JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

May 24, 2001

'01 MAY 29 A11:16

Genevieve Salmonson, Director
Office of Environmental Quality Control
Department of Health
235 S. Beretania Street, #702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

RE: Proposed Waiolani Elua Subdivision at Waikapu, Maui

In accordance with the provisions of the Chapter 343, Hawaii Revised Statutes and Title 11, Chapter 200 of the Administrative Rules of the State Department of Health, a Final Environmental Assessment (EA) has been prepared for the proposed project.

As the approving agency, the County of Maui, Department of Planning believes that there will be no significant impacts as a result of the proposed action and is filing a Finding of No Significant Impact (FONSI).

Enclosed are one (1) copy of the OEQC Publication form and four (4) copies of the Final EA. In addition, please be advised that the Project Summary has not changed since the publication of the Draft EA. We respectfully request that the notice of the availability of the Final EA be published in the next edition of the Environmental Notice.

Very truly yours,

JOHN E. MIN
Planning Director

JEM:to
Enclosures
c: Clayton Yoshida, AICP, Deputy Director of Planning
Scott Nunokawa and Haunani Lemn
Dean Frampton, Munekiyo & Hiraga, Inc.
Joe Alueta, Staff Planner
Project File (w/Enclosures)
General File
nunokawa/waikapu/oeqcfea.ltr

2001-06-08- MA- FEA-

Final Environmental Assessment

WAIOLANI ELUA SUBDIVISION

Prepared for:

May 2001

Scott Nunokawa
and Haunani Lemn

MUNEKIYO & HIRAGA, INC.

Final Environmental Assessment

WAIOLANI ELUA SUBDIVISION

Prepared for:

May 2001

Scott Nunokawa and Haunani Lemn

MUNEKIYO & HIRAGA, INC.

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Preface

Applicants Scott Nunokawa and Haunani Lemn are proposing to develop a residential subdivision in Waikapu, Maui, Hawaii. Identified by TMK (2) 3-5-4:95, the 6.058-acre parcel would be subdivided into approximately 25 single-family lots, having a minimum lot size of 7,500 square feet.

The subject property is currently designated "Agricultural" by the State Land Use Commission and therefore requires a reclassification from the Agricultural District to the Urban District. Additionally, the Wailuku-Kahului Community Plan designates the subject property as "Agriculture". The applicants are seeking a Community Plan Amendment to redesignate the subject property to "Single Family". Concurrently, a *Change in Zoning application will be filed to establish the "R-2, Residential" zoning* designation for the property.

It is noted that the Maui County Council is currently considering the 10-year update to the 1987 Wailuku-Kahului Community Plan with the subject property being proposed for "Single Family" use under this update process. The Council's update process notwithstanding, the applicants are seeking to amend the Community Plan under a separate application process to ensure the timely consideration of their Community Plan amendment request. Should the Council complete the 10-year update within the next few months, the separate application filed by the applicants will be withdrawn.

The applicants' independent request requires the preparation of an Environmental Assessment as required by Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Department of Health Administrative Rules. This Environmental Assessment has been prepared to document the project's environmental impacts and alternatives, and advances findings and conclusions relative to the significance of the project.

Chapter I

Project Overview

I. PROJECT OVERVIEW

A. PROPERTY LOCATION, EXISTING USE AND LAND OWNERSHIP

The applicants for the project are Scott Nunokawa and Haunani Lemn. The proposed Waiolani Elua Subdivision involves the construction of approximately 25 single-family lots in Waikapu, Maui, Hawaii (TMK 3-5-4:95). See Figure 1.

The site is vacant, being formerly used for sugar cane cultivation. Overgrown vegetation on the site include buffelgrass, fingergrass, koa haole, kiawe, and castor bean.

The landowners for the property are Scott Nunokawa and Haunani Lemn.

B. PROPOSED ACTION

The proposed project involves the development of approximately 25 improved lots abutting the existing 116-unit Waiolani Subdivision. See Figure 2. The lot sizes are proposed to be a minimum of 7,500 square feet. Under the project's preliminary marketing concept, improved lots would be sold to interested purchasers in fee simple interest. Sales prices for each lot are projected to range from $100,000.00 to $150,000.00. It is anticipated that covenants will be formulated to ensure that residential dwellings constructed on the lots will be similar to the neighboring Waiolani development.

The proposed project would link with Ho'okahewai Street and Mo'ohele Street which are existing roadways within the Waiolani Subdivision. Ho'okahewai Street links with Pilikana Street which then provides primary access to Honoapiilani Highway. The proposed roadways within the project would be 44-foot wide rights-of-way with curbs, gutters and sidewalk on one side of the street, in accordance with applicable County

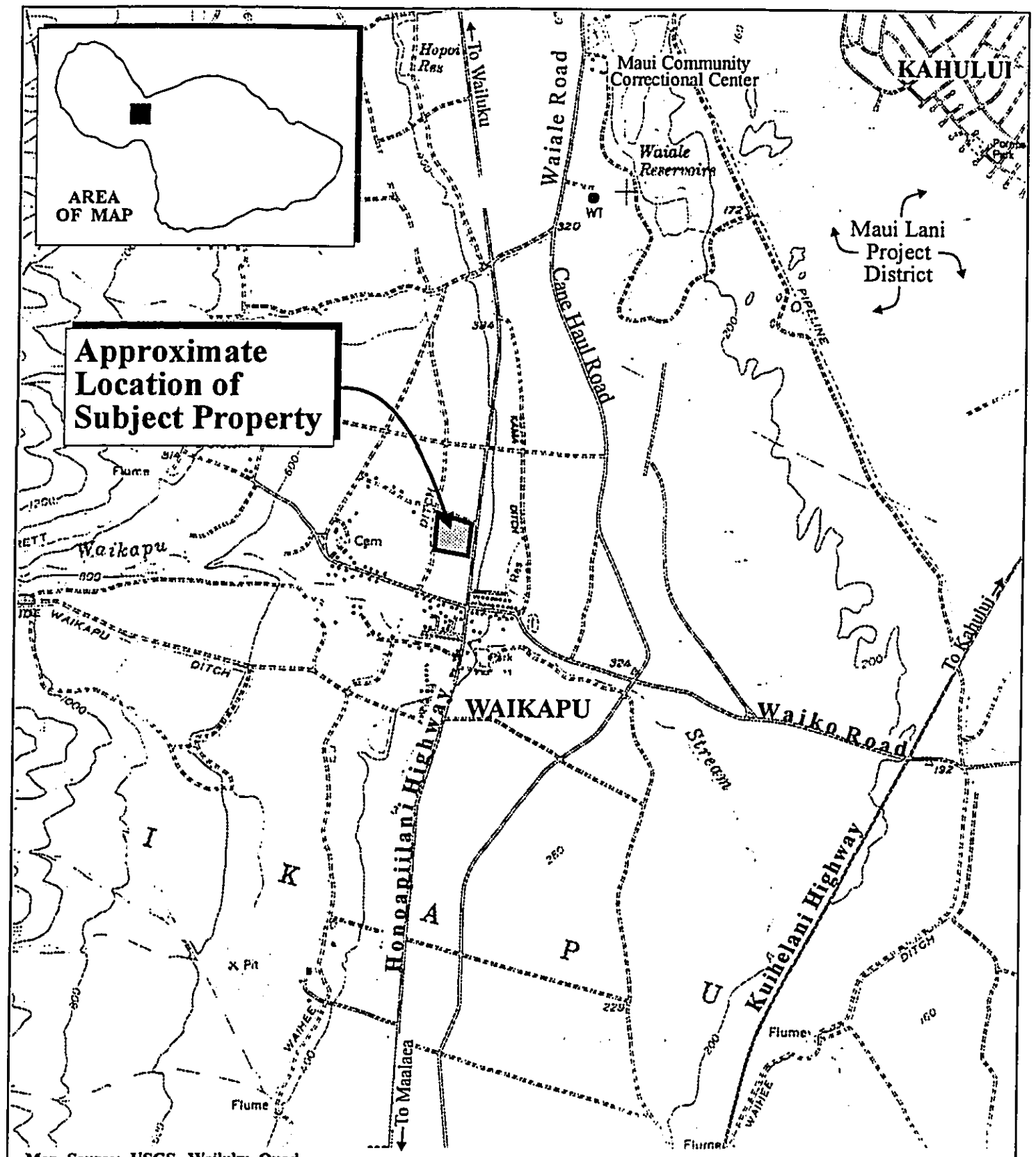


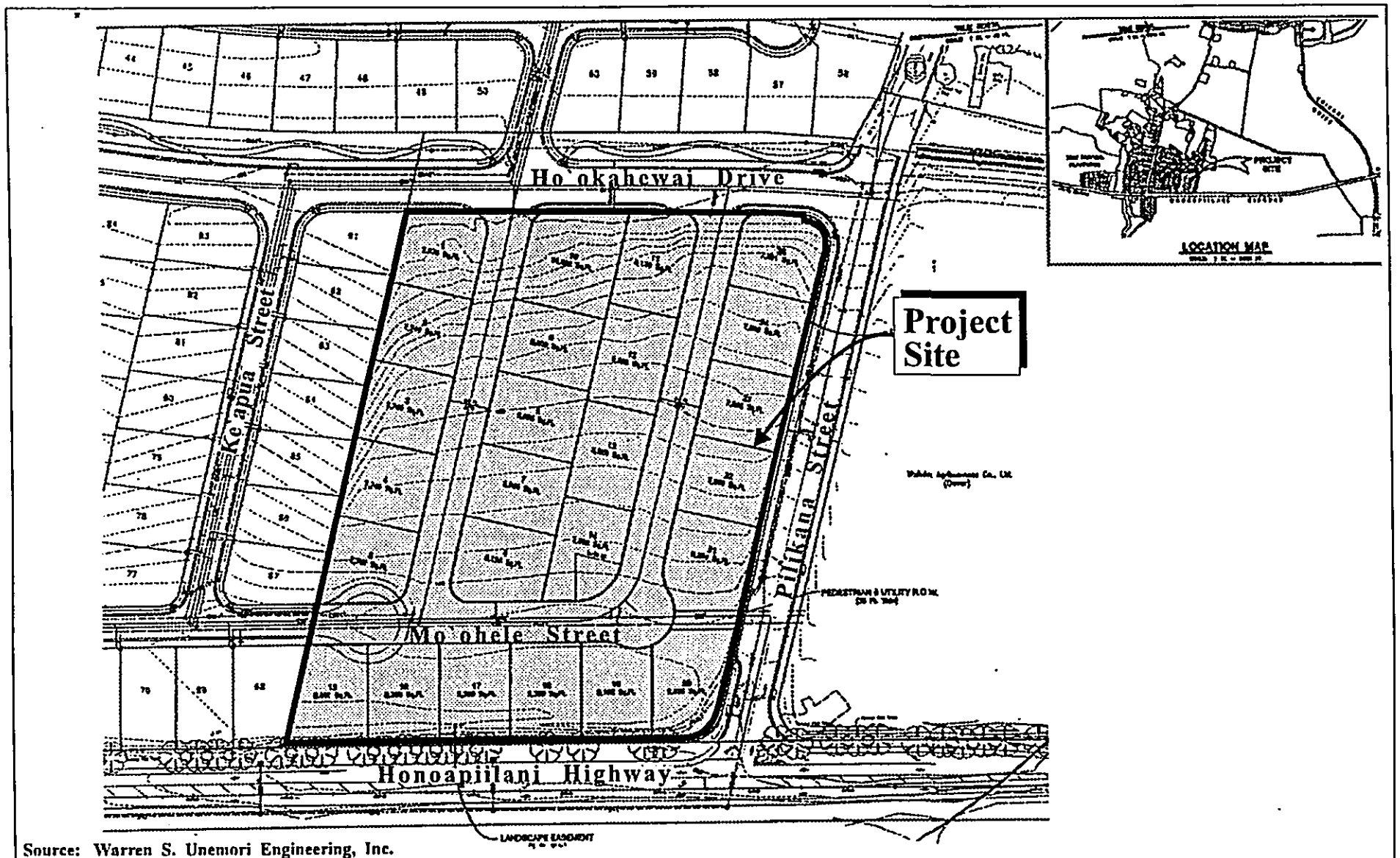
Figure 1 Waiolani Elua Subdivision

Regional Location Map

1000 0 Feet 500 2000

MUNEKIYO & HIRAGA, INC.

Prepared for: Scott Nunokawa and Haunani Lemn



Source: Warren S. Unemori Engineering, Inc.

Figure 2

Waiolani Elua Subdivision

Proposed Subdivision Concept Map

NOT TO SCALE

MUNEKIYO & HIRAGA, INC.

Prepared for: Scott Nunokawa and Haunani Lemn

standards.

The start of construction for subdivision improvements is anticipated during the fourth quarter of 2001 with completion during the second quarter of 2002. The approximate cost of subdivision improvements is $0.63 million.

C. *REASONS JUSTIFYING THE REQUEST*

The Waikapu residential area is surrounded by lands primarily used for agricultural production. However, the project site is located within an area of existing and planned residential development (as reflected by the proposed update to the Wailuku-Kahului Community Plan). The project is designed to reflect a subdivision concept integrated with the original 116-lot Waiolani Subdivision to the immediate south. In this context, the subdivision's proposed design would reflect compatibility with the neighboring Waiolani Subdivision in terms of lot layout and architectural features.

With the recent strengthening of local economic conditions, housing demand has exhibited an upward trend. Sales information for single-family subdivisions in Central Maui (e.g., Wailuku Parkside and Maui Lani) indicate that demand for products similar to that offered by the proposed Waiolani Elua Subdivision is strong, with continuing strength in demand anticipated. See Appendix A.

Chapter II

Description of the Existing Environment

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL SETTING

1. Surrounding Land Uses

Honoapiilani Highway forms the eastern boundary to the subject property. The main entrance roadway to the Waiolani Subdivision is Pilikana Street, which forms the north boundary of the subject property. Lands further east and north of the subject property are in pineapple cultivation.

Ho'okahewai Drive links with Pilikana Street and forms the western boundary of the project. The Waiolani residential subdivision is located to the west and south of the subject property. Further northwest and west of the subject property, are scattered residential and agricultural uses. Waikapu town is located to the south.

2. Climate

Like most areas of Hawaii, Maui's climate is relatively uniform year round. Characteristic of Hawaii's climate, the project site experiences mild and uniform temperatures year-round, moderate humidity and a relatively consistent northeasterly tradewind. Variation in climate on the island is largely left to local terrain.

Average temperatures at the project site (based on temperatures recorded at Kahului Airport) range from lows in the 60's to highs in the 80's. August is historically the warmest month, while January and February are the coolest. Rainfall at the project averages 20 to 30 inches per year. Winds in the region are predominantly out of the north-northeast and northeast.

3. *Topography and Soils Characteristics*

Elevations at the project site range from approximately 410 feet to 450 feet above sea level. Average slope is approximately 6.8 percent.

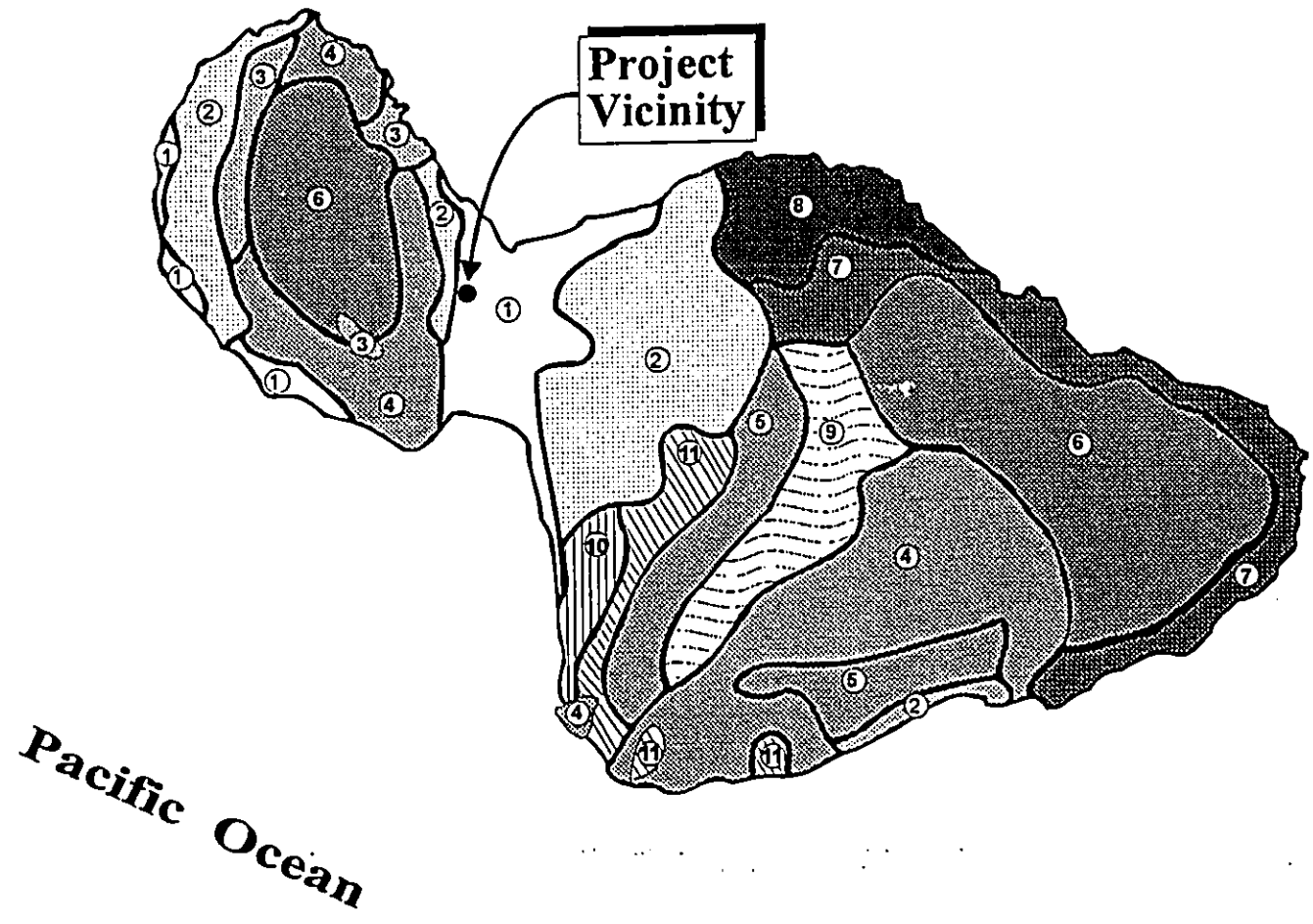
Underlying the proposed site are soils of the Pulehu-Ewa-Jaucas association. See Figure 3. This soil association is characteristically deep and well-drained and located on alluvial fans and basins.

The soil type underlying the project site is Iao clay, 3 to 7 percent slopes (IcB). See Figure 4. This soil type is included on smooth alluvial fans and valley fill. In a representative profile, the surface layer is dark-brown clay about 15 inches thick. The subsoil, about 45 inches thick, is very dark brown, dark brown and very dark grayish-brown clay and silty clay. The substratum is clayey alluvium. The soil is neutral in the surface layer and subsoil. Permeability is moderately slow. Runoff is medium and the erosion hazard is slight to moderate.

The State Department of Agriculture has established three (3) categories of Agricultural Lands of Importance to the State of Hawaii (ALISH). Utilizing modern farming methods, "prime" agricultural lands have the soil quality, growing season, and moisture supply needed to produce sustained crop yields economically, while "unique" agricultural lands possess a combination of soil quality, location, growing season, and moisture supply currently used to produce sustained high yields of a specific crop. "Other" important agricultural lands include those which have not been rated "prime" or "unique".

LEGEND

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



Map Source: USDA Soil Conservation Service

Figure 3 Waiolani Elua Subdivision
Soil Association Map

NOT TO SCALE

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Prepared for: Scott Nunokawa and Haunani Lemn

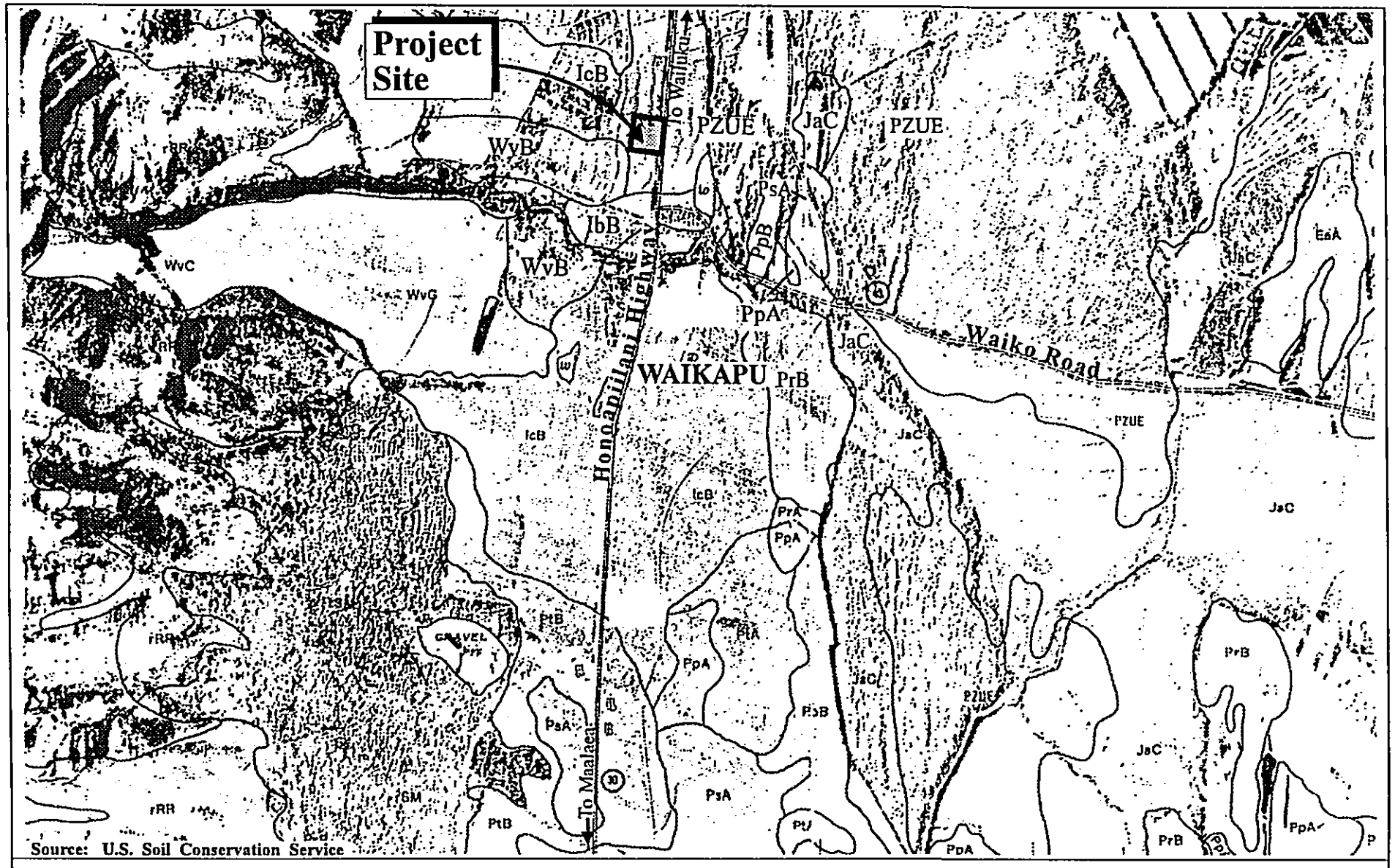


Figure 4

Waiolani Elua Subdivision
Soil Classification Map

1000 0 Feet 500 2000

MUNEKIYO & HIRAGA, INC.

Prepared for: Scott Nunokawa and Haunani Lemn

As indicated by the ALISH map, the project site falls within the "prime" agricultural lands category. See Figure 5. The lands in the project area were formerly utilized to support large scale agricultural activities and are presently fallow and undeveloped.

Lands underlying the project site are designated "A" by the University of Hawaii Land Study Bureau. This classification system rates lands on a scale of "A" to "E", reflecting productivity characteristics. Lands designated "A" are considered to be of highest productivity, with "E" lands ranked lowest.

4. ***Flood and Tsunami Hazard***

The project site is located at the eastern base of the West Maui Mountains. As indicated by the Flood Insurance Rate Map for the County of Maui, the project site is located within Zone C, an area of minimal flooding. See Figure 6.

5. ***Flora and Fauna***

The site has been formerly utilized for sugar cane cultivation but is currently fallow. Vegetation in the region is generally characterized by introduced grass species. Other plant species typically associated with the area include sandbur, lantana, fingergrass and bristly foxtail. The project site also contains vegetation such as koa haole, kiawe and castor bean. Bordering the project site are monkeypod trees along Honoapiilani Highway. Along Pilikana Street and Ho'okahewai Drive, maintained landscaping include red hibiscus and kou.

