1700						
Volume to Capacity	0.03	0.11	0.01	0.13	0.01	0.14						
Queue Length 95th (ft)	2	10	1	0	1	0						
Control Delay (s)	11.9	11.1	7.7	0.0	7.7	0.0						
Lane LOS	B	B	A		A							
Approach Delay (s)	11.9	11.1	0.3		0.6							
Approach LOS	B	B										
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			25.3%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
30: Kai Pali PI & Front St

Existing (2011) PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↖		↗	↖	
Volume (veh/h)	5	6	6	10	5	117	9	221	16	41	267	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	6	7	7	11	6	131	10	248	18	46	300	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	798	682	303	680	676	257	307			266		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	798	682	303	680	676	257	307			266		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	98	99	97	98	83	99			96		
cM capacity (veh/h)	242	356	736	345	359	781	1254			1298		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	19	148	10	266	46	307
Volume Left	6	11	10	0	46	0
Volume Right	7	131	0	18	0	7
cSH	372	685	1254	1700	1298	1700
Volume to Capacity	0.05	0.22	0.01	0.16	0.04	0.18
Queue Length 95th (ft)	4	20	1	0	3	0
Control Delay (s)	15.2	11.7	7.9	0.0	7.9	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	15.2	11.7	0.3		1.0	
Approach LOS	C	B				

Intersection Summary		
Average Delay		3.1
Intersection Capacity Utilization	36.2%	ICU Level of Service A
Analysis Period (min)		15

HCM Signalized Intersection Capacity Analysis
40: Papalaua St & Honoapiilani Hwy

Existing (2011) AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↕		↖	↕	
Volume (vph)	210	22	49	12	9	21	87	1060	30	27	1036	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	0.98	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1782	1583		1712		1770	3525		1770	3478	
Flt Permitted		0.74	1.00		0.89		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1380	1583		1543		1770	3525		1770	3478	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	239	25	56	14	10	24	99	1205	34	31	1177	153
RTOR Reduction (vph)	0	0	42	0	18	0	0	2	0	0	8	0
Lane Group Flow (vph)	0	264	14	0	30	0	99	1237	0	31	1322	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		35.8	35.8		35.8		8.0	84.6		4.6	81.2	
Effective Green, g (s)		35.8	35.8		35.8		8.0	84.6		4.6	81.2	
Actuated g/C Ratio		0.26	0.26		0.26		0.06	0.60		0.03	0.58	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		2.0	6.0		2.0	6.0	
Lane Grp Cap (vph)		353	405		395		101	2130		58	2017	
v/s Ratio Prot							c0.06	c0.35		0.02	c0.38	
v/s Ratio Perm		c0.19	0.01		0.02							
v/c Ratio		0.75	0.04		0.08		0.98	0.58		0.53	0.66	
Uniform Delay, d1		47.9	39.1		39.5		65.9	16.9		66.6	19.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.25	0.51	
Incremental Delay, d2		13.5	0.2		0.4		82.7	0.8		4.1	1.1	
Delay (s)		61.5	39.3		39.9		148.6	17.7		87.5	11.3	
Level of Service		E	D		D		F	B		F	B	
Approach Delay (s)		57.6			39.9			27.4			13.1	
Approach LOS		E			D			C			B	
Intersection Summary												
HCM Average Control Delay			24.4				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			69.7%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
40: Papalaua St & Honoapiilani Hwy

Existing (2011) PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↕		↖	↕	
Volume (vph)	255	21	90	28	18	51	88	1131	22	41	1183	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	0.98	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1781	1583		1706		1770	3529		1770	3472	
Flt Permitted		0.65	1.00		0.74		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1213	1583		1289		1770	3529		1770	3472	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	266	22	94	29	19	53	92	1178	23	43	1232	180
RTOR Reduction (vph)	0	0	69	0	29	0	0	1	0	0	9	0
Lane Group Flow (vph)	0	288	25	0	72	0	92	1200	0	43	1403	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		35.2	35.2		35.2		8.0	78.8		6.0	76.8	
Effective Green, g (s)		35.2	35.2		35.2		8.0	78.8		6.0	76.8	
Actuated g/C Ratio		0.26	0.26		0.26		0.06	0.58		0.04	0.57	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		2.0	6.0		2.0	6.0	
Lane Grp Cap (vph)		316	413		336		105	2060		79	1975	
v/s Ratio Prot							c0.05	0.34		0.02	c0.40	
v/s Ratio Perm		c0.24	0.02		0.06							
v/c Ratio		0.91	0.06		0.21		0.88	0.58		0.54	0.71	
Uniform Delay, d1		48.4	37.5		39.1		63.0	17.7		63.2	21.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.22	0.80	
Incremental Delay, d2		32.3	0.3		1.5		49.3	0.8		3.5	1.5	
Delay (s)		80.7	37.7		40.5		112.3	18.5		80.8	18.4	
Level of Service		F	D		D		F	B		F	B	
Approach Delay (s)		70.2			40.5			25.2			20.2	
Approach LOS		E			D			C			C	

Intersection Summary

HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX C

Roadway Segmental Analysis

Existing (2011)

Honoapi'ilani Highway from:	Peak Hour Volumes				Highest Peak Hour Volume		Roadway Segmental LOS	
	AM		PM		NB	SB	NB	SB
	NB	SB	NB	SB				
Kapunakea St to Kenui St	1167	1248	1389	1481	1389	1481	D	D
Kenui St to Papalaua St	1234	1198	1334	1397	1334	1397	D	D

Future (2017) Without Project

Honoapi'ilani Highway from:	Peak Hour Volumes				Highest Peak Hour Volume		Roadway Segmental LOS	
	AM		PM		NB	SB	NB	SB
	NB	SB	NB	SB				
Kapunakea St to Kenui St	1330	1120	1635	1320	1635	1320	F	D
Kenui St to Papalaua St	1050	1075	1185	1245	1185	1245	D	D

Future (2017) With Project

Honoapi'ilani Highway from:	Peak Hour Volumes				Highest Peak Hour Volume		Roadway Segmental LOS	
	AM		PM		NB	SB	NB	SB
	NB	SB	NB	SB				
Kapunakea St to Kenui St	1330	1135	1635	1370	1635	1370	F	D
Kenui St to Papalaua St	1050	1120	1185	1275	1185	1275	D	D

Directional Peak Hour Volume

State Signalized Class II arterial; Undiv w/ excl LT lanes, no RT lanes (-5% adjustment)

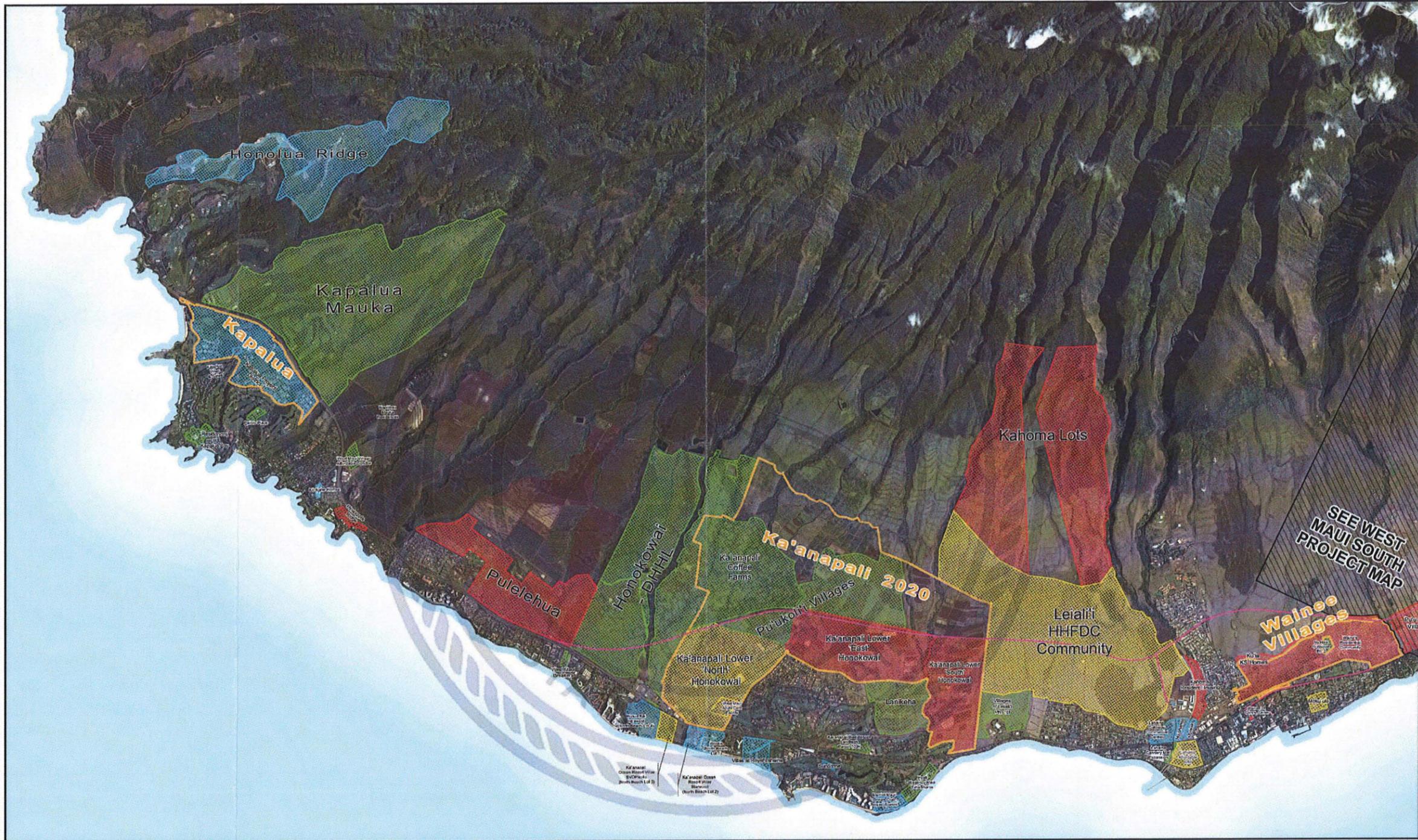
Area Over 5,000 Not in Urbanized Areas

LOS	Volume Limit
B	na
C	1149.5
D	1520
E	1605.5

APPENDIX D

West Maui Development Projects Northern Extent

Projects by Geographic Map Extent	Unit Types		
	Single Family	Multi-Family	Time Shares and Hotels
Recently Completed			
Palace	0	100	0
Palace Ridge	0	0	0
Ka'anapali Ocean Key (N & S)	0	100	0
Ka'anapali Ocean Key (N & S) (N & S)	0	0	0
Palace Project (N & S)	0	0	1,000
Palace Villa & Suite	0	0	0
Palace Hotel	0	0	0
Palace Hotel Ocean Club Beach Tennis	0	0	100
Palace	0	100	0
Palace	0	0	0
Palace at Kapalua	0	0	0
Palace (N & S)	0	0	0
TOTAL	0	200	1,100
Planned/Committed			
Palace - OHK	1,000	0	0
Palace Ridge	0	0	0
Palace Ocean Key (N & S)	0	0	0
Palace Ocean Key (N & S) (N & S)	0	0	0
Palace Project (N & S)	0	0	0
Palace Villa & Suite	0	0	0
Palace Hotel	0	0	0
Palace Hotel Ocean Club Beach Tennis	0	0	0
Palace	0	0	0
Palace	0	0	0
Palace at Kapalua	0	0	0
Palace (N & S)	0	0	0
Sub-TOTAL	1,000	0	0
Planned/Designated			
Palace - OHK	0	0	0
Palace Ridge	0	0	0
Palace Ocean Key (N & S)	0	0	0
Palace Ocean Key (N & S) (N & S)	0	0	0
Palace Project (N & S)	0	0	0
Palace Villa & Suite	0	0	0
Palace Hotel	0	0	0
Palace Hotel Ocean Club Beach Tennis	0	0	0
Palace	0	0	0
Palace	0	0	0
Palace at Kapalua	0	0	0
Palace (N & S)	0	0	0
Sub-TOTAL	0	0	0
Proposed			
Palace - OHK	0	0	0
Palace Ridge	0	0	0
Palace Ocean Key (N & S)	0	0	0
Palace Ocean Key (N & S) (N & S)	0	0	0
Palace Project (N & S)	0	0	0
Palace Villa & Suite	0	0	0
Palace Hotel	0	0	0
Palace Hotel Ocean Club Beach Tennis	0	0	0
Palace	0	0	0
Palace	0	0	0
Palace at Kapalua	0	0	0
Palace (N & S)	0	0	0
Sub-TOTAL	0	0	0
TOTAL	1,000	200	1,100



The development projects shown are those that have come to the attention of the Department of Planning. There are certain to be other developments being contemplated or planned by private individuals or corporations of which the Department has not been informed. Further, the Department is not attempting to list housing projects greater than 6 dwelling units and subdivisions of less than 4 lots. Therefore, this is not a complete depiction of the development projects for the county.

Projects identified as "Planned/Committed" have the appropriate conforming Community Plan and zoning entitlement, are approved agricultural subdivisions, are approved 2010M projects, or are Department of Hawaiian Home Lands (DHL) projects. Projects identified as "Planned/Designated" have urban or rural Community Plan designations but not the conforming zoning entitlements to proceed. Projects identified as "Proposed" are currently pending urban or rural Community Plan designations. Projects identified as "Recently Completed" include those where the subdivision process is complete, total build-out of the project has been reached or nearly reached, and real property is being actively marketed. Further, these projects remain "Recently Completed" until other map layers show the completed project.

West Maui Development Projects
Northern Extent
Kapalua to Lahaina Town

Legend

Development Projects

Growth Classes

- Recently Completed
- Planned/Committed
- Planned/Designated
- Proposed

Proposed Roads

Phased Development

Community Plan Area Boundaries



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Product Code: LR-RGDCET_20110215-0
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This is not a zoning map or community plan map. Please contact the Planning Department for Zoning and Community Plan information.

Feet
0 1,000 2,000 4,000 6,000

PREPARED BY:
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Department of Planning
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APPENDIX E

Analysis Reports Future (2017) Without Project Conditions

HCM Signalized Intersection Capacity Analysis
10: Kapunakea St & Honoapiilani Hwy

Future (2017) Without Project AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗		↖	↗		↖	↗	
Volume (vph)	95	30	30	150	35	40	30	1225	75	25	1290	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Fit		1.00	0.85	1.00	0.92		1.00	0.99		1.00	0.99	
Fit Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1794	1583	1770	1714		1770	3509		1770	3512	
Fit Permitted		0.72	1.00	0.61	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1340	1583	1127	1714		1770	3509		1770	3512	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	112	35	35	176	41	47	35	1441	88	29	1518	82
RTOR Reduction (vph)	0	0	24	0	29	0	0	3	0	0	3	0
Lane Group Flow (vph)	0	147	11	176	59	0	35	1526	0	29	1597	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		42.1	42.1	42.1	42.1		5.4	80.3		3.6	78.5	
Effective Green, g (s)		42.1	42.1	42.1	42.1		5.4	80.3		3.6	78.5	
Actuated g/C Ratio		0.30	0.30	0.30	0.30		0.04	0.57		0.03	0.56	
Clearance Time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		403	476	339	515		68	2013		46	1969	
v/s Ratio Prot					0.03		c0.02	0.43		0.02	c0.45	
v/s Ratio Perm		0.11	0.01	c0.16								
v/c Ratio		0.36	0.02	0.52	0.12		0.51	0.76		0.63	0.81	
Uniform Delay, d1		38.4	34.5	40.6	35.5		66.0	22.5		67.5	24.8	
Progression Factor		1.00	1.00	1.00	1.00		1.09	0.89		1.00	1.00	
Incremental Delay, d2		2.5	0.1	5.6	0.5		2.5	1.9		18.8	3.0	
Delay (s)		41.0	34.5	46.2	35.9		74.3	21.9		86.4	27.8	
Level of Service		D	C	D	D		E	C		F	C	
Approach Delay (s)		39.8			42.7			23.1			28.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: Kapunakea St & Honoapiilani Hwy

Future(2017) Without Project PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↘	↖		↙	↕		↖	↗	
Volume (vph)	170	40	35	120	30	40	70	1430	135	45	1430	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.91		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790	1583	1770	1704		1770	3493		1770	3495	
Flt Permitted		0.72	1.00	0.49	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1337	1583	915	1704		1770	3493		1770	3495	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	175	41	36	124	31	41	72	1474	139	46	1474	134
RTOR Reduction (vph)	0	0	26	0	29	0	0	5	0	0	5	0
Lane Group Flow (vph)	0	216	10	124	43	0	72	1608	0	46	1603	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		38.5	38.5	38.5	38.5		8.3	76.0		6.5	74.2	
Effective Green, g (s)		38.5	38.5	38.5	38.5		8.3	76.0		6.5	74.2	
Actuated g/C Ratio		0.29	0.29	0.29	0.29		0.06	0.56		0.05	0.55	
Clearance Time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		381	451	261	486		109	1966		85	1921	
v/s Ratio Prot					0.03		c0.04	c0.46		0.03	0.46	
v/s Ratio Perm		c0.16	0.01	0.14								
v/c Ratio		0.57	0.02	0.48	0.09		0.66	0.82		0.54	0.83	
Uniform Delay, d1		41.1	34.7	39.9	35.4		62.0	23.9		62.8	25.3	
Progression Factor		1.00	1.00	1.00	1.00		1.19	0.70		1.00	1.00	
Incremental Delay, d2		6.0	0.1	6.1	0.4		10.0	2.8		3.7	3.7	
Delay (s)		47.1	34.8	46.0	35.7		83.7	19.6		66.5	29.0	
Level of Service		D	C	D	D		F	B		E	C	
Approach Delay (s)		45.4			42.2			22.3			30.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 20: Kenui St & Honoapiilani Hwy

Future (2017) Without Project AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↖		↑↑	↑↓	
Volume (veh/h)	0	15	0	1050	980	140
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	16	0	1141	1065	152
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1712	609	1217			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1712	609	1217			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	81	438	569			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	16	571	571	710	507
Volume Left	0	0	0	0	0
Volume Right	16	0	0	0	152
cSH	438	1700	1700	1700	1700
Volume to Capacity	0.04	0.34	0.34	0.42	0.30
Queue Length 95th (ft)	3	0	0	0	0
Control Delay (s)	13.5	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	13.5	0.0	0.0		
Approach LOS	B				

