

2004-12-08 FONSI
SPRECKELSVILLE 16-LOT RURAL SUBDIVISION,
OPEN SPACE CONSERVATION EASEMENT AND
COUNTY/STATE DONATION PROJECT

DEC - 8 2004

Final Environmental Assessment

In Support of

***Applications for a Community
Plan Amendment, Change in
Zoning and Special Management
Area Use Permit***

***E PAEPAE KA PŪKO`A
16-LOT RURAL SUBDIVISION,
OPEN SPACE
CONSERVATION EASEMENT
AND COUNTY DONATION PROJECT***

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Prepared for:

November 2004

Old Stable LLC and
Accepting Authority,
Maui Planning Commission


MUNEKIYO & HIRAGA, INC.

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Executive Summary

Applicant: Old Stable LLC

Type of Document: Final Environmental Assessment

Legal Authority: Chapter 343, Hawaii Revised Statutes

Agency Determination: Anticipated Finding of No Significant Impact

Applicable Environmental Assessment review "trigger": Amendment to County General Plan

Location: Maui Island
Spreckelsville, Paia
TMK: 3-8-001:por.003, 3-8-002:009 and 010

Applicant: Old Stable LLC
P.O. Box 790829
Paia, Hawaii 96779

Accepting Authority: Maui Planning Commission
250 South High Street
Wailuku, Hawaii 96793
Contact: Kivette Caigoy
Phone: (808) 270-7735

Consultant: Munekiyo & Hiraga, Inc.
305 High Street
Wailuku, Hawaii 96793
Contact: Daren Suzuki
Phone: (808) 244-2015

Project Summary: The applicant is proposing a 16-lot rural subdivision consisting of 0.5 to 1 acre lots. Also proposed is the dedication of 20.93 acres as an open space conservation easement, donation to the County/State of approximately one (1) acre for the Kaunoa Senior Center future expansion and donation of a bike path.

Chapter 1

Project Overview

I. PROJECT OVERVIEW

A. PROPERTY LOCATION, BACKGROUND, AND LAND OWNERSHIP

The applicant, Old Stable LLC, proposes the development of a 16-lot rural subdivision, open space conservation easement, and County/State donation project located in Paia, Spreckelsville, Maui. The name of the subdivision is called, "*E Paepae Ka Pūko'a*", translated, "Laying the Foundation". The project site is located off of Hana Highway along Stable Road, identified as TMK Nos. 3-8-001:por.003; 3-8-002:009 and 010, and consists of approximately 40.52 acres total. See Figure 1.

The subject properties are currently undeveloped. A portion of the property was previously used as a stable and rodeo operation, which was recently vacated and moved to another location. Although some vacated stable-related structures still exist on the property, for the most part, the property is overgrown with trees, weeds and shrubs. Other existing uses of the property include vacant lands consisting of natural vegetation with a non-dedicated beach access/parking area and a bike path along the western and southern boundaries of the property.

The project site is bordered by the Pacific Ocean, single-family residences, and Laulea Place to the north; vacant State-owned lands and Hana Highway to the south; Stable Road, agricultural lands, and airport lands to the west; and Kaunoa Senior Center, single-family residences and Alakapa Place to the east.

The applicant is the current landowner of the property which was formerly owned by Alexander & Baldwin, Inc.