Terrestrial fauna in the region include introduced species, such as cats, mice, rats, and mongoose. Some of the avifauna introduced

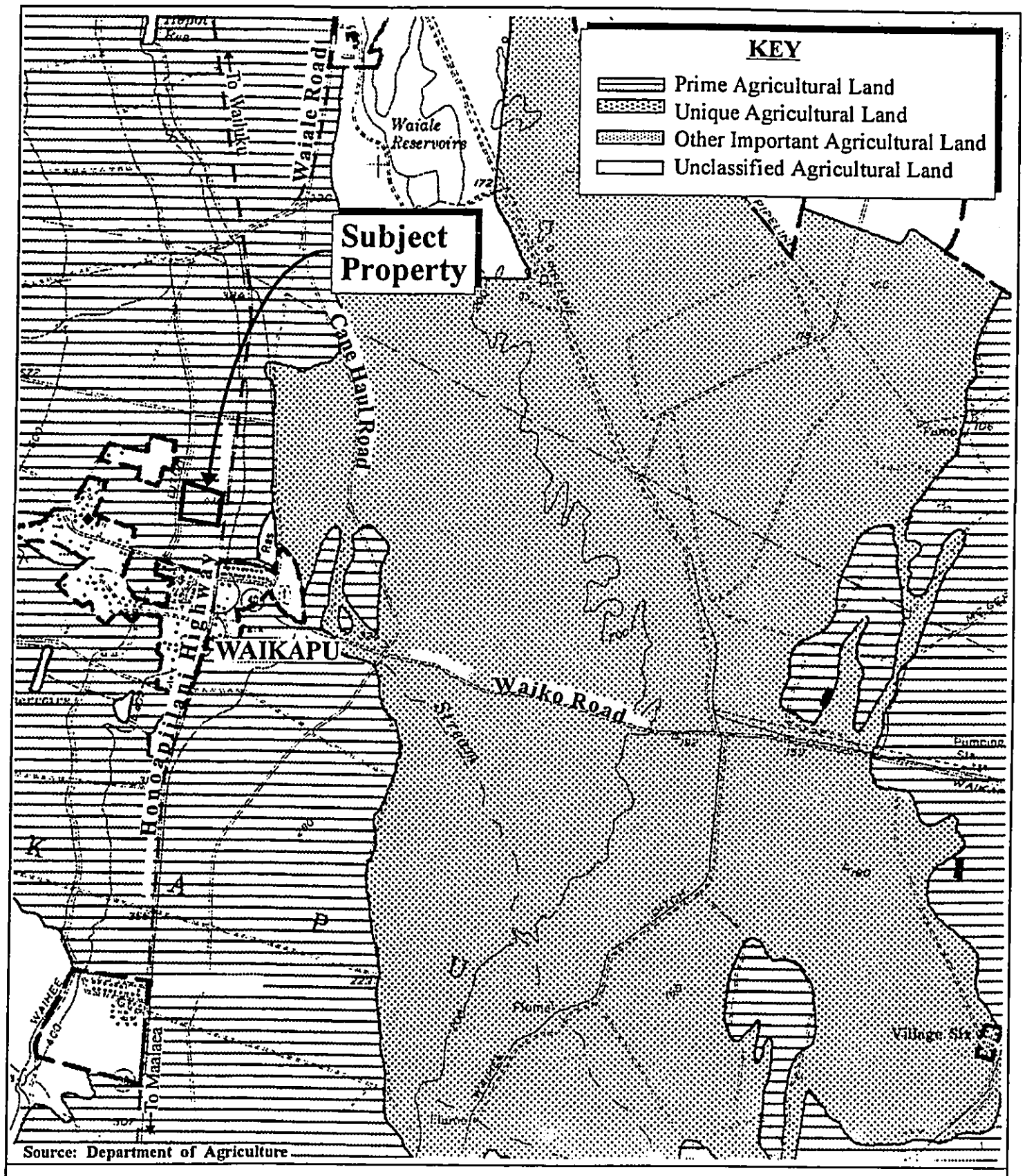


Figure 5 Waiolani Elua Subdivision

ALISH Map

0 500 1000 2000 Feet

MUNEKIYO & HIRAGA, INC.

Prepared for: Scott Nunokawa and Haunani Lemn

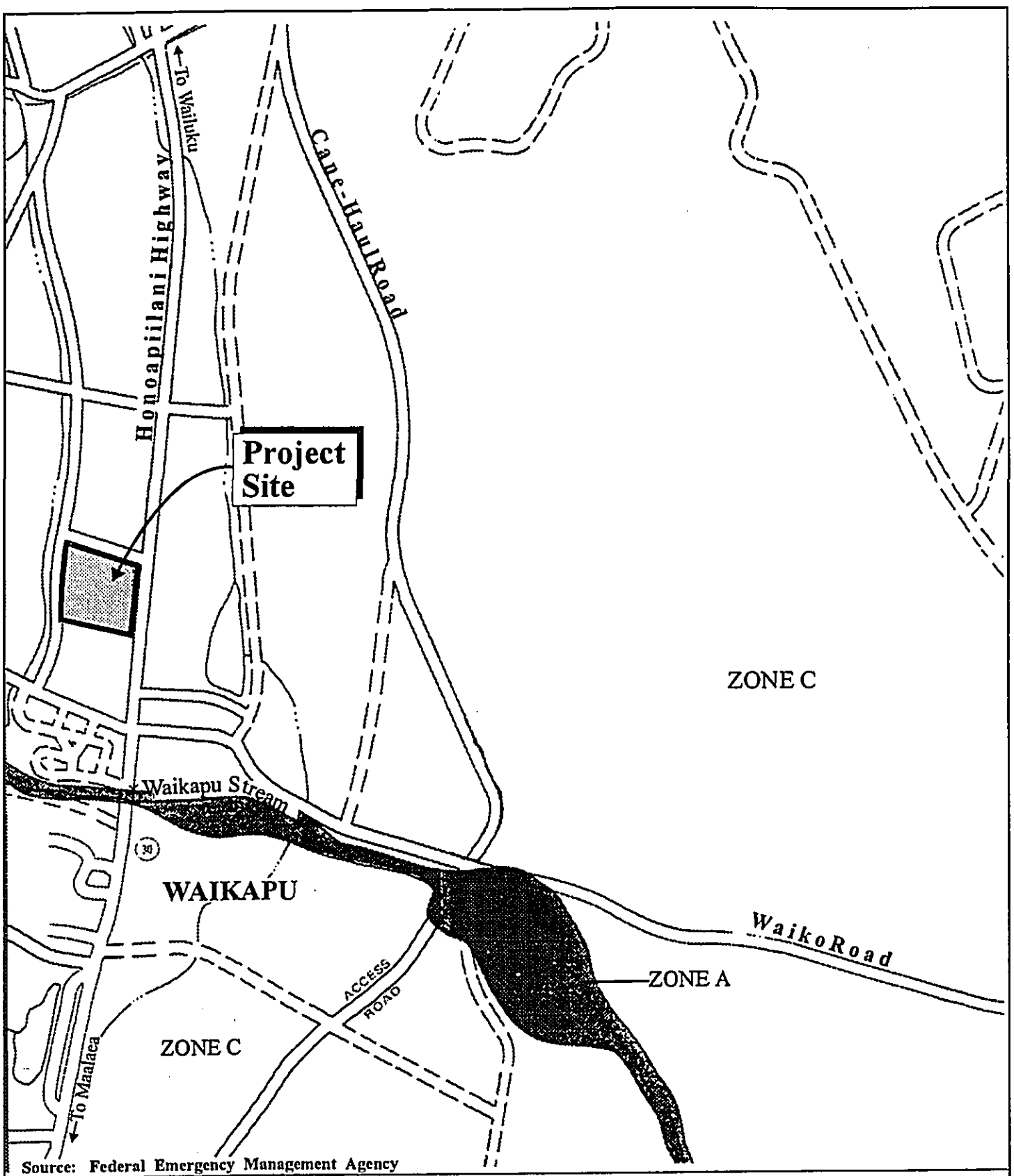


Figure 6

Waiolani Elua Subdivision

Flood Insurance Rate Map

0 500 Feet
250 1000

MUNEKIYO & HIRAGA, INC.

Prepared for: Scott Nunokawa and Haunani Lemn

to the area include the Spotted Dove, Barred Dove, Japanese white-eye, Cardinal, Red-Crested Cardinal, and Mynah.

There are no wetlands and no known rare, endangered, or threatened species of flora and fauna located within or in the vicinity of the project site.

6. ***Archaeological Resources***

The project site has been previously disturbed through past use of the property for sugar cane cultivation and for construction staging purposes during the development of the adjacent Waiolani development. Currently, the site is fallow. There are no surface cultural deposits present on the property.

There have been two (2) previous reports which have been done in conjunction with the abutting Waiolani development. The first is a preliminary archaeological survey conducted by Archaeological Consultants of Hawaii (ACH) dated November 16, 1988. It was noted that three (3) Land Commission awards are recorded for the Waiolani development property. These awards have all involved high ranking individuals. There are historic records of 29 lo'i, 7 poalima and a cluster of houses that were once present on the subject property. Since these features are associated with lands once belonging to ranking individuals, they are considered to be of archaeological interest. The preliminary archeological survey recommended that prior to development, a systematic subsurface testing program take place along the eastern portion of Land Court Award 5280 (near the northwest boundary of the Waiolani development). It is noted that there are no Land Commission

Awards encompassed by the proposed Waiolani Elua Subdivision property, which is the subject of this report.

The second study consisted of archaeological subsurface testing by ACH dated March 13, 1989. There were six backhoe trenches placed in the general vicinity of the eastern boundary of Land Court Award 5280. There were 22 lineal meters of trenching without a single trace of materials that could be associated with traditional or early historic habitation sites. As it pertains to the Waiolani project site, the study concluded that sugar cane and other recent activities have been extensive enough in this area to have obliterated any subsurface deposits that may have once existed.

7. *Air Quality*

There are no point sources of airborne emissions within proximity of the project site. Air quality in the vicinity of the project site may be affected by a variety of sources, including dust from pineapple cultivation operations to the north and east of the property, as well as smoke and dust from sugar cane harvesting and cultivation operations in Central Maui. Although minimal, airborne pollutants are largely attributable to vehicular exhaust from traffic along the region's roadways. However, these sources are intermittent and prevailing winds quickly disperse the particulates generated by these temporary sources. Overall, air quality in the Waikapu region is considered good.

8. *Noise*

Traffic noise from Honoapiilani Highway is the predominant source of noise in the vicinity of the property. Traffic on Pilikana Street, Ho'okahewai Street and other local roads in the vicinity are a

secondary source of background noise. Other background noise levels are attributed to nearby agricultural operations on an intermittent basis as well as natural conditions such as wind and rain.

9. Scenic and Open Space Resources

In addition to Mount Haleakala to the east, Iao Valley and the West Maui Mountains define the scenic resources to the west of the project site. There are no notable features within immediate proximity of the project site.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

The population of the County of Maui has exhibited relatively strong growth over the last two (2) decades. The 1990 population was estimated at 100,504, a 41.8 percent increase over the 1980 population of 70,847. The Year 2000 population is estimated at 124,562, which is a 23.9 percent increase over 1990. The resident population for the Year 2010 is projected to be 145,872 (Community Resources, Inc., 1994).

The estimated 1990 population for the Wailuku-Kahului Community Plan region is 32,816. The region's population shows an increase to 40,452 in the Year 2000. This represents a 23.2 percent increase over 1990. By the Year 2010, population in the region is projected to increase to 48,132 (Community Resources, Inc., 1994).

2. *Economy*

The Wailuku region is the Island's center of governmental activities, as well as a focal point for professional and business services. Combined with neighboring Kahului, the region's economic character encompasses a broad range of commercial, service and governmental activities. In addition, the region is surrounded by significant agricultural acreages which are currently planted in sugar cane and pineapple. The vast expanse of agricultural land, managed by Hawaiian Commercial & Sugar (HC&S) and Wailuku Agribusiness, is considered a key component of the local economy.

C. *PUBLIC SERVICES*

1. *Police and Fire Protection*

Police protection for the Wailuku-Kahului region is provided by the County Police Department headquartered at the Wailuku Station. The region is served by the Department's Central Maui patrol.

Fire prevention, suppression, and protection services for the Wailuku-Kahului region is provided by the County Department of Fire Control's Wailuku Station, located in Wailuku Town.

2. *Health Care*

Maui Memorial Medical Center, the only major medical facility on the island, services the Wailuku-Kahului region. Acute, general and emergency care services are provided by the 195 bed facility. In addition, numerous privately operated medical/dental clinics and offices are located in the area to serve the region's residents.

3. ***Solid Waste***

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

4. ***Recreational Resources***

The Wailuku-Kahului region encompasses a full range of recreational opportunities, including shoreline and boating activities at the Kahului Harbor and adjoining beach parks, and individual and organized athletic activities offered at numerous County parks. The project site is in close proximity to Waikapu Ball Park and Community Center, Iao Valley State Park, Wells Park, Wailuku Elementary School Park, the Wailuku Community Center, Papohaku Park, War Memorial athletic complex and Keopuolani Park.

5. ***Schools***

The Wailuku-Kahului region is served by the State Department of Education's public school system as well as several privately operated schools accommodating elementary, intermediate and high schools students. Department of Education facilities in the Wailuku area include Wailuku Elementary School (Grades K to 5), Iao Intermediate School (Grades 6 to 8), and Baldwin High School (Grades 9 to 12). Schools in the Kahului area include Lihikai and Kahului Schools (Grades K to 5), Maui Waena Intermediate School (Grades 6 to 8), and Maui High School (Grades 9 to 12). Maui

Community College, a branch of the University of Hawaii, serves as the island's only community college.

D. INFRASTRUCTURE

1. Roadways

Honoapiilani Highway is under the jurisdiction of the State of Hawaii Department of Transportation and is the main artery linking Waikapu to Central, South and West Maui.

Access to the project site will be directly off Honoapiilani Highway at its intersection with Pilikana Street. This intersection is located approximately 1,250 feet north of the Waiko Road and Honoapiilani Highway intersection. Honoapiilani Highway was improved as part of the Waiolani Subdivision to include a left-turn storage lane for northbound traffic and a deceleration lane for southbound traffic. Pilikana Street, at its intersection with Honoapiilani Highway, was striped to include separate left- and right-turn lanes. Pilikana Street, Ho'okahewai Street and Mo'ohele Street, which were constructed as part of the Waiolani Subdivision and improved to County of Maui standards, provide the access to the project site from Honoapiilani Highway. Pilikana and Ho'okahewai Streets have a 56-feet wide right-of-way and 40 feet (curb-to-curb) travelway. Mo'ohele Street has a 44-feet wide right-of-way and 28-feet (curb-to-curb) travelway. See Appendix B.

A traffic study for the proposed project was prepared by Phillip Rowell & Associates in January 2001. See Appendix C. The purpose of the study was to identify traffic impacts of the proposed project on the local roadway system.

According to the traffic impact analysis done for the proposed project, the Honoapiilani Highway/Pilikana Street intersection currently operates at acceptable levels of service or LOS. A LOS indicator is represented by an index that ranges from "A" to "F"; "A" indicating a very brief delay (0 to 5 seconds) and "F" indicating a significant delay (greater than 45 seconds). A LOS of "A" was given to northbound, left-turning traffic (i.e., turning left from Honoapiilani Highway onto Pilikana Street). LOS "B" was assigned to eastbound traffic (exiting the Waiolani subdivision and turning right on Honoapiilani Highway). Left turning traffic exiting the subdivision from *Pilikana Street onto Honoapiilani* Highway experience a peak hour LOS of "C".

2. ***Water***

Water for Waikapu comes from deep wells drilled to sea level at Mokuhau in Iao Valley. From these wells, at elevation 360 feet above sea level, water is conveyed by gravity to a 3.0 million gallon reservoir located east (makai) of Waiale Drive. A series of pump stations then lift water from this reservoir to a 300,000 gallon storage tank located in upper Waikapu at elevation 764 feet. It is then conveyed by means of 8- and 12-inch waterlines located within Waiko Road and the existing roadways within the Waiolani Subdivision to the project site. See Appendix B.

3. ***Wastewater***

The existing village of Waikapu is not sewered. Homes and businesses are all connected to individual cesspools and septic tanks.

However, for the Maui Tropical Plantation project, a gravity transmission system was installed between Waiko Road and the County's gravity system on Waiale Road below Honoapiilani Highway. This system, comprised of 8- and 12-inch sewerlines, was designed and constructed to County of Maui standards. The existing Waiolani Subdivision is sewered and the improvements in conjunction with the previously mentioned gravity transmission system was dedicated to the County of Maui.

4. *Drainage*

The current on-site surface runoff generated from the project site for a 50-year recurrence interval, 1-hour duration storm is 7.1 cubic feet per second (cfs). Off-site surface runoff is intercepted and conveyed by the existing underground drainage system installed as part of the Waiolani Subdivision improvements.

The on-site surface runoff generated from the project is intercepted by the existing curb-inlet type catch basin located within the Waiolani Subdivision or the grated-inlet type catch basin located within the Honoapiilani Highway right-of-way. This surface runoff is conveyed by means of an existing underground drainage system located within the Waiolani Subdivision, Honoapiilani Highway, and Waiolu Street to an outlet into Waikapu Reservoir. This reservoir serves as a sedimentation and retention basin for the Waiolani Subdivision. The two (2) existing overflow spillways in the Waikapu Reservoir discharge the runoff into an existing underground drainage system located within Waiko Road to an outlet at Waikapu Stream. See Appendix B.

5. ***Electricity, Telephone and Cable Television Systems***

The existing overhead electrical, telephone, and cable television lines located on the easterly side of Honoapiilani Highway provide the source of these utilities for the project site and the Waiolani Subdivision. See Appendix B.

Chapter III

Potential Impacts and Mitigation Measures

III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. IMPACTS TO THE PHYSICAL ENVIRONMENT

1. Surrounding Land Uses

The project site is located on the outskirts of Waikapu Town and abuts the existing Waiolani residential subdivision. Waikapu contains primarily single-family residential uses although there are neighborhood commercial uses along Honoapiilani Highway. The project abuts the Waiolani residential development and involves the construction of dwellings similar in character and scale to Waiolani. The Waiolani project and its existing access roads form three (3) borders of the project site. The fourth border is formed by Honoapiilani Highway.

The development of residential uses at the project site is consistent with already existing residential uses in Waikapu Town and within the Waiolani development. It is also noted that lot sizes within the original Waiolani development are a minimum of 6,000 square feet. Proposed lot sizes for Waiolani Elua will be a minimum of 7,500 square feet. The project is not anticipated to create any adverse impacts.

2. Topography and Landform

The proposed project is not anticipated to result in significant earth-moving activities. Finished contours will be consistent with those defined by surrounding roads and the Waiolani Subdivision.

3. Flora and Fauna

There are no known significant habitats or rare, endangered, or threatened species of flora or fauna located on the project site. In addition, the proposed improvements are not anticipated to impact

wetland areas and wildlife habitats. As such, the removal of vegetation and displacement of wildlife from the project site is not considered an adverse impact to these components of the natural environment.

4. ***Archaeological Resources and Cultural Impact Considerations***

The project site has been subject to previous ground disturbing activities related to agricultural activities. In addition, the property was previously utilized as a construction staging area during the development of the adjacent Waiolani Subdivision. Development of the subject property is believed to have "no effect" upon significant historic sites. See Appendix D.

In the event that human remains or artifacts are encountered, work will be halted in the area of the find and the State Historic Preservation Division will be notified. Applicable procedures to ensure compliance with Chapter 6E, Hawaii Revised Statutes (HRS), will be implemented.

The name "Waikapu" is attributed to the existence of a cave on the south side of the stream about a mile inland in which a great conch shell (*pu*) was hidden (Handy and Handy). The sound of the conch shell could be heard in the valley, and hence the name *Waikapu* (water of the conch). It is said that the conch was stolen by a dog named *Puapua-lena-lena*, and since that time, the sound of the conch has not been heard.

With its abundant availability of stream water, Waikapu has historically been associated with agricultural use. Land Commission Awards (LCA) situated in the vicinity of the subject

property indicate the area's historical occupation for agricultural purposes, including taro farming (Archaeological Consultants of Hawaii). According to Handy and Handy, spreading north and south from the base of Waikapu (below the valley) were wet taro cultivation areas which were more recently replaced by sugar cane cultivation. Beyond taro farming and sugar cultivation activities, the Waikapu area was also known for its truck farming activities.

The Waikapu area's past cultural character then, is founded on a subsistence lifestyle which pre-dated Hawaii's large scale agricultural and industrial economies. As a result of the shifts in the economic base of the island over time (including the closure of sugar cane operations by Wailuku Sugar Company), Waikapu's land use character has now been redefined as a village residential community, consisting of older plantation homes and recently completed single-family subdivisions. The proposed Waiolani Elua Subdivision is in keeping with this character.

In the context of existing land use conditions and spatial relationships, the development of the property is not anticipated to affect Native Hawaiian traditional gathering practices, nor is it anticipated to affect access rights and Native Hawaiian traditional beliefs.

5. ***Air Quality***

Emissions from construction equipment and other vehicles involved in construction activities may temporarily affect the ambient air quality within the immediate vicinity. However, these effects can be minimized by properly maintaining construction equipment and vehicles.

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. Mitigation measures include utilizing dust barriers, waterwagons, and/or sprinklers to control dust, and watering graded areas upon the completion of daily construction activities and/or weekends and holidays to the extent practicable.

On a long-term basis, the proposed residential use in this location is not anticipated to generate adverse air quality impacts.

6. ***Noise***

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

Proper equipment and vehicle maintenance are anticipated to reduce noise levels. Equipment mufflers or other noise attenuating equipment may also be employed as required. All construction activities will be limited to daylight working hours.

Once completed, the proposed project is not anticipated to generate adverse noise conditions.

7. ***Scenic and Open Space Resources***

Haleakala is visible to the east of the project site with the West Maui Mountains to the west. The project is not part of a scenic corridor and will not affect views from inland vantage points. As

such, the proposed project is not anticipated to have an adverse impact upon the visual character of the surrounding area.

B. *IMPACTS TO THE SOCIO-ECONOMIC ENVIRONMENT*

1. *Population and Local Economy*

On a short-term basis, the proposed action should not significantly affect population parameters but will support construction and construction-related employment.

Over the long term, the proposed project would not lead to a significant population increase in the region. Any increase in population resulting from the project should be within expected growth parameters for the region. In the long term, residential homeowners will require services related to home maintenance and improvement which is expected to further support local business operators.

2. *Agriculture*

Although the land was previously engaged in large scale agricultural activities, it is presently fallow, undeveloped and predominantly vegetated with scattered kiawe, koa haole and introduced grass species. From a large scale agricultural use standpoint, this unutilized state is attributed to the parcel's relatively small size and surrounding residential and roadway uses. The foregoing conditions place operational (land locking) constraints on conducting profitable, large scale agricultural production. The use of the subject property for the proposed project is not anticipated to affect agricultural activities.

3. ***Police, Fire and Medical Services***

The proposed action is not anticipated to affect the service capabilities of police, fire and emergency medical operations. The project will not extend the existing service area limits for emergency services.

4. ***Recreational and Educational Services***

The applicant for the project will work with the Department of Parks and Recreation to ensure compliance with applicable park assessment requirements.

The project involves the development of 25 improved residential lots. The State Department of Education's general guidelines for student enrollment projections indicates the following:

a. Approximately six (6) elementary school students will come from the proposed subdivision (based on a general ratio of 25 students per 100 units);

b. Approximately three (3) middle school students will come from the proposed subdivision (based on a general ratio of 10 students per 100 units); and

c. Approximately three (3) high school students will come from the proposed subdivision (based on a general ratio of 10 students per 100 units).

5. ***Solid Waste Management***

A solid waste management plan will be developed for the disposal of materials resulting from the site and construction activities, as appropriate. Once completed, it is anticipated that the project would be served by the County of Maui.

C. *IMPACTS TO INFRASTRUCTURE*

1. *Roadways*

A traffic impact analysis report was conducted for the subject project by Philip Rowell and Associates. The study included an analysis of existing traffic conditions determined from traffic counts performed during November 2000. Future traffic conditions without the proposed project were estimated using the year 2005 as the design year. The next step in the traffic analysis was to estimate peak-hour traffic that would be generated by the proposed project. The trips were distributed based on available approach and departure routes. The project-related traffic was then superimposed on the 2005 cumulative traffic volumes at the study intersections. A level of service (LOS) analysis was performed for cumulative plus project conditions.

The results of the LOS analysis for the unsignalized intersection of Honoapiilani Highway at Pilikana Street are shown in Table 1. According to the traffic impact analysis, increase in delay time for eastbound right- and northbound left-turn traffic patterns can be primarily attributed to the general increase in traffic patterns on Maui rather than the increased traffic volume resulting from the proposed subdivision. The projected LOS for the northbound traffic turning left and eastbound traffic turning right are not anticipated to be adversely affected.

Table 1

LEVEL-OF-SERVICE ANALYSIS FOR 2005 PEAK HOUR CONDITIONS [1]

Intersection and Movement	Cumulative			Cumulative Plus Project			Change in Delay [2]
	Average Vehicle Delay [2]	95% Queue [3]	LOS [4]	Average Vehicle Delay [2]	95% Queue [3]	LOS [4]	
AM PEAK HOUR							
Honoapiilani Highway at Pilikana Street	1.0		A	1.3		A	0.3
Eastbound Left	20.0	1.2	D	22.4	1.6	D	2.4
Eastbound Right	6.0	0.1	B	6.1	0.2	B	0.1
Northbound Left	4.4	0.0	A	4.4	0.0	A	0.0
PM PEAK HOUR							
Honoapiilani Highway at Pilikana Street	0.9		A	1.1		A	0.2
Eastbound Left	32.3	1.0	E	36.6	1.4	E	4.3
Eastbound Right	6.8	0.1	B	6.9	0.2	B	0.1
Northbound Left	5.2	0.1	B	5.3	0.2	B	0.1

NOTES:
[1] See Appendix B of traffic impact analysis report
[2] Delay is in seconds per vehicle
[3] 95th queue is not calculated for the total intersection
[4] LOS denotes Level-of-Service calculated using the operations method described in Highway Capacity Manual

Traffic turning left from Pilikana onto Honoapiilani Highway is estimated to operate at LOS "D" during the AM peak hour and LOS "E" during the PM peak hour at the 2005 horizon year. As determined by the traffic analysis, the proposed subdivision will have no impact on the LOS for the intersection of Honoapiilani Highway and Pilikana Street.