Intersection Summary					
Average Delay	0.1				
Intersection Capacity Utilization	41.6%		ICU Level of Service	A	
Analysis Period (min)	15				

HCM Unsignalized Intersection Capacity Analysis
 20: Kenui St & Honoapiilani Hwy

Future(2017) Without Project PM Peak



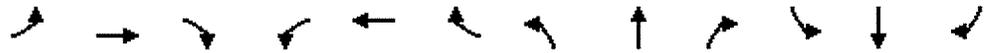
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Volume (veh/h)	0	45	0	1185	1135	185
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	47	0	1234	1182	193
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1896	688	1375			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1896	688	1375			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	88	100			
cM capacity (veh/h)	61	389	495			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	47	617	617	788	587
Volume Left	0	0	0	0	0
Volume Right	47	0	0	0	193
cSH	389	1700	1700	1700	1700
Volume to Capacity	0.12	0.36	0.36	0.46	0.35
Queue Length 95th (ft)	10	0	0	0	0
Control Delay (s)	15.5	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	15.5	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		47.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
30: Kai Pali PI & Front St

Future (2017) Without Project AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖		↗	↖	
Volume (veh/h)	5	0	5	20	0	50	10	210	10	15	235	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	6	0	6	23	0	57	11	239	11	17	267	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	619	574	267	574	568	244	267			250		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	619	574	267	574	568	244	267			250		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	95	100	93	99			99		
cM capacity (veh/h)	366	420	772	420	423	794	1297			1316		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	80	11	250	17	267
Volume Left	6	23	11	0	17	0
Volume Right	6	57	0	11	0	0
cSH	496	633	1297	1700	1316	1700
Volume to Capacity	0.02	0.13	0.01	0.15	0.01	0.16
Queue Length 95th (ft)	2	11	1	0	1	0
Control Delay (s)	12.4	11.5	7.8	0.0	7.8	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	12.4	11.5	0.3		0.5	
Approach LOS	B	B				

Intersection Summary		
Average Delay		2.0
Intersection Capacity Utilization	23.7%	ICU Level of Service A
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis
30: Kai Pali PI & Front St

Future(2017) Without Project PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↖		↗	↖	
Volume (veh/h)	5	5	5	10	5	125	10	245	15	40	295	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	6	6	6	11	6	140	11	275	17	45	331	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	865	739	334	736	733	284	337			292		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	865	739	334	736	733	284	337			292		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	98	99	96	98	81	99			96		
cM capacity (veh/h)	213	330	708	317	332	755	1222			1270		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	17	157	11	292	45	337
Volume Left	6	11	11	0	45	0
Volume Right	6	140	0	17	0	6
cSH	328	660	1222	1700	1270	1700
Volume to Capacity	0.05	0.24	0.01	0.17	0.04	0.20
Queue Length 95th (ft)	4	23	1	0	3	0
Control Delay (s)	16.6	12.2	8.0	0.0	7.9	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	16.6	12.2	0.3		0.9	
Approach LOS	C	B				

Intersection Summary		
Average Delay		3.1
Intersection Capacity Utilization	38.0%	ICU Level of Service A
Analysis Period (min)		15

HCM Signalized Intersection Capacity Analysis
40: Papalaua St & Honoapiilani Hwy

Future (2017) Without Project AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↗		↔		↖	↕		↖	↕	
Volume (vph)	215	20	50	10	10	20	85	905	30	25	910	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	0.98	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1781	1583		1713		1770	3522		1770	3468	
Flt Permitted		0.71	1.00		0.92		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1326	1583		1591		1770	3522		1770	3468	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	244	23	57	11	11	23	97	1028	34	28	1034	159
RTOR Reduction (vph)	0	0	36	0	15	0	0	1	0	0	8	0
Lane Group Flow (vph)	0	267	21	0	30	0	97	1061	0	28	1185	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		50.9	50.9		50.9		11.6	70.5		3.6	62.5	
Effective Green, g (s)		50.9	50.9		50.9		11.6	70.5		3.6	62.5	
Actuated g/C Ratio		0.36	0.36		0.36		0.08	0.50		0.03	0.45	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		2.0	6.0		2.0	6.0	
Lane Grp Cap (vph)		482	576		578		147	1774		46	1548	
v/s Ratio Prot							c0.05	0.30		0.02	c0.34	
v/s Ratio Perm		c0.20	0.01		0.02							
v/c Ratio		0.55	0.04		0.05		0.66	0.60		0.61	0.77	
Uniform Delay, d1		35.5	28.7		28.9		62.3	24.7		67.5	32.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.29	0.54	
Incremental Delay, d2		4.5	0.1		0.2		7.9	1.0		11.0	2.2	
Delay (s)		40.0	28.8		29.1		70.2	25.7		98.4	19.8	
Level of Service		D	C		C		E	C		F	B	
Approach Delay (s)		38.1			29.1		29.4				21.6	
Approach LOS		D			C		C				C	

Intersection Summary

HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
40: Papalaua St & Honoapiilani Hwy

Future(2017) Without Project PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔		↔	↔	
Volume (vph)	270	20	90	30	20	50	90	1005	20	40	1025	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	0.98	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780	1583		1712		1770	3529		1770	3460	
Flt Permitted		0.67	1.00		0.85		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1242	1583		1479		1770	3529		1770	3460	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	281	21	94	31	21	52	94	1047	21	42	1068	188
RTOR Reduction (vph)	0	0	59	0	26	0	0	1	0	0	11	0
Lane Group Flow (vph)	0	302	35	0	78	0	94	1067	0	42	1245	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		50.6	50.6		50.6		10.4	63.4		6.0	59.0	
Effective Green, g (s)		50.6	50.6		50.6		10.4	63.4		6.0	59.0	
Actuated g/C Ratio		0.37	0.37		0.37		0.08	0.47		0.04	0.44	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		2.0	6.0		2.0	6.0	
Lane Grp Cap (vph)		466	593		554		136	1657		79	1512	
v/s Ratio Prot							c0.05	c0.30		0.02	c0.36	
v/s Ratio Perm		c0.24	0.02		0.05							
v/c Ratio		0.65	0.06		0.14		0.69	0.64		0.53	0.82	
Uniform Delay, d1		34.8	27.0		27.8		60.7	27.2		63.1	33.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.20	0.70	
Incremental Delay, d2		6.8	0.2		0.5		11.5	1.4		2.4	3.1	
Delay (s)		41.7	27.2		28.4		72.3	28.6		77.8	26.4	
Level of Service		D	C		C		E	C		E	C	
Approach Delay (s)		38.2			28.4			32.2			28.0	
Approach LOS		D			C			C			C	

Intersection Summary

HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX F

Analysis Reports Future (2017) With Project Conditions

HCM Signalized Intersection Capacity Analysis
 10: Kapunakea St & Honoapiilani Hwy

Future (2017) WITH Project AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗		↖	↕	↗	↖	↕	
Volume (vph)	140	30	30	150	35	40	30	1225	75	25	1300	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.92		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1789	1583	1770	1714		1770	3509		1770	3512	
Flt Permitted		0.70	1.00	0.53	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1311	1583	986	1714		1770	3509		1770	3512	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	35	35	176	41	47	35	1441	88	29	1529	82
RTOR Reduction (vph)	0	0	24	0	29	0	0	3	0	0	3	0
Lane Group Flow (vph)	0	200	11	176	59	0	35	1526	0	29	1608	0
Turn Type	Perm		Perm	Perm			Prot		Prot			
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		43.4	43.4	43.4	43.4		5.4	79.0		3.6	77.2	
Effective Green, g (s)		43.4	43.4	43.4	43.4		5.4	79.0		3.6	77.2	
Actuated g/C Ratio		0.31	0.31	0.31	0.31		0.04	0.56		0.03	0.55	
Clearance Time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		406	491	306	531		68	1980		46	1937	
v/s Ratio Prot					0.03		c0.02	0.43		0.02	c0.46	
v/s Ratio Perm		0.15	0.01	c0.18								
v/c Ratio		0.49	0.02	0.58	0.11		0.51	0.77		0.63	0.83	
Uniform Delay, d1		39.3	33.6	40.6	34.5		66.0	23.5		67.5	26.0	
Progression Factor		1.00	1.00	1.00	1.00		1.03	0.94		1.00	1.00	
Incremental Delay, d2		4.2	0.1	7.7	0.4		2.5	2.1		18.8	3.5	
Delay (s)		43.6	33.6	48.2	34.9		70.3	24.2		86.4	29.5	
Level of Service		D	C	D	C		E	C		F	C	
Approach Delay (s)		42.1			43.8			25.2			30.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 10: Kapunakea St & Honoapiilani Hwy

Future (2017) WITH Project PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↘	↙		↘	↖↗		↘	↖↗	
Volume (vph)	200	40	35	125	30	40	70	1430	135	45	1475	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.91		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1788	1583	1770	1704		1770	3493		1770	3496	
Flt Permitted		0.71	1.00	0.46	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1326	1583	856	1704		1770	3493		1770	3496	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	206	41	36	129	31	41	72	1474	139	46	1521	134
RTOR Reduction (vph)	0	0	25	0	29	0	0	5	0	0	5	0
Lane Group Flow (vph)	0	247	11	129	43	0	72	1608	0	46	1650	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		41.1	41.1	41.1	41.1		7.6	74.4		5.5	72.3	
Effective Green, g (s)		41.1	41.1	41.1	41.1		7.6	74.4		5.5	72.3	
Actuated g/C Ratio		0.30	0.30	0.30	0.30		0.06	0.55		0.04	0.54	
Clearance Time (s)		5.0	5.0	5.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		404	482	261	519		100	1925		72	1872	
v/s Ratio Prot					0.03		c0.04	0.46		0.03	c0.47	
v/s Ratio Perm		c0.19	0.01	0.15								
v/c Ratio		0.61	0.02	0.49	0.08		0.72	0.84		0.64	0.88	
Uniform Delay, d1		40.1	32.9	38.4	33.5		62.7	25.2		63.8	27.6	
Progression Factor		1.00	1.00	1.00	1.00		1.24	0.79		1.00	1.00	
Incremental Delay, d2		6.7	0.1	6.6	0.3		17.1	3.4		12.9	5.7	
Delay (s)		46.9	33.0	45.0	33.8		94.7	23.3		76.6	33.3	
Level of Service		D	C	D	C		F	C		E	C	
Approach Delay (s)		45.1			41.0			26.4			34.4	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 20: Kenui St & Honoapiilani Hwy

Future (2017) WITH Project AM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Volume (veh/h)	0	60	0	1050	980	155
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	65	0	1141	1065	168
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1720	617	1234			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1720	617	1234			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	85	100			
cM capacity (veh/h)	80	433	560			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	65	571	571	710	524
Volume Left	0	0	0	0	0
Volume Right	65	0	0	0	168
cSH	433	1700	1700	1700	1700
Volume to Capacity	0.15	0.34	0.34	0.42	0.31
Queue Length 95th (ft)	13	0	0	0	0
Control Delay (s)	14.8	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	14.8	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization	42.4%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 20: Kenui St & Honoapiilani Hwy

Future (2017) WITH Project PM Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Volume (veh/h)	0	75	0	1185	1135	235
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	78	0	1234	1182	245
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1922	714	1427			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1922	714	1427			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	79	100			
cM capacity (veh/h)	59	374	472			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	617	617	788	639
Volume Left	0	0	0	0	0
Volume Right	78	0	0	0	245
cSH	374	1700	1700	1700	1700
Volume to Capacity	0.21	0.36	0.36	0.46	0.38
Queue Length 95th (ft)	19	0	0	0	0
Control Delay (s)	17.1	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	17.1	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		50.2%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
30: Kai Pali PI & Front St

Future (2017) WITH Project AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔			↔		↗	↖		↗	↖		
Volume (veh/h)	5	0	5	20	0	70	10	210	10	25	235	0	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Hourly flow rate (vph)	6	0	6	23	0	80	11	239	11	28	267	0	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type								None			None		
Median storage veh													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	665	597	267	597	591	244	267			250			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	665	597	267	597	591	244	267			250			
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1			
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2			
p0 queue free %	98	100	99	94	100	90	99			98			
cM capacity (veh/h)	328	404	772	402	407	794	1297			1316			
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2							
Volume Total	11	102	11	250	28	267							
Volume Left	6	23	11	0	28	0							
Volume Right	6	80	0	11	0	0							
cSH	461	653	1297	1700	1316	1700							
Volume to Capacity	0.02	0.16	0.01	0.15	0.02	0.16							
Queue Length 95th (ft)	2	14	1	0	2	0							
Control Delay (s)	13.0	11.5	7.8	0.0	7.8	0.0							
Lane LOS	B	B	A		A								
Approach Delay (s)	13.0	11.5	0.3		0.7								
Approach LOS	B	B											
Intersection Summary													
Average Delay			2.4										
Intersection Capacity Utilization			31.4%		ICU Level of Service								A
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
30: Kai Pali PI & Front St

Future (2017) WITH Project PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↖		↗	↖	
Volume (veh/h)	5	5	5	10	5	180	10	245	15	45	295	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	6	6	6	11	6	202	11	275	17	51	331	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	938	750	334	747	744	284	337			292		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	938	750	334	747	744	284	337			292		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	98	99	96	98	73	99			96		
cM capacity (veh/h)	170	324	708	310	326	755	1222			1270		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	17	219	11	292	51	337
Volume Left	6	11	11	0	51	0
Volume Right	6	202	0	17	0	6
cSH	289	682	1222	1700	1270	1700
Volume to Capacity	0.06	0.32	0.01	0.17	0.04	0.20
Queue Length 95th (ft)	5	35	1	0	3	0
Control Delay (s)	18.2	12.8	8.0	0.0	8.0	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	18.2	12.8	0.3		1.0	
Approach LOS	C	B				

Intersection Summary		
Average Delay	3.9	
Intersection Capacity Utilization	41.4%	ICU Level of Service A
Analysis Period (min)	15	

HCM Signalized Intersection Capacity Analysis
40: Papalua St & Honoapiilani Hwy

Future (2017) WITH Project AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗		↖	↗	
Volume (vph)	215	20	50	10	10	20	100	905	30	25	950	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	0.98	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1781	1583		1713		1770	3522		1770	3469	
Flt Permitted		0.71	1.00		0.92		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1326	1583		1590		1770	3522		1770	3469	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	244	23	57	11	11	23	114	1028	34	28	1080	165
RTOR Reduction (vph)	0	0	37	0	15	0	0	1	0	0	9	0
Lane Group Flow (vph)	0	267	20	0	30	0	114	1061	0	28	1236	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		48.3	48.3		48.3		12.8	73.1		3.6	63.9	
Effective Green, g (s)		48.3	48.3		48.3		12.8	73.1		3.6	63.9	
Actuated g/C Ratio		0.34	0.34		0.34		0.09	0.52		0.03	0.46	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		2.0	6.0		2.0	6.0	
Lane Grp Cap (vph)		457	546		549		162	1839		46	1583	
v/s Ratio Prot							c0.06	0.30		0.02	c0.36	
v/s Ratio Perm		c0.20	0.01		0.02							
v/c Ratio		0.58	0.04		0.05		0.70	0.58		0.61	0.78	
Uniform Delay, d1		37.6	30.4		30.6		61.8	22.9		67.5	32.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.24	0.54	
Incremental Delay, d2		5.4	0.1		0.2		10.7	0.9		11.1	2.4	
Delay (s)		43.0	30.5		30.8		72.5	23.8		94.9	19.6	
Level of Service		D	C		C		E	C		F	B	
Approach Delay (s)		40.8			30.8			28.5			21.3	
Approach LOS		D			C			C			C	

Intersection Summary		
HCM Average Control Delay	26.7	HCM Level of Service C
HCM Volume to Capacity ratio	0.70	
Actuated Cycle Length (s)	140.0	Sum of lost time (s) 15.0
Intersection Capacity Utilization	68.6%	ICU Level of Service C
Analysis Period (min)	15	
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis
40: Papalaua St & Honoapiilani Hwy

Future (2017) WITH Project PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↖	↕		↖	↕	↗
Volume (vph)	270	20	90	30	20	50	140	1005	20	40	1050	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	0.98	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780	1583		1712		1770	3529		1770	3460	
Flt Permitted		0.66	1.00		0.85		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1236	1583		1477		1770	3529		1770	3460	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	281	21	94	31	21	52	146	1047	21	42	1094	193
RTOR Reduction (vph)	0	0	61	0	27	0	0	1	0	0	10	0
Lane Group Flow (vph)	0	302	33	0	77	0	146	1067	0	42	1277	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4								
Actuated Green, G (s)		47.3	47.3		47.3		14.1	66.7		6.0	58.6	
Effective Green, g (s)		47.3	47.3		47.3		14.1	66.7		6.0	58.6	
Actuated g/C Ratio		0.35	0.35		0.35		0.10	0.49		0.04	0.43	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		2.0	6.0		2.0	6.0	
Lane Grp Cap (vph)		433	555		517		185	1744		79	1502	
v/s Ratio Prot							c0.08	0.30		0.02	c0.37	
v/s Ratio Perm		c0.24	0.02		0.05							
v/c Ratio		0.70	0.06		0.15		0.79	0.61		0.53	0.85	
Uniform Delay, d1		37.7	29.1		30.1		59.0	24.8		63.1	34.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.26	0.65	
Incremental Delay, d2		9.0	0.2		0.6		18.3	1.1		2.2	3.7	
Delay (s)		46.7	29.3		30.7		77.3	25.9		81.9	26.0	
Level of Service		D	C		C		E	C		F	C	
Approach Delay (s)		42.6			30.7			32.1			27.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX J.

Preliminary Engineering Report

Preliminary Engineering Report

for

Kahoma Village

Lahaina, Maui, Hawaii

TMK: (2) 4-5-008: 001

Submitted By

SSFM INTERNATIONAL, INC.
Project Managers, Planners, & Engineers

1351 Lower Main Street, Suite 3
Wailuku, Hawaii 96793
Phone: (808) 244-7630
Fax: (866) 887-8885
Email: ematsuda@ssfm.com

SSFM
INTERNATIONAL

August 2012



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I. Introduction

Location

The proposed project is located in Lahaina on Front Street, adjacent to Kahoma Stream and is designated as Tax Map Key (2) 4-5-008: 01. The project site has an area of 21.6 acres, is zoned A-1 Apartment District and located in the Special Management Area. The West Maui Community Plan labels the property as Project District 4, which includes multi-family and senior residential uses. See Exhibits E-1 Location Map, E-2 Tax Map 2nd Division 4-5-08, E-3 Kahoma Stream Flood Control Project Subdivision Map, E-6 Land Information, E-7 County of Maui Real Property Tax Record and E-8 West Maui Community Plan Lahaina Town Map.