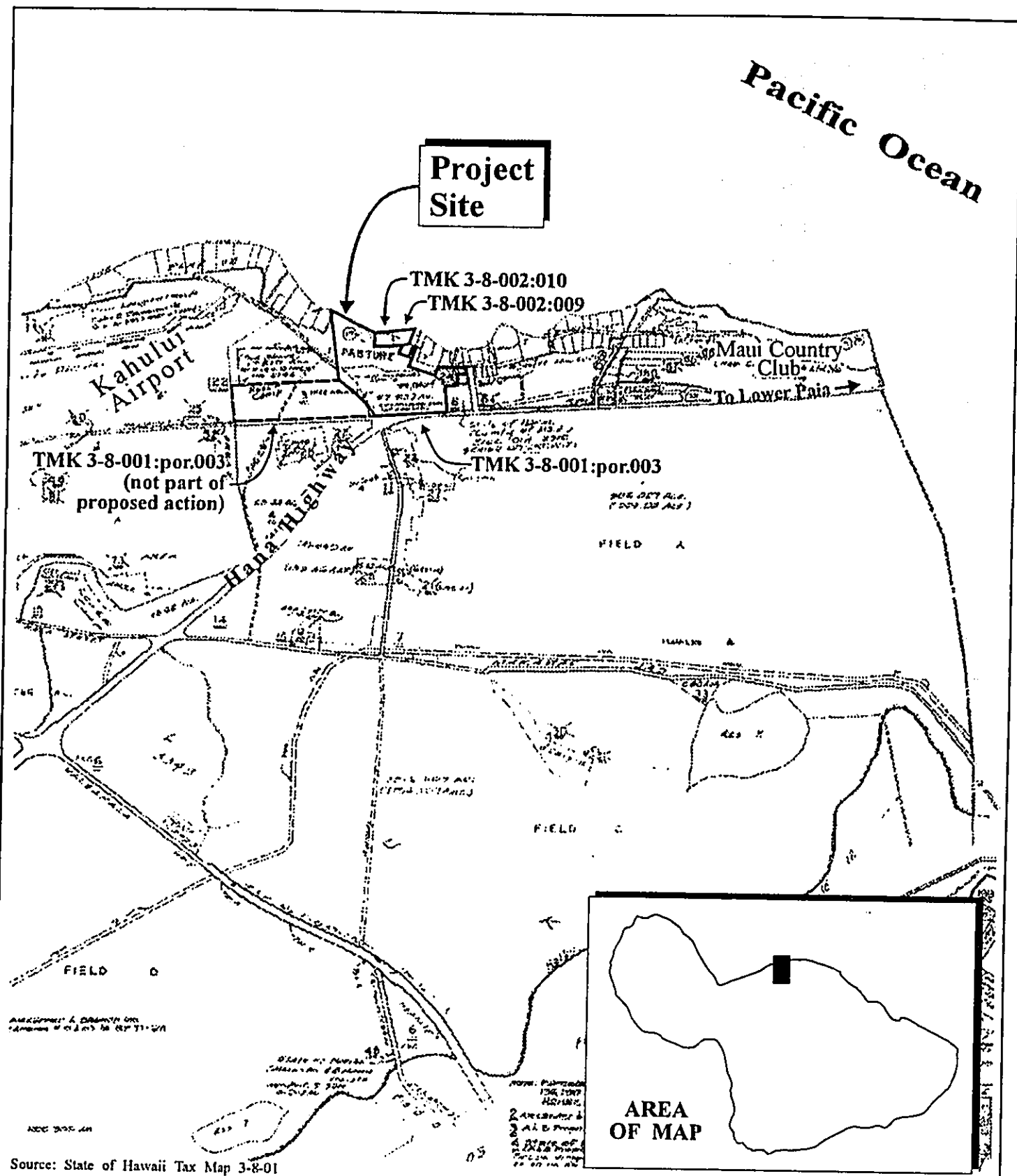


Figure 1 *E Paepae Ka Pūko`a*
Site Location Map



Prepared for: Old Stable LLC

MUNEKIYO & HIRAGA, INC.