A traffic signal warrant analysis was also performed. The study was conducted to determine if traffic conditions projected for the year 2005 would necessitate the installation of a traffic signal at the subject intersection. The study was performed using procedures set forth by the U.S. Department of Transportation, Federal Highway Administration. The report concluded that the increase in additional vehicles from the proposed subdivision, combined with projected traffic increases in local traffic patterns in the year 2005, would not satisfy the criteria necessary for a traffic signal at the intersection of Honoapiilani Highway and Pilikana Street. See Table 2.

Table 2

TRAFFIC SIGNAL WARRANT ANALYSIS				
No.	*Warrant*	*Satisfied*	*Not Satisfied*	*Comment*
1	Minimum Vehicular Volume		X	
2	Interruption of Continuous Traffic		X	
3	Minimum Pedestrian Volume		X	
4	School Crossing		X	
5	Progressive Movement		X	
6	Accident Experience		X	Accident Data Not Available
7	Systems Warrant		X	
8	Combination of Warrants		X	
9	Four Hour Volume		X	
10	Peak Hour Delay		X	
11	Peak Hour Volume		X	

Based on the Traffic Impact Analysis Report, the following conclusions have been advanced:

1. There is no change in the LOS at the study intersections as a result of the proposed project.

2. Traffic signals are not warranted at the intersection of Honoapiilani Highway and Pilikana Street for cumulative plus project conditions.

2. ***Water***

The projected average daily water demand for the proposed 25-lot single-family residential project is expected to be 15,000 gallons

per day (gpd). This translates to a maximum daily demand of 22,500 gpd. The fire flow demand for a single-family residential project is 1,000 gallons per minute (gpm).

The existing storage and transmission system have the capacity to satisfy both the domestic water and fire flow requirements. Therefore, the project's prorata share of source development, storage and transmission costs will be paid for as part of the comprehensive water meter assessment fee for each lot.

The existing 8-inch waterlines along Ho'okahewai and Mo'ohele Streets will be extended into the project in order to satisfy the fire flow requirement. The distribution system will be looped to ensure continuous circulation as required by the Department of Water Supply. Fire hydrants are expected to be installed along the subdivision roadways at intervals of 300 to 350 feet. Refer to Appendix B.

3. ***Wastewater***

The proposed single-family residential project is expected to generate approximately 8,750 gpd of wastewater. The existing 8-inch sewerline along Mo'ohele Street, which was extended into the project as part of Waiolani Subdivision, as well as the existing County of Maui wastewater system, have the capacity to accommodate the projected wastewater flow.

In accordance with the provisions of the Maui County Code, the applicant's contribution towards the completed expansion of the Kahului Wastewater Reclamation Facility will be an assessment

based on a per gallon of wastewater generated. Refer to Appendix B.

4. ***Drainage***

The post development surface runoff from this single-family residential project for a 50-year recurrence interval, 1-hour duration storm is estimated to be approximately 12.2 cfs. This on-site surface runoff will be directed into the existing storm drain system that was installed as part of the Waiolani Subdivision. This system was designed to accommodate the on-site post-development flow generated from the project. In this regard, the applicant has approval from Wailuku Agribusiness Company, Inc. to discharge the subdivision's storm runoff into the Waikapu Reservoir system, which receives stormwater from the Waiolani Subdivision. Based on the available drainage improvements in the project vicinity, it is expected that there will be no adverse drainage-related impacts to downstream or surrounding properties. Refer to Appendix B.

5. ***Electricity, Telephone and Cable Television Systems***

Underground distribution systems for electricity, telephone and cable television will be extended into the project from Pilikana, Ho'okahewai and Mo'ohele Streets along the subdivision roadways, all in accordance with the provisions of the county subdivision standards, and the applicable utility standards. Refer to Appendix B.

Chapter IV

Relationship to Governmental Plans, Policies and Controls

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE LAND USE DISTRICTS

Pursuant to Chapter 205, Hawaii Revised Statutes, all lands in the State have been 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 classified "Agricultural". See Figure 7. The proposed action involves a request for classification from the "Agricultural" District to the "Urban" District.

B. LAND USE COMMISSION RULES, CHAPTER 15-15, HAWAII ADMINISTRATIVE RULES

The proposed reclassification of the subject property is in conformance with the following standards of the Urban District set forth in Chapter 15-15-18, Hawaii Administrative Rules:

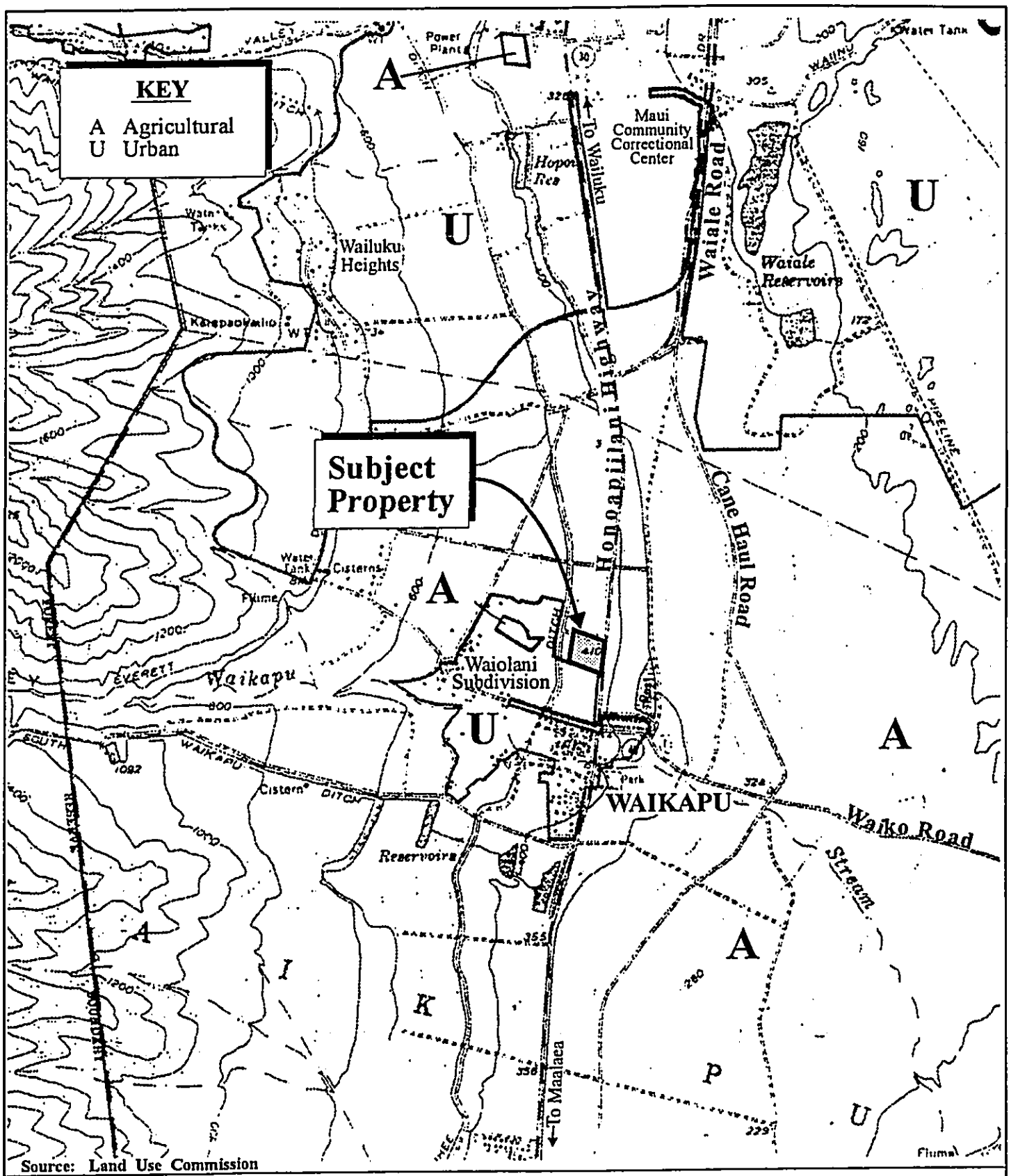
Chapter 15-15-18

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

Comment: The proposed project abuts the existing Waiolani residential development containing 116 single-family homes. It is also adjacent to Waikapu Town which contains single-family residential, commercial and recreational uses.

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

A. Proximity to centers of trading and employment except where the development would generate new centers of trading and employment.



Source: Land Use Commission

Figure 7 Waiolani Elua Subdivision

State Land Use Classifications

0 500 1000 2000 Feet

MUNEKIYO & HIRAGA, INC.

Prepared for: Scott Nunokawa and Haunani Lemn

Comment: There is a small node of commercial uses in Waikapu Town. However, Waikapu has traditionally been a residential village. It is located approximately 1.2 miles from Wailuku Town which is the County seat and a center of trading and employment.

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

Comment: Basic infrastructural services such as transportation systems, sewer and water are available in close proximity to the project. Drainage improvements will comply with County of Maui standards. Schools and parks are available in close proximity. Police and fire services also presently serve Waikapu Town.

C. Sufficient reserve areas for foreseeable urban growth.

Comment: The area of the proposed reclassification utilizes 6.058 acres for single-family residential purposes. Development of the subject property should address a portion of the demand without significantly affecting reserve areas for urban growth.

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

Comment: The site is relatively flat. Existing drainage improvements constructed as part of the Waiolani development are sufficient to accommodate additional flows resulting from the development. The project site is located in Zone C, an area of minimal flooding. The project site is not subject to tsunami inundation and unstable soil conditions.

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

Comment: Lands pertaining to the subject request are contiguous to areas already in the Urban District.

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

Comment: *The subject property is an appropriate location* for an Urban District classification as it abuts lands already in the Urban District. The 10-year update to the Wailuku-Kahului Community Plan includes a proposed "Single Family" designation for the subject property.

(6) It may include lands which do not conform to the standards in paragraphs (1) to (5):

A. When surrounded by or adjacent to existing urban development; and

B. Only when those lands represent a minor portion of this district

Comment: Although the subject property conforms with standards in paragraphs (1) to (5), it is noted that it abuts urban development on two (2) sides and is adjacent to existing urban development. Moreover, the proposed project site represents 0.002 percent of the 248,457 acres within the Agricultural District on the island of Maui.

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

Comment: The proposed reclassification does not contribute to scattered spot urban development. It is adjacent to existing Waikapu Town. The proposed development will not necessitate unreasonable public investment in infrastructural facilities or public services. The applicant will comply with applicable provisions regarding provision of infrastructural facilities.

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

Comment: The area of the proposed reclassification contains a slope significantly less than 20 percent.

C. *GENERAL PLAN OF THE COUNTY OF MAUI*

The General Plan of the County of Maui provides long-term goals, objectives and policies directed toward the betterment of living conditions in the County. Addressed are social, environmental and economic issues which influence both the quantity and quality of growth in Maui County. The following General Plan objectives and policies are addressed by the proposed project.

Land Use

Objective: To preserve for present and future generations existing geographic and traditional lifestyles by limiting and managing growth through environmentally sensitive and effective use of lands in accordance with the individual character of the various communities and regions of the County.

Policy: Provide and maintain a range of land use districts sufficient to meet the physical, environmental, and economic needs of the community.

Comment: A revised community plan designation of "Single Family", would allow implementation of a land use designation compatible with the residential character of the Waikapu area.

Objective: To provide a choice of attractive, sanitary and affordable homes for all our residents.

Policy: Encourage the construction of housing in a variety of price ranges and geographic locations.

Comment: The proposed project provides an incremental addition to housing choices available in the Central Maui area. The intent is to provide a product similar to the neighboring Waiolani development.

D. *WAILUKU-KAHULUI COMMUNITY PLAN*

Nine (9) community plans have been established in Maui County. Each region's growth and development is guided by a Community Plan, which contains objectives and policies drafted in accordance with the County General Plan. The purpose of the Community Plan is to outline a relatively detailed agenda for carrying out these objectives.

The proposed project is designated as "Agriculture" under the 1987 Wailuku-Kahului Community Plan. The Maui County Council is currently updating the plan, with the subject property being proposed for "Single Family" designation. A change in community plan designation would allow the applicants to implement a single-family subdivision compatible with the intent of the proposed 10-year update to the Wailuku-Kahului Community Plan. See Figure 8.

E. *COUNTY ZONING*

The zoning for the subject site is County Agricultural District. A change in zoning to the R-2 Residential District is being sought.

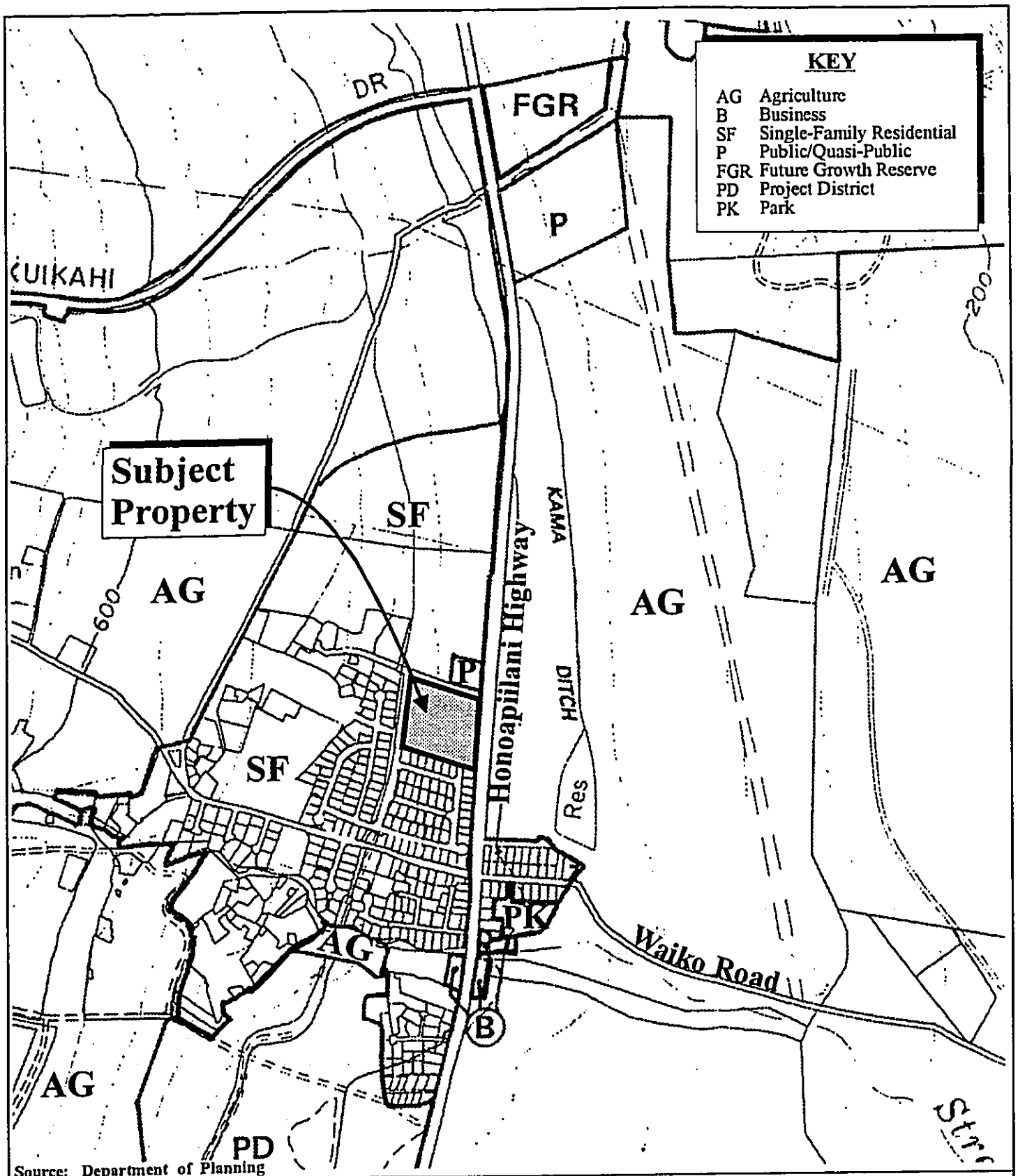


Figure 8 Waiolani Elua Subdivision

Proposed Update to Wailuku-Kahului Community Plan

0 500 Feet
250 1000

MUNEKIYO & HIRAGA, INC.

Prepared for: Scott Nunokawa and Haunani Lemn

F. *COASTAL ZONE MANAGEMENT OBJECTIVES AND POLICIES*

Pursuant to Chapter 205A, Hawaii Revised Statutes, projects are evaluated with respect to Coastal Zone Management (CZM) objectives, policies and guidelines. It is noted that while the subject property is not located within the County of Maui's Special Management Area, the project's relationship to applicable coastal zone management considerations have been reviewed and assessed.

(1) Recreational Resources

Objective:

Provide coastal recreational opportunities accessible to the public.

Policies:

(A) Improve coordination and funding of coastal recreational planning and management; and

(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

(ii) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand 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;

(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, HRS.

Response: The proposed project will not affect coastal zone recreational opportunities. Accessibility to shoreline areas will not be impacted by the proposed action.

(2) Historic resources

Objective:

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

Policies:

(A) Identify and analyze significant archeological 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 has already been extensively altered through previous agricultural activities and use as a construction staging area and is not anticipated to adversely affect significant historic or archaeological resources.

(3) ***Scenic and open space resources***

Objective:

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

Policies:

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

Response: The proposed project will not adversely impact scenic or open space resources. The proposed project will not involve significant alteration to the existing topographic character of the site and will not affect public views from the shoreline.

(4) ***Coastal ecosystems***

Objective:

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

Policies:

(A) Improve the technical basis for natural resource management;
(B) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
(C) 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

(D) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

Response: Appropriate erosion control measures will be implemented during the construction of the project to prevent significant impacts upon coastal water ecosystems. Runoff from the project will be routed to existing drainage improvements which have already been sized to accommodate the subject project. The completion of the proposed project will not significantly disrupt or impact coastal ecosystems.

(5) Economic Uses

Objective:

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

Policies:

(A) Concentrate coastal dependent development in appropriate areas;

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

(C) Direct the location and expansion of coastal dependent developments to areas presently designated and 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 proposed project is not a coastal dependent development. No adverse economic impacts will be generated as a result of the project.

(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, and 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 pollution hazards;
(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program;
(D) Prevent coastal flooding from inland projects; and
(E) Develop a coastal point and nonpoint source pollution control program.

Response: The project site is located within Zone C, which is an area of minimal flooding. Moreover, tsunami inundation parameters do not apply to the subject project.

(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 future 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 public to facilitate public participation in the planning and review process.

Response: The district boundary amendment and change in zoning application processes involve review by governmental agencies which may have an interest in the matter. Participation is also afforded at public hearings and meetings.

Applicable State and County requirements will be adhered to in the design and construction of the project.

(8) Public Participation

Objective:

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

Policies:

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

(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 previously noted, opportunities for agency and public review of the proposed action are provided through the

notification review and comment processes of the County development process.

(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 and to minimize loss of improvements due to erosion;
(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and
(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Response: The proposed project does not involve any construction work seaward of the shoreline setback and will not have any effect on beaches in the region. On-site runoff will be accommodated by drainage facilities in compliance with County standards.

(10) ***Marine Resources***

Objective:

Implement the State's ocean resources management plan.

Policies:

(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
(B) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

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

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

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

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

Response: The proposed project is not anticipated to have adverse effects upon marine and coastal resources in the vicinity.

Chapter V

Adverse Environmental Impacts Which Cannot be Avoided

V. ADVERSE ENVIRONMENTAL IMPACTS WHICH CANNOT BE AVOIDED

Potential construction-related impacts include noise-generated impacts occurring from site preparation and construction activities. In addition, there may be temporary air quality impacts associated with dust generated from construction activities, and exhaust emissions discharged by construction equipment. These effects are temporary, and appropriate best management practices will be implemented to ensure that these construction-related impacts are mitigated to the maximum extent practicable.

The proposed project is not anticipated to create any significant, long-term, adverse environmental effects.

Chapter VI

Alternatives to the Proposed Action

VI. ALTERNATIVES TO THE PROPOSED ACTION

A. PREFERRED ALTERNATIVE

The preferred alternative represents a proposed 25-lot single-family subdivision to be developed as a residential community compatible with the adjacent Waiolani subdivision. There are no adverse impacts associated with the proposed subdivision plan relating to the environment or local infrastructure. Moreover, current market research indicates conditions warranting demand for additional single-family residential properties.

B. NO ACTION ALTERNATIVE

The subject property is not a viable candidate for future agricultural use due to surrounding uses and property definition constraints. In the context of growing housing demand, therefore, residential use is deemed an appropriate land use development consideration. It is also noted that the Maui County Council is currently considering a comprehensive update to the Wailuku-Kahului Community Plan which includes a redesignation of the subject property from the "Agriculture" to "Single Family" category. Given these conditions, the "no action" alternative was not considered.

C. DEFERRED ACTION ALTERNATIVE

As with the "no action" alternative, the "deferred action alternative" is not considered viable.

D. SITE DESIGN

The proposed site plan and lot configuration are largely based on infrastructure development parameters established by the original Waiolani Subdivision. Although lot sizes are larger than those at Waiolani, the proposed subdivision's layout can be accommodated by roadway and infrastructure patterns established by Waiolani. Utilizing a

new or differing subdivision concept may require additional infrastructure development elements. Therefore, the proposed 25-lot subdivision configuration was considered the most efficient and compatible with adjacent infrastructure systems.

Chapter VII

Irreversible and Irretrievable Commitment of Resources

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed project will involve the commitment of fuel, labor, and material resources, as well as private funds.

Development of the proposed project will also involve the commitment of land for improvements, which is consistent with existing land uses surrounding the project site. In this context, the use of this land for single-family residential purposes is not considered a negative impact relative to land resource commitment.

Chapter VIII

Findings and Conclusions

VIII. FINDINGS AND CONCLUSIONS

The "Significance Criteria", Section 12 of the Administrative Rules, 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. ***No Irrevocable Commitment to Loss or Destruction of any Natural or Cultural Resource Would Occur as a Result of the Proposed Project***

   The project will not result in any adverse environmental impacts. There are no known, rare, endangered or threatened species of flora, fauna or avifauna located within the project site.

   From an archaeological standpoint, the ground surface has been continuously disrupted through prior decades of intensive agricultural production. The resulting ground disturbances have virtually eliminated any possibility of recovering intact cultural materials in the subject area. Should any artifacts or human remains be encountered during construction, work will stop in the immediate vicinity of the find and the SHPD and/or the Maui/Lanai Island Burial Council will be appropriately and immediately notified to establish an appropriate mitigation strategy.

2. ***The Proposed Action Would Not Curtail the Range of Beneficial Uses of the Environment***

   The proposed project and the commitment of land resources would not curtail the range of beneficial uses of the environment.

3. ***The Proposed Action Does Not Conflict with the State's Long-term Environmental Policies or Goals or Guidelines as Expressed in Chapter 344, Hawaii Revised Statutes***

The State's Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes. The proposed action is not contrary to these policies and guidelines.

4. ***The Economic or Social Welfare of the Community or State Would Not be Substantially Affected***

The proposed project would have a direct beneficial effect on the local economy during construction. In the long term, the proposed project will support the local economy through homeowners' need for goods and services. The economic and social welfare needs of the community will not be adversely impacted by the proposed subdivision.

5. ***The Proposed Action Does Not Affect Public Health***

No impacts to the public's health and welfare are anticipated as a result of the proposed project.

6. ***No Substantial Secondary Impacts, Such as Population Changes or Effects on Public Facilities are Anticipated***

No significant population changes are anticipated as a result of the proposed project.

The proposed improvements will hookup to existing County water and wastewater systems. No adverse impacts to water and wastewater capacities and facilities are anticipated. Onsite and offsite surface runoff are expected to be accommodated by existing drainage system improvements. The project is not expected to significantly impact public services such as police, fire, and medical services. Impacts upon

educational, recreational, and solid waste collection and disposal facilities and resources are considered minimal.

7. ***No Substantial Degradation of Environmental Quality is Anticipated***

During the construction phase of the project, there will be short-term air quality and noise impacts as a result of the project. In the long term, effects upon air quality and ambient noise levels should be minimal. The project is not anticipated to significantly affect the open space and scenic character of the area.

No substantial degradation of environmental quality resulting from the project is anticipated.

8. ***The Proposed Action Does Not Involve a Commitment to Larger Actions, Nor Would Cumulative Impacts Result in Considerable Effects on the Environment***

The proposed project does not involve a commitment to larger actions.

9. ***No Rare, Threatened or Endangered Species or Their Habitats Would be Adversely Affected by the Proposed Action***

There are no rare, threatened or endangered species of flora, fauna, avifauna or their habitats on the subject property.

10. ***Air Quality, Water Quality or Ambient Noise Levels Would Not be Detrimentally Affected by the Proposed Project***

Construction activities will result in short-term air quality and noise impacts. Dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions. Noise impacts will occur primarily from construction-related activities. It is anticipated that construction will be limited to daylight working hours. Water quality is not expected to be affected.

In the long term, the project is not anticipated to have a significant impact on air and water quality or ambient noise levels.