The surrounding properties are well-established residential and commercial properties.

Topography

The property consists of mostly barren land with trees and brush. The ground generally slopes in a westerly direction toward Front Street. The existing elevations range between 5 and 20 feet above mean sea level (MSL). See Exhibit E-4 for Topographic Map of Existing Information.

Proposed Project

The proposed residential project will consist of approximately 203 various residential units with parking and 3 park areas totaling 1.75 acres. Road widening, frontage and utility improvements will be designed as required for the development. See Exhibit E-5 for the Proposed Site Plan.

II. Physical Environment

Land Use

The land is currently vacant. The real property tax records indicate this parcel was used for cane waste disposal and has never been developed.

Soils

The soils in this area are described as Ewa silty clay loam (EaA) and Pulehu silt loam (PpA) by the Soils Conservation Service. Runoff is very slow for Ewa silty clay loam and the erosion hazard is very slight. Pulehu silt loam is found on alluvial fans, stream terraces and in basins. The permeability is moderate, runoff is slow and the erosion hazard is no more than slight. See Exhibit E-12 for the Soil Conservation Service Soil Survey Map and Descriptions.



Flood Hazard

The subject property is located in Zone X as indicated on the current September 25, 2009 Flood Insurance Rate Map (FIRM), Community Panel No. 150003 0361 E and therefore is not subject to the requirements of the Flood Hazard District Ordinance, Chapter 19.62 of the Maui County Code. The Kahoma Stream is indicated as Zone A, which has no determined base flood elevation. See Exhibit E-9 for the Flood Insurance Rate Map Community Panel No. 150003 0361E.

III. Infrastructure

Access

The existing roads adjacent to the subject property include Honoapiilani Highway (State), Front Street (County) and Kenui Street (County).

There is no access to the project from Honoapiilani Highway.

Accesses to the project's interior roads are proposed from Front Street and Kenui Street. Both County roads are two-lane collector roads with varying right-of-way widths and no improvements along either frontage. Standard frontage improvements (curbs & gutters, sidewalks and landscaping) will be required. Road widening requirements are undetermined at this time.

Grading

On-site grading will be required for proposed interior roads and buildings pads. At this time, there is no determination of the finished floor elevations for the building pads. No conceptual grading of lots has been completed; however, it should be noted that in order to achieve flat building pads, a small grade wall may be required on the southeast corner of the lot. Preliminary grading of the internal roads is depicted in Exhibit E-16.

Water and Fire Protection

The Lahaina area is served by the Lahaina Water System. The major sources for this system are the Launiupoko Aquifer, Honolulu Aquifer and Honokowai Aquifer.

According to the engineering division of the Department of Water Supply, there is a 12-inch main located along Front Street, which can be the point of connection for the project's water service. Water meter requirements will be determined during the design phase.

Utilizing the 2002 DWS Water System Standard's domestic consumption guidelines, preliminary development water use approximate an average daily demand of 120,000 gallons per day and a maximum daily demand of 180,000 gallons/day for the proposed development. Moreover, it is



approximated that the project will require a 4-inch master meter will be necessary for domestic water service. See Exhibit E-15 for the Conceptual Water Plan.

For fire protection, an internal fire line will be designed to supplement the existing hydrants along Front Street. See Exhibit E-15 for the Conceptual Water Plan.

Wastewater

The project is located within the County's Lahaina Wastewater Reclamation System. The Lahaina Wastewater Reclamation Facility was expanded in 1995 and has a capacity of 9 million gallons per day (mgd), and the average daily flow is approximately 4.1 mgd.

The project can be serviced through the 12-inch and 18-inch gravity collection mains on Front Street. A 14-inch force main from Lahaina No. 4 Wastewater Pump Station traverses along Kahoma Stream, adjacent to the north boundary of the subject property, down from Honoapiilani Highway. The County of Maui is in the process of a replacement project for this force main. See Exhibit E-11 for the Wastewater Collection System Map.

Utilizing the standard wastewater flow of 350 gallons per day for a residential unit, the preliminary wastewater projection for the project is approximately 71,400 gallons per day, or 0.07 mgd. See Exhibit E-14 for the Conceptual Sewer Plan.

Drainage

The Kahoma Stream is adjacent to the project site to the north and serves a drainage basin of 5.4 square miles. Improvements to the Kahoma Stream were completed in 1990, which has eliminated floods due to overtopping of the stream. There is one drainage system along Front Street, which discharges into the ocean. This system is identified as Line W in the Lahaina Town Drainage Master Plan. Line U shown on Ala Moana Street and Line A shown on Front Street are future off-site drainage systems. See Exhibit E-10 for Lahaina Town Drainage Master Plan Map.

The County of Maui requires that the peak flow and total volume of storm runoff from the project site have no adverse impact on adjacent or downstream properties. The increase in runoff from the proposed improvements is approximated at 35.9 cfs. The quality of stormwater leaving the site is also a concern. Stormwater quality degrades with urban development and increased impervious surfaces, because various pollutants are introduced into the stormwater runoff.

There are several drainage system options or combination of options available to mitigate the quality and quantity of runoff: construction of Line U, linear infiltration (perforated drainage pipe), and a depressed detention basin. A complete assessment of the existing and proposed drainage system will be completed during the design. Moreover, the drainage system would incorporate permanent Best Management Practices (BMP's) to optimize water quality. A full assessment of all available BMP's will be provided during design of the project. See Exhibit E-13 for the Conceptual Drain Plan.



During construction of the proposed improvements, temporary Best Management Practices (BMP's) will be utilized to prevent erosion and the release of sediment and other pollutants to storm drains, waterways, and adjacent properties. See Exhibit E-16 and E-17 for the Conceptual Grading and Construction BMP Plan and BMP Details.

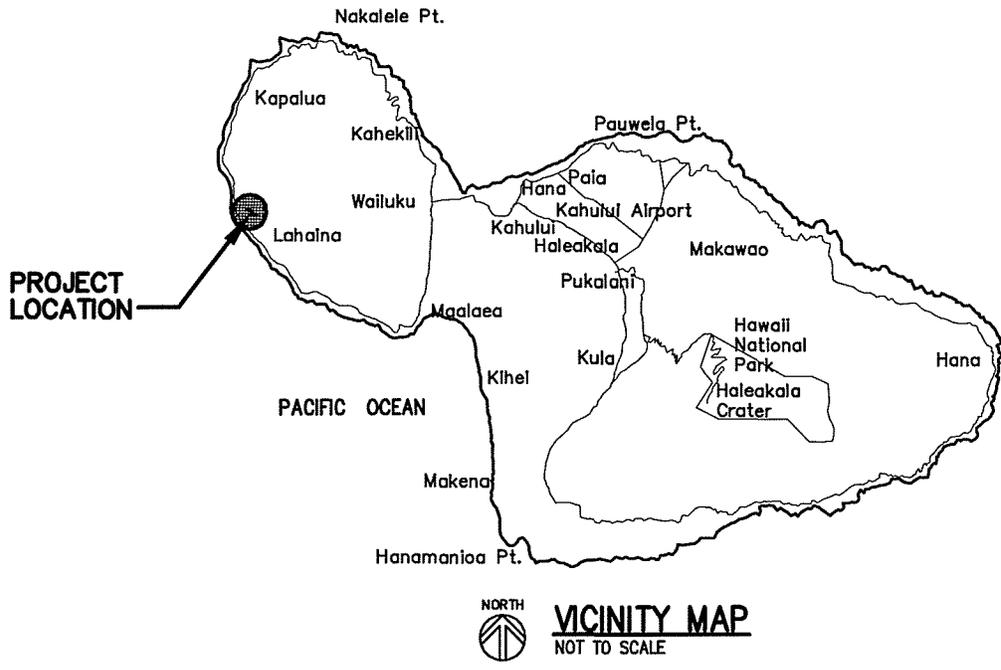
Electrical and Telephone

Electrical service is provided by Maui Electric Company, Ltd. Telephone service is provided by Hawaiian Telecom. Cable television service is provided by Oceanic Time Warner Cable. All existing utility lines are located overhead and power poles are located on the mauka side of Front Street along the project's frontage. Underground conversion will be as directed by the utility companies.

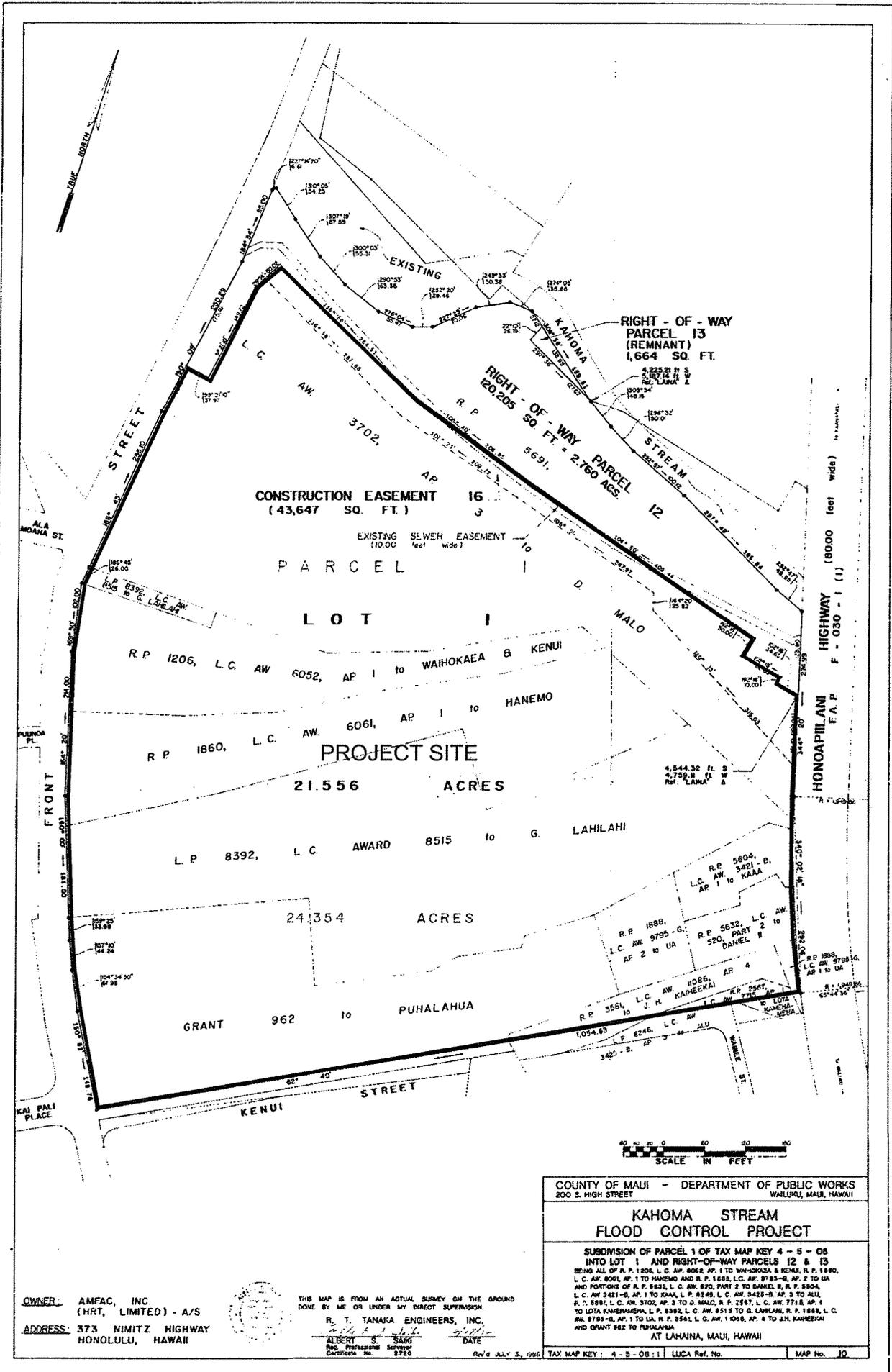
IV. References

1. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, United States Department of Agriculture Soil Conservation Service, August 1972
2. *Flood Insurance Rate Map, Maui County, Hawaii*, National Flood Insurance Program, Federal Emergency Management Agency, Federal Insurance Administration, June 1981
3. *Fire Protection System for Maui and Molokai*, Department of Water Supply, County of Maui, 2000
4. *Rules for the Design of Storm Drainage Facilities in the County of Maui, Chapter 4, Title MC-15*, Department of Public Works and Waste Management, County of Maui, State of Hawaii, July 1995

Exhibits



**WEINBERG LAHAINA
 LOCATION MAP**



OWNER: AMFAC, INC.
(HRT, LIMITED) - A/S
ADDRESS: 373 NIMITZ HIGHWAY
HONOLULU, HAWAII



THIS MAP IS FROM AN ACTUAL SURVEY ON THE GROUND
DONE BY ME OR UNDER MY DIRECT SUPERVISION.
R. T. TANAKA ENGINEERS, INC.
ALBERT S. SANKI
Reg. Professional Surveyor
Certificate No. 3720

COUNTY OF MAUI - DEPARTMENT OF PUBLIC WORKS
200 S. HIGH STREET WAILUKU, MAUI, HAWAII

**KAHOMA STREAM
FLOOD CONTROL PROJECT**

SUBDIVISION OF PARCEL 1 OF TAX MAP KEY 4 - 5 - 08
INTO LOT 1 AND RIGHT-OF-WAY PARCELS 12 & 13
BEING ALL OF R.P. 1206, L.C. AW. 6052, AP. 1 TO WAHIOKAEA & KENUI, R.P. 1860,
L.C. AW. 6061, AP. 1 TO HANEMO AND R.P. 1860, L.C. AW. 6061, AP. 1 TO HANEMO
AND PORTIONS OF R.P. 5632, L.C. AW. 520, PART 2 TO DANIEL & R.P. 5604,
L.C. AW. 5421 - B, AP. 1 TO KAAA, L.C. AW. 8248, L.C. AW. 3423 - B, AP. 3 TO ALU,
R.P. 5881, L.C. AW. 3702, AP. 3 TO G. MAALO, R.P. 2587, L.C. AW. 771 & AP. 1
TO LOTA KANEHEKA, L.P. 8392, L.C. AW. 8515 TO G. LAHILAH, R.P. 1868, L.C.
AW. 9795 - G, AP. 1 TO UA, R.P. 3551, L.C. AW. 1008, AP. 4 TO J.H. KANEHEKA
AND GRANT 962 TO PUHALAHUA
AT LAHAINA, MAUI, HAWAII

E-3 Kahoma Stream Flood Control Project Subdivision Map



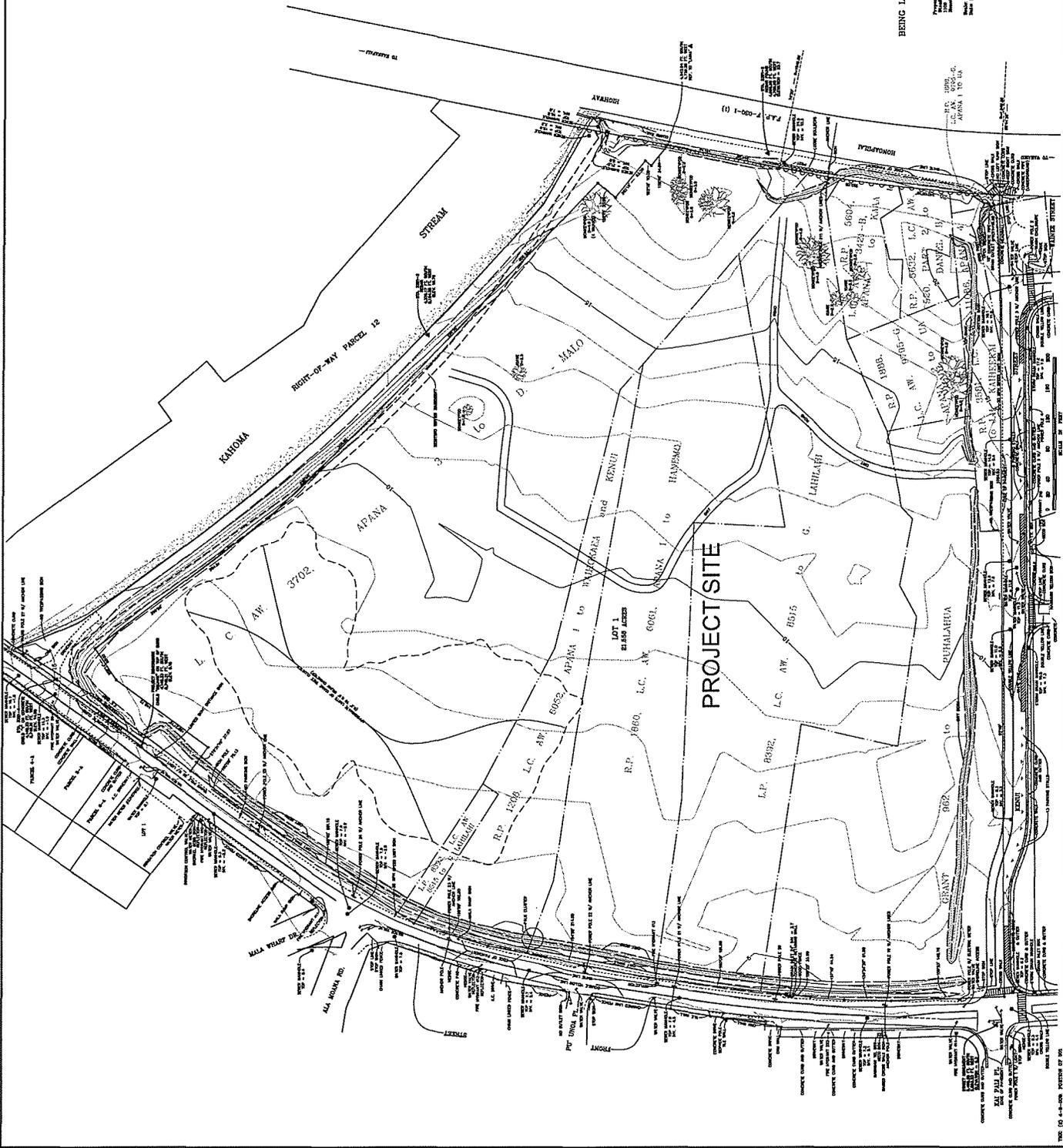
- 1. Horizontal and vertical curves are shown on the project.
- 2. Elevation shown above datum is in feet.
- 3. Elevation shown below datum is in feet.
- 4. Elevation shown below datum is in feet.
- 5. Elevation shown below datum is in feet.
- 6. Elevation shown below datum is in feet.