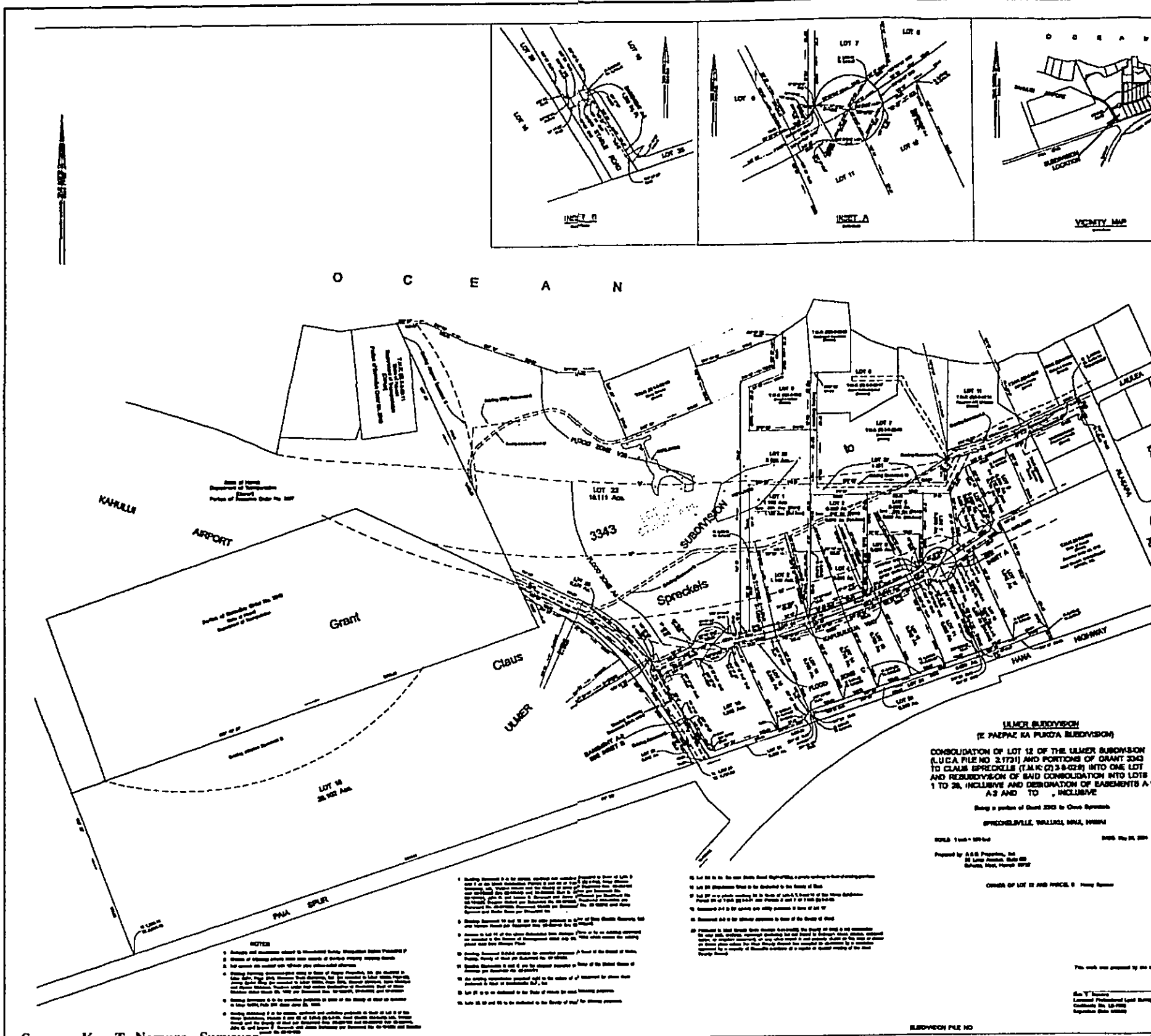
B. PROPOSED ACTIONS

The applicant is requesting a community plan amendment, change in zoning, and special management area (SMA) use permit in order to implement the following proposals.

1. Rural Subdivision (TMK 3-8-001:por. 003)

The applicant proposes to develop a 16-lot rural subdivision and related subdivision improvements on an approximately 14.86-acre portion of TMK 3-8-001:003. Lots will be offered for sale, fee simple, ranging from approximately 0.5 acre to 1+ acres. See Figure 2. Associated improvements include paved roadways with concrete curb, gutter, and sidewalk, as well as drainage, water, sewer, and electrical distribution systems and landscaping.

In connection with the subdivision proposal, the applicant is requesting a community plan amendment from Open Space to Rural and a change in zoning from the R-3, Residential District to the RU-0.5, Rural District. See Figure 3. (Refer to light-blue shaded area). The RU-0.5 County zoning district is being requested to reflect the proposed 0.5-acre minimum lot sizes of the subdivision, as well as to be compatible with the existing lot sizes of the surrounding residential area. It is noted that through deed restrictions, further subdivision of the lots and accessory "Ohana" dwellings will not be allowed. In order to ensure these deed restrictions are not amended, the applicant also has no objections to the County imposing these restrictions as a condition of zoning or SMA use permit.