11. The Proposed Project Would Not Affect Environmentally Sensitive Areas, Such as Flood Plains, Tsunami Zones, Erosion-prone Areas, Geologically Hazardous Lands, Estuaries, Fresh Waters or Coastal Waters

The project is not located within and would not affect environmentally sensitive areas. The project site is not subject to flooding or tsunami inundation. Soils of the project site are not erosion-prone. There are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the project site.

12. The Proposed Action Would Not Substantially Affect Scenic Vistas and Viewplanes Identified in County or State Plans or Studies

The project site is not identified as a scenic vista or viewplane. The proposed project will not affect scenic corridors and coastal scenic and open space resources.

13. The Proposed Action Would Not Require Substantial Energy Consumption

The proposed project will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction activities. However, this use is not anticipated to result in a substantial consumption of energy resources. In the long term, the project will create an additional demand for electricity. However, this demand is not deemed substantial or excessive within the context of the region's overall energy consumption.

Based on the foregoing findings, it is concluded that the proposed action will not result in any significant impacts.

Chapter 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 agencies were consulted during the preparation of the Draft Environmental Assessment. Agency comments and responses to substantive comments are also included in this section.

1. Neal Fujiwara, Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793-2100

2. William Lennan
Department of the Army
U.S. Army Engineer District, Hnl.
Attn: Operations Division
Bldg. T-1, Room 105
Fort Shafter, Hawaii 96858-5440

3. Robert P. Smith
Pacific Islands Manager
U. S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

4. David Blane, Director
State of Hawaii
Office of Planning
Department of Business, Economic, Development and Tourism
P.O. Box 2359
Honolulu, Hawaii 96804

5. Denis Lau, Chief
Clean Water Branch
State of Hawaii
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaii 96814

6. Herbert Matsubayashi
District Environmental Health Program Chief
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793

7. Gilbert Coloma-Agaran
State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

8. Don Hibbard
State of Hawaii
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaii 96707

9. Linnel T. Nishioka, Deputy Director
State of Hawaii
Department of Land and Natural Resources
Water Resources Management Division
P. O. Box 621
Honolulu, Hawaii 96809

10. Brian Minaai
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

11. Robert Siarot, Maui District Engineer
State of Hawaii
Department of Transportation
Highways Division
650 Palapala Drive
Kahului, Hawaii 96732

12. Clayton Ishikawa, Chief
County of Maui
Department of Fire Control
200 Dairy Road
Kahului, Hawaii 96732

13. Alice Lee, Director
County of Maui
Department of Housing and Human Concerns
200 S. High Street
Wailuku, Hawaii 96793

14. Floyd Miyazono, Director
County of Maui
Department of Parks and Recreation
1580 C. Kaahumanu Avenue
Wailuku, Hawaii 96793

15. John Min, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

16. Tom Phillips, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

17. David Goode, Director
County of Maui
Department of Public Works and Waste Management
200 South High Street
Wailuku, Hawaii 96793

18. David Craddick, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

19. **Maui Electric Company, Ltd.**
P. O. Box 398
Kahului, Hawaii 96732

Comments

JAN 17 2001

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

January 11, 2001

Regulatory Branch

Mr. Dean K. Frampton
Munekiyo, Arakawa & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Frampton:

This letter responds to your request for comments on the proposed Waiolani 'Elua Subdivision, Waikapu, Maui, dated January 9, 2001. The information summary is not sufficiently detailed to determine if a Department of the Army (DA) permit will be required for this project. Please include us on the mailing list for the Draft Environmental Assessment and include in the document information concerning the presence or absence of streams or wetlands on the project site.

If you have any questions concerning this determination, please contact William Lennan of my staff at 438-6986 or FAX 438-4060, and reference File No. 200100103.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

BENJAMIN J. CAYETANO
GOVERNOR

JAN 2 6 2001

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD/CWB

01060PKP.0

January 22, 2001

Mr. Dean K. Frampton
Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Frampton:

Subject: **Proposed Waiolani Elua Subdivision**
Waikapu, Maui, Hawaii

The Clean Water Branch has reviewed the subject submittal dated January 9, 2001 and has the following comments:

1. The Army Corps of Engineers should be contacted to identify whether a Federal permit (including a Department of Army permit) is required for the construction project. If it is determined that a Federal permit is required for the subject project, then a Section 401 Water Quality Certification would also be required from our office.

2. If the construction project involves any of the following discharges into Class A or Class II State waters, a National Pollutant Discharge Elimination System (NPDES) general permit is required for each activity:

   a. Storm water runoff associated with construction activities, including clearing, grading, and excavation that result in the disturbance of equal to or greater than five (5) acres of total land area;

      [Note: After March 10, 2003, NPDES general permit coverage will be required for discharges of storm water associated with construction activities, including clearing, grading, and excavation that result in the disturbance of one (1) acre or more.]

   b. Hydrotesting water; and

   c. Construction dewatering effluent;

Notices of Intent (NOI) for NPDES general permits should be submitted at least 30 days before the discharge is to occur. NOI and NPDES individual permit application forms can be downloaded from our website at *http://www.state.hi.us/doh/eh/cwb/forms/index.html*.

Should you have any questions, please contact Ms. Kris Poentis, Engineering Section of the Clean Water Branch, at (808) 586-4309.

Sincerely,

DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:cr

JAN 2 4 2001

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

January 23, 2001

LD-NAV

Ref.: EULASUB.RCM

Munekiyo, Arakawa & Hiraga, Inc.
Dean K Frampton, Planner
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Frampton:

SUBJECT: Pre-Consultation for proposed Waiolani Elua Subdivision
Waikapu, Island of Maui, Hawaii TMK (2) 3-5-4: 095

Thank you for the opportunity to review and comment on the subject matter.

We had transmitted the subject informational material to our appropriate divisions for their review and comment on the subject proposed project.

We have no comment to offer.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 587-0438.

Very truly yours,

DEAN Y. UCHIDA
Administrator

C: Maui District Land Office

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAUI DISTRICT
650 PALAPALA DRIVE
KAHULUI, HAWAII 96732

Brian K. Minaai
Director - Designate
DEPUTY DIRECTORS
Jadine Y. Urasaki
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-M 2.034-01

January 29, 2001

MEMORANDUM

TO: Dean K. Frampton
Munekiyo & Hiraga, Inc.

FROM: Paul M. Chung
State Highways

SUBJECT: PROPOSED WAIOLANI ELUA SUBDIVISION,
I.D. NO. ME-01-06

==========

Thank you for the opportunity to review and comment on the proposed action for the subject project. Based upon our review, we request verification that the proposed development will not have an adverse effect upon our facilities.

If there are any questions or concerns, please call me at 873-3535.

PMC:mh

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

FEB 14 2001

Dean K. Frampton
Munekiyo Hiraga, Inc.
305 High Street 104
Wailuku, Maui , HI 96793

Dear Mr. Frampton:

Proposed Waiolani Elua Subdivision

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

[X] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

[ ] We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[ ] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[ ] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[ ] Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

[ ] We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.

[ ] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).

[ ] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.

[X] OTHER: Please be aware that the Iao Aquifer has been overpumped beyond its sustainable yield in the recent past, and the aquifer continues to show signs it has not fully recovered. If the Commission has to designate the aquifer as a water management area, all groundwater withdrawals to the purveyor would be subject to water use permits. The service area would be subject to a declaration of a water shortage or a water emergency. If withdrawals are constrained, uses may be subject to allocation to users by the purveyor.

If there are any questions, please contact Charley Ice at 587-0251.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

JAN 1 0 2001

JAMES "KIMO" APAN
May
ALICE L. LEE
Director
PRISCILLA P. MIKEI
Deputy Direct

200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165

January 16, 2001

Mr. Dean K. Frampton
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Frampton:

PROPOSED WAIOLANI ELUA SUBDIVISION, WAIKAPU, MAUI
TMK (2) 3-5-4:095

Thank you for the opportunity to comment on the above referenced subject matter.

The proposed project could be beneficial to the community if the selling prices are reasonable.

The proposed project will be subject to the provisions of the Administration's new affordable housing policy.

Should you have any questions, please feel free to call me at 270-7805.

Sincerely,

ALICE L. LEE
Director

DEPARTMENT OF
PARKS AND RECREATION
COUNTY OF MAUI

1580-C Kaahumanu Avenue, Wailuku, Hawaii 96793

JAMES "KIMO" APANA
Mayor
FLOYD S. MIYAZONO
Director
ELIZABETH D. MENOR
Deputy Director

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

January 23, 2001

Mr. Dean K. Frampton
Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Frampton:

SUBJECT: PROPOSED WAIOLANI ELUA SUBDIVISION, WAIKAPU, MAUI
TMK: (2) 3-5-4:095

We would like to request for information on how the applicant intends to meet the park dedication requirements of the subdivision ordinance.

Should you have any questions, please call Patrick Matsui, Chief of Planning and Development at 270-7387.

Sincerely,

FLOYD S. MIYAZONO
Director, Department of Parks & Recreation

c: Patrick Matsui, Chief of Planning & Development
p:\ltr\268

JAMES "KIMO" APANA
Mayor

CHARLES JENCKS
Director

DAVID C. GOODE
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND WASTE MANAGEMENT
LAND USE AND CODES ADMINISTRATION
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

RALPH M. NAGAMINE, L.S., P.E.
Land Use and Codes Administration

RONALD R. RISKA, P.E.
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.
Engineering Division

ANDREW M. HIROSE
Solid Waste Division

BRIAN HASHIRO, P.E.
Highways Division

January 30, 2001

Mr. Dean K. Frampton
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Hawaii 96793

SUBJECT: **PROPOSED WAIOLANI ELUA SUBDIVISION**
TMK:(2) 3-5-004:095
EARLY CONSULTATION REQUIREMENTS

Dear Mr. Frampton:

This is in response to your request for early consultation comments for the proposed subdivision.

At this early stage of the project, the Land Use and Codes Administration does not have any comments to offer.

If you have any questions regarding this letter, please call Mr. Glen Ueno of our Land Use and Codes Administration at 270-7379.

Very truly yours,

for DAVID C. GOODE
Director of Public Works
And Waste Management

GAU S:\LUCA\ALL\SUBD\35004095.ltr

JAMES "KIMO" APANA
MAYOR

OUR REFERENCE
ty
YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

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

THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

FEB 0 6 2001

February 1, 2001

Mr. Dean K. Frampton
Planner
Munekiyo, Arakawa & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Frampton:

SUBJECT: Proposed Waiolani Elua Subdivision, Waikapu, Maui
TMK (2) 3-5-4:095

Thank you for your letter of January 9, 2001 requesting comments on the above subject.

We have reviewed the proposed summary and have enclosed our recommendations. Thank you for giving us the opportunity to comment on this proposed project.

Very truly yours,

Assistant Chief Robert Tam Ho
for: Thomas M. Phillips
Chief of Police

Enclosure

c: John E. Min, Planning Department

TO : **THOMAS PHILLIPS, CHIEF OF POLICE, MAUI COUNTY**

VIA : **CHANNELS**

FROM : **JORGE MARZAN, POLICE OFFICER, COMMUNITY POLICING**

SUBJECT : **PROPOSED WAIOLANI ELUA SUBDIVISION, WAIKAPU, MAUI (TMK-(2) 3-5-4:095**

The purpose of this letter is to inform you and your administration of the traffic impacts of the proposed project for a rezoning and subdivision application.

Project Location and Description

The proposed project is located along the West Side of Honoapiilani High way in Waikapu. The project is located southwest of the intersection of Honoapiilani Highway at Pilikana Street.

The project involves the development of approximately 25 improved parcels adjacent to the existing 116 units Waiolani Subdivision.

There are two existing roadways (Ho'okahewai and Mo'ohele Street) into Waiolani Subdivision and with the proposed project Ho'okahewai Street would connect with Pilikana Street thus providing primary access to Honoapiilani Highway. Access will be via Pilikana Street.

Description of Existing Streets and Intersection Control

Honoapiilani Highway is a Major State Highway connecting to Wailuku and Maalaea. In the area of the proposed project, the highway is a two-lane, two-way facility with separate left turn lanes. Pilikana Street is a two-way street providing access to Honoapiilani Highway from the residential area. The intersection with Honoapiilani Highway is unsignalized.

Existing Peak Hour Traffic

The AM and PM peak traffic at the intersection of Honoapiilani Highway at Pililkana Street showed an average vehicle delay for Eastbound left at 17.1, Eastbound right at 5.6 and Northbound left at 4.1. This survey was conducted during AM peak hours and performed

on a Monday afternoon and Tuesday morning during November, 2000. During PM peak hours indicated an average vehicle delay for Eastbound left of 26.9, Eastbound right of 6.4 and Northbound 4.9.

Assessment reveals that the intersection of Honoapiilani Highway at Pilikana Street operates well; however, there are significant delays to left turn from Pilikana Street.

Conclusion and Recommendations

Phillip Rowell and Associate have been retained by Scott Nunokawa and Haunani Lemn of Wailuku to perform a traffic impact analysis for the proposed residential development. As a result, their finding of facts provided critical data for the proposed residential development, which identifies the project related impact.

The above data was obtained from the **TRAFFIC IMPACT ANALYSIS FINAL REPORT FOR WAIOLANI ELUA SUBDIVISION.**

Respectfully submitted for your information.

Jorge MARZAN
Police Officer
Community Policing
1/22/01 1245 hours

Noted, concur with Officer MARZAN's observations.
Traffic out of the subdivision will be impacted with the influx of additional residences.

Sgt. Barry SOKI 1041
01/24/01 @ 1330 hours

CONCUR WITH OFFICERS.
01/24/01

COPY

TO : **THOMAS PHILLIPS, CHIEF OF POLICE, MAUI COUNTY**

VIA : **CHANNELS**

FROM : **JORGE MARZAN, POLICE OFFICER, COMMUNITY POLICING**

2/1/01

SUBJECT : **(ADDENDUM) PROPOSED WAIOLANI ELUA SUBDIVISION, WAIKAPU, MAUI (TMK-(2) 3-5-4:095)**

Existing Peak Hour Traffic

The AM and PM peak traffic at the intersection of Honoapiilani Highway at Pilikana Street showed an average vehicle delay for Eastbound left at 17.1 per seconds, Eastbound right at 5.6 seconds and Northbound left at 4.1 seconds. This survey was conducted during AM peak hours and performed on a Monday afternoon and Tuesday morning during November, 2000. During PM peak hours indicated an average vehicle delay for Eastbound left of 26.9 second, Eastbound right of 6.4 second and Northbound 4.9 seconds. These delays will not change the level of service.

Assessment reveals that the intersection of Honoapiilani Highway at Pilikana Street operates well; however, there are significant delays to left turn from Pilikana Street.

Conclusion and Recommendations

Phillip Rowell and Associate have been retained by Scott Nunokawa and Haunani Lemn of Wailuku to perform a traffic impact analysis for the proposed residential development. As a result, their finding of facts provided critical data for the proposed residential development, which identifies the project related impact.

Further assessment and evaluation concerning speeding vehicles on Honoapiilani Highway should be an issue. And suggest that a study and research be conducted relating to intersection related Motor Vehicle Crash in the area. The above issues and concerns should be addressed before any conclusions are made.

The above data was obtained from the **TRAFFIC IMPACT ANALYSIS FINAL REPORT FOR WAIOLANI ELUA SUBDIVISION.**

NOTED:

JAN 19 2001

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109
Telephone (808) 270-7816 • Fax (808) 270-7199

January 16, 2001

Mr. Dean Frampton
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

SUBJECT: Proposed Waiolani Elua Subdivision, Waikapu, Maui
TMK 3-5-04:095

Dear Mr. Frampton,

Thank you for the opportunity to provide comments in preparation of the draft environmental assessment (EA).

The EA should include the sources and expected potable and non-potable water usage. This project area is served by the Central Maui System. The major source of water for this system is the Iao Aquifer. Rolling annual average groundwater withdrawals from the Iao Aquifer as of January 1, 2001 were 17.002 MGD. The regulatory sustainable yield of this aquifer is 20 MGD. If rolling annual average withdrawals exceed 20 MGD, the State Commission on Water Resource Management will designate Iao Aquifer. The Department is implementing a plan to bring new sources on-line and to mitigate withdrawals. Two wells in North Waihee were brought on-line in July 1997 and another two adjacent wells were brought on-line during 2000. The Department is continuing to implement a plan to bring new sources on-line and to mitigate withdrawals. Nevertheless, the applicants should be made aware that the timing of this project may be affected with possible delays until new sources can be brought on-line. No guarantee of water is granted or implied as a result of these comments. Water availability will be reviewed at the time of application for meter or meter reservation. The applicant is a participant of the Central Maui Water Transmission and Source Development Joint Venture (CMJV). Water requirements must be coordinated with DWS pursuant to the CMJV agreement.

We have included a portion of our water system map pertaining to the project area. The applicant will be required to provide water service and fire protection to standards. The project would be served by the 300,000 gallon Waikapu tank and reserved capacity allocation of the applicant be debited according to the 1990 "Agreement To Participate In The Construction of Waikapu 300,000 Gallon Storage Tank" between DWS and C.Brewer Properties, Inc.

As much of the water demand as possible should be delivered from non-potable sources (reclaimed or brackish). Where appropriate, the applicants should consider these measures:
Use Climate-adapted Plants: The project site is located in "Maui County Planting Plan" - Plant Zone 4. Please

refer to the "Maui County Planting Plan", and to the attached document. We encourage the applicants to consider using climate-adapted and salt-tolerant native plants in perimeter landscaping and provide the plant brochure to future homeowners. Native plants adapted to the area, conserve water and further protect the watershed from degradation due to invasive alien species.

Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20.675 requires the use of low flow water fixtures and devices in faucets, showerheads, urinals, water closets and hose bibs.

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. Refer to the attached handout, "The Costly Drip". The applicant should establish a regular maintenance program.

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

Prevent Over-Watering By Automated Systems: For all perimeter landscaping, provide rain-sensors on all automated irrigation controllers. Check and reset controllers at least once a month to reflect the monthly changes in evapotranspiration rates at the site.

The project overlies the Iao aquifer. The Department of Water Supply strives to protect the integrity of surface water and groundwater resources by encouraging applicants to adopt best management practices (BMPs) relevant to potentially polluting activities. We list a few BMP references here. Additional information can be obtained from the State Department of Health.

"The Megamanual - Nonpoint Source Management Manual - A Guidance Document for Municipal Officials." Massachusetts Department of Environmental Protection.

"Guidance Specifying Management Measures For Sources of Nonpoint Pollution In Coastal Waters." United States Environmental Protection Agency, Office of Water.

If you need additional information, please call our Water Resources and Planning Division at 270-7199.

Sincerely,

David Craddick
Director
emb

cc: engineering division

attachments:

1) "The Costly Drip"
2) "Saving Water in the Yard: What & How to Plant in Your Area"
3) Ordinance 2108 - "An ordinance amending Chapter 16.20 of the Maui County Code, pertaining to the plumbing code"
4) A Checklist of Water Conservation Ideas for the Home
5) Portion of fire water system map

S:\PLANNING\EMB\Permit letters\Waiolani Elua SD.wpd

By Water All Things Find Life

Responses

MUNEKIYO HIRAGA, INC.

February 7, 2001

George P. Young, P.E.
Chief, Regulatory Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

SUBJECT: Waiolani Elua Subdivision, Waikapu, Maui

Dear Mr. Young:

Thank you for your letter dated January 11, 2001 regarding the subject above. A copy of the Draft Environmental Assessment (EA) will be provided to your office for review and comment. The EA will provide information to facilitate your determination regarding Department of the Army jurisdictional concerns.

If there are any questions, or if additional information is needed, please do not hesitate to call.

Very truly yours,

D- K. F-
Dean K. Frampton, Planner

DKF:to
cc: Scott Nunokawa
nunokawa/waikapu/armyltr.001

mahinc@aloha.net
305 High Street, Suite 104, Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhincmlinc.com

MUNEKIYO HIRAGA, INC.

February 7, 2001

David Craddick, Director
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku Hi 96793-7109

SUBJECT: Proposed Waiolani Elua Subdivision, Waikapu, Maui

Dear Mr. Craddick:

Thank you for your letter of January 16, 2001 regarding the subject project. In response to your comments, we note the following:

1. The Draft Environmental Assessment (EA) for the proposed project will include estimates of water use.

2. The applicants will coordinate with the DWS to determine applicable water requirements for the proposed subdivision.

3. The applicants will provide water service and fire protection as prescribed by existing County Standards.

4. There is no non-potable infrastructure system available to the applicants at this time. However, the applicant will undertake water conservation practices, including those described in your comment letter.

5. During the design and construction phase, the applicants will utilize best management practices (BMP's) in order to protect the integrity of surface and groundwater resources of the underlying Iao aquifer.

Please be aware that your comments have been forwarded to the applicants' Civil Engineer. In addition, the applicant has indicated that they will be addressing your comments regarding the CMJV and the Waikapu Storage Tank Agreement by way of a separate letter. A copy of the Draft EA will be provided to your office for further review and comment.

mahinc@aloha.net
305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

If there are any questions, or if additional information is needed, please do not hesitate to call.

Very truly yours,

Dean Frampton, Planner

DF:to
nunokawa/waikapurdwaltr.001

HAUNANI S. Y. LEMN

February 14, 2001

David Craddick, Director
Department of Water Supply
County of Maui
P. O. Box 1109
Wailuku, HI 96793-7109

SUBJECT: Proposed Waiolani Elua Subdivision, Waikapu, Maui
TMK 3-5-04:095

Dear Director Craddick:

Thank you for your January 16, 2001 letter to Mr. Dean Frampton regarding the preparation of a draft environmental assessment (EA) for our project. Because my husband and I are the applicants for the EA, Mr. Frampton forwarded your letter to us as a matter of routine. Our review of your letter leads us to believe that there is some confusion as to our status as participants or parties under the Central Maui Water Transmission and Source Development Joint Venture (hereinafter referred to as the "CMJV") and the 1990 Agreement to Participate In The Construction of Waikapu 300,000 Gallon Storage Tank (hereinafter referred to as the "Waikapu Tank Agreement"). Consequently, we are writing to clarify that we have no knowledge of having any status under either of these agreements.

I. ANALYSIS OF THE POSSIBLE GROUNDS FOR THE DEPARTMENT'S POSITION:

In order to establish the context for our response, let us begin by noting that we had no prior knowledge of our being connected to the CMJV or Waikapu Tank Agreement prior to receipt of your letter. Given that your communication did not elaborate on the manner by which we were being accorded entitlements under the agreements, we reviewed the documents from the context of analyzing the relationships and rights of the parties to the agreements as they may correlate to our own situation. Our review led us to explore certain suppositions that may have been made in the department's assessment. A list and brief address of these suppositions follow:

1. It was assumed that we purchased our property from one of the named parties. We did not. We purchased the property from Wailuku Agribusiness Co., Inc. Our title report does not name any of the parties to the agreements as ever owning the project site. As such, we have no claim that the named parties to the agreements transferred their rights to us via our purchase;

2. It was assumed that Wailuku Agribusiness Co., Inc. had express rights to water under the agreements and that those rights were transferred to us through our purchase of the project site. If so, there would have to be further assumptions made as to Wailuku Agribusiness Co., Inc.'s rights under the CMJV or Waikapu Tank Agreement which are not born out by the actual role it played in either agreement;

P.O. BOX 946 • WAILUKU, HAWAII • 96793
PHONE: 808-242-4828 • FAX: 808-986-0009

3. It was assumed that Wailuku Agribusiness Co., Inc. had implied rights under the agreements and that those rights were then transferred to us through our purchase of the project site. Given that the agreements do not identify Wailuku Agribusiness Co., Inc. as a party to be benefited by water rights but specifically identifies the names parties as benefited, the grounds for making such an inference is not readily apparent; and

4. It was assumed that a transfer of water rights to Wailuku Agribusiness Co., Inc. took place and that those rights were then transferred to us through our purchase of the project site. Neither our purchase documents nor our title report indicate that either transfer took place. Accordingly, we will have to rely on any information you may be able to provide us regarding whether these transfers have occurred.

A more comprehensive response requires that the issues be examined in the context of the agreements themselves. In addition, given that a common element shared by the agreements is the participation of our seller along with other former C. Brewer & Co., Ltd. entities, our examination gives special attention to the relationship of Wailuku Agribusiness Co., Inc., Wailuku Sugar Company, Hawaiiana Investment Co., Inc., and C. Brewer Properties, Inc. We begin by untangling the relationships shared by these entities. Our information in this area is based not only on an interpretation of the agreements but on our communications with principals of these companies, my husband's knowledge of the companies as a former employee of C. Brewer Homes, Inc., and my own knowledge of the law as an attorney-at-law.

II. ANALYSIS OF THE HISTORICAL RELATIONSHIP BETWEEN THE TWO FORMER C. BREWER & CO. ENTITIES THAT PARTICIPATED IN THE AGREEMENTS

First, there are really only two real entities that are the subject of this discussion. One entity is Hawaiiana Investment Co., Inc., which preceded C. Brewer Properties, Inc., which preceded C. Brewer Homes, Inc., which preceded Hawaii Land and Farming, Inc. (Hereinafter these entities will be referred to comprehensively as "HIC/CBP/CBH/HLF".) Hawaiiana Investment Co., Inc. was the wholly owned subsidiary of C. Brewer & Co., Ltd. that functioned as its real estate management branch. In the mid-1980s, it changed its name to C. Brewer Properties, Inc. but continued to be privately held. In December of 1993, it became a separate, publicly held corporation listed on the NASDAQ for trading. Despite this change, the new corporation's Class B stockholders were made up of many of the same people who owned and controlled the former C. Brewer Properties, Inc. These Class B stockholders controlled approximately 75% of the company's voting rights and filled many of the corporate board and upper echelon management positions. They continued to control the voting and decisions for the company. Anticipating the impending sale of the company's Class B stock, the corporation's name was changed to Hawaii Land and Farming, Inc. in November of 1998. This name change was done, in part, to distance the corporation from its former C. Brewer association. On November 30, 1999, the sale of the company was effectuated through the transfer of its Class B stock to Milwaukee Holding, LLC. In

March of 2000, all of the remaining shareholders, (Class A stockholders), were bought out. The company, once again, became privately held. By this last action, Hawaii Land and Farming, Inc. rid itself of its last "C. Brewer" ties.