ADVANCED COPY
TOPOGRAPHIC SURVEY

"LAHANA WEINBERG SITE"
BEING LOT 1 OF THE KAHOMA STREAM FLOOD CONTROL PROJECT,

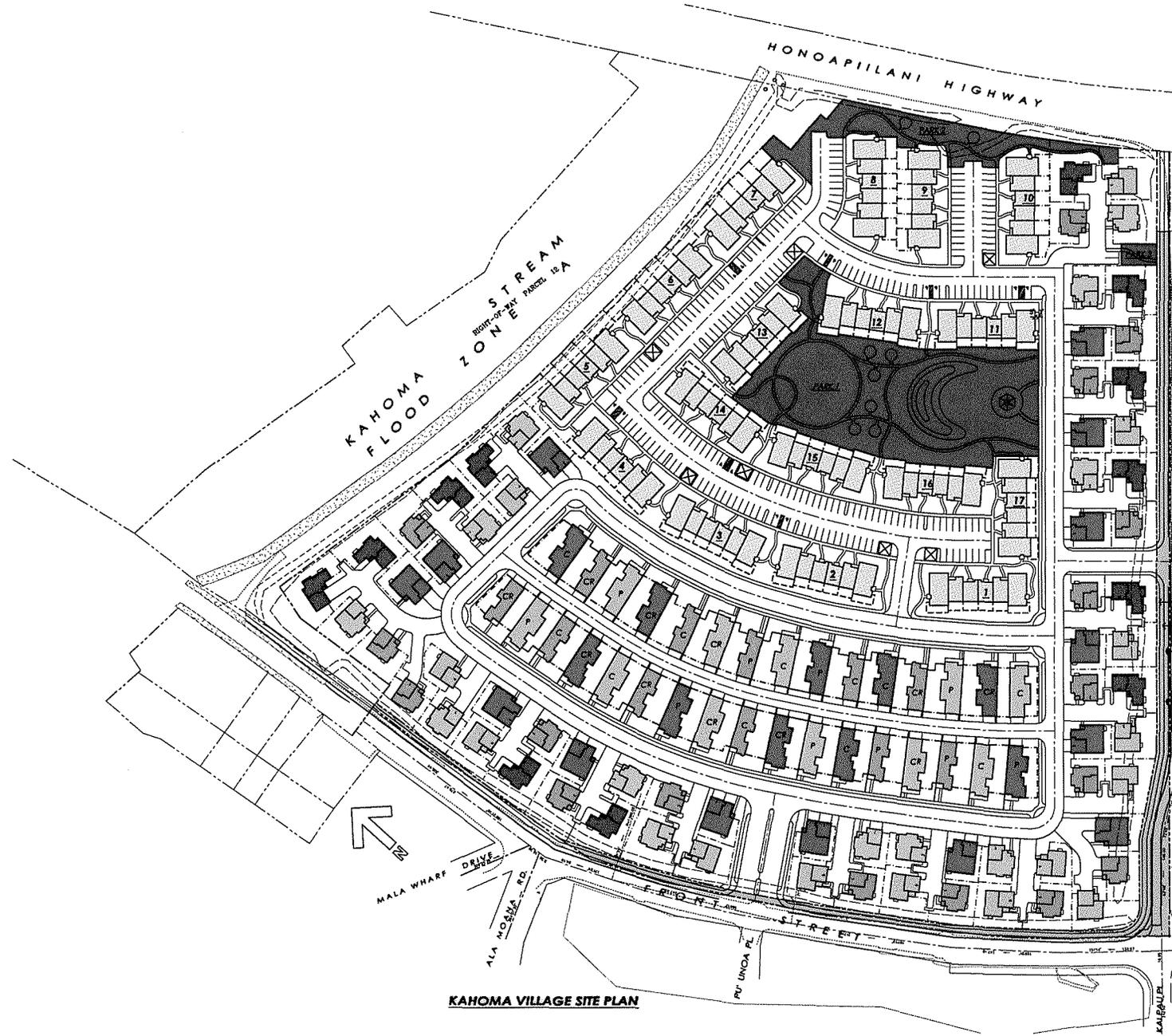


ENGINEER AT LAHANA, MAUI, HAWAII
 PROJECT NO. 88-001-01
 SHEET NO. 1 OF 1
 DATE: 10/1/88



E-4 Topographic Map of Existing Conditions

SCALE: 1" = 40' HORIZONTAL, 1" = 20' VERTICAL
 SHEET NO. 1 OF 1
 DATE: 10/1/88



LEGEND:

MULTI-FAMILY
 SIX-FLEX AFFORDABLES
 PLAN1
 PLAN2
 PLAN3

SFD CLUSTERS
 PLAN1 - PLANTATION
 PLAN 2 - COTTAGE
 PLAN 3 - CRAFTSMAN
 PLAN 4 - COTTAGE
 PLAN 5 - PLANTATION

SFD ALLEY LOADED
 PLAN 1
 PLAN 2
 PLAN 3
 P
 C
 CR
 PROPOSED ROAD
 WIDENING LOT
 AREA: 30,360 SF.
 PARK AREAS:
 PARK 1 59,310 SF.
 PARK 2 15,486 SF.
 PARK 3 1,292 SF.
 TOTAL 76,188 SF.
 TRASH ENCLOSURE

UNIT COUNT:

MF AFFORDABLES	
PROPOSED 4'-0" LANDSCAPE STRIP, TYP.	
PROPOSED 6'-0" SIDEWALK, TYP.	
PROPOSED 6'-0" SHOULDER, TYP.	
PROPOSED ROAD WIDENING LOT, TYP.	
DISTING PROPERTY LINE, TYP.	
TOTAL	102

SFD CLUSTERS	
PLAN 1	14
PLAN 2	12
PLAN 3	17
PLAN 4	14
PLAN 5	12
TOTAL	69

SFD ALLEY LOADED	
PLAN 1	11
PLAN 2	11
PLAN 3	11
TOTAL	33

PARKING COUNT:

MF AFFORDABLES:	215 REGULAR STALLS
	14 ADA STALLS
	229 TOTAL PROVIDED
SFD CLUSTERS	169 TOTAL PROVIDED
SFD ALLEY LOADED	64 TOTAL PROVIDED

DATA:

TASK:	4 - 5 - 008 : 001
ZONING:	A1 APARTMENT
WMCD - PROJECT 4 AND OPEN SPACE	
STATE LAND USE - URBAN	
AREA:	21.6 ACRES
OCCUPANCY:	R2 - MULTIFAMILY R3 - SINGLE FAMILY

0 30 60 90 120

KAHOMA VILLAGE SITE PLAN



ALAKEA DESIGN GROUP, LLC
 ARCHITECTURE PLANNING INTERIORS
 1100 ALAKEA STREET, SUITE 1500, HONOLULU, HAWAII 96813

Project:
Kahoma Village
 Lahaina, Maui, Hawaii

Title:
 SITE PLAN

Date:
 August 24, 2012

Sheet:
A-0

E-5 Proposed Site Plan



[Help](#) [Home](#) [Look Up](#) [Permits](#) [Geo Areas](#) [RFS](#) [Summary](#)

Parcel Summary

TMK:	2450080010000	Alt. TMK:	
Domain:		Type:	PAR
Status:	EXST	Display Legal	GIS Parcel

Parcel Master Address						
Address	Frac	Prefix	Street	Type	PD	Suite

Addresses		
Address	Alias	Origin
No other addresses available for this parcel		

Owner(s)
Name: THE WEINBERG FOUNDATION INC Address: Phone: E-mail:
Name: THE H & J WEINBERG FDN INC Address: 3660 WAIALAE AVE SUITE 400 HONOLULU, HI, 96816 Phone: E-mail:

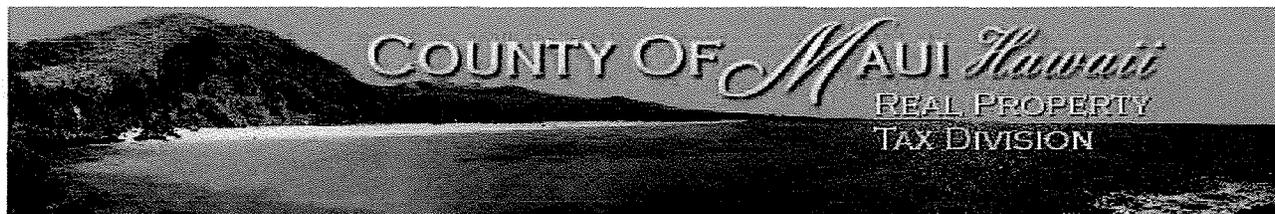
Zone Code	Zone Description	Ordinance No.	Origin
A-1	COUNTY'S A-1 APARTMENT DISTRICT		
STATE URB	STATE URBAN DISTRICT	STATUTE205	
SMA	SPECIAL MANAGEMENT AREA	STATUTE205	

Attributes			
Front:	0.00	Rear:	0.00
Side 1:	0.00	Side 2:	0.00
Acres:	24.35	SqFt.:	1,060,860.24
Frontage:	0.00		

Flood:	C - AREAS OF MINIMAL FLOODING
Soil:	
Slope:	
Seismic:	
Land Use:	

Struct/Improv Value:	0	Property Value:	12422800
Land Value:	12422800	Exempt Value:	0
Owner Occupy:			

There are no establishments on this parcel.



Recent Sales in Neighborhood Recent Sales in Area	Previous Parcel	Next Parcel	Return to Main Search Page	Maui Home
--	---------------------------------	-----------------------------	--	---------------------------

Owner and Parcel Information

Owner Name	THE WEINBERG FOUNDATION INC THE H & J WEINBERG FDN INC	Today's Date	February 15, 2011
Mailing Address		Parcel Number	450080010000
Location Address	0 FRONT ST		
Property Type	APARTMENT	Parcel Map	Show Parcel Map
Neighborhood Code	4511-2	Land Area	24.354 Acres
Legal Information			

Assessment Information [Show Historical Assessments](#)

Year	Tax Class	Market Land Value	Agricultural Land Value	Assessed Land Value	Building Value	Total Assessed Value	Total Exemption Value	Total Net Taxable Value
2010	APARTMENT	\$ 9,406,200	\$ 0	\$ 9,406,200	\$ 0	\$ 9,406,200	\$ 0	\$ 9,406,200

Current Tax Bill Information [2010 Tax Payments](#) [Show Historical Taxes](#)

Tax Period	Description	Original Due Date	Taxes Assessment	Tax Credits	Net Tax	Penalty	Interest	Other	Amount Due
No Tax Information available on this parcel.									

Improvement Information

No improvement information available for this parcel.

Accessory Information

Description	Year Built	Dimensions/Units	Value
No accessory information associated with this parcel.			

Sales Information

Sale Date	Price	Instrument #	Instrument Type	Document Type	Grantor	Grantee
02/17/1994	\$ 1,771,334	9400083151	Fee conveyance			
05/15/1989	\$ 100	8900077067	Fee conveyance			

Permit Information

Date	Permit Number	Reason	Permit Amount
No permit information associated with this parcel.			

[Recent Sales in Neighborhood](#)
[Recent Sales in Area](#)

[Previous Parcel](#)

[Next Parcel](#)

[Return to Main Search Page](#)

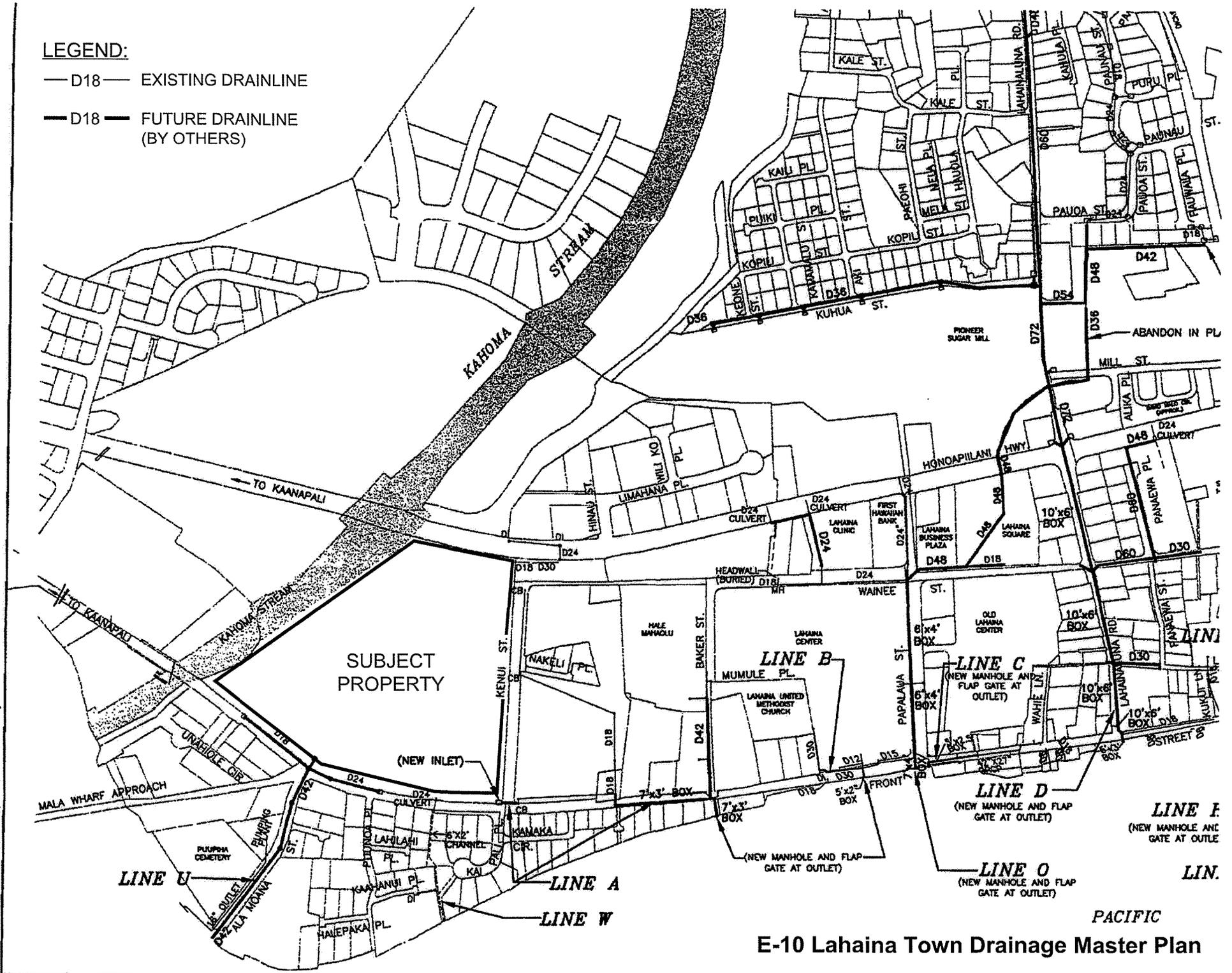
[Maui Home](#)

The Maui County Tax Assessor's Office makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. Website Updated: February 12, 2011

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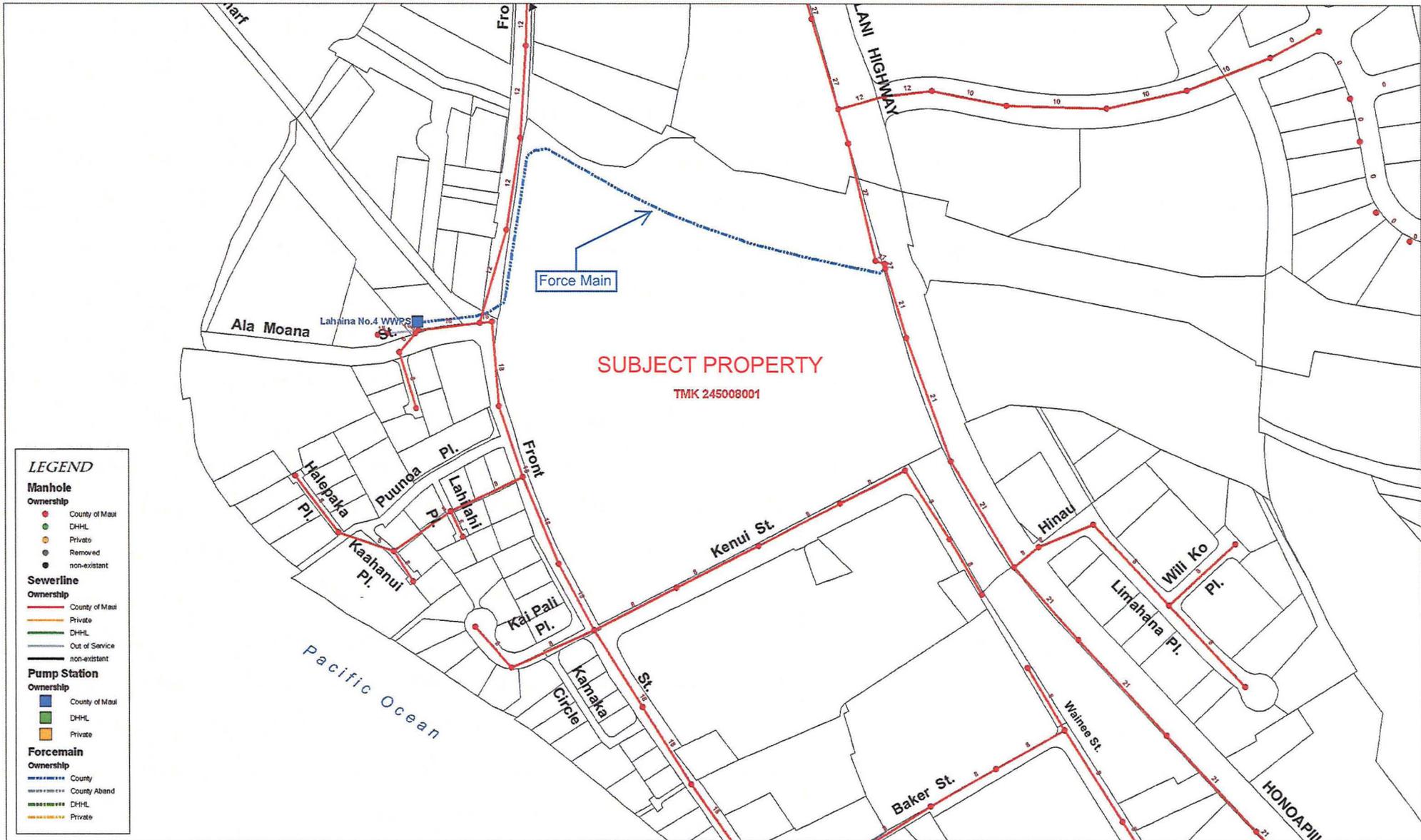
- D18 — EXISTING DRAINLINE
- D18 — FUTURE DRAINLINE (BY OTHERS)