Source: Ken T. Nomura, Surveyor

Figure 2

E Paepae Ka Pūko'a
Subdivision Site Plan

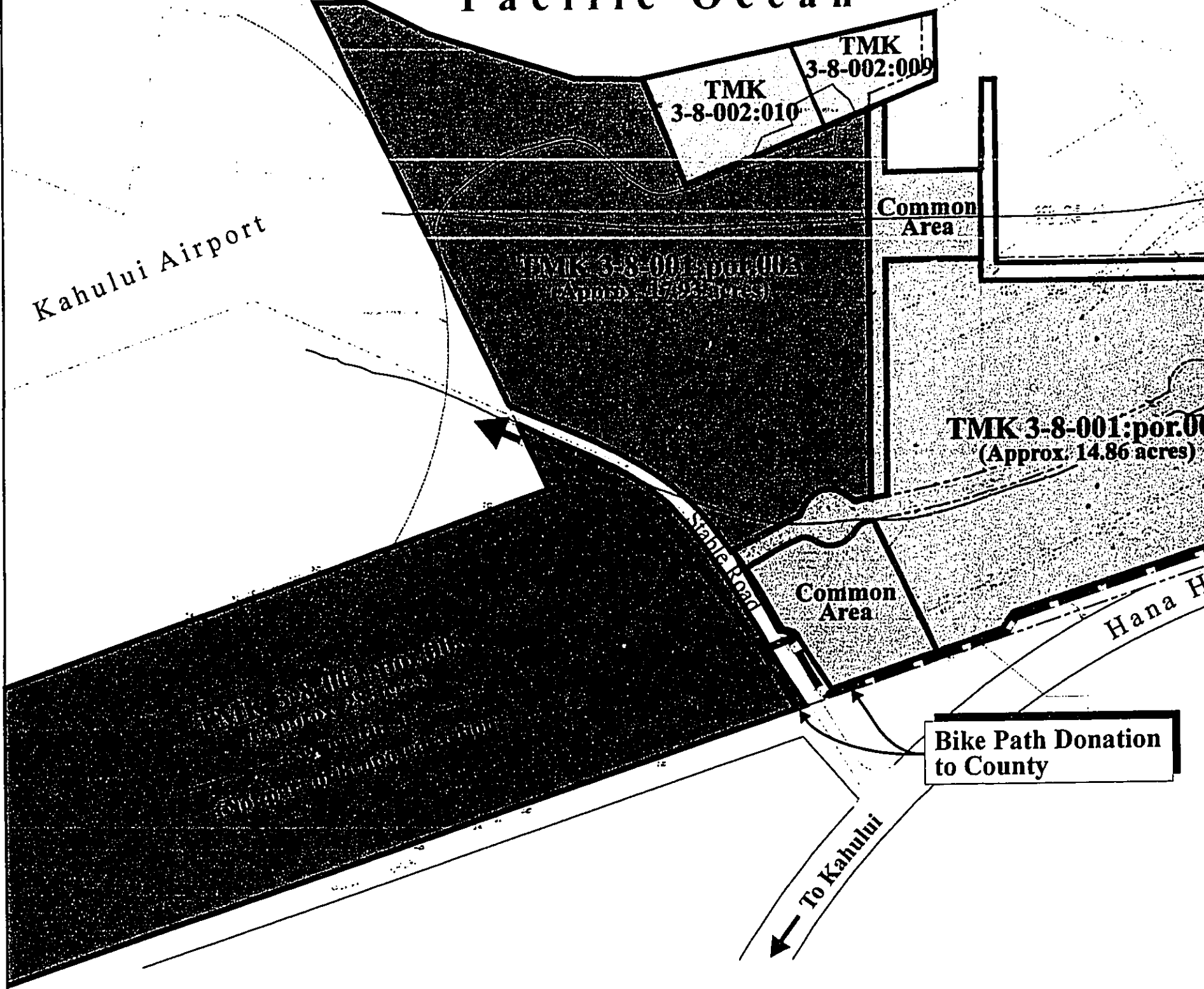
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Pacific Ocean