The second entity is Wailuku Sugar Company, the predecessor to Wailuku Agribusiness Co., Inc. (Hereinafter these entities will be referred to comprehensively as "WSC/WACI".) Wailuku Sugar Company changed its name to Wailuku Agribusiness Co., Inc. It is historically the agricultural arm of the former C. Brewer & Co., Ltd. on Maui. WSC/WACI is 90% owned by C. Brewer & Co., Ltd. and 10% owned by minority shareholders. Significantly, during the period the agreements were entered into, many of the same people who controlled HIC/CBP/CBH/HLF also controlled WSC/WACI. The most recent sale of HIC/CBP/CBHI/HLF erased that critical commonality. Therefore, while HIC/CBP/CBH/HLF continues to hold certain important claims on WSC/WACI via past contractual obligations, it is now a totally separate and at-arms-length legal entity from WSC/WACI.

Second, the separate nature of these legal entities is often confused because of the past contractual relationships they shared. As previously described, their common board members and majority voting shareholders made it logical that the two entities would conduct mutually beneficial business together. For example, HIC/CBP/CBHI/HLF developed both the existing Waiolani and Kehalani subdivisions on lands purchased from WSC/WACI. Moreover, HIC/CBP/CBHI/HLF continues to hold the option of the First-Right-Of-Refusal on many of WSC/WACI's undeveloped lands. Most significantly, this common bond explains a motive for WSC/WACI's past participation in the CMJV and Waikapu Tank Agreements in 1975 and 1990, respectively. During this period, the interests of HIC/CBP/CBHI/HLF and WSC/WACI were still firmly interwoven. HIC/CBP/CBHI/HLF held the option on WSC/WACI lands but needed water to pursue its land development interests. WSC/WACI assisted HIC/CBP/CBHI/HLF in the obtainment of water to encourage HIC/CBP/CBHI/HLF to exercise its option to purchase WSC/WACI lands. Profit generated by both companies enriched overlapping shareholder interests.

Third, despite the two entities' intertwined business dealings, the status of each in the CMJV and Waikapu Tank Agreement is legally very distinct and separate. HIC/CBP/CBHI/HLF is identified as a party with standing in both of the agreements. In contrast, WSC/WACI is neither a signatory nor a party in either agreement. In fact, WSC/WACI is identified as an entity compensated by the actual parties to the agreements for work performed or land provided.

III. ANALYSIS OF WSC/WACI'S ROLE IN THE CMJV

In the CMJV, the actual signatories and parties to the agreement are Wailea Development Company, Seibu Real Estate Co., Ltd., A&B Properties, Inc, and Hawaiiana Investment Co., Inc. (HIC/CBP/CBH/HLF). WSC/WACI is not a party. Its role in the CMJV is outlined in two places. The first reference at Item 3, Page 2-3, states, in part:

> "3. The estimated budget for the test drilling and engineering program is $150,000. Alexander & Baldwin, Inc. and Wailuku Sugar Company have formed a joint venture and have agreed to expend the sum of $40,000 for test drilling purposes for two drill holes. The parties have agreed with Alexander & Baldwin, Inc. and Wailuku Sugar Company to reimburse Alexander & Baldwin, Inc. and Wailuku Sugar Company for the amounts each has expended as soon as the joint venture is organized and funded and to assume and continue the efforts of their joint venture." (Underlining has been added for emphasis.)

The CMJV refers here to a separate test drilling joint venture between WSC/WACI and Alexander & Baldwin, Inc. that will be reimbursed by the CMJV parties. WSC/WACI does not derive any water rights out of the CMJV through this provision.

The second reference to WSC/WACI comes at Items 8 and 9, Page 7, of the CMJV *agreement. These provisions state, in part:*

> "8. HIC covenants that it has obtained an agreement from Wailuku Sugar Company ("Wailuku") whereby Wailuku has agreed to permit the test drilling and water sources development program to be located on its lands at sites selected by the venturers with the prior concurrence of Wailuku, and as water sources are developed, to sell at prices set forth in the agreement the lands needed for the source development together with reasonable utility, transmission and access easements to the venturers for subsequent dedication by the venturers at no cost to BWS.
>
> 9.
>
> * * *
>
> The location of the well field or fields shall also be subject to the approval of BWS and Wailuku Sugar Company." (Underlining has been added for emphasis.)

Once again, WSC/WACI's role is limited. Here, the agreement identifies a separate contract that HIC/CBP/CBH/HLF obtained from WSC/WACI. In it, HIC/CBP/CHI/HLF secures the rights to lands for the water source development program. WSC/WACI is the seller of lands. It derives no water rights under the CMJV from this reference.

Given that there is no other reference in the agreement to WSC/WACI, it does not appear that any water rights were granted to it by way of the CMJV. This conclusion is supported by the fact that the CMJV specifies the exact, proportional shares to which only the named parties are entitled. Item 5 at Page 5, in part, designates:

> "5. Each company, or its designees, shall share in whatever quantities of water that are developed in each phase for each company as determined by the Executive Committee and approved by BWS and when 19 MGD has

been developed on the basis of 7/19 to WDC, 4/19 to SREC, 4/19 to HIC, and 4/19 to Properties;

* * *

Each company, or its designees, may use its proportionate share of the water as developed at any location within the Central Maui area for any use permitted by law, ordinance or regulation; ..." (Underlining has been added for emphasis.)

Given that WSC/WACI is not named as having a share in the water, the CMJV only allows it to obtain water rights through being a designee of one of the named parties.

IV. ANALYSIS OF WSC/WACI'S ROLE IN THE WAIKAPU TANK AGREEMENT

In turning to the Waikapu Tank Agreement, the signatories and parties here are identified as C. Brewer Properties, Inc., (HIC/CBP/CBH/HLF is in the agreement itself referred to as "Brewer"), and the Board of Water Supply, (hereinafter referred to as the "BWS"). WSC/WACI is not a party. Instead, it is separately contracted by HIC/CBP/CBH/HLF to sell the lands upon which the parties are to locate their facilities. The second full paragraph on Page 2 and last paragraph starting on Page 2 and continuing on Page 3 notes, in part:

"WHEREAS, Brewer intends to process subdivisions or projects in Waikapu which will be required to construct water storage facilities and thus has proposed to the Department that:

A. Brewer undertake the responsibility to design, plan and construct a 300,000 gallon concrete tank hereafter referred to as the "Alternate Tank",

B. Board contribute $250,000 towards the cost to design, plan and construct the Alternate Tank and pipeline (hereafter called "Alternate Project") and Brewer will pay for the balance of the costs to design and construct the Alternate project;

C. Brewer receive credit for a storage capacity of 200,000 gallons in the Alternate Tank to be used for the development or improvement of lands in Waikapu in the future;

* * *

WHEREAS, the Alternate Tank will be constructed on or within TMK 3-5-04: 22, hereafter referred to as the "Alternate Tank Lot", and the Pipeline will be constructed on or within TMK 3-5-04: 18, owned by Wailuku Agribusiness Co, Inc., hereafter referred to as the "Pipeline Lot"; ..." (Underlining has been added for emphasis.)

Items 1.f on Page 3 and 1.g on Page 4 require HIC/CBP/CBH/HLF to secure the transfer of lands from WSC/WACI for the "Alternate Tank Lot" and "Pipeline Lot":

> "1. Brewer's Responsibilities. The Board and Brewer shall be responsible for their respective costs incurred prior to April 1, 1990, toward the Project or Alternate Project. After execution of this agreement, Brewer shall be responsible for the design and construction of the Alternate Project and other tasks including but not limited to the following:
>
> * * *
>
> f. Apply and process for a subdivision to create a lot upon which the Alternate Tank will be located, and cause Wailuku Agribusiness Co., Inc. to transfer fee simple title of the said Lot to the Board.
>
> g. Prepare metes and bounds description for pipeline easements and cause Wailuku Agribusiness Co., Inc. to grant easements to the Board." (Underlining has been added for emphasis.)

Notwithstanding WSC/WACI's role therein, the agreement specifically identifies only HIC/CBP/CBH/HLF and the BWS as owning the water rights under the agreement. Thus, Item 7 at Pages 6 - 7 mandates:

> "7. Permanent Reserved Capacity Allocation. In consideration of both Parties agreeing to fund the costs to plan, design, and construct the Alternate Project, the Board agrees upon the completion of construction of the Alternate Project, to permanently and irrevocable set aside and reserve for the exclusive use of Brewer or its transferees or assigns, 200,000 gallons of storage capacity in the Alternate Tank. Brewer agrees that the Board has a permanent, irrevocable storage capacity allocation in the Alternate Tank of 100,000 gallons (herein each Party's allocation is called "Reserved Capacity Allocation").
>
> The Board guarantees that the Reserved Capacity Allocation for Brewer of 200,000 gallons and for the Board of 100,000 gallons in the Alternate Tank shall be permanently set aside for the exclusive use of each Party. The Board promises it will not use nor allow anyone other than Brewer or its transferees or assigns to use, even on a temporary basis, the Reserved Capacity Allocation of Brewer." (Underlining has been added for emphasis.)

WSC/WACI is not given any water rights under these provisions. In fact, unless HIC/CBP/CBH/HLF expressly transfers its rights, Item 8, at Pages 7 and 8, identifies the water rights allotted to HIC/CBP/CBH/HLF as exclusive:

"8. Use of Reserved Capacity Allocation. a. After acceptance of the construction of the Alternate Tank, Brewer can use or transfer its Reserved Capacity Allocation, without the prior consent or approval of the Board, for any future development or improvement of land within the service area of the Alternate Tank by filing a notice of use or transfer of capacity with the Board. The service area of the Alternate Tank is defined as any area located at an elevation less than the elevation of the Alternate Tank that is or can be connected to the water pipeline system connected to and located below the Alternate Tank without the need to pump water from or to any portion of such water pipeline system.

Normally the notice of use or transfer of capacity shall be filed with a building permit application; provided that at Brewer's election, the notice of use or transfer of capacity may be submitted either at the time of final subdivision approval of a parcel of land, or upon sale of land in bulk by Brewer, so long as the Reserved Capacity Allocation shown, on the notice of use or transfer shall be transferred with the land and subsequent development of such land shall be limited to the Reserved Capacity Allocation shown in the original notice of use or transfer unless at the time of building permit, any deficiency in capacity is corrected by an additional allocation of Reserved Capacity Allocation from Brewer. A subsequent lawful subdivision of the transferred land can also include a notice of use or transfer dividing the Reserved Capacity Allocation as shown in the original notice of use or transfer to each subdivided parcel...."

* * *

c. Notwithstanding any language to the contrary, Brewer may transfer any excess Reserved Capacity Allocation, as determined by Brewer from time to time, to any other person without the consent or approval of the Board so long as the transferee will use the capacity transferred for the development or improvement of lands located within the service area of the Alternate Tank as set forth in Section 8.a. above and a notice of transfer signed by Brewer and the transferee containing the pertinent information has been filed with the County within thirty days after the transfer..."(Underlining has been added for emphasis.)

HIC/CBP/CBH/HLF's entitlement to transfer water rights for the development of lands located in the service area is an exclusive, elective right. Items 9.a and 9.c, respectively, allow that, "Brewer can use or transfer its Reserved Capacity Allocation," and that "Brewer may transfer any excess Reserved Capacity Allocation," but does not require that such a transfer be made when land in the service area is sold or developed. The water rights in the agreement do not inure to the benefit of WSC/WACI or to the lands of WSC/WACI located in the service area. Consequently, although the project site maybe in the service area, its location does not automatically entitle it to HIC/CBP/CBH/HLF's water rights. If a transfer was made by HIC/CBP/CBH/HLF to WSC/WACI, we are unaware of it.

V. SUMMARY

In summary, we did not obtain our lands from HIC/CBP/CBH/HLF but from WSC/WACI. As previously described, HIC/CBP/CBH/HLF holds the First-Right-Of-Refusal option on many of WSC/WACI's lands. It did so on the project site. It refused its option and allowed the project site to be sold to my husband and I. Consequently, we obtained our bundle-of-rights to the land from WSC/WACI. WSC/WACI participated in both the CMJV and Waikapu Tank Agreement as a sub-contractor not a party. Its role was limited to the provision of lands or the performance of work. In each instance, it was compensated for its participation. Both the CMJV and the Waikapu Tank Agreement make it clear that the water rights therein are exclusive to the parties only. Unless there was a subsequent transfer to WSC/WACI, it did not obtain any water rights, express or implied, under either agreement. Furthermore, even if a transfer was made from HIC/CBP/CBH/HLF to WSC/WACI, without a subsequent transfer from WSC/WACI to us, we are unaware of any contractual claim that can be made upon either entity that would entitle our land to water rights. Given that neither our purchase nor title documents include any reference to a transfer of water rights, we would be grateful for any communication from you regarding any separate agreement between HIC/CBP/CBH/HLF to WSC/WACI that entitles our parcel to water rights.

In closing, it is germane to note that WSC/WACI no longer shares the close corporate relationship it once did with HIC/CBP/CBH/HLF. In fact, they are currently very much at-arms-length. It is also significant that HIC/CBP/CBH/HLF is a residential developer. Given that we hope to develop a small residential subdivision on the project site, we would be in direct competition with HIC/CBP/CBH/HLF. Accordingly, it cannot be assumed that HIC/CBP/CBH/HLF would have any motivation to provide us with its water rights. Given all of the foregoing, we did not want to proceed without clarifying the water rights issues raised by your reference to the CMJV or Waikapu Tank Agreement. We hope that our letter has cleared up any misunderstanding on this subject. We look forward to working with you on the processing of our application.

Sincerely,

Haunani S. Y. Lemn

Haunani S. Y. Lemn

cc: Mr. Mike Munekiyo, Munekiyo & Hiraga, Inc. (via Fax#244-8729)

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109
Telephone (808) 270-7816 • Fax (808) 270-7199

May 9, 2001

Mrs. Haunani S. Y. Lemn
P.O. Box 946
Wailuku, Hawaii 96793

SUBJECT: Proposed Waiolani Elua Subdivision, Waikapu, Maui
TMK 3-5-04:095

Dear Mrs. Lemn,

We have received and reviewed your response letter of February 14, 2001. While source and storage requirements for the subject development will be determined in the subdivision application review, please be aware that storage improvements may be required for this development.

Sincerely,

David Craddick
Director
emb

cc: engineering

By Water All Things Find Life

MUNEKIYO & HIRAGA, INC.

February 7, 2001

Dennis R. Lau, P.E., Chief
State of Hawaii
Department of Health, Clean Water Branch
P.O. Box 3378
Honolulu Hi 96801-3378

SUBJECT: Proposed Waiolani Subdivision, Waikapu, Maui, Hawaii

Dear Mr. Lau:

Thank you for your letter dated January 22, 2001 regarding the subject matter. The U.S. Department of the Army (DA) will be provided a copy of the Draft Environmental Assessment (EA) to determine whether a DA permit is required for the subject project.

Moreover, should subdivision construction activities necessitate a general permit associated with the National Pollutant Discharge Elimination System (NPDES), coordination with your office will be conducted to ensure that all necessary requirements are fulfilled.

A copy of the Draft EA will be provided to your office for review and comment.

If there are any questions, or if additional information is needed, please do not hesitate to call.

Very truly yours,

D- 7-
Dean Frampton, Planner

DF:to
cc: Scott Nunokawa and Haunani Lemn
nunokawa/waikapu/dohltr.001

mahinc@aloha.net
305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinc.com

MUNEKIYO HIRAGA, INC.

February 7, 2001

Floyd Miyazono
Department of Parks
and Recreation
1580-C Kaahumanu Avenue
Wailuku, Hawaii 96793

SUBJECT: Proposed Waiolani Elua Subdivision, Waikapu, Maui
TMK (2) 3-5-4:95

Dear Mr. Miyazono:

Thank you for your letter dated January 23, 2001 regarding the subject matter. In response to your inquiry for additional information, the applicant intends to comply with Section 18.16.320 of the Maui County Code through the payment of cash.

Please feel free to call if there are any questions or if additional information is needed.

Very truly yours,

D. F.
Dean Frampton, Planner

DF:to
cc: Scott Nunokawa and Haunani Lemn
nunokawa/waikapu/dpritr.001

mahinc@aloha.net

MUNEKIYO & HIRAGA, INC.

February 7, 2001

Paul M. Chung
State of Hawaii
Department of Transportation
Highways Division-Maui District
650 Palapala Drive
Kahului, Hawaii 96732

SUBJECT: Proposed Waiolani Elua Subdivision, Waikapu, Maui
I.D. NO. ME-01-06. REF-HWY M 2.034-01

Dear Mr. Chung:

Thank you for your letter of January 29, 2001 regarding the subject matter. A traffic impact study has been completed by Phillip J. Rowell, P.E., and will be included in the Draft Environmental Assessment (EA). A copy of the Draft EA will be provided to your office for your review and comment.

Please feel free to call if you have any questions or if additional information is needed.

Very truly yours,

D- K 7-
Dean K. Frampton, Planner

DKF:to
munokawa/waikapu/dotltr.001

mahinc@aloha.net
305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

MUNEKIYO & HIRAGA, INC.

February 22, 2001

Alice Lee, Director
Department of Housing and
Human Concerns
County of Maui
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Proposed Waiolani Elua Subdivision, Waikapu, Maui
TMK (2) 3-5-4:95

Dear Ms. Lee:

Thank you for your letter dated January 16, 2001 regarding the subject matter.

The applicants, Scott Nunokawa and Haunani Lemn, understand that the specific provisions of the Administration's new affordable housing policy have not yet been promulgated. They look forward to coordination with your office to insure a fair and equitable application of the Administration's new policy regarding the proposed Waiolani Elua Subdivision.

If there are any questions or if additional information is needed, please do not hesitate to call.

Very truly yours,

D- K7—
Dean K. Frampton, Planner

DKF:to
cc: Scott Nunokawa and Haunani Lemn
nunokawa/waikapu/dhhctr.002

environme
mahinc@aloha.net

MUNEKIYO & HIRAGA, INC.

March 13, 2001

Thomas Phillips, Chief of Police
Maui Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

SUBJECT: Proposed Waiolani Subdivision, Waikapu, Maui, Hawaii
TMK (2) 3-5-005:95

Dear Chief Phillips:

Thank you for your comment letter dated February 1, 2001 regarding the subject matter. To ensure that the Department's comments were appropriately addressed, your letter was referred to Phillip Rowell, P.E., the traffic consultant for the proposed Waiolani Elua Subdivision. Attached you will find a copy of Mr. Rowell's response letter.

We hope the additional information provided by Mr. Rowell clarifies technical issues raised relative to traffic operations in the vicinity of the proposed subdivision.

If there are any questions or if additional information is needed, please do not hesitate to call.

Very truly yours,

D. K. F.

Dean K. Frampton, Planner

DKF:to
Attachment
cc: Scott Nunokawa and Haunani Lemn
Phillip Rowell, P.E.
nunokawa/waikapu/mpdltr.001

mahinc@aloha.net
305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808) 244-2015 fax: (808) 244-8729

Phillip Rowell and Associates
47-273 'O' Hui Iwa Street Kaneohe, Hawaii 96744 Phone: (808) 239-8208 FAX: (808) 239-4175 Email:prowell@gte.net

March 9, 2001

Mr. Scott Nunokawa
P. O. Box 946
Wailuku, HI 96793

Re: Waiolani Elua Subdivision
Response to Comments from Maui Police Department

Dear Scott:

Per your request, the following is my response to comments from the Maui Police Department (MPD) regarding the traffic study prepared for the proposed Waiolani Elua Subdivision.

There are two separate memorandums from MPD. The first is a memorandum dated January 22, 2001 from Officer Jorge Marzan to Chief of Police Thomas Phillips that describes the proposed project. The second memorandum, dated February 1, 2001, and also from Officer Marzan to Chief Phillips, assesses existing traffic conditions makes certain recommendations.

In response to the first, the discussion by MPD of the roadways in the section on "Project Location and Description" leads one to believe that certain points need to be clarified. One point is that the report seems to assume that Waiolani Subdivision does not currently access Honoapiilani Highway via Pilikana Street. To clarify, all of the existing Waiolani Subdivision is connected to Pilikana Street (and via Pilikana Street to Honoapiilani Highway) by way of the existing Ho'okahewai Street. The second assumption that the MPD memorandum seems to make is that a new roadway would be constructed as part of the development of Waiolani Elua Subdivision that would force all the traffic from the existing Waiolani Subdivision to use Pilikana Street to Honoapiilani Highway. To clarify, no new connections to Pilikana Street are proposed. Therefore, the only traffic that will use Pilikana Street would continue to be the traffic generated by the 132 existing residential units that currently use Pilikana Street plus the traffic from the 30 units of the proposed Waiolani Elua Subdivision traffic.

Travel speed and safety are factors in defining the level-of-service at an intersection as discussed in the Level-of-Service Concept on pages 6,7, and 8 of the traffic report. The intersection of Honoapiilani Highway at Pilikana Street is designed to provide a high level-of-service without and with the proposed project and is confirmed by the level-of-service analysis. Therefore, we believe that the issue of travel speed and safety have been addressed. Sight distances appear to be more that the minium for a design speed of 40 miles per hour. (Design speed is typically 5 or 10 miles per hour above the posted speed limit.).

Lastly, no hazardous traffic movements were observed at the intersection of Pilikana Street at Honoapiilani Highway during the traffic counts. This indicates that drivers entering Honoapiilani Highway from Pilikana Street are waiting for sufficient gaps in the traffic stream before entering the highway.

If you need additional information, please call.

Very truly yours,
PHILLIP ROWELL AND ASSOCIATES

Phillip L. Rowell, P.E.
Principal

Response to MPD.wpd

Chapter X

Letters Received During the Draft Environmental Assessment Public Comment Period and Responses to Substantive Comments

X. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT PUBLIC COMMENT PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

Pursuant to the requirements of the environmental review process, letters received during the Draft Environmental Assessment public comment period, as well as responses to substantive comments, are included in this section.

Comments

MAY 1 5 2001

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

May 11, 2001

Regulatory Branch

Mr. Dean K. Frampton
Munekiyo, Arakawa & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Frampton:

This letter responds to your request for comments on the proposed Waiolani Elua Subdivision, Waikapu, Maui, dated January 9, 2001, and our review of the draft Environmental Assessment for the project dated March 2001. Based on the information provided I have determined that a Department of the Army (DA) permit will not be required for this project.

If you have any questions concerning this determination, please contact William Lennan of my staff at 438-6986 or FAX 438-4060, and reference File No. 200100103.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

BENJAMIN J. CAYETANO
GOVERNOR

C... DEPT. OF PLANNING

2001 MAY 14 PM 2:33

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

May 10, 2001

Mr. John E. Min
Planning Director
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Min:

Subject: Notice of Application
District Boundary Amendment Application (DBA2001/0001)
Community Plan Amendment Application (CPA2001/0002)
Change in Zoning Application (CIZ 2001/0002)
Project Name: Waiolani Elua Subdivision
Applicant: Scott Nunokawa
Haunani Lemn
TMK No.: 3-5-004: 095
Waikapu, Wailuku, Maui, Hawaii

We have reviewed the subject application forwarded by your transmittal dated April 17, 2001, to reclassify the subject parcel from the State Land Use Agricultural District to the Urban District for the development of a 25-lot residential subdivision.

Based upon our review we have the following comments:

1. It appears that the subject parcel is in the State Land Use Agricultural District as described in the application.

2. We would like to point out that the project area abuts property that was the subject of A89-639/C. Brewer Properties, Inc., that reclassified approximately 23.3 acres from the State Land Use Agricultural District to the Urban District for the Waiolani Subdivision, pursuant to the Commission's Findings of Fact, Conclusions of Law, and Decision and Order issued on November 11, 1989.

3. In regard to Applicant's Draft Environmental Assessment ("DEA"), we recommend including discussion on valued cultural, historical, or natural resources involved with traditional and customary native Hawaiian rights in the proposed project area. Pursuant to Act 50, Session Laws of Hawaii, 2000, environmental review documents must include the identification of the project's "significant effect" on these resources.

We have no further comments to offer at this time. Thank you for the opportunity to comment on the subject application.

Please feel free to contact Russell Kumabe of my staff at (808) 587-3822, should you require clarification or any further assistance.

Sincerely,

ANTHONY I.H. CHING
Executive Officer

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

May 11, 2001

Mr. John E. Min
Department of Planning
250 South High Street
Wailuku, Maui, HI 96793

Subject: Applications for Community Plan Amendment, District Boundary Amendment and Change in Zoning and Draft Environmental Assessment for Proposed Waiolani Elua Subdivision
TMK: 3-5-004:095

Dear Mr. Min:

Thank you for the opportunity to comment on the above referenced project.