Thu, 17 Mar 2005 - 2:23pm
 M:\lobos\drainage\2003\200303\mapa\copy\shawn\final 4 010503.dwg

E-10 Lahaina Town Drainage Master Plan

PACIFIC



LEGEND

Manhole
Ownership

- County of Maui
- DHHL
- Private
- Removed
- non-existent

Sewerline
Ownership

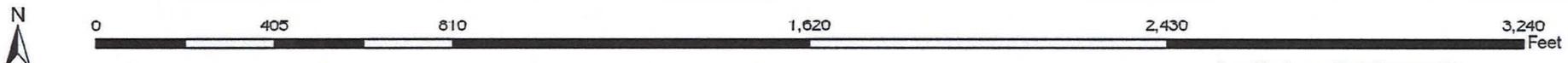
- County of Maui
- Private
- DHHL
- Out of Service
- non-existent

Pump Station
Ownership

- County of Maui
- DHHL
- Private

Forcemain
Ownership

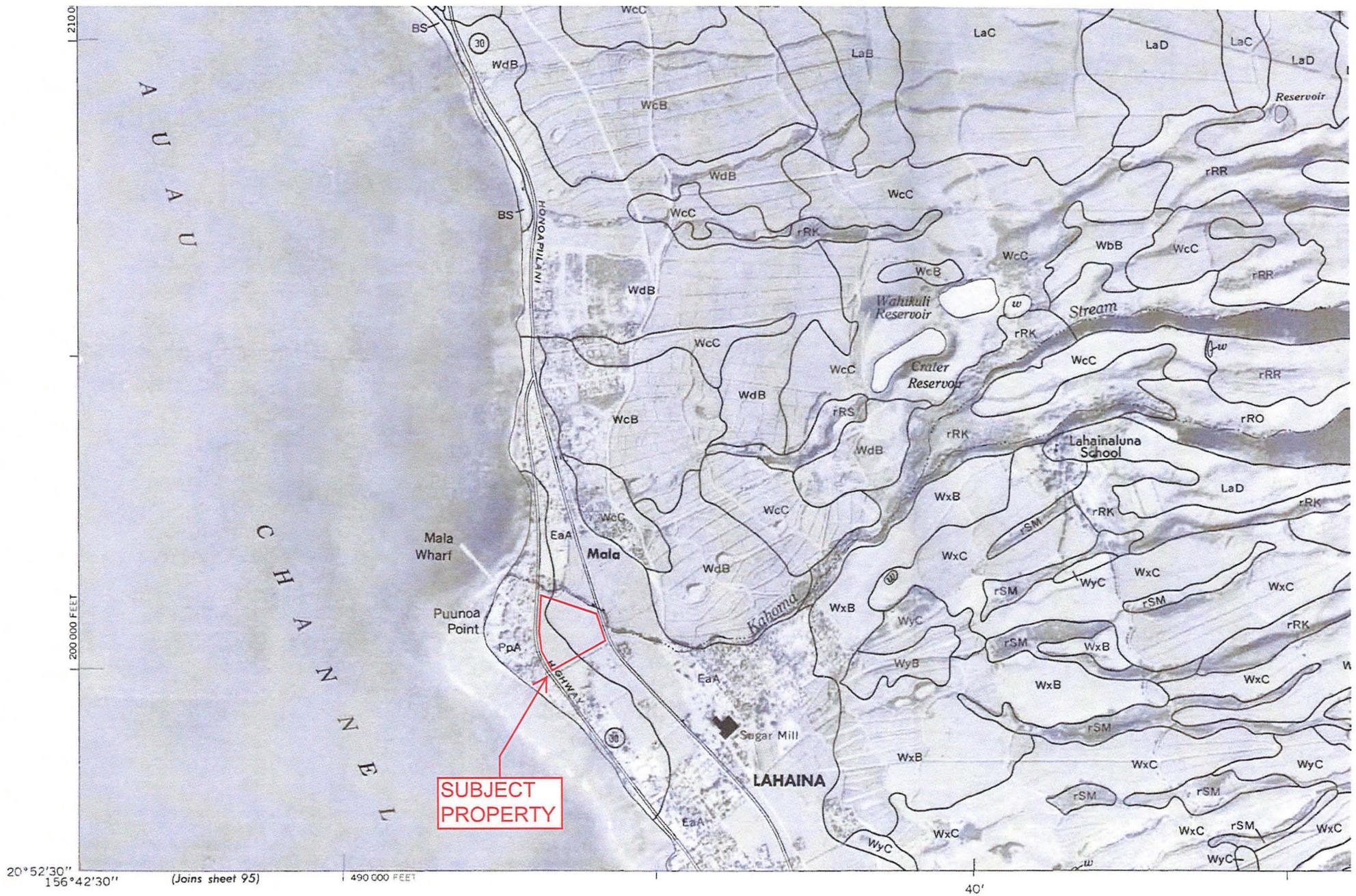
- County
- County Aband
- DHHL
- Private



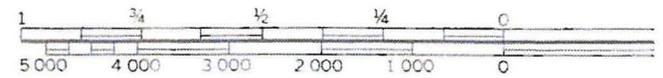
Created By: County of Maui - Wastewater GIS



E-11 Wastewater Collection System



E-12 Soil Conservation Service Soil Survey Map and Description



effervesce strongly with hydrogen peroxide; clear, wavy boundary. 3 to 6 inches thick.

B21—18 to 45 inches, dark reddish-brown (2.5YR 3/4) silty clay loam, dark red (2.5YR 3/6) when dry; weak, fine and very fine, subangular blocky structure; hard, friable, sticky and plastic; plentiful very fine and fine roots; many, fine and very fine, tubular pores; common, medium, tubular pores, and few, coarse, tubular pores; weak, patchy pressure cutans on ped faces; few reddish-yellow and yellow sand grains; common, very fine, black concretions that effervesce strongly with hydrogen peroxide; neutral; diffuse, wavy boundary. 25 to 28 inches thick.

B22—45 to 60 inches, dark-red (2.5YR 2/5) silty clay loam, dark red (2.5YR 3/6) when dry; moderate, medium and fine, subangular blocky structure; hard, friable, slightly sticky and plastic; plentiful fine and very fine roots; many, fine and very fine, tubular pores and few, medium, tubular pores; many, thin, patchy coatings that are nearly continuous with depth; many sand grains; many, very fine, black concretions that effervesce strongly with hydrogen peroxide; neutral.

The depth to coral limestone or gravelly alluvium ranges from 50 to more than 60 inches. In some areas cobblestones and stones occur on the surface and in the surface layer. The A and B horizons range from 5YR to 2.5YR in hue and, when moist, from 2 to 3 in value and from 3 to 5 in chroma. The texture of the A horizon is silty clay loam or silty clay. The structure in the B horizon ranges from weak to moderate.

This soil is used for sugarcane, truck crops, and pasture. (Capability classification IIe if irrigated, IVc if nonirrigated; sugarcane group 1; pineapple group 2; pasture group 2)

Ewa silty clay loam, 0 to 3 percent slopes (EoA).—On this soil, runoff is very slow and the erosion hazard is no more than slight. In a few places small, gently sloping areas were included in mapping.

This soil is used for sugarcane and homesites. (Capability classification I if irrigated, IVc if nonirrigated; sugarcane group 1; pineapple group 1; pasture group 2)

Ewa silty clay loam, 6 to 12 percent slopes (EoC).—On this soil, runoff is slow to medium and the erosion hazard is slight to moderate. Included in mapping were a few small areas that are strongly sloping.

This soil is used for sugarcane and pasture. (Capability classification IIIe if irrigated, IVe if nonirrigated; sugarcane group 1; pineapple group 3; pasture group 2)

Ewa silty clay loam, moderately shallow, 0 to 2 percent slopes (EmA).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except that the depth to coral limestone is 20 to 50 inches. Runoff is very slow, and the erosion hazard is no more than slight. Included in mapping were a few small areas less than 20 inches deep.

This soil is used for sugarcane, truck crops, and pasture. (Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pineapple group 1; pasture group 2)

Ewa silty clay loam, moderately shallow, 2 to 6 percent slopes (EmB).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except that the depth to coral limestone is 20 to 50 inches. Included in mapping were small areas less than 20 inches deep.

This soil is used for sugarcane, truck crops, and pasture. (Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pineapple group 2; pasture group 2)

Ewa cobbly silty clay loam, 0 to 3 percent slopes (EcA).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except that it is cobbly on the surface. Runoff is very slow, and the erosion hazard is no more than slight.

Most of this soil is used for sugarcane. A small acreage is used for pasture. (Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pasture group 2)

Ewa cobbly silty clay loam, 3 to 7 percent slopes (EcB).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except that it is cobbly on the surface. Included in mapping were a few small, stony areas.

Most of this soil is used for sugarcane. A small acreage is used for pasture. (Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pasture group 2)

Ewa silty clay, 0 to 3 percent slopes (EsA).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except for the texture of the surface layer. Runoff is very slow, and the erosion hazard is no more than slight.

This soil is used for sugarcane. (Capability classification I if irrigated, IVc if nonirrigated; sugarcane group 1; pineapple group 1; pasture group 2)

Ewa silty clay, 3 to 7 percent slopes (EsB).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except for the texture of the surface layer.

Most of this soil is used for sugarcane. A small acreage is used for pasture. (Capability classification IIe if irrigated, IVc if nonirrigated; sugarcane group 1; pineapple group 2; pasture group 2)

Ewa cobbly silty clay, 3 to 7 percent slopes (EtB).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except for the texture of the surface layer. Cobblestones in the surface layer interfere with tillage but do not make intertilled crops impracticable.

This soil is used for sugarcane. (Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pineapple group 2; pasture group 2)

Ewa stony silty clay, 0 to 2 percent slopes (EwA).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except for the texture of the surface layer. Surface stones interfere with tillage but do not make intertilled crops impracticable. Runoff is very slow, and the erosion hazard is no more than slight. Included in mapping were a few small areas where the texture of the surface layer is silty clay loam.

This soil is used for sugarcane, truck crops, and pasture. (Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pasture group 2)

Ewa stony silty clay, 2 to 6 percent slopes (EwB).—This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except for the texture of the surface layer. Stones in the surface layer interfere with tillage, but not enough to make intertilled crops impracticable. Included in mapping were a few small, nonstony areas where the texture of the surface layer is silty clay loam.

This soil is used for sugarcane and pasture. (Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pasture group 2)

and Waialua soils. Also included were small areas of gravelly, stony, and gently sloping soils.

In a representative profile the surface layer is dark-brown clay loam about 21 inches thick. This is underlain by dark-brown, dark grayish-brown, and brown, massive and single grain, stratified loam, loamy sand, fine sandy loam, and silt loam about 39 inches thick. Below this is coarse, gravelly or sandy alluvium. The soil is neutral in the surface layer and neutral to mildly alkaline below the surface layer.

Permeability is moderate. Runoff is slow, and the erosion hazard is no more than slight. The available water capacity is about 1.4 inches per foot in the surface layer and subsoil. In places roots penetrate to a depth of 5 feet or more. Low areas are subject to flooding.

Representative profile: Island of Oahu, lat. 21°34'38" N. and long. 158°09'51" W.

Ap1—0 to 7 inches, very dark brown (10YR 2/2) clay loam, dark brown (10YR 3/3) when dry; weak, fine and medium, granular structure; hard, friable, sticky and plastic; abundant very fine and fine roots; common, fine and very fine, interstitial pores; few rounded pebbles; slight effervescence with hydrogen peroxide; neutral; gradual, smooth boundary. 5 to 8 inches thick.

Ap2—7 to 21 inches, very dark brown (10YR 2/2) clay loam, dark brown (10YR 3/3) when dry; weak, fine and medium, subangular blocky structure; hard, friable, sticky and plastic; abundant very fine and fine roots; common, fine and very fine, interstitial pores and common, fine, tubular pores; slight effervescence with hydrogen peroxide; neutral; abrupt, wavy boundary. 9 to 14 inches thick.

IIC1—21 to 33 inches, dark-brown (10YR 3/3) loam, dark brown (10YR 4/3) when dry; massive; slightly hard, very friable, slightly sticky and slightly plastic; plentiful fine roots; common, very fine and fine, tubular pores; neutral; abrupt, wavy boundary. 8 to 12 inches thick.

IIC2—33 to 37 inches, very dark grayish-brown (10YR 3/2) loamy sand, dark grayish brown (10YR 4/2) when dry; single grain; loose when dry or moist, non-sticky and nonplastic; few fine roots; porous; mildly alkaline; abrupt, wavy boundary. 0 to 6 inches thick.

IVC3—37 to 47 inches, dark-brown (10YR 3/3) fine sandy loam, dark brown (10YR 4/3) when dry; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; common, fine, tubular pores; mildly alkaline; abrupt, wavy boundary. 8 to 10 inches thick.

VC4—47 to 60 inches, dark-brown (10YR 3/3) silt loam, brown (10YR 5/3) when dry; massive; slightly hard, friable, sticky and plastic; few fine roots; common, fine, tubular pores; mildly alkaline.

The main variation is in the range in thickness and texture of the layers in the C horizon. The thickness of the layers ranges from less than 1 inch to more than 12 inches. The texture ranges from sand to silty clay loam. Throughout the profile, the soil ranges from 10YR to 7.5YR in hue, from 2 to 3 in value when moist and 3 to 5 when dry, and from 1 to 3 in chroma when moist or dry. Gravel is common on the surface and is scattered throughout the profile.

This soil is used for sugarcane, truck crops, and pasture. (Capability classification I if irrigated, IVc if non-irrigated; sugarcane group 1; pasture group 2)

Pulehu cobbly clay loam, 0 to 3 percent slopes (PtA).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that it is cobbly.

This soil is used for sugarcane. Small acreages are used for pasture. (Capability classification II_s if irrigated, IV_s if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu cobbly clay loam, 3 to 7 percent slopes (PtB).—On this soil, runoff is slow and the erosion hazard is slight. Included in mapping were small areas that have thin, stratified layers of sand and gravel at a depth of 20 to 36 inches.

This soil is used for sugarcane. Small acreages are used for pasture. (Capability classification II_e if irrigated, IV_s if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu stony clay loam, 2 to 6 percent slopes (PuB).—On this soil, there are sufficient stones to hinder tillage but not enough to make intertilled crops impracticable. Runoff is slow, and the erosion hazard is slight.

This soil is used for sugarcane, truck crops, and pasture. Capability classification II_e if irrigated, IV_s if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu very stony clay loam, 0 to 12 percent slopes (PvC).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that as much as 3 percent of the surface is covered with stones. Runoff is slow to medium, and the erosion hazard is slight to moderate. Workability is difficult because of the stones.

This soil is used for pasture and wildlife habitat. (Capability classification IV_s, nonirrigated; sugarcane group 1; pasture group 2)

Pulehu silt loam, 0 to 3 percent slopes (PpA).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam. This soil is used for sugarcane. Small acreages are used for homesites. (Capability classification I if irrigated, IV_c if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu silt loam, 3 to 7 percent slopes (PpB).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam. Runoff is slow, and the erosion hazard is slight. Included in mapping were small areas underlain by coral sand at a depth of 20 to 36 inches.

This soil is used for sugarcane. (Capability classification II_e if irrigated, IV_c if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu cobbly silt loam, 0 to 3 percent slopes (PrA).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam and there are many cobblestones on the surface. In a few places cobblestones are common throughout the profile. Included in mapping were small areas underlain by coral sand at a depth of 20 to 36 inches.