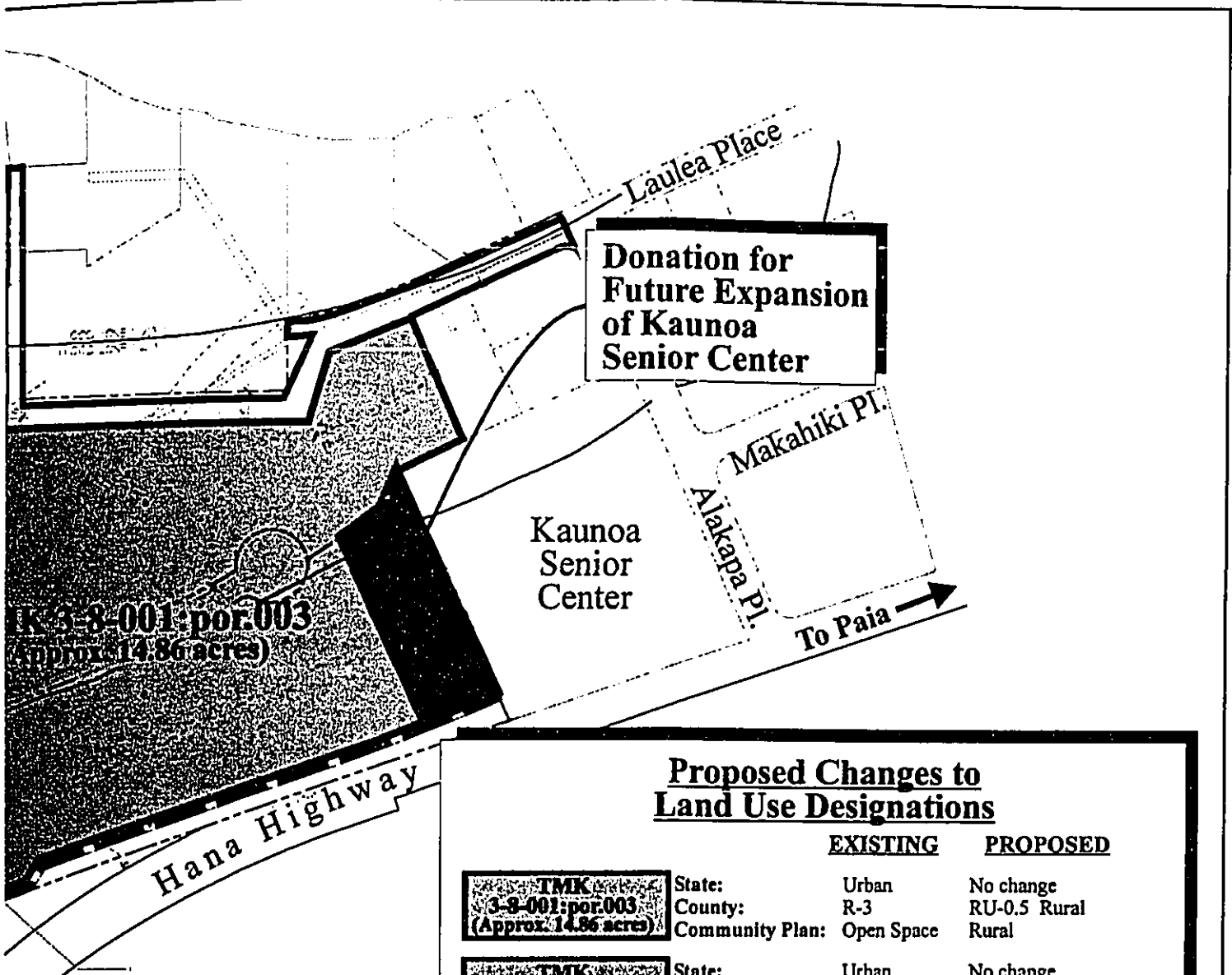
Source: Lundahl & Associates

Figure 3



E Paepae Ka Pūko`a
 Proposed Changes to Land Use Designation

Prepared for: Old Stable LLC



Proposed Changes to Land Use Designations

	EXISTING	PROPOSED
TMK 3-8-001:por.003 (Approx. 14.86 acres) State: Urban County: R-3 Community Plan: Open Space	Urban R-3 Open Space	No change RU-0.5 Rural Rural
TMK 3-8-001:por.003 (Approx. 3.57 acres) State: Urban County: R-3 Community Plan: Open Space	Urban R-3 Open Space	No change OS-2 Open Space No change
TMK 3-8-002:009 & 010 (Approx. 3 acres) State: Urban County: R-3 Community Plan: Open Space	Urban R-3 Open Space	No change OS-2 Open Space No change
TMK 3-8-002:009 & 010 (Approx. 3 acres) State: Urban County: R-3 Community Plan: Open Space	Urban R-3 Open Space	No change P-1 Public/Quasi Public Public/Quasi-Public
TMK 3-8-002:009 & 010 (Approx. 3 acres) State: Agriculture County: Agriculture Community Plan: Agriculture	Agriculture Agriculture Agriculture	No change No change No change

Path Donation County

Ka Pūko`a
and Use Designations

NOT TO SCALE

2. **Common Area Park Space (TMK 3-8-001:por. 003)**

Two (2) common areas will be located within the 16-lot subdivision consisting of approximately 3.57 acres total. (Refer to light-green shaded area in Figure 3). Therefore, the applicant is requesting a change in zoning from R-3, Residential District to OS-2, Open Space District. The common area located adjacent to Old Stable Road will be developed as a park for the subdivision. The common area located on the makai portion of the project site is intended to be left in its present state, with the exception of providing a 30-foot wide beach access along the western boundary of this area. The proposed zoning designation permits park uses and reflects the existing open space community plan designation. Rezoning this portion of the property to OS-2 is also intended to prevent future urban encroachment into these areas.

3. **Open Space Conservation Easement (TMKs 3-8-001:por. 003, 3-8-002:009 and 010)**

Approximately 20.93 acres, which include two (2) oceanfront parcels, will be left in its natural state to be dedicated as a conservation easement to the Maui Coastal Land Trust (or other nonprofit organization). To accomplish this dedication, the applicant is requesting a change in zoning from the R-3, Residential District to OS-2, Open Space District, consistent with the Open Space designation of the Community Plan (affecting approximately 17.93 acres). (Refer to dark green shaded area in Figure 3.) In addition, a community plan amendment from Single-Family to Open Space and a change in zoning from R-3, Residential to OS-2, Open Space for the two (2) oceanfront parcels consisting of approximately 3 acres total is being requested. (Refer to pink shaded area in Figure 3.)

4. **County/State Donation (TMK 3-8-001:por. 003)**

Approximately 1.16 acres for the future expansion of Kaunoa Senior Center will be donated to the County of Maui/State of Hawaii. In order to assist the County for the future expansion of the center, the applicant is requesting a community plan amendment from Open Space to Public/Quasi-Public and a change in zoning from R-3, Residential to P-1, Public/Quasi-Public. These actions would permit additional government facilities and assist the County by bringing consistency with the community plan and County zoning when filing for SMA permits for any future development. (Refer to dark blue shaded area in Figure 3.)

Another project element includes donating to the County the existing paved bike path along the western and southern boundaries of the property. (Refer to blue dashed line in Figure 3.)

Areas to be dedicated to the County of Maui/State of Hawaii will be subdivided as part of the 16-lot rural subdivision process.