OHA is concerned about the project's potential impacts on the Iao aquifer, which has not fully recovered from recent overpumping. Water resources are in a critical state on Maui. Available water falls short of that needed to support developments already zoned in Central and South Maui. While the project's water use is estimated to be relatively small compared with larger developments, the final EA should address the impact that its project will have on the aquifer. The EA should also include a mitigation plan that incorporates Department of Water Supply recommendations such as using climate adapted native plants that retain water in landscaping, limiting irrigated turf, and providing rain sensors on all automated irrigation controllers.

If you have any questions, please contact Sharla Manley, assistant policy analyst at 594-1944, or e-mail her at sharlam@oha.org.

Sincerely,

Colin C. Kippen, Jr.
Deputy Administrator

CK: sam
cc: Board of Trustees
Randall K. Ogata
Maui CAC

BENJAMIN J. CAYETANO
GOVERNOR

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

April 11, 2001

John Min
Maui Planning Department
250 South High Street
Wailuku, HI 96793

Attn: Joe Alueta

Dear Mr. Min:

Subject: Draft environmental assessment (EA) for **Waiolani Elua Subdivision**

Please include the following in the final EA:

Two-sided pages: In order to reduce bulk and save on paper, please consider printing on both sides of the pages in the final document.

Water: Water shortage is a chronic problem on Maui. In it's February 14th 2001 letter the Commission on Water Resources Management notes overpumping of the Iao Aquifer. In the final EA be sure to document all contacts with the Maui Department of Water Supply.

Cultural impacts assessment:

Act 50 was passed by the Legislature in April of 2000. This mandates an assessment of impacts to local cultural practices by the proposed project. In the final EA include such an assessment.

If the subject area is in a developed urban setting, cultural impacts must still be assessed. Many incorrectly assume that the presence of urban infrastructure effectively precludes consideration of current cultural factors. For example, persons are known to gather kauna'oa, 'ilima, 'uhaloa, noni or ki on the grassy slopes and ramps of the H-1 freeway and some state highways on the neighbor islands. Certain landmarks and physical features are used by Hawaiian navigators for sailing, and the lines of sight from landmarks to the coast by fisherman to determine certain fishing spots. Blocking these features by the construction of buildings or tanks may constitute an adverse cultural impact.

For assistance in the preparation refer to our *Guidelines for Assessing Cultural Impacts.* Contact us for a paper copy or go to our homepage at *http://www.state.hi.us/health/oeqc/index.html.* You will also find the text of Act 50 linked to this section of our homepage.

Time frame: What are the anticipated start and end dates of this project?

If you have any questions, please call Nancy Heinrich at 586-4185.

Sincerely,

GENEVIEVE SALMONSON
Director

c: Michael Munekiyo
Scott Nunokawa & Haunani Lemn

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

JAMES "KIMO" APANA
Mayor
ALICE L. LEE
Director
PRISCILLA P. MIKELL
Deputy Director

200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165

April 23, 2001

TO: JOHN E. MIN, Director
Department of Planning

FROM: ALICE L. LEE, Director
Department of Housing and Human Concerns

SUBJECT: **I.D. CPA 2001/0002, DBA 2001/0001, CIZ 2001/0002**
TMK: 3-5-004:095
Project Name: Waiolani Elua Subdivision
Project Description: 25-Lot Subdivision in Waikapu
Applicant: Scott Nunokawa

We have reviewed the subject applications and would like to inform you that the proposed project will be subject to the County Administration's affordable housing policy. The policy requires developers of housing projects with 10 or more units to provide affordable housing units that is equal to ten percent (10%) of the total units in the project or an in-lieu contribution pursuant to the policy. The details of the affordable housing requirement will be specified in an affordable housing agreement between the developer and the County.

Thank you for the opportunity to comment.

ETO:hs

c: Housing Administrator

Responses

MUNEKIYO & HIRAGA, INC.

May 22, 2001

Anthony J.H. Ching, Executive Officer
State of Hawaii
Land Use Commission
P.O. Box 2359
Honolulu, Hawaii 96804-2359

SUBJECT: Waiolani Elua Subdivision, Waikapu Maui
TMK (2) 3-5-4:95

Dear Mr. Ching:

Thank you for your comment letter dated May 10, 2001 regarding the subject project. Please note that the Final Environmental Assessment includes discussion on the potential impacts to cultural and historical resources in the project area, as well as traditional native Hawaiian rights.

If you have any questions or require additional information, please do not hesitate to call me at 244-2015.

Very truly yours,

Dean K. Frampton, Planner

DKF:to
cc: Scott Nunokawa
nunokawa/waikapu/luclr.001

environment

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 fax: (808)244-8729 · planning@mhinconline.com

MUNEKIYO & HIRAGA, INC.

May 22, 2001

Colin Kippen, Jr., Deputy Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Ste. 500
Honolulu, Hawaii 96813

SUBJECT: Proposed Waiolani Elua Subdivision, Waikapu, Maui
TMK (2) 3-5-4:95

Dear Mr. Kippen:

Thank you for your comment letter dated May 11, 2001 regarding the subject project. The Final Environmental Assessment (FEA) will include all correspondence between the applicant and the County of Maui Department of Water Supply (DWS), which considers potential impacts of the subject project on the Iao aquifer.

In addition, the applicant will coordinate with the DWS to formulate an appropriate water conservation mitigation plan. The mitigation plan will consider measures recommended by the DWS, including but not limited to use of climate-adapted native plants, use of low-flow fixtures and devices, regular maintenance of fixtures to prevent leaks, limiting use of irrigated turf and prevention of over-watering by automated systems.

A copy of your comment letter will be incorporated in the Final EA. If you have any questions or require additional information, please do not hesitate to call me at 244-2015.

Very truly yours,

Dean K. Frampton, Planner

DKF:to
cc: Scott Nunokawa
nunokawa/waikapu/ohaltr.001

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 · planning@mhinconline.com

MUNEKIYO & HIRAGA, INC.

May 24, 2001

Genevieve Salmonson, Director
Office of Environmental Quality Control
235 S. Beretania Street #702
Honolulu, Hawaii 96813

SUBJECT: Waiolani Elua Subdivision

Dear Ms. Salmonson:

Thank you for your comment letter dated April 11, 2001 regarding the subject project. In response to your comments, we offer this following information.

1. Two-side printing will be utilized for the Final EA;

2. The Final EA will include correspondence between the applicant and the County of Maui, Department of Water Supply;

3. The Final EA will address cultural impact considerations;

4. With regard to project scheduling, construction of subdivision improvements is tentatively scheduled to begin in early to mid-2002. Construction duration is estimated to be six (6) months.

If there are any questions or additional information is needed, please do not hesitate to call me at 244-2015.

Very truly yours,

Dean K. Frampton, Planner

DKF:cc
munokawa\waiks.puoeqcltr.002

MUNEKIYO & HIRAGA, INC.

May 23, 2001

Alice Lee, Director
County of Maui
Department of Housing and
Human Concerns
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Proposed Waiolani Elua Subdivision, Waikapu, Maui
TMK (2) 3-5-4:95

Dear Ms. Lee:

Thank you for your letter dated May 22, 2001 regarding the subject project.

The applicants, Scott Nunokawa and Haunani Lemn, look forward to continued coordination with your office in the determination of the appropriate affordable housing application as it pertains to the Waiolani Elua subdivision.

If there are any questions or if additional information is needed, please do not hesitate to call.

Very truly yours,

Dean K. Frampton, Planner

DKF:to
cc: Scott Nunokawa
Haunani Lemn
nunokawa/waikapu/dhhcltr.004

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhmcunline.com

Chapter XI

List of Permits and Approvals

XI. LIST OF PERMITS AND APPROVALS

The following permits and approvals will be required prior to the implementation of the project.

State of Hawaii

1. NPDES Permit (for stormwater discharge associated with construction activities)

County of Maui

1. Subdivision Approval
2. Grading Permit

References

References

Archaeological Consultants of Hawaii, Archaeological Subsurface Testing Results at Phase IA of the Waikapu Master Plan, March 13, 1989.

Archaeological Consultants of Hawaii, Preliminary Archaeological Survey of Phase IA of the Waikapu Master Plan, November 16, 1988.

Community Resources, Inc., Maui County Community Plan Update Program Socio-Economic Forecast Report, January 1994.

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County of Maui, Wailuku-Kahului Community Plan, December 1987.

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Handy, E.S. Craighill and Elizabeth Green Handy, with collaboration of Mary Kawena Pukui, Native Planters in Old Hawaii, Their Life, Lore, and Environment, Bernice P. Bishop Museum Bulletin 233, 1972.

Munekiyo & Arakawa, Inc., Final Environmental Assessment, Business/Commercial Use for Approximately Two-Acre Parcel at TMK 3-5-01:Por. 63, December 1997.

R.M. Towill Corporation, Maui Public Facilities Assessment, Final, August 17, 1992.

State of Hawaii, Department of Education, personal communication with S. Beppu, December 22, 2000.

State of Hawaii, Office of State Planning, The Hawaii State Plan, 1991.

University of Hawaii, Land Study Bureau, Detailed Land Classification Island of Maui, May 1967.

University of Hawaii at Hilo, Department of Geography, Atlas of Hawaii, Third Edition, 1998.

U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, August 1972.

Wilson Okamoto & Associates, Inc., Maui Community Plan Update Infrastructure Assessment, September 1992.

Appendices

Appendix A

Central Maui Real Property Survey

Central Maui Real Property Survey

Prepared By:

Scott Nunokawa

February 2001

Central Maui Real Property Survey

There are a number of sources of information on the recent supply and demand for residential real property in the central Maui area. The following is a compilation of a number of those sources that provides a picture of the current supply and demand dynamics for residential product in the central Maui area.

The Maui Board of Realtors provides statistics for homes and land sold through the Multiple Listing Service (MLS). Overall for Maui, the single-family home resales for the calendar years 1998-2000 were as follows:

Year	Number of Sales	Median Sales Price
2000	951	$275,000
1999	965	$250,000
1998	602	$258,068

The Maui Board of Realtors also provides data for specific regions on the island. Central Maui, which includes the area of Waikapu, shows single-family home resales for the calendar years 1998-2000 as follows:

Year	Number of Sales	Median Sales Price
2000	182	$215,000
1999	193	$202,288
1998	117	$195,000

The MLS data shows only resales of property involving Realtors who are members of the Maui Board of Realtors. Typically, this data tends to underestimate new project sales due to reporting difficulties. Notwithstanding these limitations, the data shows that demand for residential property has increased in the past two years all over the island of Maui, including the "Central" area.

The number of new residential projects that have come to market in the Central Maui area in the recent past has been limited to Wailuku Parkside, Nanea (in the Kehalani Project District), and a number of phases of the Maui Lani Project District. Of these projects, only Maui Lani has offered "Land" sales. Maui Lani continues to market "Land" sales in similar product through the Grand Fairways subdivision although only about 15-20 lots remained owned by the developer at the end of 2000. The only other Central Maui project of substance on the market selling "Land" is Maui Lani's other product called "The Islands". This project is a gated, golf course community. Because

this product is unique, it does not work well as a comparison for Waiolani Elua due to its differences as a product type and its target market.

Excluding "the Islands", the approximate sales data for Maui Lani's lot sales is as follows[1]:

Year	Number of Sales	Price Ranges	Lot Size Ranges (sq. ft.)
2000	+/- 73	$82,500-$133,000	6,160-13,000
1999	133	$79,500-$174,500	5,640-14,000
1998	61	$79,000-$121,000	5,560-7,150

The low 2000 results may be due to limited lower priced inventory and/or problems with verifying sales of recent new product transactions. However, it is noteworthy that in 1999, the most recent year with complete data and relatively unrestricted inventory, 133 lots were sold at a price range of $79,500-174,500 for lots ranging in size from 5,640 to 14,000 sq. ft. The initial target price range for Waiolani Elua is $100,000-$150,000 for lots that should average around 8000 sq. ft. It appears clear that demand for lots in the size and price range of Waiolani Elua is strong. Further, aside from Maui Lani's "The Islands", there does not appear to be new projects coming to market in the Central Maui area in the immediate future.

The sale of new homes, while not specifically on point, is another good indicator of overall market demand for new residential product. As discussed, in the recent past, two new home projects in Central Maui came to market. The first is Nanea, an eighty-lot subdivision in the Kehalani Project District. Nanea was produced in 1998 and 1999 and all-80 house/lots closed between 11/98 and 7/99. Lot sizes ranged from 6200 sq. ft. to 8000 sq. ft. and prices ranged from $180,000 to the mid $250,000 range for 1150 to 1700 sq. ft. homes. [2]

The second new residential house/lot project is Wailuku Parkside. As of the end of January 2001, contracts have been executed for 88 homes of the 119 total homes in the project since sales commenced at the end of 1999.[3] It should be noted that 17 of the 119 homes were only released for sale as of the beginning of February 2001. As of the end of January of 2001, 37 homes have closed escrow. Additional transactions should continue to close as homes in the project are completed. Based on these two new projects, it appears that demand for new single-family residential housing is also strong.

---

[1] Based on information obtained through a local appraiser, County Tax office, local realtors, and other public records. The information is deemed reasonably accurate, however not guaranteed.

[2] See 1 above.

[3] See 1 above.

Based on the SMS Hawaii Housing Study Update 1997, annual demand for new housing units on the Island of Maui will range between 700 and 800 units for the foreseeable future.[4] The report also indicates that in 1997 just over 20% of potential purchasers indicated that their preferred location would be central Maui.[5] This indicates that the annual demand for new housing product in Central Maui should be in the 140 to 160-unit range. Aside from the product available at "The Islands", there does not appear to be additional inventory coming to market in the Central Maui area in the near future. While predictions on the timing of inventory coming to market is difficult at best, it appears reasonable to predict that there is adequate demand for new inventory to justify the need for the type and quantity of product Waiolani Elua will provide.

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[4] Locations, Inc. Research & Consulting Division and SMS Research & Marketing Services, Inc. November 1997 report titled Hawaii Housing Policy Study Update 1997 done on behalf of the County of Maui Department of Housing and Human Concerns et al., Exhibit I-4 "Maui Housing Model".

[5] Hawaii Housing Policy Study Update 1997 Table A-11 "Preferred Location of New Housing Units, 1997 Preferred Tenancy: Own"

Appendix B

Preliminary Engineering Report

Established 1969

Preliminary Engineering Report for

WAIOLANI ELUA SUBDIVISION

Waikapu, Wailuku, Maul, Hawaii

Prepared For:

Scott Nunokawa and Haunani Lemn
Wailuku, Maui, Hawaii 96793

Warren S. Unemori Engineering, Inc.
Civil and Structural Engineers - Land Surveyors
2145 Wells Street, Suite 403
Wailuku, Hawaii 96793

Date: November, 2000

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TABLE OF CONTENTS

Preliminary Engineering Report
for
Waiolani Elua Subdivision

I. *INTRODUCTION*

The purpose of this report is to provide a description and evaluation of existing infrastructure in the vicinity of the project site. This report also provides an overview of probable infrastructural improvements that may be required to support the proposed project.

II. *PROJECT SITE ANALYSIS*

A. Site Location

The proposed Waiolani Elua Subdivision Project is situated in Waikapu, Wailuku, Maui, Hawaii. The existing Waiolani Subdivision borders the southerly boundary of the Project. It is bordered along the northerly boundary by Piikana Street, the easterly boundary by Honoapiilani Highway, and the westerly boundary by Ho'okahewai Street.

The project site is identified as Lot 3-B of Waikapu North Large-Lot Subdivision. The tax map key assigned to the parcel is (2) 3-5-04:parcel 95.

The project site contains an area of 6.058 acres.

B. Project Description

The proposed plan is to create a residential subdivision consisting of approximately 25 single family residential lots. The proposed minimum lot size will be 7,500 square feet, conforming to a proposed R-2 zoning under the provisions of Chapter 19 of the Maui County Code.

C. Topography and Soil Conditions

The existing ground slopes from an elevation of approximately 450 feet ± to 410 feet in a westerly to easterly direction, with an average slope of approximately 6.8%.

According to the "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August, 1972)" the soil type at the project site consists of Iao Clay (IcB), 3 to 7 percent slopes. This soil type is characterized as having medium runoff and slight to moderate erosion hazard.

D. Flood Hazard

According to the Flood Insurance Rate Map, effective March 16, 1995, prepared by the U.S. Federal Emergency Management Agency, Federal Insurance Administration, the project site is located within Zone C, which is designated as areas prone to minimal flooding.

III. EXISTING INFRASTRUCTURE

A. Water System

Water for Waikapu comes from deep wells drilled to sea level at Mokuhau in Iao Valley. From these wells at elevation 360 feet above sea level, water is conveyed by gravity to a 3.0 million gallon reservoir located east (makai) of Waiale Drive. A series of pump stations then lifts water from this reservoir to a 300,000 gallon storage tank located on upper Waikapu at elevation 764 feet. It is then conveyed by means of 8 and 12-inch waterlines located within Waiko Road and the existing roadways within Waiolani Subdivision to the project site.

B. Sanitary Sewer System

The existing Village of Waikapu is not sewered. Homes and businesses are all connected to individual cesspools or septic tanks.

Several years ago C. Brewer Properties installed a gravity transmission system between Waiko Road and the County's gravity system on Waiale Road below Honoapiilani Highway for their Maui Tropical Plantation project. This system comprised of 8 and 12-inch sewerlines was designed and constructed to County of Maui standards. The existing Waiolani Subdivision is sewered and the improvements in conjunction with the previously mentioned gravity transmission system was dedicated to the County of Maui.

C. Drainage

The current onsite surface runoff generated from the project site for a 50 year recurrence interval, 1-hour duration storm is 7.1 cubic feet per second (cfs). Offsite surface runoff is intercepted and conveyed by the existing underground drainage system installed as part of the Waiolani Subdivision improvements.

The onsite surface runoff generated from the project is intercepted by the existing curb-inlet type catch basin located within Waiolani Subdivision or the grated-inlet type catch basin located within the Honoapiilani Highway right-of-way. This surface runoff is conveyed by means of an existing underground drainage system located within Waiolani Subdivision, Honoapiilani Highway, and Waiolu Street to an outlet into Waikapu Reservoir. This reservoir serves as sedimentation and retention basin for Waiolani Subdivision. The 2 existing overflow spillways in Waikapu Reservoir discharge the runoff into an existing underground drainage system located within Waiko Road to an outlet located in Waikapu Stream.

The existing underground drainage system was installed as part of the Waiolani Subdivision improvements. The existing drainage system was designed and constructed to accommodate the increase in surface runoff generated from the proposed development.

D. Roadway System

Honoapiilani Highway is a roadway owned and maintained by the State of Hawaii and is the main artery linking Waikapu to Central, South and West Maui.

Access to the project site will be directly off Honoapiilani Highway at its intersection with Pilikana Street. This intersection is located approximately 1,250 feet north of the Waiko Road and Honoapiilani Highway intersection. Honoapiilani Highway was improved as part of Waiolani Subdivision to include a left turn storage lane for northbound traffic and a deceleration lane for southbound traffic. Pilikana Street at its intersection with Honoapiilani Highway was striped to include separate left and right turn lanes. Pilikana Street, Ho'okahewai Street and Mo'ohele Street, which were constructed as part of Waiolani Subdivision and improved to County of Maui standards provide the access to the project site from Honoapiilani Highway. Pilikana and Ho'okahewai Streets have a 56-feet wide right-of-way and 40 feet (curb-to-curb) travelway. Mo'ohele Street has a 44 feet wide right-of-way and 28 feet (curb-to-curb) travelway.

E. Electricity, Telephone and Cable Television Systems

The existing overhead electrical, telephone and cable television lines located on the easterly side of Honoapiilani Highway provide the source of these utilities for the project site and Waiolani Subdivision.

Underground ducts, pullboxes, handholes and manholes were installed in conjunction with the Waiolani Subdivision improvements.

IV. PROBABLE INFRASTRUCTURAL IMPROVEMENTS

A. Water System

The projected average daily water demand for the proposed 25-lot single family residential project is expected to be 15,000 gallons per day (gpd). This translates to a maximum daily demand of 22,500 gpd. The fire flow demand for a single family residential project is 1,000 gallons per minute (gpm).

The existing storage and transmission system both have the capacity to satisfy both the domestic water and fire flow requirements. Therefore, the Project's prorata share of source development, storage and transmission costs will be paid for as part of the comprehensive water meter assessment fee for each lot.

The existing 8-inch waterlines along Ho'okahewai and Mo'ohele Streets will be extended into the Project in order to satisfy the fire flow requirement. The distribution system will be looped to ensure continuous circulation as required by the Department of Water Supply. Fire hydrants are expected to be installed along the subdivision roadways at intervals of 300 to 350 feet.

B. Sewer System

The proposed single family residential project is expected to generate approximately 8,750 gallons per day (gpd) of wastewater. The existing 8-inch sewerline along Mo'ohele Street, which was extended into the Project as part of Waiolani Subdivision, as well as the existing County of Maui wastewater system has the capacity to accommodate the projected wastewater flow.

In accordance with the provisions of the Maui County Code, the applicant's contribution towards the completed expansion of the Kahului Wastewater Reclamation Facility will be a assessment based on a per gallon of wastewater generated.

C. Drainage

The post development surface runoff from this single family residential project for a 50-year recurrence interval, 1-hour duration storm is estimated to be approximately 12.2 cfs. This onsite surface runoff will be directed into the existing storm drain system that was installed as part of Waiolani Subdivision. This system was designed to accommodate the onsite post development flow generated from the Project. Based on the available drainage improvements in the project vicinity, it is expected that there will be no adverse drainage-related impacts to downstream or surrounding properties.

D. Roadways

All internal subdivision streets will be connected to Ho'okahewai and Mo'ohele Streets. The subdivision streets will be developed in accordance with the provisions in the Maui County Code. (For project-generated impact

on the existing Waiolani Subdivision roadways and Honoapiilani Highway, see Traffic Impact Study prepared for the project.)

E. Electricity, Telephone and Cable Television Systems

Underground distribution systems for electricity, telephone and cable TV will be extended into the project from Pilikana, Ho'okahewai and Mo'ohele Streets along the subdivision roadways, all in accordance with the provisions of the County subdivision standards, and the applicable utility standards.

V. *CONCLUSION*

Based on the foregoing it is reasonable to conclude that any project related impact on the infrastructure can be readily mitigated. Infrastructural improvements anticipated are those normally associated with residential developments and are not extraordinarily excessive or unusual.