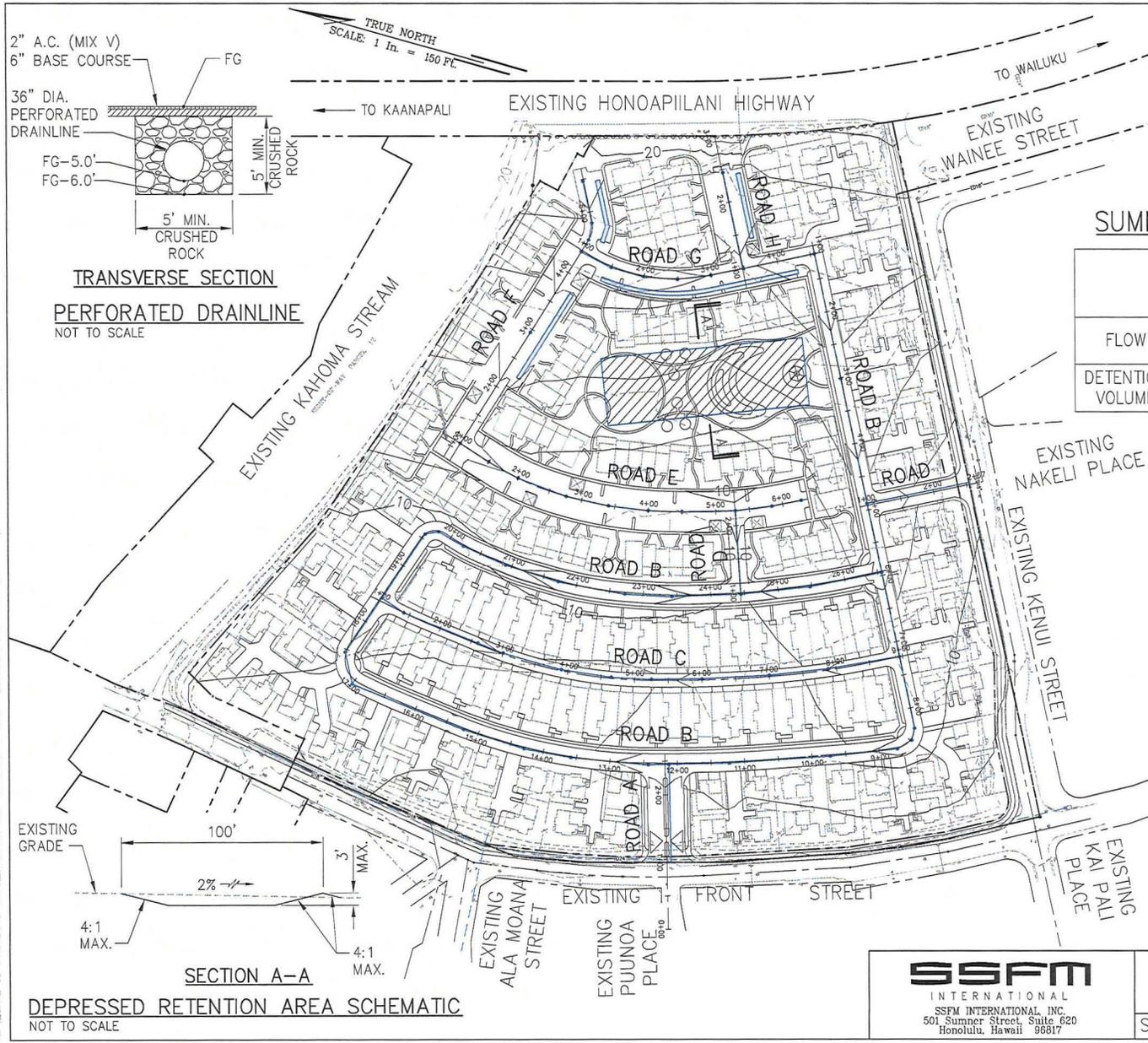
This soil is used for sugarcane and pasture. (Capability classification II_s if irrigated, IV_s if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu cobbly silt loam, 3 to 7 percent slopes (PrB).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam, and the surface layer is cobbly. Runoff is slow, and the erosion hazard is slight. Included in mapping were small areas underlain by coral sand at a depth of 20 to 36 inches.

This soil is used for sugarcane. Small areas are used for pasture. (Capability classification II_e if irrigated, IV_s if nonirrigated; sugarcane group 1; pasture group 2)

Pulehu sandy loam, 2 to 6 percent slopes (PoB).—This soil is similar to Pulehu clay loam, 0 to 3 percent slopes,

W:_CIVIL_3D_PROJECTS_2010_095.000_SCD_WEINBERG_LAHAINA_EXHIBITS_PDR_EXHIBITS.E 13 DRAIN PLAN.DWG 8/30/12 11:55 CBD



SUMMARY OF IMPROVEMENTS:

1. 58 DRAIN MANHOLES
2. 5,100 LINEAR FEET DRAINLINE
3. 590 LINEAR FEET PERFORATED DRAINLINE
 - STORAGE CAPACITY = 5,000 CF
4. DEPRESSED DETENTION BASIN = 0.69 ACRES
 - STORAGE CAPACITY = 50,000 CF

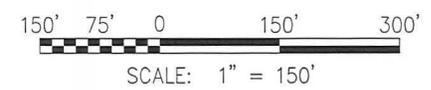
SUMMARY OF STORM WATER RUNOFF:

	EXISTING	PROPOSED	NET INCREASE	POTENTIAL DETENTION CAPACITY
FLOW	17.5 CFS	53.4 CFS	35.9 CFS	45.0 CFS
DETENTION VOLUME	0 CF	34,000 CF	34,000 CF	55,000 CF

LEGEND:

- PROPERTY LINE
- ROAD CENTERLINE
- FINISH GRADE
- EXISTING GRADE
- EXISTING EASEMENT
- FENCE
- DRAINLINE
- DRAIN MANHOLE
- PERFORATED DRAINLINE
- DEPRESSED DETENTION BASIN
- FUTURE DRAINLINE (BY OTHERS)

GRAPHICAL SCALE:

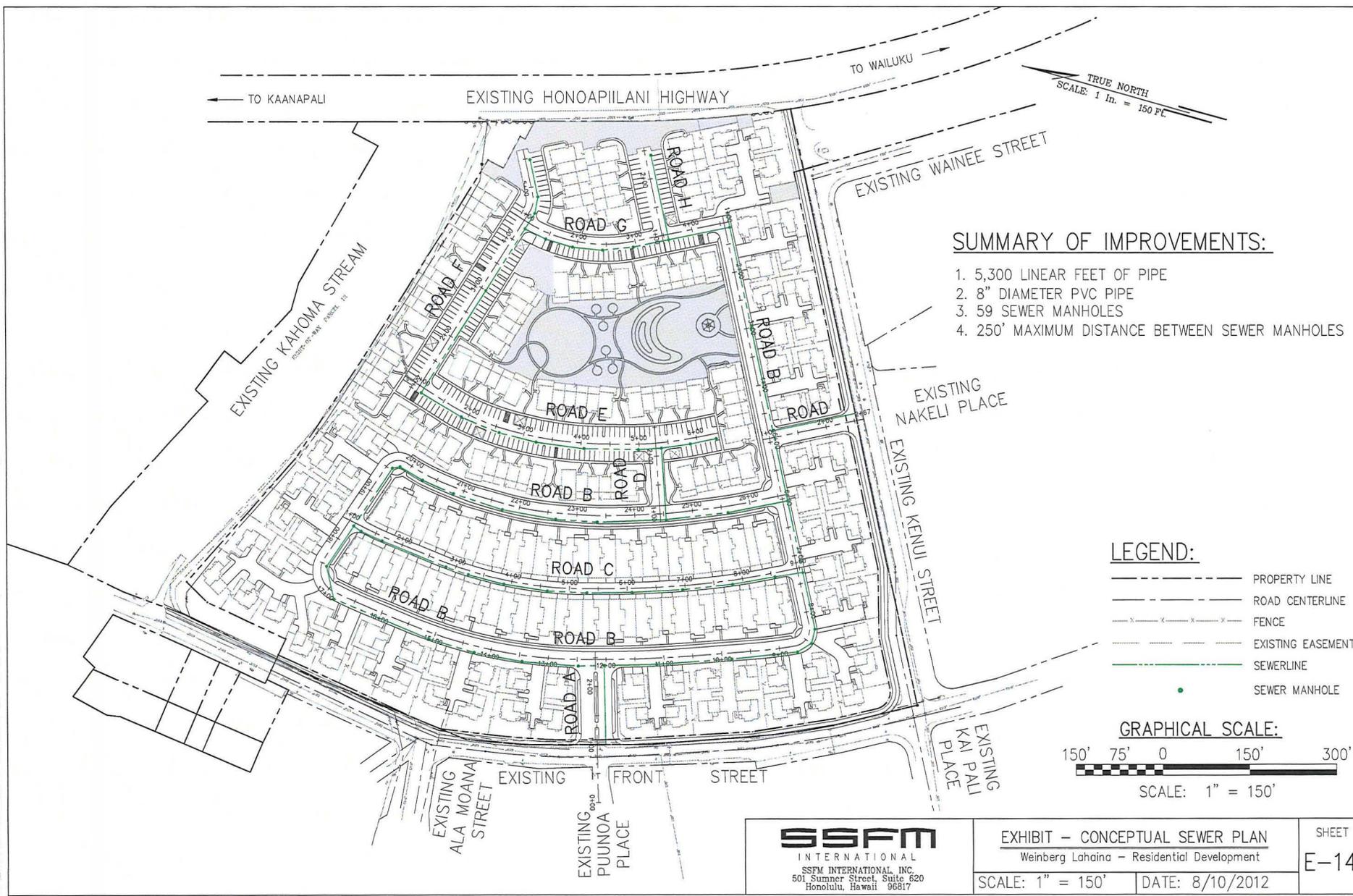


SSFM
INTERNATIONAL
SSFM INTERNATIONAL, INC.
501 Sumner Street, Suite 620
Honolulu, Hawaii 96817

EXHIBIT - CONCEPTUAL DRAIN PLAN
Weinberg Lahaina - Residential Development
SCALE: 1" = 150' DATE: 8/30/2012

SHEET
E-13

W:_CIVIL_3D_PROJECTS_2010_095.000_500_WEINBERG_LAHAINA_EXHIBITS_PER-PDR_EXHIBITS\14_SEWER_PLAN.DWG 08/19/12 14:30 GBD



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INTERNATIONAL
SSFM INTERNATIONAL, INC.
501 Sumner Street, Suite 620
Honolulu, Hawaii 96817

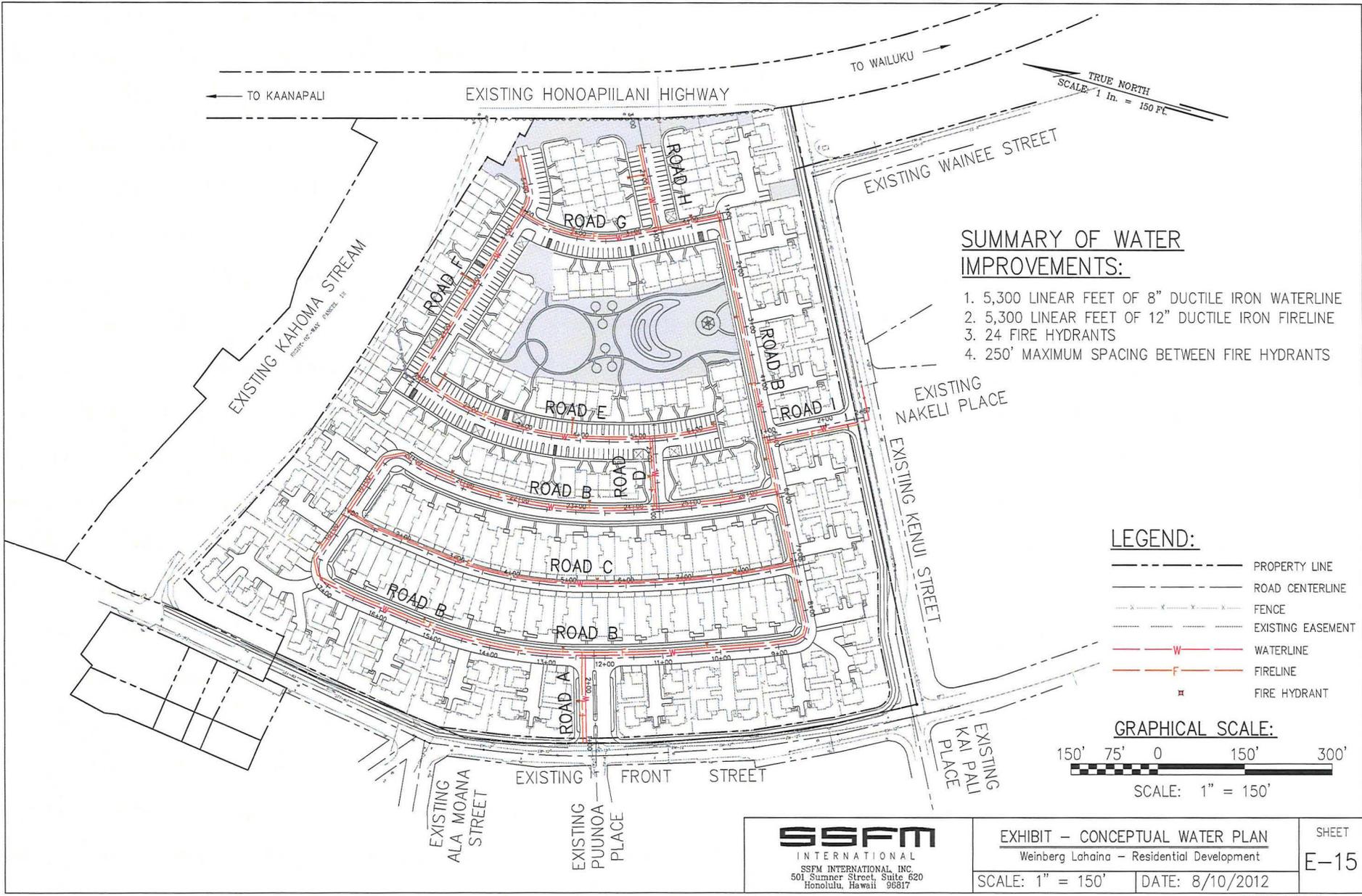
EXHIBIT - CONCEPTUAL SEWER PLAN
Weinberg Lahaina - Residential Development

SHEET
E-14

SCALE: 1" = 150' DATE: 8/10/2012

PRINTED: 8/10/12

W:_CIVIL_3D PROJECTS 2010_295.000 5CD WEINBERG LAHAINA EXHIBITS PER-PDR EXHIBITS.E 15 WATER PLAN.DWG 08/10/12 14.35 CSD



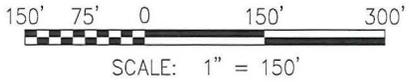
SUMMARY OF WATER IMPROVEMENTS:

1. 5,300 LINEAR FEET OF 8" DUCTILE IRON WATERLINE
2. 5,300 LINEAR FEET OF 12" DUCTILE IRON FIRELINE
3. 24 FIRE HYDRANTS
4. 250' MAXIMUM SPACING BETWEEN FIRE HYDRANTS

LEGEND:

- PROPERTY LINE
- ROAD CENTERLINE
- FENCE
- EXISTING EASEMENT
- W--- WATERLINE
- F--- FIRELINE
- FIRE HYDRANT

GRAPHICAL SCALE:

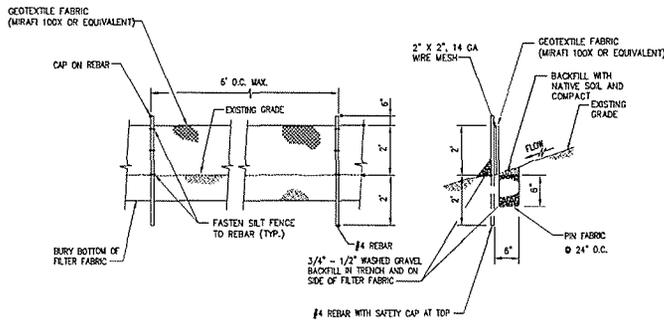


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Honolulu, Hawaii 96817

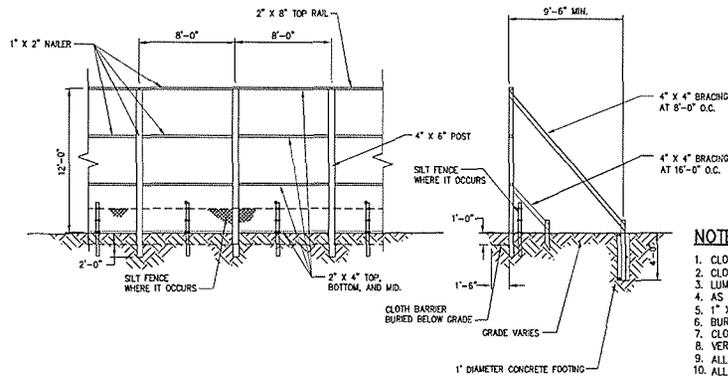
EXHIBIT - CONCEPTUAL WATER PLAN
Weinberg Lahaina - Residential Development
SCALE: 1" = 150' DATE: 8/10/2012

SHEET
E-15

W:_CIVIL_3D_PROJECTS_2010_09\5.000_SCD WEINBERG LAHAINA EXHIBITS PER-PDR EXHIBITS\17 BMP DETAILS.DWG 11/07/11 09:25 C80

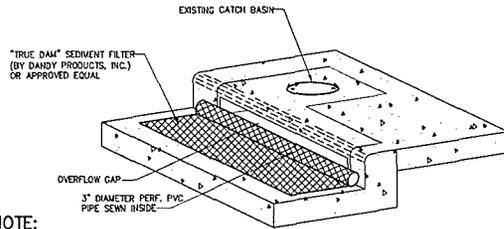


1 SILT FENCE DETAIL
E-17 NOT TO SCALE



2 DUST FENCE DETAIL
E-17 NOT TO SCALE

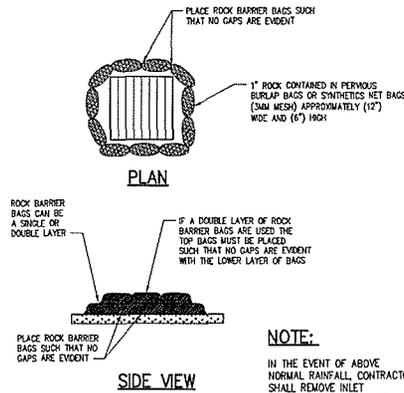
- NOTES:**
1. CLOTH BARRIER NOT SHOWN IN FRONT VIEW
 2. CLOTH BARRIER TO BE A "NOVEN GEOTEXTILE" OR "NURSERY SHADE"
 3. LUMBER SIZES ARE NOMINAL INCHES
 4. AS SHOWN CLOTH TO BE BURIED AT BASE TO INDICATED DIM.
 5. 1" X 2" CLOTH BARRIER CAPS TO BE NAILED 12" O.C.
 6. BURLAP IS NOT ACCEPTABLE AS THE CLOTH BARRIER
 7. CLOTH TO HAVE NO HORIZONTAL SEAMS
 8. VERTICAL SEAMS TO BE MADE OVER UPRIGHTS ONLY
 9. ALL SEAMS TO BE CAPPED WITH MINIMUM OF 1" X 2"
 10. ALL JOINTS TO BE SECURELY FASTENED BY MECHANICAL MEANS



NOTE:

IN THE EVENT OF ABOVE NORMAL RAINFALL, CONTRACTOR SHALL REMOVE INLET PROTECTION AND REPLACE AFTER EVENT HAS PASSED.