The total acreage for TMK 3-8-001:003 is approximately 67 acres, which includes a portion of Laulea Place, a portion of Old Stable Road, and approximately 28 acres located west of Stable Road presently in agricultural use. This 28-acre area is not part of the proposed action. (Refer to gray/brown shaded area in Figure 3.) This portion of the property is currently being leased to Alexander & Baldwin, Inc. for sugar cane production.

Table 1 summarizes the proposed land use amendments described above:

Table 1

PROPOSED LAND USE AMENDMENTS		
	<i>Existing</i>	<i>Proposed</i>
Approx. 14.86 acres (16-lot subdivision site) affecting TMK 3-8-001:por. 003		
State Land Use	Urban	No change
County Zoning	R-3, Residential	RU 0.5, Rural
Community Plan	Open Space	Rural
Approx. 3.57 acres ("Common Area" for 16-lot subdivision site) affecting TMK 3-8-001:por.003		
State Land Use	Urban	No change
County Zoning	R-3, Residential	OS-2, Open Space
Community Plan	Open Space	No change
Approx. 17.93 acres (Open Space Dedication Area) affecting TMK 3-8-001:por.003		
State Land Use	Urban	No change
County Zoning	R-3, Residential	OS-2, Open Space
Community Plan	Open Space	No change
Approx. 3 acres (Open Space Dedication Area)* affecting TMKs 3-8-002:009 and 010		
State Land Use	Urban	No change
County Zoning	R-3, Residential	OS-2, Open Space
Community Plan	Single-Family	Open Space
*This dedication excludes the 30-ft. wide beach access on the eastern boundary of Parcel 009.		
Approx. 1.16 acres (Donation to Kaunoa Senior Center) affecting TMK 3-8-001:por. 003		
State Land Use	Urban	No Change
County Zoning	R-3, Residential	P-1, Public/Quasi-Public
Community Plan	Open Space	Public/Quasi-Public

C. PROJECT SCHEDULE AND COST

Construction of the proposed project is anticipated to commence upon the receipt of all applicable permits and approvals, and completed within six (6) months. Estimated cost of construction is approximately \$1.4 million.

D. REGULATORY PROCESSING CONTEXT

The proposed project will involve an amendment to the Wailuku-Kahului Community Plan which is a component of the County General Plan. Therefore, an Environmental Assessment (EA) has been prepared in accordance with Chapter 343, Hawaii Revised Statutes (HRS) and Chapter 200, Title 11, Department of Health Administrative Rules, Environmental Impact Statement Rules. The accepting authority for this Environmental Assessment is the Maui Planning Commission.

Applications for a community plan amendment and change in zoning have also been prepared in accordance with Chapters 2.80A and 19.510 of the Maui County Code, respectively, to establish the appropriate County land use designations. After the requirements of Chapter 343, HRS have been met, the land use applications will be noticed and scheduled for a public hearing with the Maui Planning Commission. The Commission will then transmit a recommendation to the Maui County Council for consideration.

Finally, the subject properties are located within the limits of the County's SMA boundaries. Accordingly, an SMA Use permit application has been prepared in accordance with Chapter 205A, HRS and Chapter 202, SMA Rules for the Maui Planning Commission. It is anticipated that concurrent SMA notice and public hearing with the community plan amendment and change in zoning requests will be processed with the Maui Planning Commission. Typically, action on an SMA application is bifurcated by the

Commission until the Council takes action on the community plan amendment and change in zoning requests, and subsequent approval by the mayor.

Chapter II

***Description of Surrounding
Land Uses, Climate
and Topography***

II. DESCRIPTION OF SURROUNDING LAND USES, CLIMATE AND TOPOGRAPHY

A. SURROUNDING LAND USES

The project site is approximately three (3) miles east of Kahului, the island of Maui's center of commerce. Surrounding land uses include the Pacific Ocean, Laulea Place, and single-family residences to the north; Kaunoa Senior Center and single-family residences to the east; Hana Highway, vacant State-owned lands, and agricultural lands to the south; and agricultural lands, single-family residences and Kahului Airport to the west.

B. 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 site averages approximately 20 inches per year. Winds in the Kahului region are predominantly out of the north-northeast and northeast.

C. TOPOGRAPHY

The project site is currently undeveloped and is covered with various trees, grasses, weeds and shrubs. With the exception of coastal sand dunes along the beach on the northwesterly end of the property, the

project site is generally flat, sloping in the southerly to northerly direction with an average slope of 2 percent.