APPENDIX A

DRAINAGE CALCULATIONS

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: RMA
DATE: November 8, 2000

HYDROLOGIC STUDY
FOR
WAIOLANI SUBDIVISION NO. 2

WAIKAPU, WAILUKU, MAUI, HAWAII

BEFORE DEVELOPMENT

ONSITE SURFACE RUNOFF

RECURRENCE INTERVAL:	50 years	HYDRAULIC LENGTH:	690.0 ft.
ONE-HOUR RAINFALL:	2.50 inches	ELEV'N. DIFFERENTIAL:	43.00 ft.
		HYDRAULIC SLOPE:	0.062 ft./ft.
WEIGHTED RUNOFF			
COEFFICIENT, C:	0.28	TIME OF CONCENTRATION:	19.0 min.
INTENSITY, I:	4.20 inches		
AREA, A:	6.06 acres	SUB BASINS CONSIDERED:	1

Q = C*I*A = 7.13 cfs

COMMENTS:

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: RMA
DATE: November 8, 2000

WAIOLANI SUBDIVISION NO. 2
[continued]

TABULATION OF RUNOFF COEFFICIENTS & AREAS:

SUB-BASIN 1 OF 1 : ONSITE

INFILTRATION:	Medium	0.07	
RELIEF:	Rolling (5-15%)	0.03	>>> COMPOSITE C = 0.280
VEGETAL COVER:	Good (10-50%)	0.03	>>> AREA = 6.060 acres
DEVELOPMENT:	Agricultural	0.15	

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: RMA
DATE: November 8, 2000

HYDROLOGIC STUDY

FOR

WAIOLANI SUBDIVISION NO. 2

WAIKAPU, WAILUKU, MAUI, HAWAII

AFTER DEVELOPMENT

ONSITE SURFACE RUNOFF

RECURRENCE INTERVAL:	50 years	HYDRAULIC LENGTH:	795.0 ft.
ONE-HOUR RAINFALL:	2.50 inches	ELEV'N. DIFFERENTIAL:	32.00 ft.
		HYDRAULIC SLOPE:	0.040 ft./ft.
WEIGHTED RUNOFF COEFFICIENT, C:	0.53	TIME OF CONCENTRATION:	23.0 min.
INTENSITY, I:	3.80 inches		
AREA, A:	6.06 acres	SUB BASINS CONSIDERED:	1

Q = C*I*A = 12.20 cfs

COMMENTS:

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

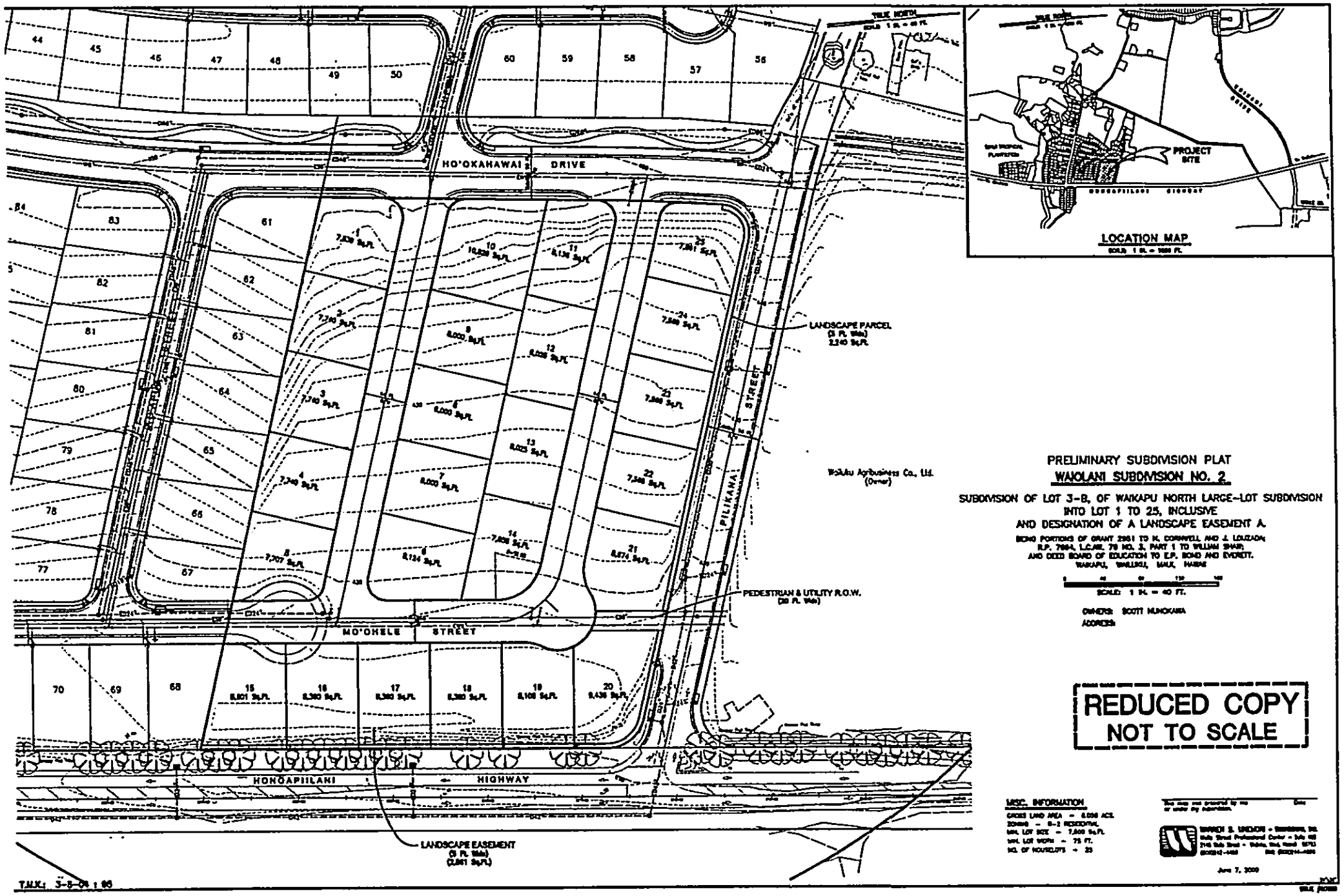
BY: RMA
DATE: November 8, 2000

WAIOLANI SUBDIVISION NO. 2
[continued]

TABULATION OF RUNOFF COEFFICIENTS & AREAS:

SUB-BASIN 1 OF 1 : ONSITE

INFILTRATION:	Medium	0.07	
RELIEF:	Rolling (5-15%)	0.03	>>> COMPOSITE C = 0.530
VEGETAL COVER:	Good (10-50%)	0.03	>>> AREA = 6.060 acres
DEVELOPMENT:	Residential	0.40	


HO'OKAHAWAI DRIVE
MO'OHELE STREET
HONOAPIILANI HIGHWAY
PILIKANA STREET
LANDSCAPE PARCEL
(5 Ft. Wide)
2,240 Sq.Ft.
PEDESTRIAN & UTILITY R.O.W.
(20 Ft. Wide)
LANDSCAPE EASEMENT
(5 Ft. Wide)
(1,061 Sq.Ft.)
Wailuku Agribusiness Co., Ltd.
(Owner)
TMK: 3-8-04 : 86
PROJECT SITE
LOCATION MAP
PRELIMINARY SUBDIVISION PLAT
WAIOLANI SUBDIVISION NO. 2
SUBDIVISION OF LOT 3-B, OF WAIKAPU NORTH LARGE-LOT SUBDIVISION
INTO LOT 1 TO 25, INCLUSIVE
AND DESIGNATION OF A LANDSCAPE EASEMENT A.
BEING PORTIONS OF GRANT 2951 TO H. CORNWELL AND J. LOUZADA,
R.P. 7884, L.C.Aw. 79 NO. 3, PART 1 TO WILLIAM SHAW,
AND DEED BOARD OF EDUCATION TO E.P. BOND AND EVERETT.
WAIKAPU, WAILUKU, MAUI, HAWAII
SCALE: 1 IN. = 40 FT.
OWNER: SCOTT NUNOKAWA
ADDRESS:
REDUCED COPY
NOT TO SCALE
MISC. INFORMATION
GROSS LAND AREA = 6.036 ACS.
ZONING = R-1 RESIDENTIAL
MIN. LOT SIZE = 7,500 Sq.Ft.
MIN. LOT WIDTH = 75 FT.
NO. OF HOUSELOTS = 33
June 7, 2000

Appendix C

Traffic Impact Analysis Report

TRAFFIC IMPACT ANALYSIS REPORT FOR

WAIOLANI ELUA SUBDIVISION

A SINGLE-FAMILY RESIDENTIAL REZONING AND SUBDIVISION APPLICATION

(TMK 3-5-04:95)

IN WAIKAPU, MAUI, HAWAII

FINAL REPORT

Prepared For

SCOTT NUNOKAWA AND HAUNANI LEMN

Wailuku, Maui, Hawai'i

Phillip Rowell and Associates
47-273 'D' Hui Iwa Street
Kaneohe, Hawai'i 96744
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Email: prowell@gte.net

December 27, 2000

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LIST OF FIGURES

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LIST OF APPENDICES

1. INTRODUCTION

Phillip Rowell and Associates has been retained by Scott Nunokawa and Haunani Lemn of Wailuku to perform a traffic impact analysis for a proposed residential development in Waikapu, Maui, Hawaii. The purpose of this study is to identify the traffic impacts of the proposed project for a rezoning and subdivision application.

This introductory chapter discusses the location of the project, the proposed development, and the study methodology.

Project Location and Description

The proposed project is located along the west side of Honoapiilani Highway in Waikapu, Maui. The project is in the southwest quadrant of the intersection of Honoapiilani Highway at Pilikana Street. See Figure 1.

The project will be 30 or less single-family detached residential units. Access will be via Pilikana Street. No street improvements are planned for either Honoapiilani Highway or Pilikana Street.

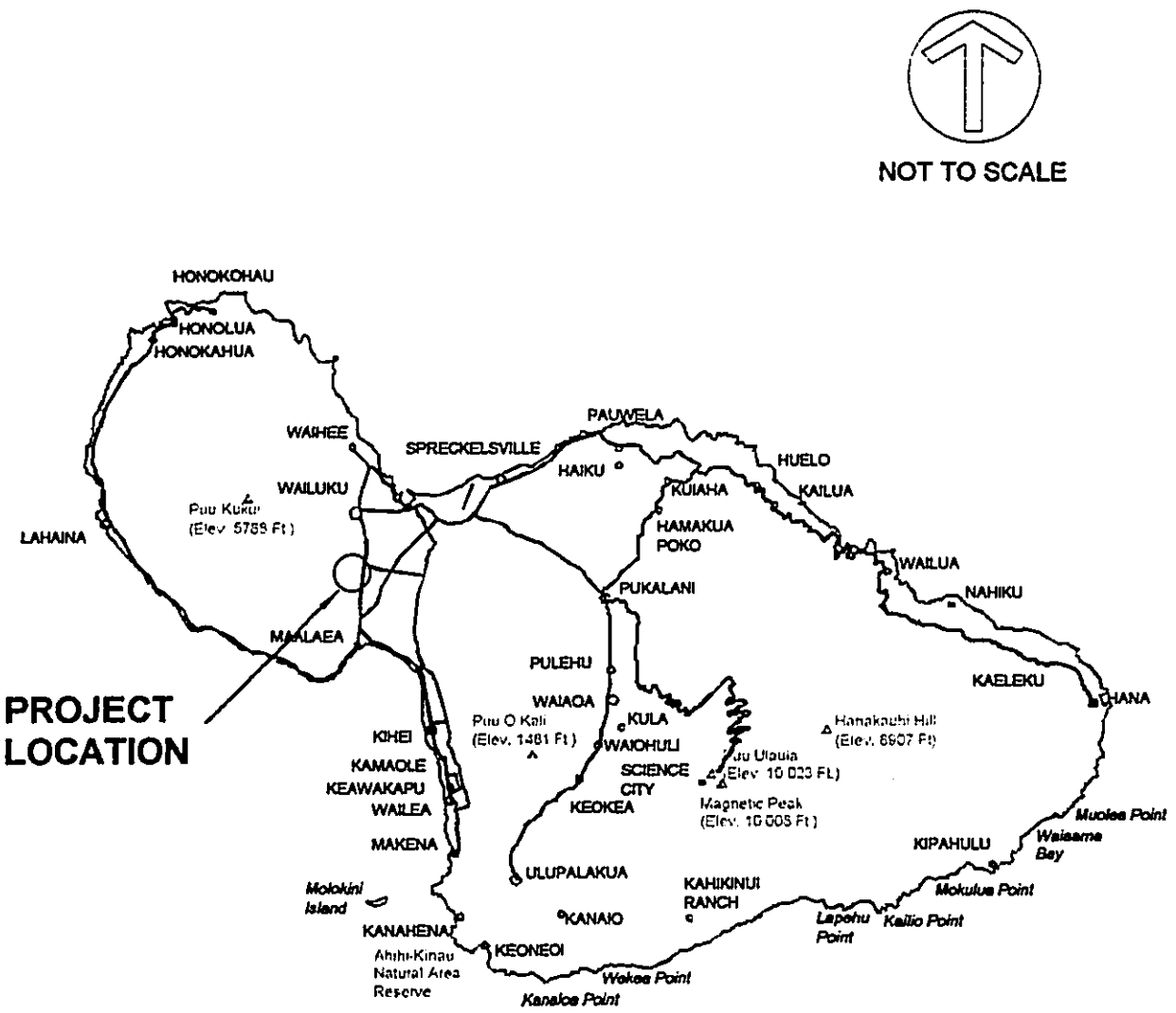


Figure 1

PROJECT LOCATION MAP

Study Methodology and Order of Presentation

1. Analysis of Existing Traffic Conditions

Existing traffic volumes at the study intersections were determined from traffic counts performed during November, 2000. Intersection configurations and traffic control information were also collected in the field at the time of the traffic counts. Other data collected included speed limits and right-of-way controls.

Using the data collected, existing traffic operating conditions in the vicinity of the project were determined. The methodology for unsignalized intersections described in the 1997 *Highway Capacity Manual* (HCM) [1] was used to determine the level-of-service (LOS) at the study intersections.

Existing traffic conditions, the LOS concept and the results of the LOS analysis for existing conditions are presented in Chapter 2.

2. Determination of Cumulative Traffic Projections

The year 2005 was used as the design year. This does not necessarily represent the project completion date. It represents occupancy for purposes of conducting the impact analysis. Cumulative traffic conditions are defined as future traffic conditions without the proposed project. A description of the process used to estimate 2005 cumulative traffic volumes and the resulting cumulative traffic projections is presented in Chapter 3.

3. Analysis of Project-Related Traffic Impacts

The next step in the traffic analysis was to estimate the peak-hour traffic that would be generated by the proposed project. This was done using standard trip generation procedures outlined in *Trip Generation*[2]. The procedure is described in Chapter 4.

These trips were distributed based on the available approach and departure routes. The project-related traffic was then superimposed on 2005 cumulative traffic volumes at the study intersections. The HCM methodology was used again to conduct a LOS analysis for cumulative plus project conditions. The results of this analysis were compared to 2005 cumulative conditions to determine the incremental impacts of this project. The analysis of the project-related impacts and the conclusions of the analyses are presented in Chapter 5.

---

[1] *Highway Capacity Manual*, Institute of Transportation Engineers, Washington, D.C., 1997

[2] *Trip Generation*, Institute of Transportation Engineers, Washington, D.C., 1997

2. ANALYSIS OF EXISTING CONDITIONS

This chapter presents the existing traffic conditions on the roadways adjacent to the proposed project. The level-of-service (LOS) concept and the results of the LOS analysis for existing conditions are also presented. The purpose of this analysis is to establish the base conditions for the determination of the impacts of the project which are described in a subsequent chapter.

Description of Existing Streets and Intersection Controls

The following is summary of the major roadways in the study area:

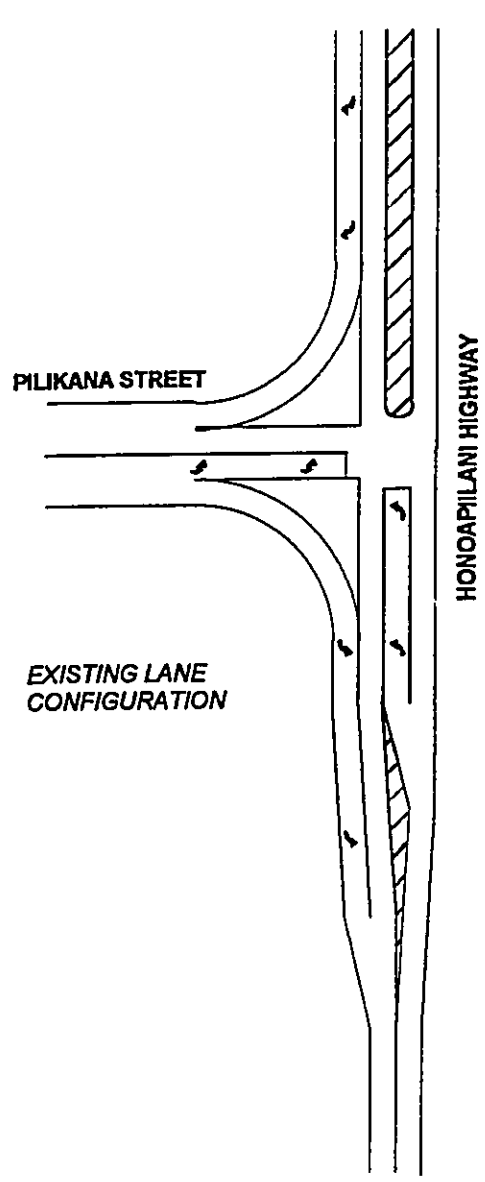
Honoapiilani Highway

Honoapiilani Highway is a major State highway connecting Wailuku and Maalaea. In the vicinity of the proposed project, the highway is a two-lane, two-way facility with separate left turn lanes. The posted speed limit is 30 miles per hour (mph).

Pilikana Street

Pilikana Street is a two-way street providing access to Honoapiilani Highway from the residential area to the west. The intersection with Honoapiilani Highway is unsignalized.

Figure 2 is a schematic of the roadway conditions adjacent to the project. Photographs of the study intersections are presented as Appendix A.



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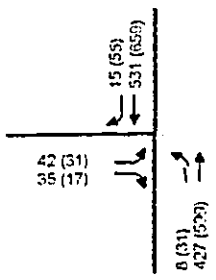


AM AND PM PEAK HOUR TRAFFIC VOLUMES

LEGEND
000 (000)
PM PEAK HOUR
AM PEAK HOUR

Figure 2

SCHEMATIC OF EXISTING LANE CONFIGURATION AND EXISTING PEAK HOUR TRAFFIC VOLUMES

Existing Peak Hour Traffic Volumes

The AM and PM peak hour traffic volumes at the intersection of Honoapiilani Highway at Pilikana Street are also shown in Figure 2. The traffic volumes include large trucks, buses and motorcycles. They do not include mopeds or bicycles.

These counts were performed on a Monday afternoon and Tuesday morning during November, 2000.

Level-of-Service Concept

Signalized Intersections

The operations method described in the *1997 Highway Capacity Manual* (HCM) was used to analyze the operating efficiency of the signalized intersections adjacent to the study site. This method involves the calculation of a volume-to-capacity (V/C) ratio which is related to a level-of-service.

"Level-of-Service" is a term which denotes any of an infinite number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. Level-of-service (LOS) is a qualitative measure of the effect of a number of factors which include space, speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

There are six levels-of-service, A through F, which relate to the driving conditions from best to worst, respectively. The characteristics of traffic operations for each level-of-service are summarized in Table 1. In general, LOS A represents free-flow conditions with no congestion. LOS F, on the other hand, represents severe congestion with stop-and-go conditions. Level-of-service D is typically considered acceptable for peak hour conditions in urban areas.

Corresponding to each level-of-service shown in the table is a volume/capacity ratio. This is the ratio of either existing or projected traffic volumes to the capacity of the intersection. Capacity is defined as the maximum number of vehicles that can be accommodated by the roadway during a specified period of time. The capacity of a particular roadway is dependent upon its physical characteristics such as the number of lanes, the operational characteristics of the roadway (one-way, two-way, turn prohibitions, bus stops, etc.), the type of traffic using the roadway (trucks, buses, etc.) and turning movements.

Table 1 Level-of-Service Definitions for Signalized Intersections[1]

Level of Service	Interpretation	Volume-to-Capacity Ratio[2]	Stopped Delay (Seconds)
A, B	Uncongested operations; all vehicles clear in a single cycle.	0.000-0.700	<15.0
C	Light congestion; occasional backups on critical approaches	0.701-0.800	15.1-25.0
D	Congestion on critical approaches but intersection functional. Vehicles must wait through more than one cycle during short periods. No long standing lines formed.	0.801-0.900	25.1-40.0
E	Severe congestion with some standing lines on critical approaches. Blockage of intersection may occur if signal does not provide protected turning movements.	0.901-1.000	40.1-60.0
F	Total breakdown with stop-and-go operation	>1.001	>60.0

Notes:
(1) Source: *Highway Capacity Manual*, 1997.
(2) This is the ratio of the calculated critical volume to Level-of-Service E Capacity.

Unsignalized Intersections

Like signalized intersections, the operating conditions of intersections controlled by stop signs can be classified by a level-of-service from A to F. However, the method for determining level-of-service for unsignalized intersections is based on the use of gaps in traffic on the major street by vehicles crossing or turning through that stream. Specifically, the capacity of the controlled legs of an intersection is based on two factors: 1) the distribution of gaps in the major street traffic stream, and 2) driver judgement in selecting gaps through which to execute a desired maneuver. The criteria for level-of-service at an unsignalized intersection is therefore based on delay of each turning movement. Table 2 summarizes the definitions for level-of-service and the corresponding delay. A subsequent calculation to determine an overall LOS was made, and these results are presented in tables to summarize traffic conditions using parameters similar to those used for signalized intersections.

Table 2 Level-of-Service Definitions for Unsignalized Intersections[1]

Level-of-Service	Expected Delay to Minor Street Traffic	Delay (Seconds)
A	Little or no delay	>5
B	Short traffic delays	5.1 to 10.0
C	Average traffic delays	10.1 to 20.0
D	Long traffic delays	20.1 to 30.0
E	Very long traffic delays	30.1 to 45.0
F	See note (2) below	>45.1

Notes:
(1) Source: *Highway Capacity Manual*, 1997.
(2) When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement of the intersection.

Level-of-Service Analysis of Existing Conditions

The results of the Level-of-Service analysis for the study intersections Table 3. The calculation worksheets are presented in Appendix C.

Table 3 Existing Levels-of-Service[1]

Intersection and Movement	AM Peak Hour			PM Peak Hour		
	Average Vehicle Delay [2]	95% Queue [3]	LOS [4]	Average Vehicle Delay [2]	95% Queue [3]	LOS [4]
Honoapiilani Highway at Pilikana Street	0.9		A	0.8		A
Eastbound Left	17.1	1.1	C	26.9	0.9	D
Eastbound Right	5.6	0.1	B	6.4	0.0	B
Northbound Left	4.1	0.0	A	4.9	0.1	A

NOTES:
(1) See Appendices B for calculations.
(2) Delay is in seconds per vehicle.
(3) 95th queue is not calculated for the total intersection.
(4) LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*.

The conclusions of this analysis are:

1. Overall, the intersection of Honoapiilani Highway at Pilikana Street operates well (Level-of-Service A). However, there are significant delays to left turns from Pilikana Street. This movement operates at Level-of-Service C and D during the morning and afternoon peak periods, respectively.

2. Left turning vehicles from Pilikana Street use the median area as a refuge area.

3. The Level-of-Service calculations accurately reflect traffic conditions observed in the field.

3. PROJECTED CUMULATIVE TRAFFIC CONDITIONS

The purpose of this chapter is to discuss the assumptions and data used to estimate 2005 cumulative traffic conditions. Cumulative traffic conditions are defined as future traffic volumes without the proposed project.

Future traffic growth consists of two components. The first is ambient background growth that is a result of regional growth and cannot be attributed to a specific project. The second component is estimated traffic that will be generated by other development projects in the vicinity of the proposed project.

Background Traffic Growth

The *Maui Long Range Land Transportation Study* was used to estimated the background growth rate of traffic along Honoapiilani Highway. The AM and PM peak hour traffic estimates for 1990 and 2020 provided in the report were used to calculate separate growth rates for northbound and southbound peak hour traffic. This data and the calculations are shown in Table 4.

The growth rates shown were used to estimate the background growth of traffic along Honoapiilani Highway between 2000 and 2005.

Table 4 Calculation of Background Growth Rate Along Honoapiilani Highway[1]

	AM Peak Hour		PM Peak Hour	
Year	Northbound	Southbound	Northbound	Southbound
1990	903	691	810	1,217
2020	1,401	1,201	1,324	1,845
Growth Rate [2]	1.47%	1.86%	1.65%	1.40%

Notes:
1. Source: Kaku & Associates, *Maui Long Range Land Transportation Study*, February 1997, p. 66
2. Compounded growth rate.

Related Projects

The second component in estimating background traffic volumes is traffic resulting from other proposed projects in the vicinity. Related projects are defined as those projects that are under construction or have been approved for construction and would significantly impact traffic in the study area. Related projects may be development projects or roadway improvements. No related projects were identified.

2005 Cumulative Traffic Projections

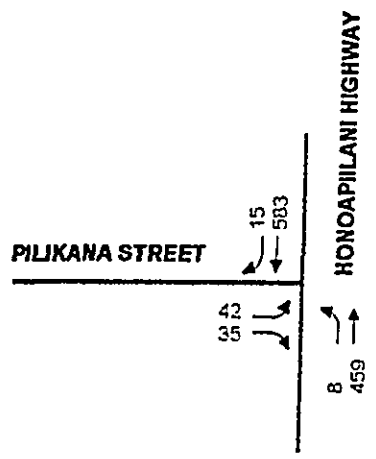
2005 cumulative traffic projections are calculated by expanding existing traffic volumes by the appropriate growth rates and then superimposing traffic generated by related projects. In summary, the assumptions used to estimate the cumulative traffic volumes are:

1. Existing traffic was increased by the following annual growth rates per year from 1999 to 2005:

   AM Peak Hour Northbound 1.47% per year
   AM Peak Hour Southbound 1.86% per year
   PM Peak Hour Northbound 1.65% per year
   PM Peak Hour Southbound 1.40% per year

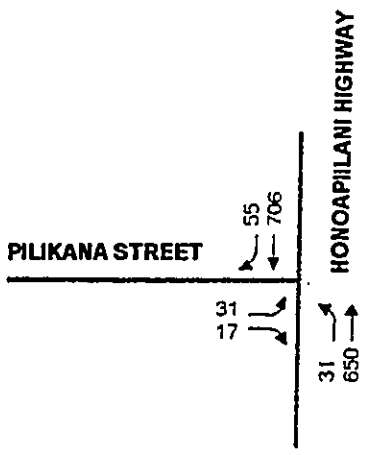
2. No related projects were identified.

The resulting 2005 cumulative peak hour traffic volumes are shown in Figure 3.



AM PEAK HOUR
TRAFFIC VOLUMES

NOT TO SCALE



PM PEAK HOUR
TRAFFIC VOLUMES

Figure 3

2005 CUMULATIVE PEAK HOUR TRAFFIC VOLUMES

4. PROJECT-RELATED TRAFFIC CONDITIONS

This chapter discusses the methodology used to identify the traffic-related impacts of the proposed project. Generally, the process involves the determination of weekday peak-hour trips that would be generated by the proposed project, distribution and assignment of these trips on the approach and departure routes, and finally, determination of the levels-of-service at affected intersections and driveways subsequent to implementation of the project.

Project Trip Generation

Future traffic volumes generated by a project are typically estimated using the procedure described in *Trip Generation* published by the Institute of Transportation Engineers. However, to insure that an accurate estimate of project generated traffic, a trip generation analysis of the existing development was performed. This analysis presumes that the proposed development will have traffic characteristics consistent with the existing residential development.

The calculated trip rates for the existing development and the estimated number of AM and PM peak hour trips are shown in Table 5. The trips shown are the peak hourly trips generated by the project, which may, or may not, coincide with the peak hour of the adjacent street. Therefore, a worse-case scenario is analyzed because the peak hourly volumes of the project are superimposed on peak hourly background traffic volumes. Use of the trips generated during the peak hour of the adjacent street, rather than the peak hour of the generator, may result in underestimating the impacts of project traffic.

Table 5 Trip Generation Summary

Time Period	Direction	Existing Trips	Existing Units	Trips per Unit [1]	New Units	New Peak Hour Trips
AM Peak Hour	Inbound	23	132	0.174	30	5
	Outbound	75	132	0.568	30	17
	Total	98	132	0.742	30	22
PM Peak Hour	Inbound	86	132	0.652	30	20
	Outbound	48	132	0.364	30	11
	Total	134	132	1.015	30	31

NOTES:
(1) Number of units based on field survey of existing development serve by the intersection of Pilikana Street at Honoapiilani Highway.