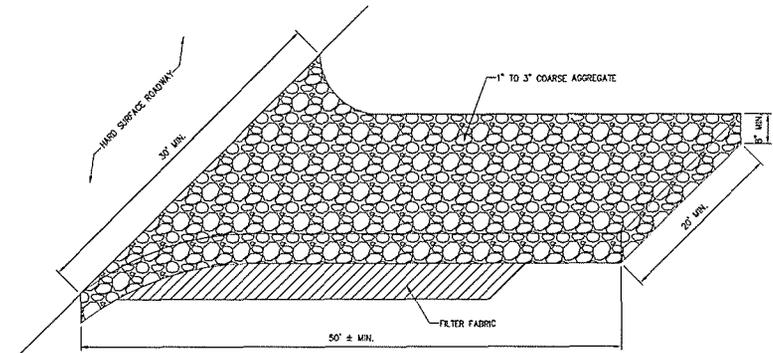
3 TEMPORARY CATCH BASIN PROTECTION
E-17 NOT TO SCALE



NOTE:

IN THE EVENT OF ABOVE NORMAL RAINFALL, CONTRACTOR SHALL REMOVE INLET PROTECTION AND REPLACE AFTER EVENT HAS PASSED.

4 GRATED INLET PROTECTION
E-17 NOT TO SCALE



NOTE:

ALL POINT OF EGRESS AND INGRESS TO THE SITE SHALL BE PROTECTED WITH A STABILIZED CONSTRUCTION ENTRANCE.

5 STABILIZED CONSTRUCTION ENTRANCE
E-17 NOT TO SCALE

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INTERNATIONAL
SSFM INTERNATIONAL, INC.
501 Summer Street, Suite 620
Honolulu, Hawaii 96817

EXHIBIT - CONCEPTUAL CONSTRUCTION BMP DETAILS

Weinberg Lahaina - Residential Development

SCALE: 1" = 150'

DATE: 8/10/2012

SHEET

E-17

PRINTED: 8/10/12

APPENDIX K.

**February 15, 2012
Community Meeting**

February 29, 2012

MEETING MEMORANDUM

Date of Meeting: February 15, 2012

From: Colleen Suyama, Senior Associate

Purpose of Meeting: Discuss Proposed Kahoma Village

Project Team: Stanford Carr and Jay Nakamura, *Stanford Carr Development LLC*
Michael Kujubu, *Alakea Design Group, LLC*
Michael Miyabara, *Miyabara & Associates, LLC*
Michael Packard and Fiona van Ammers, *SSFM International, Inc.*
Colleen Suyama and Cheryl K. Okuma, *Munekiyo & Hiraga, Inc.*

Participants: See Attached Sign In Sheet

Senior Associate Colleen Suyama of Munekiyo & Hiraga, Inc. opened the meeting at 6:00 p.m. and informed the attendees that the purpose of the meeting was to introduce the Kahoma Village project to the residents and solicit comments on the project. Stanford Carr of Stanford Carr Development, LLC (SCD) gave an overview of the Project and Michael Miyabara of Miyabara & Associates, Inc. explained the landscape planting.

The following provides highlights from the community meeting on February 15, 2012, at the West Maui Senior Center.

TRAFFIC

The public voiced questions, comments and concerns regarding the impact this Project will have on the existing traffic patterns as follows:

1. Won't egress from this Project affect traffic exiting onto Honoapiilani Highway? The problem is that coming from Kaanapali one needs to make a right-turn and for those trying to exit there is a need to slow down to take a left onto Wainee Street. This

situation slows traffic.

Response: Traffic circulation from Honoapiilani Highway to Kenui and Wainee Streets are currently under review by the County. The traffic from this Project is not anticipated to be significant at this location. The morning and afternoon peak traffic experiences about 100 vehicles on Kenui Street.

Traffic consultant Michael Packard explained that this Project is an ideal location for pedestrian and biking with the Lahaina Cannery nearby. The underlying zoning could double what is proposed, however, the developer has chosen not to do that for this Project.

2. Concerns were raised that the driveway entrance on Front Street is directly across Ala Moana Street and would create traffic conflicts with the people using Mala Wharf, especially boaters and recreational users, as well as create safety problems. There is a fence at the residence to the south of Ala Moana Street that makes it difficult to see on-coming traffic. It was suggested that the Project consider installing a traffic signal at this location.

There are scores of boats pulling out of Ala Moana trying to make a difficult left-turn on Front Street heading north. People are driving from both directions going in and out of Mala Wharf. Besides the traffic signal, it was suggested that the project should consider widening Front Street and putting in a turning lane or a round-about. According to the public there are about 90 permits held by four companies as well as local fishermen that use Mala Wharf and that traffic occurs all times of the day. Reverend Hara of the Lahaina Jodo Mission suggested that the entrance be relocated.

Response: The project team will re-evaluate traffic in the area and investigate measures that can be taken to reduce any traffic conflicts at the Ala Moana and Front Streets intersection. However, it was pointed out by traffic consultant M. Packard that traffic on Front Street does not warrant a traffic signal at the entrance and a round-about was not possible due to the land constraints.

M. Packard also noted that further south there are raised crosswalks which are intended to slow traffic and ensure the visibility of pedestrians. Installing a turn lane to widen Front Street would make this collector road a thoroughfare with no need for drivers to slow down making it easier for drivers to speed through the area. The intent of the Project is to create a friendly walkable environment for pedestrians and bicycles. It is hoped that motorist will drive 20 miles per hour (mph) in the surrounding streets such as Kenui Street and Wainee Street.

3. A public member indicated another problem with traffic that occurs on Kapunakea Street, where traffic lines up from Safeway due to the lane configuration and traffic signal timing at the intersection with Honoapiilani Highway. He suggested the Project consider re-configuring the lanes to allow two (2) left-turning lanes north and adjusting the timing of the signals to allow more vehicles to turn north toward Kaanapali, especially the boaters leaving Mala Wharf.

Response: As stated previously, the project team will re-evaluatue traffic in the area and investigate measures that can be taken. The project team will discuss the suggestion with the State Department of Transportation.

4. The public voiced concerns regarding traffic exiting off Honoapiilani Highway onto Kenui Street. Due to the location of the Wainee Street intersection and driveway access into the apartments at the southern corner of the intersection traffic tends to slow down for those trying to make a left-turn. The location of the Project's access on Kenui Street would add to the existing traffic conflict at the Wainee intersection. It was suggested that the entrance to the Project be relocated further west toward Front Street.

Also, Kenui Street is below the highway and as vehicles are turning the grade difference makes visibility of cars on Kenui Street making left-turns difficult, especially into the driveway at the apartments at the southern corner of the intersection. It was suggested that a dedicated right-turn onto Kenui Street may help the situation or relocation of the driveway access to the apartments.

Response: The project team indicated that they can re-evaluate the Project's entrance onto Kenui Street. However, according to M. Packard from a traffic volume standpoint, vehicles turning off of Honoapiilani Highway onto Kenui Street was not viewed as a significant problem. Relocation of the Project's access further west toward Front Street would not add to the existing traffic conflict at the Wainee Street intersection or the existing apartment driveway.

INFRASTRUCTURE AND AMENITIES

5. It was pointed out that the Baby Beach area is already inundated with recreational users and this Project will add to the problem. Problems also include the lack of public beach parking in the Mala Wharf area. The public asked whether the Project's park would be open to the public and whether a consideration was given to a swimming pool.

Response: The project's park is intended for the residents but as an un-gated community it doesn't prevent the area residents from using the park. There are no plans at this time to monitor outside use of the park. The project team did consider including a swimming pool but as an

affordable housing project it was determined the maintenance fees for a pool would be difficult for the residents.

6. Concerns were raised regarding infrastructure to sewers and roadway improvements, such as what improvements will be necessary and who will pay for the improvements. The public indicated the wastewater pump station (Ala Moana Pump Station) has capacity issues because it is being pumped all the time and it is at a low point.

Response: It was explained that the County system has adequate capacity to accommodate the Project. Regarding the pump station, the project engineers have not been informed by the County there are problems regarding the frequency of pumping. The project will connect to the County water and wastewater infrastructure.

It was disclosed that the County is in discussions with SCD regarding new and existing sewer lines in the flood embankment to the north of the Project site. The County proposes to construct a new force main in the embankment. The embankment is under the jurisdiction of the U.S. Army Corps of Engineers who was unaware of the existing sewer line in the embankment which is apparently at a fairly deep depth.

Regarding who will pay for infrastructure improvements, it was noted that the applicant is in discussions with the County. This is an affordable housing project and the costs of infrastructure improvements need to be discussed in order to keep costs down so the project remains affordable. It was noted that the Project is estimated to generate approximately \$90 million from increased real property tax revenues.

MARKET

7. The public requested information on who were the units geared toward and what was the breakdown for the units and income categories. Also, the lot sizes, permitting, phasing and when construction was to begin.

Response: It was explained that the lots will vary in sizes and in addition to the affordable units there will be market units to be sold at prices that the market will bear. The affordable units will be sold in accordance with the County's Department of Housing and Human Concerns requirements. Income categories are between 80 percent to 160 percent of the median income for Maui as determined by the U.S. Department of Housing and Urban Development (HUD). Current information on the County's website indicates the affordable prices are from \$260,000.00 to \$500,000.00.

Provided the permitting process goes smoothly, groundbreaking for the project will begin in late 2013 and take 18 months to two (2) years to complete. The project will be phased depending on market conditions.

Presently, all studies for the project have been completed and the applications for a 201H Affordable Housing Approval for the Maui County Council and Special Management Area (SMA) Permit for the Maui Planning Commission are being prepared. Without these approvals the project cannot apply for any ministerial permits, such as building permits, required for construction.

MISCELLANEOUS

8. A public person asked whether there would be dust control during construction.

Response: Water trucks, dust monitoring and use of Best Management Practices will be utilized during construction to control dust as well as other construction-related impacts.

9. The public asked whether the site will be cleared, especially since there are problems with the homeless on the property. Residents have been told that the property would be cleared and fenced before construction of this Project.

Response: Jay Nakamura responded the property will be cleared and that they are working with the Police Department. Efforts have been made through eviction notices and working with the homeless shelter which has been ongoing for the last six (6) months. The plan is to clean the property within 60 days by removing vegetation to provide visibility into the site.

10. Questions were asked regarding the buffer area next to the flood embankment and what will happen to the area near Snorkle Bob's.

Response: The buffer area is under the jurisdiction of the U.S. Army Corps of Engineers and will remain as such while the area near Snorkle Bob's will remain.

11. Questions were asked regarding the area along Honoapiilani Highway and the property perimeter, renewable energy and American with Disabilities Act (ADA) units.

Response: The area along Honoapiilani Highway will likely include a sound barrier similar to the walls along the highway. Along Kenui and Front Streets there will be a fence with shrubbery, bush plant material and trees for shade, canopy and visual screening. The units will include renewable

energy such as solar and the option to install photovoltaic systems. The project will be designed to meet the Fair Housing accessibility guidelines. The multi-family, single story units are adaptable to meet these requirements as well as design flexibility in the single family units.

12. A public person asked whether the Harry and Jeanette Weinberg Foundation (Foundation) has considered any other charitable contributions.

Response: The Foundation has charitable works throughout the United States, including Maui.

CLOSING REMARKS

The comments from this community meeting will be discussed by the Project team. The next public notice would be during the time the public hearing is scheduled on the Special Management Area (SMA) application. The 201H and SMA process includes the opportunity for public comments. Tonight's meeting is the first community discussion on this proposed Project.



Colleen Suyama
Senior Associate

CS:yp
Attachment

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KAHOMA VILLAGE COMMUNITY MEETING

February 15, 2012

Attendance Sheet

PLEASE PRINT LEGIBLE				
Name	Organization	Mailing Address	Email Address	Telephone No.
Elle Cochran	Maui County			
D.B. HOSKINS				
KELIA LEONG				
GORDON COCKETT	MAUI UNITE			
Chuck Louisa				
JUDY K BREWER				
DAWN ALLEN				
KIMBA + JIM TAYLOR				
LANCE THOMAS	LAHAINA Welding			
DRAKE THOMAS	LAHAINA Welding			
JAMES HOPKINS				
JOHN DIXIE VOLES				
Julie FRAZIER				
Jason Sturis				
Ben Stibbe				
Ronda Salmon				

KAHOMA VILLAGE COMMUNITY MEETING

February 15, 2012

Attendance Sheet

PLEASE PRINT LEGIBLE				
Name	Organization	Mailing Address	Email Address	Telephone No.
JUDY STURGIS	HOME OWNER			
CAROL CAROLAN	"			
CHAD VIEA	"			
Antony Amet	"			
Long Xadao				
Genkio Hara	Jodo Missio			
MASA HATORI	HOME OWNER			
ANTHONY/BETH GRIFFITH	HOMEOWNER			
Sho. L. Nelson	Homeowner			
JAMES WALKUS	HOME OWNER			
ETHAN RATHBUN	HOME OWNER			

COMMENT FORM

PROPOSED KAHOMA VILLAGE

Aloha! Welcome to the public meeting for the proposed Kahoma Village. We encourage all interested individuals and organizations to comment on the project.

To submit this comment form at tonight's meeting, please deposit into the Comment Box. To submit this comment form by mail, please fold and staple, and affix proper postage (see reverse side for guide). We ask that written comments be submitted by February 22, 2012. For more information on the project, please contact Colleen Suyama at Munekiyo & Hiraga, Inc. by phone at (808)244-2015, or by email at colleen@mhplanning.com.

(96 Puunoa Place)

Name: RUTH GRIFFITH

Address: P.O. BOX 11805 LAHAINA, HI 96761

Phone: (808) 269-5903

Email: ruthgriffith@hawaii.rr.com

Comments:

- Suggest that Kenui St. entrance be aligned with Front St. Apartments entrance, located away from the highway, in the center of Kenui St. Alignment w/ Wainee St. is too close to highway

+ will cause traffic problems

- Fencing Front St. side of property will help reduce the # of beachgoers who will want to park in your complex + walk across the street to Baby Beach

- when landscaping, keep in mind that certain times of the year, large gusts of wind come down from the mountainside + through this property. be careful about types of trees you choose. Roof of my garage had to be reinforced (bigger support beams, etc.) during construction because it was shown that high winds had moved the roof

- Perhaps entry + exit on the Front St. side could be "right turn only" to help maintain flow of traffic on Front Street.



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSUBU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Ruth Griffith
96 Puunoa Place
P.O. Box 11805
Lahaina, Hawaii 96761

SUBJECT: Proposed Kahoma Village at Lahaina, Maui, Hawaii

Dear Ms. Griffith:

Thank you for your comment form received on February 17, 2012. To address some of the concerns regarding traffic, the location of the Project's driveway access on Kenui Street has been relocated toward Front Street across from Nakeli Place at the entrance to the Front Street Apartments. Also, fencing and landscaping will be provided on the Kenui and Front Street boundaries of the proposed Kahoma Village project. The landscape architect will be advised of the strong winds that blow through the area during certain times of the year, so this is considered in the selection of trees to plant in the project site.

We understand that the suggestion for a right-turn only entrance on Front Street is out of concern over the traffic conflicts that occur at Ala Moana Street and Mala Warf. To address this concern, the project access has been relocated further south across of Puunoa Place.

Ruth Griffith
September 24, 2012
Page 2

Again, thank you for your comments. If there are additional questions, please do not hesitate to contact me at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Colleen S.', with a long horizontal flourish extending to the right.

Colleen Suyama
Senior Associate

CS:lh

cc: Jay Nakamura, Stanford Carr Development, LLC
Michael Packard, SSFM International, Inc.

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2/18/12

Munchings + Hiraga, Inc.
305 High Street, Ste 104
Haleiwa, HI 96793

Gentlemen:

I reside at Puunoa District on Front Street adjacent to the proposed Kahoma in Lahaina.

May I recommend that portion of Kenui Street at the intersection of Front Street be set aside for public parking. I'm sure the Lahaina Police Captain can help and recommend the number of parking stalls are adequately needed.

I also recommend that lighted side-walk be created on the makai side of the major Konoapiilani Highway from Kenui Street going over to Kahoma Stream. With the anticipated increase number of pedestrians from Kale Mahalee, Lahaina surf apartments and residents of Kahoma Village traversing over to Lahaina Cannery Mall and Lahaina Gateway, on the narrow Konoapiilani Highway shoulder is extremely hazardous. Before there are any pedestrian accident, it is imperative that a safe side-walk be installed.

Thanking you kindly for your attention and your

serious consideration will be appreciated very much.

Mahalo and Aloha nui loa.

Very truly yours,

Steven Y. Uyehara

cc: Honorable Mayor Arakawa

Honorable Council persons

Captain of Lehaia Police Dept.



Front Street

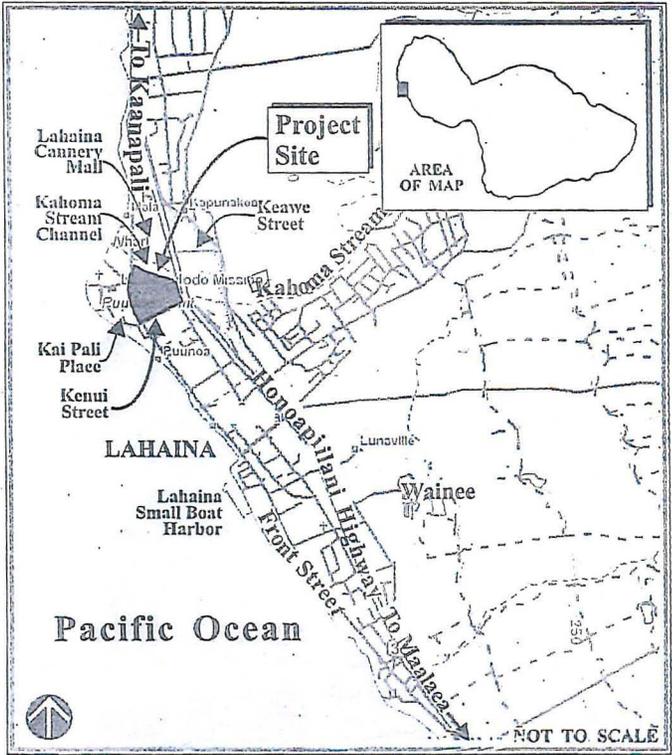
Kenui Street

NOTICE OF COMMUNITY MEETING

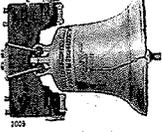
Stanford Carr Development, LLC, on behalf of The Harry and Jeanette Weinberg Foundation, Inc., is proposing to develop the Kahōma Village project and will be conducting a public informational meeting on:

- Date:** Wednesday, February 15, 2012
- Time:** 6:00 p.m. to 8:00 p.m.
- Place:** West Maui Senior Center • 788 Pauoa Street, Lahaina.