Chapter III

***Description of the Affected
Environment, Potential Impacts
and Mitigation Measures***

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Agriculture

a. Existing Conditions

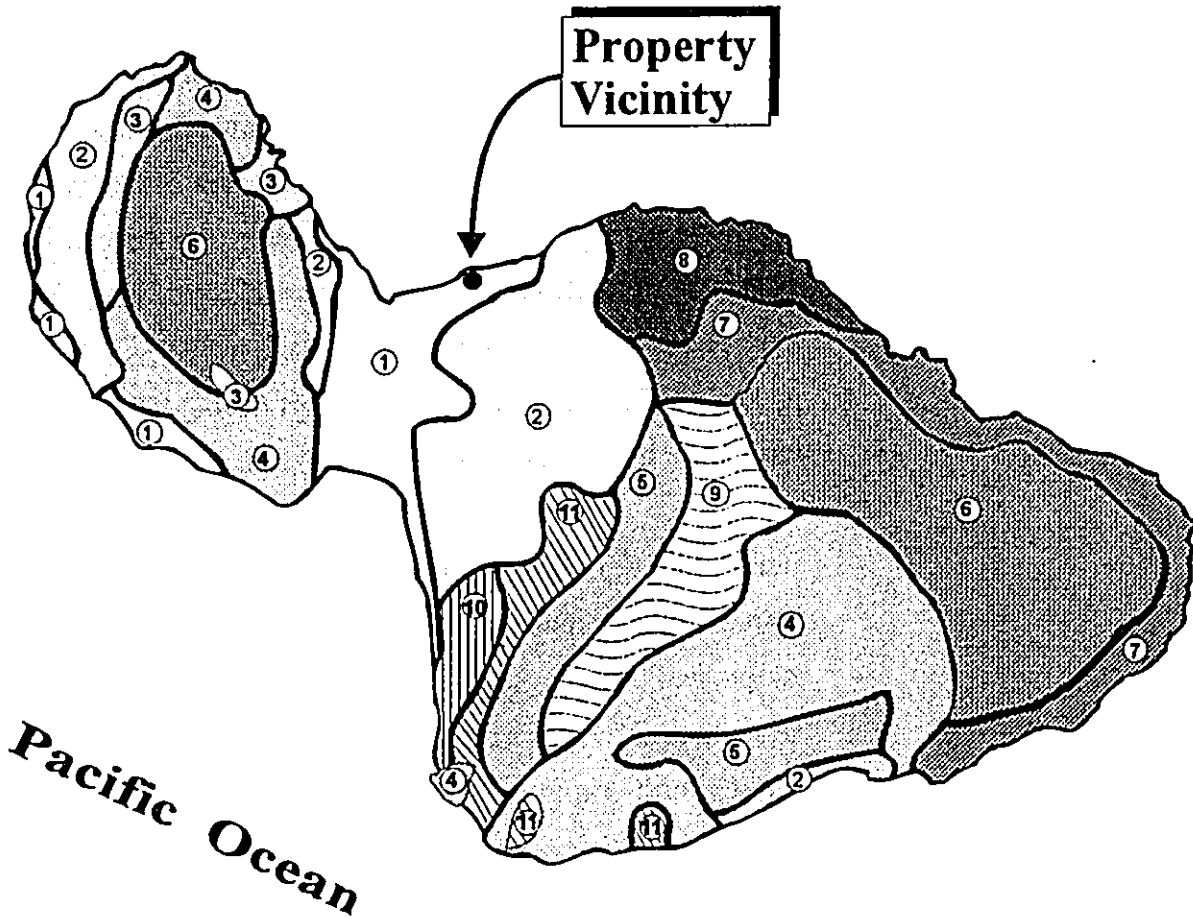
The subject properties are currently undeveloped with no associated agricultural uses. Again, the 28-acre portion west of Old Stable Road currently in sugar cane cultivation is not part of the proposed actions set forth herein.

According to the "Soils Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August 1972)", prepared by the United States Department of Agriculture Soil Conservation Service, the soils within the project site are within the Pulehu-Ewa-Jaucas association, encompassing soil types identified as Jaucas sand (JaC), Jaucas sand, saline (JcC), Molokai silty clay loam (MuA), Dune land (DL), and Beaches (BS). See Figure 4 and Figure 5.

The majority of the subdivision site is located in the Jaucas series area, consisting of Jaucas Sand (JaC) 0 to 15 percent slope and Jaucas Sand, Saline 0 to 12 percent slope (JcC). The Jaucas series is characterized as having slow to very slow runoff, rapid permeability, slight erosion hazard with severe wind erosion hazard where vegetation is removed. There is a sliver of Molokai Silty Loam (MuA), 0 to 3 percent slope located along Hana Highway. Molokai series consists of well-drained soils on upland areas. Dune Land (DL) consists of hills and ridges of sand-sized particles drifted and piled by wind. Beaches (BS) consist mainly of light-colored sands derived from coral and seashells.