Trip Distribution and Assignments

The project-related trips were distributed along the anticipated approach routes to the project site based on the directional distribution of existing peak hour traffic along Honoapiilani Highway. The trip distribution and project related trip assignments are shown in Figure 4.

2005 Cumulative Plus Project Projections

Cumulative plus project traffic conditions are defined as 2005 background traffic conditions plus project related traffic. The incremental difference between cumulative and cumulative plus project is the traffic impact of the project under study.

2005 cumulative plus project traffic volumes with the project were estimated by superimposing the peak hourly traffic generated by the proposed project on the 2005 cumulative peak hour traffic volumes presented in Chapter 3. The traffic projections for 2005 cumulative plus project conditions are shown on Figure 4.

The traffic projection worksheets are presented as Appendix B.

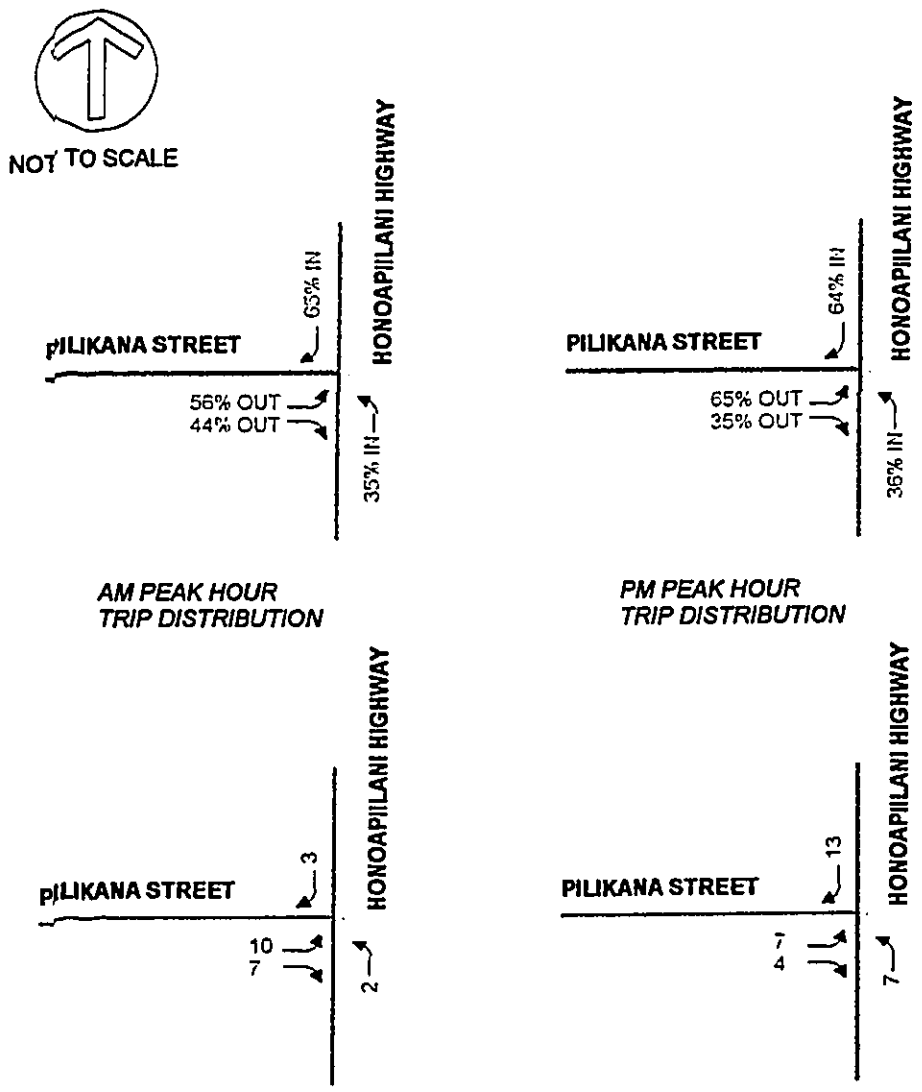
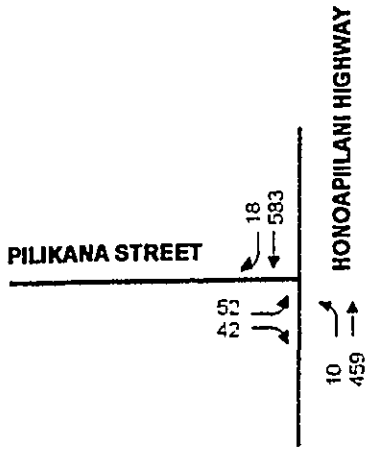


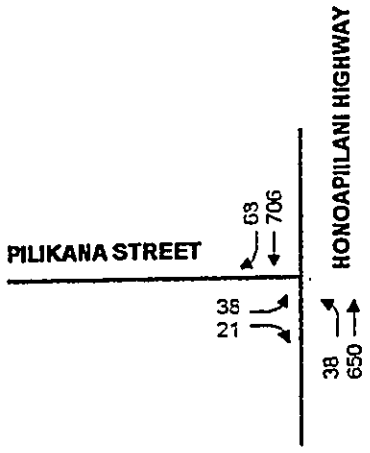
Figure 4

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT



AM PEAK HOUR
TRAFFIC VOLUMES

NOT TO SCALE



PM PEAK HOUR
TRAFFIC VOLUMES

Figure 5

2005 PEAK HOUR TRAFFIC VOLUMES CUMULATIVE PLUS PROJECT CONDITIONS

5. CONCLUSIONS AND RECOMMENDATIONS

The purpose of this chapter is to summarize the results of the level-of-service analysis, which identifies the project-related impacts. In addition, any mitigation measures necessary and feasible are identified and other access, egress and circulation issues are discussed.

Definition of Significant Impacts

Criteria for determining if a project has a significant traffic impact for which mitigation measures must be investigated have been established based on traffic impact study guidelines used in other traffic studies. Generally, the criteria are as follows: if the level-of-service (LOS) without the project is E or F and the volume/capacity (V/C) ratio changes less than 0.020, the project's traffic impacts are considered insignificant. However, if the V/C ratio change is greater than 0.020, then mitigation measures which will reduce the V/C ratio change to less than 0.020 must be identified.

Project Related Traffic Impacts

The traffic impact of the proposed project was assessed by analyzing the changes in traffic volumes and Levels-of-Service. The change in traffic volumes along the roadway links serving the project is summarized in Table 6.

Table 6 Traffic Volume Increases

Roadway	Location	Direction	AM Peak Hour Without Project	AM Peak Hour With Project	AM Peak Hour Change	PM Peak Hour Without Project	PM Peak Hour With Project	PM Peak Hour Change
Honoapiilani Highway	North of Pilikana St.	NB	501	511	10	681	688	7
		SB	598	601	3	761	774	13
	South of Pilikana St.	NB	467	469	2	681	688	7
		SB	618	625	7	723	727	4
Pilikana Street	West of Honoapiilani Highway	EB	77	94	17	48	59	11
		WB	23	28	5	86	106	20

The results of the Level-of-Service analysis for the intersection of Honoapiilani Highway at Pilikana Street are shown in Table 5. The Level-of-Service analysis was performed using the following assumptions:

1. The intersection of Honoapiilani Highway at Pilikana Street is unsignalized.
2. The existing intersection geometry is unchanged.
3. The median area is used as a refuge for left turning from Pilikana Street to northbound Honoapiilani Highway.

Table 7 Level-of-Service Analysis for 2005 Peak Hour Conditions[1]

Intersection and Movement	Cumulative Average Vehicle Delay [2]	Cumulative 95% Queue [3]	Cumulative LOS [4]	Cumulative Plus Project Average Vehicle Delay [2]	Cumulative Plus Project 95% Queue [3]	Cumulative Plus Project LOS [4]	Change in Delay [2]
AM PEAK HOUR							
Honoapiilani Highway at Pilikana Street	1.0		A	1.3		A	0.3
Eastbound Left	20.0	1.2	D	22.4	1.6	D	2.4
Eastbound Right	6.0	0.1	B	6.1	0.2	B	0.1
Northbound Left	4.4	0.0	A	4.4	0.0	A	0.0
PM PEAK HOUR							
Honoapiilani Highway at Pilikana Street	0.9		A	1.1		A	0.2
Eastbound Left	32.3	1.0	E	36.6	1.4	E	4.3
Eastbound Right	6.8	0.1	B	6.9	0.2	B	0.1
Northbound Left	5.2	0.1	B	5.3	0.2	B	0.1

NOTES:
(1) See Appendices B for calculations.
(2) Delay is in seconds per vehicle.
(3) 95th queue is not calculated for the total intersection.
(4) LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*.

Traffic Signal Warrant Analysis

A traffic signal warrant analysis was performed for the intersection of Honoapiilani Highway at Pilikana Street. The traffic signal warrant analysis was performed using the warrants and procedures described in the *Manual of Uniform Traffic Control Devices* (MUTCD) published by the U.S. Department of Transportation, Federal Highway Administration.

There are eleven warrants described in the MUTCD. These warrants and the results of the warrant analysis is shown in Table 8.

If the traffic conditions satisfy any of the warrants, then a traffic signal should be considered. The MUTCD and traffic manual clearly states that satisfaction of a warrant is not necessarily justification for a traffic signal. Conversely, a signal may be warranted even though no warrants may be satisfied. Other considerations may require signals to address safety and geometric issues. Delay, congestion, confusion or other evidence of the need of right-of-way assignment must also be shown.

The assumptions used in the analysis are:

4. The study area is zoned rural.

5. The analysis was performed for cumulative plus project conditions.

6. The existing lane was used.

The conclusion of this analysis is that traffic signals are not warranted for cumulative plus project conditions.

Table 8 Traffic Signal Warrant Analysis

No.	Warrant	Satisfied	Not Satisfied	Comment
1	Minimum Vehicular Volume		✔	
2	Interruption of Continuous Traffic		✔	
3	Minimum Pedestrian Volume		✔	
4	School Crossing		✔	
5	Progressive Movement		✔	
6	Accident Experience		✔	Accident Data Not Available
7	Systems Warrant		✔	
8	Combination of Warrants		✔	
9	Four Hour Volume		✔	
10	Peak Hour Delay		✔	
11	Peak Hour Volume		✔	

Conclusions

The conclusions of the LOS analysis for 2005 cumulative plus project conditions are:

1. There is no change in the LOS at the study intersections as a result of the proposed project.

2. Traffic signals are not warranted at the intersection of Honoapiilani Highway at Pilikana Street for cumulative plus project conditions.

APPENDIX A

PHOTOGRAPHS OF STUDY INTERSECTION

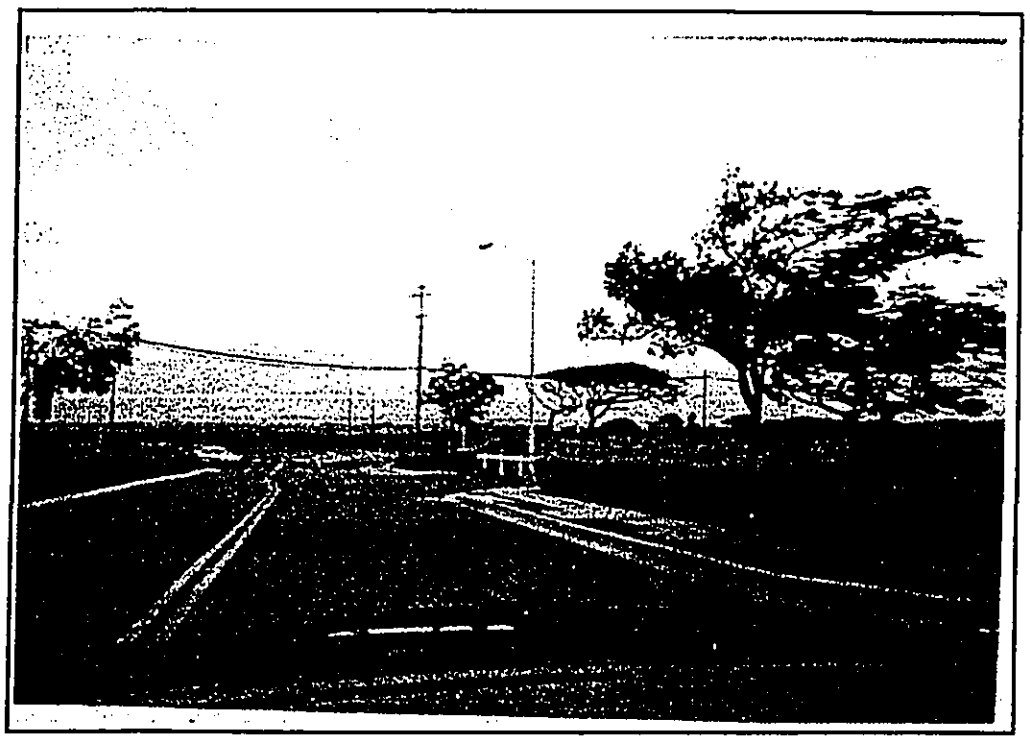


Figure A-1. Looking east along Pilikana Street Old Honoapiilani Highway.

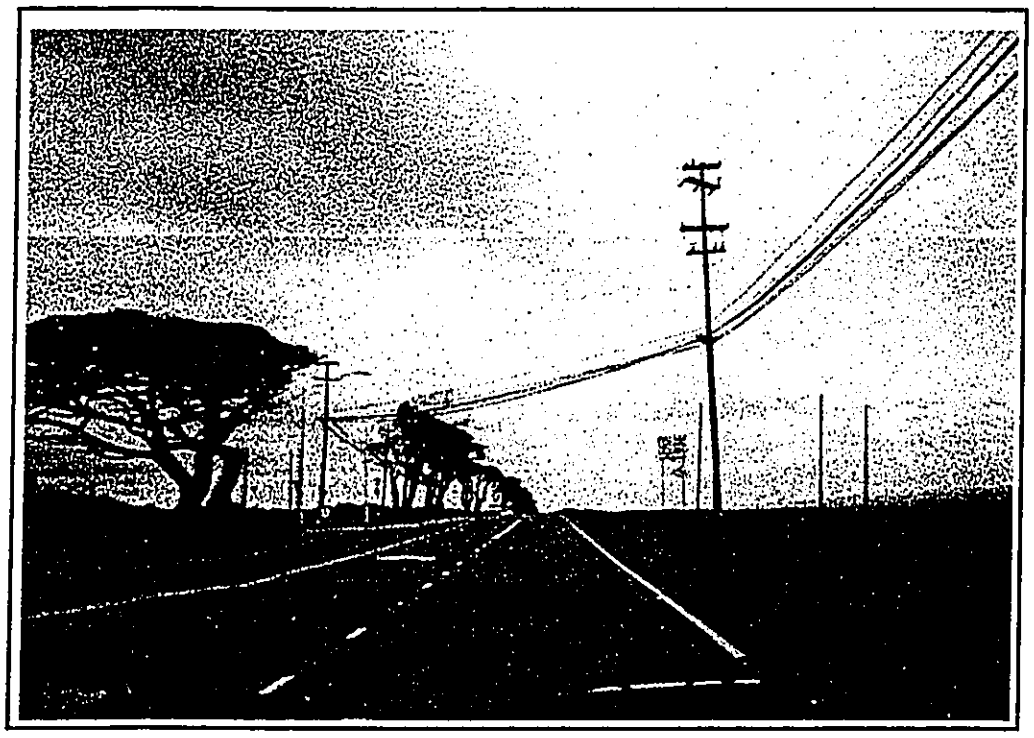


Figure A-2. Looking north along Honoapiilani Highway toward Pilikana Street.

Figure A-3. Looking south along Honoapiilani Highway to Pilikana Street.

APPENDIX B

LEVEL-OF-SERVICE CALCULATIONS

Phillip Rowell And Associates
47-273 'D' Hui Iwa Street
Kaneohe, HI 96744-
Ph: (808) 239-8206

Streets: (N-S) Honoapiilani Highway (E-W) Pilikana Street
Major Street Direction.... NS
Length of Time Analyzed... 15 (min)
Analyst..... PJR
Date of Analysis..... 0/0/0
Other Information.....Existing AM Peak Hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	1	0	1	0	0	0
Stop/Yield			Y			Y						
Volumes	8	427			531	15	42		35			
PHF	.5	.89			.89	.63	.62		.8			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.10						1.10		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	*6.00	*3.30

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)		597
Potential Capacity: (pcph)		690
Movement Capacity: (pcph)		690
Prob. of Queue-Free State:		0.93

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)		597
Potential Capacity: (pcph)		890
Movement Capacity: (pcph)		890
Prob. of Queue-Free State:		0.98

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)		1093
Potential Capacity: (pcph)		291
Major LT, Minor TH Impedance Factor:		0.98
Adjusted Impedance Factor:		0.98
Capacity Adjustment Factor due to Impeding Movements		0.98
Movement Capacity: (pcph)		285

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	75	285		17.1	1.1	C	11.9
EB R	48	690		5.6	0.1	B	
NB L	18	890		4.1	0.0	A	0.1

Intersection Delay = 0.9 sec/veh

Phillip Rowell And Associates
47-273 'D' Hui Iwa Street
Kaneohe, HI 96744-
Ph: (808) 239-8206

Streets: (N-S) Honoapiilani Highway (E-W) Pilikana Street
Major Street Direction.... NS
Length of Time Analyzed... 15 (min)
Analyst..... PJR
Date of Analysis..... 0/0/0
Other Information.....Existing PM Peak Hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	1	0	1	0	0	0
Stop/Yield			Y			Y						
Volumes	31	599			659	55	31		17			
PHF	.7	.87			.92	.81	.78		.53			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.10						1.10		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	*6.00	*3.30

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)		716
Potential Capacity: (pcph)		601
Movement Capacity: (pcph)		601
Prob. of Queue-Free State:		0.94
Step 2: LT from Major Street	**SB**	**NB**
Conflicting Flows: (vph)		716
Potential Capacity: (pcph)		781
Movement Capacity: (pcph)		781
Prob. of Queue-Free State:		0.94
Step 4: LT from Minor Street	**WB**	**EB**
Conflicting Flows: (vph)		1449
Potential Capacity: (pcph)		189
Major LT, Minor TH Impedance Factor:		0.94
Adjusted Impedance Factor:		0.94
Capacity Adjustment Factor due to Impeding Movements		0.94
Movement Capacity: (pcph)		177

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	44	177		26.9	0.9	D	19.7
EB R	35	601		6.4	0.0	B	
NB L	48	781		4.9	0.1	A	0.2

Intersection Delay = 0.8 sec/veh

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Kaneohe, HI 96744-
Ph: (808) 239-8206

Streets: (N-S) Honoapiilani Highway (E-W) Pilikana Street
Major Street Direction.... NS
Length of Time Analyzed... 15 (min)
Analyst..... PJR
Date of Analysis..... 0/0/0
Other Information.....Cumulative AM Peak Hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	1	0	1	0	0	0
Stop/Yield			Y			Y						
Volumes	8	459			583	15	42		35			
PHF	.5	.89			.89	.63	.62		.8			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.10						1.10		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	*6.00	*3.30

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)		655
Potential Capacity: (pcph)		645
Movement Capacity: (pcph)		645
Prob. of Queue-Free State:		0.93

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)		655
Potential Capacity: (pcph)		836
Movement Capacity: (pcph)		836
Prob. of Queue-Free State:		0.98

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)		1187
Potential Capacity: (pcph)		260
Major LT, Minor TH Impedance Factor:		0.98
Adjusted Impedance Factor:		0.98
Capacity Adjustment Factor due to Impeding Movements		0.98
Movement Capacity: (pcph)		254

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	75	254		20.0	1.2	D	13.7
EB R	48	645		6.0	0.1	B	
NB L	18	836		4.4	0.0	A	0.1

Intersection Delay = 1.0 sec/veh

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Streets: (N-S) Honoapiilani Highway (E-W) Pilikana Street
Major Street Direction.... NS
Length of Time Analyzed... 15 (min)
Analyst..... PJR
Date of Analysis..... 0/0/0
Other Information.....Cumulative PM Peak Hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	1	0	1	0	0	0
Stop/Yield			Y			Y						
Volumes	31	650			706	55	31		17			
PHF	.7	.87			.92	.81	.78		.53			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.10						1.10		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	*6.00	*3.30

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)		767
Potential Capacity: (pcph)		566
Movement Capacity: (pcph)		566
Prob. of Queue-Free State:		0.94

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)		767
Potential Capacity: (pcph)		739
Movement Capacity: (pcph)		739
Prob. of Queue-Free State:		0.94

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)		1558
Potential Capacity: (pcph)		166
Major LT, Minor TH Impedance Factor:		0.94
Adjusted Impedance Factor:		0.94
Capacity Adjustment Factor due to Impeding Movements		0.94
Movement Capacity: (pcph)		155

Intersection Performance Summary

Avg. 958

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Total Delay (sec/veh)	Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	44	155		32.2	1.0	E	23.2
EB R	35	566		6.8	0.1	B	
NB L	48	739		5.2	0.1	B	0.2

Intersection Delay = 0.9 sec/veh

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Kaneohe, HI 96744-
Ph: (808) 239-8206

Streets: (N-S) Honoapiilani Highway (E-W) Pilikana Street
Major Street Direction.... NS
Length of Time Analyzed... 15 (min)
Analyst..... PJR
Date of Analysis..... 0/0/0
Other Information.....Cumulative Plus Project AM Peak Hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	1	0	1	0	0	0
Stop/Yield			Y			Y						
Volumes	10	459			583	18	52		42			
PHF	.5	.89			.89	.63	.62		.8			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.10						1.10		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	*6.00	*3.30

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)		655
Potential Capacity: (pcph)		645
Movement Capacity: (pcph)		645
Prob. of Queue-Free State:		0.91

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)		655
Potential Capacity: (pcph)		836
Movement Capacity: (pcph)		836
Prob. of Queue-Free State:		0.97

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)		1192
Potential Capacity: (pcph)		258
Major LT, Minor TH Impedance Factor:		0.97
Adjusted Impedance Factor:		0.97
Capacity Adjustment Factor due to Impeding Movements		0.97
Movement Capacity: (pcph)		251

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	92	251		22.4	1.6	D	15.1
EB R	57	645		6.1	0.2	B	
NB L	22	836		4.4	0.0	A	0.1

Intersection Delay = 1.3 sec/veh

Phillip Rowell And Associates
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Kaneohe, HI 96744-
Ph: (808) 239-8206

Streets: (N-S) Honoapiilani Highway (E-W) Pilikana Street
Major Street Direction.... NS
Length of Time Analyzed... 15 (min)
Analyst..... PJR
Date of Analysis..... 0/0/0
Other Information.....Cumulative Plus Project PM Peak Hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	1	0	1	0	0	0
Stop/Yield			Y			Y						
Volumes	38	650			706	68	38		21			
PHF	.7	.87			.92	.81	.78		.53			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.10						1.10		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	*6.00	*3.30

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)		767
Potential Capacity: (pcph)		566
Movement Capacity: (pcph)		566
Prob. of Queue-Free State:		0.92

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)		767
Potential Capacity: (pcph)		739
Movement Capacity: (pcph)		739
Prob. of Queue-Free State:		0.92

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)		1568
Potential Capacity: (pcph)		164
Major LT, Minor TH Impedance Factor:		0.92
Adjusted Impedance Factor:		0.92
Capacity Adjustment Factor due to Impeding Movements		0.92
Movement Capacity: (pcph)		151

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	54	151		36.6	1.4	E	26.0
EB R	44	566		6.9	0.2	B	
NB L	59	739		5.3	0.2	B	0.3

Intersection Delay = 1.1 sec/veh

Appendix D

Letter from SHPD Dated February 15, 2001

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN, CHAIRPERS
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JANET E. KAWELO
LINNEL NISHIOKA

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

February 15, 2001

Dean K. Frampton
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

LOG NO: 26981 ✓
DOC NO: 0102CD05

Dear Mr. Frampton,

SUBJECT: **Chapter 6E-42 Historic Preservation Review Pertaining to the Proposed Waiolani Elua Subdivision**
Waikapu Ahupua`a, Wailuku District, Island of Maui TMK: 3-5-04:095

Thank you for the opportunity to comment on the proposed Waiolani Elua Subdivision. Our review is based on reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the subject property.

From the submitted document, we understand the proposed Waiolani Elua Subdivision consists of the development of approximately improved 25 lots (each a minimum of 7500 sq ft) abutting the existing Waiolani Subdivision. In addition, this project would link Ho`okāhewai Street and Mo`ohele Street, which we understand are existing roadways within the Waiolani Subdivision. The proposed roadways within the project area would include 44-foot right-of-ways with curbs, gutters, and sidewalk on one side of the street.

We have commented previously in response to a Grading Review and Work on County Highway Permit Applications (SHPD DOC NO.: 0010CD32/LOG NO.: 26432). At that time we stated the following:

> A search of our records indicates the subject property has not undergone an archaeological inventory survey. The general area seems likely to have once been the location of pre-Contact farming, perhaps with scattered houses. However, no significant historic sites were identified during archaeological inventory surveys, which included subsurface testing, conducted on adjacent properties. The subject property has been subjected to considerable alteration due to modern commercial agriculture. Therefore, we believe it is unlikely that significant historic sites will be encountered during the proposed undertaking.

Given the above information, we believe the proposed undertaking will have "no effect" on significant historic sites.

Please call Cathleen Dagher at 692-8023 if you have any questions.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division