The proposed site for the Kahōma Village project is bounded by Honoapiilani Highway to the east (mauka), Front Street to the west (makai) and Kenui Street to the south. The proposed project will contain 203 dwelling units consisting of 101 single family units and 102 multi-family units. The project will also include a 1.3 acre park for residents. For more information, the public is invited to attend the scheduled informational meeting or to contact Ms. Colleen Suyama at 244-2015. Oral or written comments will be accepted after the meeting, until 4:30 p.m. on February 22, 2012 and may be submitted to the Office of Munekiyo & Hiraga, Inc., 305 High Street, Suite 104, Wailuku, Hawaii 96793.



USA FIRST-CLASS FOREVER



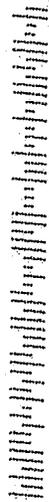
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Steven Y. Uyehara
P.O. Box 1016
Lahaina, HI 96767

Maenekeigo + Kerepa, Inc.

305 Keigh Street, Ste 104

Maui, HI 96793





MICHAEL T. MUNEKIYO
PRESIDENT
KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT
GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT
MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT
MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Steven Y. Uyehara
P.O. Box 1016
Lahaina, Hawaii 96767

SUBJECT: Proposed Kahoma Village at Lahaina, Maui, Hawaii

Dear Mr. Uyehara:

Thank you for your letter dated February 18, 2012. While we appreciate your request for a public parking lot at the corner of the property at Kenuei Street, unfortunately we are unable to accommodate your request. It is our understanding that the need for a public parking lot in the area is due to ocean recreation users in the area. Future residents of Kahoma Village are within walking distance of the ocean and are not expected to add to the existing parking problem.

Any consideration to provide a sidewalk on the Honoapiilani Highway side of the property boundary would need to address the safety of pedestrians and drivers. Honoapiilani Highway is a four-lane roadway and due to the higher speeds on the roadway and for safety reasons pedestrians are not encouraged to walk along this stretch of the highway. As such the safety of pedestrians wishing to access the Lahaina Gateway project is assured by encouraging them to access from the signalized intersection on Keawe Street. The construction of sidewalks on Kenuei Street and Front Street will make it more convenient for pedestrians to access the Lahaina Cannery Mall and encourage pedestrians to use the safer access to Lahaina Gateway through the signalized intersection at Keawe Street.

Steven Y. Uyehara
September 24, 2012
Page 2

Again, thank you for your comments. If there are additional questions, please do not hesitate to contact me at 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:lh

cc: Jay Nakamura, Stanford Carr Development, LLC

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COMMENT FORM

PROPOSED KAHOMA VILLAGE

Aloha! Welcome to the public meeting for the proposed Kahoma Village. We encourage all interested individuals and organizations to comment on the project.

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Name: MASAMICHI HATTORI Address: 1233 LIMAHANA CIR #B-403

Phone: 808 214 7214 LAHAINA HI. 96761

Email: babybeachmaui@gmail.com

Comments:

Please concern more about community.
Do you have to make over 200 units?
So many cars parking around babybeach,
on streets, on your property, specialy weekend.
Please make some public beach parking for
community.

Simply Question

Do we need more housing Makai side on Hwy?
Lahaina Town is world famous tourist town.
A lot of property Maulea on Hwy, why don't you
make there?



MICHAEL T. MUNEKIYO
PRESIDENT
KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT
GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT
MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT
MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Masamichii Hattori
1233 Limahana Circle, #B-403
Lahaina, Hawaii 96761

SUBJECT: Proposed Kahoma Village at Lahaina, Maui, Hawaii

Dear Mr. Hattori:

Thank you for your comment form received on February 21, 2012. The project site is zoned for apartment use which allows for more units than the proposed 203 units. The developer, Stanford Carr Development, LLC (SCD), has constructed several residential developments on Maui and statewide, such as the Kehalani project in Wailuku. The housing products proposed by SCD are typical of the single family and townhouse units in the Kehalani project which emphasizes a walkable community with landscaped street frontages.

The subject property has been zoned for residential housing for many years and the County of Maui encourages the development of such properties that have the proper land use entitlements and are close to County services such as water, sewer and roadways. Although there may be properties mauka of the highway, many of these properties are not identified for residential development and are not easily accessible to County services.

We understand the area known as Baby Beach does not have adequate beach parking. While we appreciate your suggestion, unfortunately we are unable to accommodate your request. However, future residents of Kahoma Village are within walking distance of the ocean and are not expected to add to the existing parking problem.

Masamichii Hattori
September 24, 2012
Page 2

Again, thank you for your comments. If there are additional questions, please do not hesitate to contact me at 244-2015.

Very truly yours,



Colleen Suyama
Senior Associate

CS:lh

cc: Jay Nakamura, Stanford Carr Development, LLC

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COMMENT FORM

PROPOSED KAHOMA VILLAGE

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Name: Elaine Aotaki Address: PO BOX 12846
 Phone: 662 3979 ext 242 LAHAINA, HI
 Email: aotaki@hawaii.edu 96761

Comments:

Aloha. At the 02.15.12 meeting, valid concerns regarding the increased traffic created by the proposed development on Kamei St & Ala Moana St were raised. Because of this, Kamei St should be widened. With the elimination (I assume) of the dirt curb alongside the north side of Kamei St, it's possible to establish two (2) lanes going toward Front St (makai): (1) Right lane going toward Puamana & across Front St (dead end - makai) & (2) For north lane - turn north only (toward Kaunapali). The second area of concern is Ala Moana & Malua Wharf. I am a member of Lahaina Judo Mission & at an open hour & day the problematic traffic situation is already an issue. It will only worsen if improvements are not met. I think a right turn lane into the development to get as much north traffic off of Front St would help. Also is it possible to establish a left turn lane into Ala Moana St / Malua Wharf from Front St. Or is it a concern of DOT? It's likely, north traffic back up will eventually occur more frequently. Will there be another community meeting in the future? Some Ala Moana St residents learned of this meeting at the last minute. Mahealani



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

EWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Elaine Aotaki
P.O. Box 12846
Lahaina, Hawaii 96761

SUBJECT: Proposed Kahoma Village at Lahaina, Maui, Hawaii

Dear Ms. Aokaki:

Thank you for attending the community meeting and your comment form received on February 22, 2012. In response to traffic concerns raised at the meeting the Project's site plan has been re-evaluated. The project plans have been revised to relocate the access across Nakeli Place. This will eliminate potential traffic conflicts near the intersections of Kenui Street with Wainee Street and Honoapiilani Highway that could have been created in the former driveway access location.

The project team also noted the concerns on Ala Moana Street and Mala Wharf. In response, the project site plan has been redesigned to locate the driveway access on Front Street further south toward the Kenui Street intersection with Front Street, across Puunoa Place.

While the developers have not planned for another community meeting, the proposed Kahoma Village will require approvals from the Maui County Council and the Maui Planning Commission. As part of the approval process, the public will be given an opportunity to provide additional comments before the Maui County Council and Maui Planning Commission.

Elaine Aotaki
September 24, 2012
Page 2

Again, thank you for your comments. If there are additional questions, please do not hesitate to contact me at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Colleen S', with a long horizontal flourish extending to the right.

Colleen Suyama
Senior Associate

CS:lh

cc: Jay Nakamura, Stanford Carr Development, LLC

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COMMENT FORM

PROPOSED KAHOMA VILLAGE

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Name: Shirley Smith Address: 409 Front St Lahaina, HI
Phone: 408 472-1300
Email: SSmith6529@aol.com

Comments:

Good first cut - I thank you.
No cedar roofs please



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN HASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Ms. Shirley Smith
409 Front Street
Lahaina, Hawaii 96761

SUBJECT: Proposed Kahoma Village at Lahaina, Maui, Hawaii

Dear Ms. Smith:

Thank you for attending the community meeting. On behalf of the developer Stanford Carr Development, LLC we appreciate your comments. The architectural consultant, Alakea Design Group LLC, has been informed of your request that the roofs not be made of cedar.

Again, thank you for your comments. If there are additional questions, please do not hesitate to call me at 244-2015.

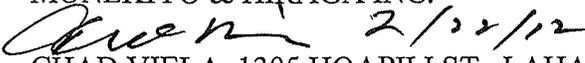
Very truly yours,

Colleen Suyama
Senior Associate

CS:lh

cc: Jay Nakamura, Stanford Carr Development, LLC

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TO : MUNEKIYO & HIRAGA INC.
FROM :  2/22/12
CHAD VIELA, 1305 HOAPILI ST., LAHAINA
SUBJECT : TRAFFIC IMPACTS ON PROPOSED KAHOMA VILLAGE PROJECT

I did attend the community meeting on Feb. 15, 2012 on the above development proposal. Although many questions arose, I think for the most part, this project may present some positives for the people of West Maui. Traffic and infrastructure concerns will no doubt be the primary concerns for residents in around the Mala area. I am one of these residents. We have lived on the corner of Kapunakea and Hoapili streets for over 15 years.

Traffic back-up running Mauka- Makai on Kapunakea is a daily occurrence. With the Cannery Mall ,Mala Tavern and the new Honu Restaurants all on one corner, not to mention the Old Lahaina Luau traffic on Front St., all Mala residents going north on the Highway use Kapunakea which has the only left turn lane in this area of town. The next entryway going north Makai of the Highway is all the way down to Papalaua St., about a half mile down the road! Kapunakea, wit the exception of Papalaua and Lahainaluna road will be the busiest entryway onto the highway..and this is without the Kahoma Village Project. There are instances where we could not even make a left turn to get out of Kiawe camp subdivision because vehicle were line up clear down to Front St...all the down from Honoapiilani Hwy. Remember that this proposed project will be the biggest development Makai of the Highway in Lahaina Town since the Front St. Apartments some 17 years ago. The Lahaina Town and Mala area is unable to handle any increased vehicle without meaningful solutions or ideas.

If this project goes forward, I am suggesting a very viable solution to easing the traffic on Kapunakea..and it's really a simple, make sense alternative..almost too simple..that it might have been overlooked but it's been done throughout Maui County. ALLOW TWO-LANE LEFT TURN ACCESS ONTO THE HIGHWAY FROM KAPUNAKEA STREET. This can be accomplished on both Makai and Mauka sides of the highway as two lanes already exist. It would literally take re-striping and the re-setting of light intervals to get this going. I've observed the intersection many times and this could work with minimal cost. Currently, the second lane only allows straight-ahead traffic. Thank you for your time and I would appreciate a response at some point during this process.



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSUBU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Chad Viela
1305 Hoapili Street
Lahaina, Hawaii 96761

SUBJECT: Proposed Kahoma Village at Lahaina, Maui, Hawaii

Dear Mr. Viela:

Thank you for attending the community meeting and your comment form dated February 22, 2012. We appreciate your comments regarding the existing problem at the signalized intersection at Kapunakea Street and Honoapiilani Highway. The project traffic consultant, SSFM International, Inc. will evaluate your recommendation to determine if it is viable based on State of Hawaii Department of Transportation requirements.

Again, thank you for your comments. If there are additional questions, please do not hesitate to contact me at 244-2015.

Very truly yours,

Colleen Suyama
Senior Associate

CS:lh

cc: Jay Nakamura, Stanford Carr Development, LLC
SSFM International, Inc.

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COMMENT FORM

PROPOSED KAHOMA VILLAGE

Aloha! Welcome to the public meeting for the proposed Kahoma Village. We encourage all interested individuals and organizations to comment on the project.

To submit this comment form at tonight's meeting, please deposit into the Comment Box. To submit this comment form by mail, please fold and staple, and affix proper postage (see reverse side for guide). We ask that written comments be submitted by February 22, 2012. For more information on the project, please contact Colleen Suyama at Munekiyo & Hiraga, Inc. by phone at (808)244-2015, or by email at colleen@mhplanning.com.

Name: John M. Jones Address: 1300 Limahana Ln 301 96761

Phone: 808-298-0774

Email: Jjones2050@AOL.COM

Comments: I thought all involved did a good job of
answering questions.

#1 I am concerned with ~~the~~ traffic problems on
RT. turn off of Hy 30.

#2 an Front Street maybe a center turning
lane would relieve traffic at the intersection
at Maala ramp Street.



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN HASHI HIRAGA
SENIOR VICE PRESIDENT

MIYURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

John M. Jones
1300 Limahana Circle, #301
Lahaina, Hawaii 96761

SUBJECT: Proposed Kahoma Village at Lahaina, Maui, Hawaii

Dear Mr. Jones:

Thank you for attending the community meeting and your comment form received on February 24, 2012. We appreciate your comment that the project team did a good job in addressing the questions posed by the community.

The project team noted your concern regarding existing right-turns off of Honoapiilani Highway onto Kenui Street. So as not to add to the existing problem at this intersection, the driveway access on Kenui Street has been relocated toward Front Street across of Nakeli Place.

We understand that the suggestion for a center turning lane is out of concern over the traffic conflicts that occur at Ala Moana Street and Mala Warf. To address this concern, the project site plan has been redesigned to locate the driveway access on Front Street further south across Puunoa Place.

Again, thank you for your comments. If there are additional questions, please do not hesitate to contact me at 244-2015.

Very truly yours,

Colleen Suyama
Senior Associate

CS:lh

cc: Jay Nakamura, Stanford Carr Development, LLC

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MAUI

305 High St., Suite 104 Wailuku, Hawaii 96793

PH: (808)244-2015 FAX: (808)244-8729

OAHU

735 Bishop St., Suite 238 Honolulu, Hawaii 96813 PH: (808)983-1233

WWW.MHPLANNING.COM

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process
management 22

From: Yayoi Hara <yayoi.hara@gmail.com>
Sent: Tuesday, February 21, 2012 3:27 PM
To: Colleen Suyama
Subject: Proposed Kahoma Village

Name: Yayoi Hara

Address: 12 Ala Moana Street, Lahaina 96761

Phone: 808-276-4042

Email: yayoi.hara@gmail.com

Comments: For years the Harry and Jeanette Weinberg Foundation has left the proposed Kahoma Village project site fallow and overgrown, it is now occupied by several homeless families as well as beach parking (corner of Front and Kenui Street). On any given weekday there are at least 8-15 cars parked on the dirt in the empty lot, on the weekends 10-20 cars. There is no other beach parking for the south side of Baby Beach. I would propose that the Weinberg Foundation provide 15-20 parking space on the corner of project for community beach parking. Also they may consider relocating the park so that it can be a community park for everyone living in the surrounding area and not a private park for Kahoma Village residents only. I would hope that they would consider these two small acts of charity that would greatly benefit the entire community of Lahaina. A public park will enhance the lifestyle and appeal of the area including the Kahoma Village project greatly.

--

Yayoi Hara

email. yayoi.hara@gmail.com

mobile. 808.276.4042



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FLIKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Yayoi Hara
Lahaina Jodo Mission
12 Ala Moana Street
Lahaina, Hawaii 96761

SUBJECT: Proposed Kahoma Village at Lahaina, Maui, Hawaii

Dear Ms. Hara:

Thank you for your email correspondence dated February 21, 2012. Stanford Carr Development, LLC (SCD), on behalf of the Harry and Jeanette Weinberg Foundation, Inc. (Foundation) is working with the Maui Police Department to resolve the homeless problem on the property. SCD has obtained the required permits from the County of Maui and has commenced clearing the property.

While we appreciate your suggestion to add 15 to 20 additional beach parking spaces, unfortunately we are unable to accommodate your request. Future residents of Kahoma Village are within walking distance of the beach and are not expected to add to the existing parking problem.

As stated at the meeting, the park areas are intended for the residents of the Project. The larger of the three (3) park areas has been centrally located within the Project to provide visibility to all areas of the park and safety for park users. As an un-gated community, outside use of the park by surrounding residents will not be controlled or restricted.

The Foundation undertakes many charitable works on Maui, including providing affordable housing opportunities for residents. The Kahoma Village project will meet the Foundation's goal to provide affordable housing opportunities.

Yayoi Hara
September 24, 2012
Page 2

Again, thank you for your comments. If there are additional questions, please do not hesitate to call me at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Colleen Suyama', with a long horizontal flourish extending to the right.

Colleen Suyama
Senior Associate

CS:lh

cc: Jay Nakamura, Stanford Carr Development, LLC

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Colleen Suyama

From: Gensho Hara <lahainajodominion@gmail.com>
Sent: Tuesday, February 21, 2012 3:28 PM
To: Colleen Suyama
Subject: Comment- Proposed Kahoma Village

Name: Gensho Hara, Lahaina Jodo Mission
Address: 12 Ala Moana Street, Lahaina 96761
Phone: 808-661-4304
Email: lahainajodominion@gmail.com

Comments:

Ala Moana Street is a major thoroughfare for commercial and private boat trailers in and out of Mala Ramp, it is utilized by tourist and local passengers for the boats trying to find roadside parking, families accessing the beach and residents living on Ala Moana Street.

Turing out onto Front Street can be a blind turn unless you inch out, this is already a dangerous intersection.

The proposed Kahoma Village project has an entry and exit adjacent to Ala Moana, adding additional traffic to an already busy thoroughfare.

I strongly feel that vehicle access should not be made adjacent to Ala Moana Street.

Additionally there is a school bus pick-up 10 feet north of Ala Moana with drop-off 10 feet south of Ala Moana. Adding additional vehicles endangers children waiting for the school bus and/or waiting to cross the street after getting off the school bus. Your thoughtful consideration is greatly appreciated.



MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSUBU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

September 24, 2012

Reverend Gensho Hara
Lahaina Jodo Mission
12 Ala Moana Street
Lahaina, Hawaii 96761

SUBJECT: Proposed Kahoma Village at Lahaina, Maui, Hawaii

Dear Reverend Hara:

Thank you for your attendance at the community meeting and your email correspondence dated February 21, 2012. The project team noted the traffic concerns on Ala Moana Street and near Mala Wharf. In response, the project site plan has been redesigned to locate the driveway access on Front Street further south across Puunoa Place.

Again, thank you for your comments. If there are additional questions, please do not hesitate to call me at 244-2015.

Very truly yours,

Colleen Suyama
Senior Associate

CS:lh

cc: Jay Nakamura, Stanford Carr Development, LLC

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