LEGEND

- | | |
|--|---|
| <p>① Pulehu-Ewa-Jaucus association</p> <p>② Wainkou-Keahua-Molokai association</p> <p>③ Honolulu-Olelo association</p> <p>④ Rock land-Rough mountainous land association</p> <p>⑤ Puu Pu-Kula-Panc association</p> <p>⑥ Hydrandepts-Tropaquods association</p> | <p>⑦ Hana-Makaalae-Kailua association</p> <p>⑧ Pauwela-Haiku association</p> <p>⑨ Laumaia-Kaipoi-Olinda association</p> <p>⑩ Keawakapu-Makana association</p> <p>⑪ Kamaole-Oanapuka association</p> |
|--|---|



Source: U. S. Department of Agriculture, Soil Conservation Service

Figure 4

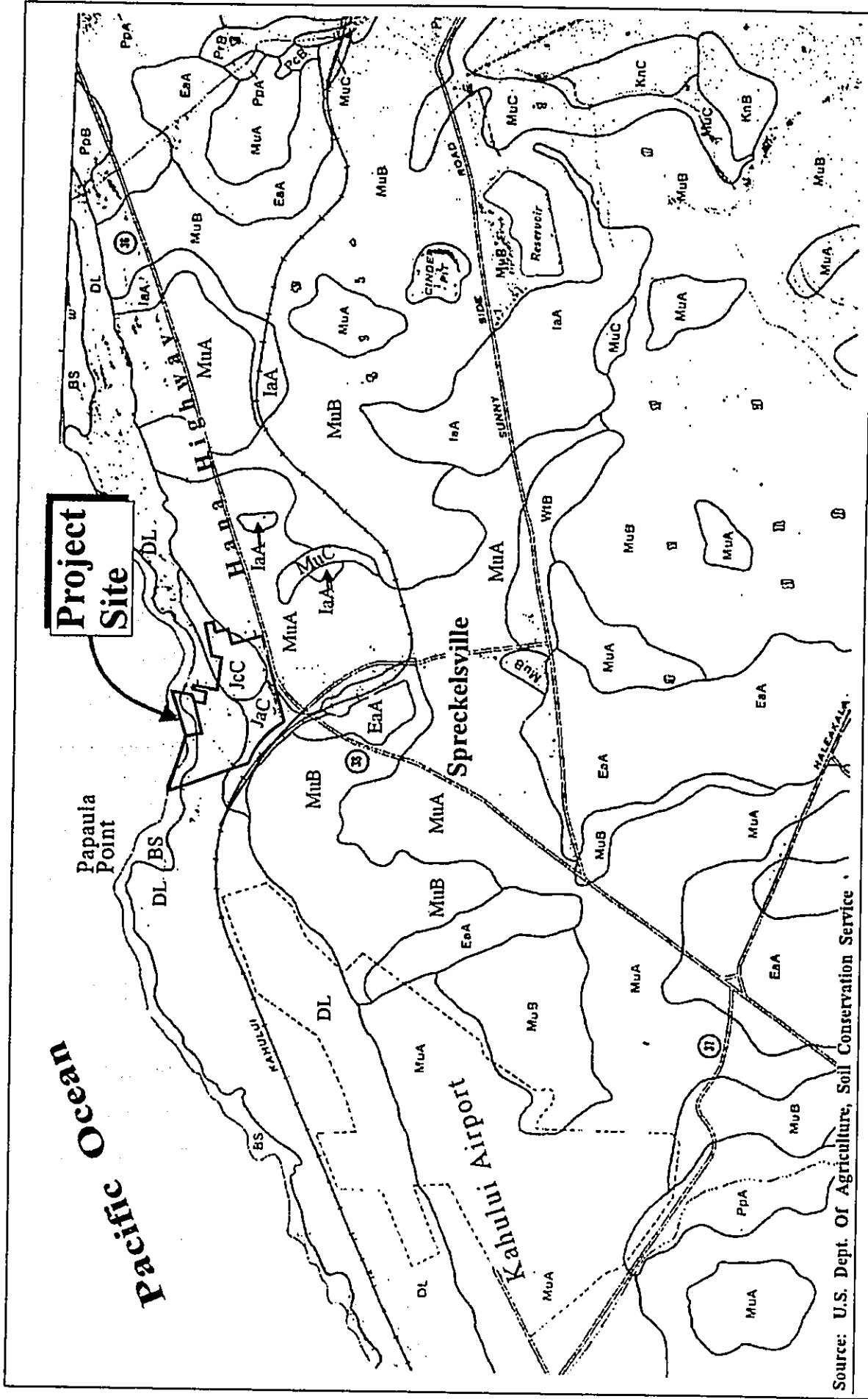
E Paepae Ka Pūko`a
Soil Association Map

NOT TO SCALE



Prepared for: Old Stable LLC

MUNEKIYO & HIRAGA, INC.



Project Site

Pacific Ocean

Papaula Point

Spreckelsville

Kalihi Airport

Highway

HANA

Kalihi

DL

BS

PbB

PbA

PbC

PbD

PbE

PbF

PbG

PbH

PbI

PbJ

PbK

PbL

PbM

PbN

PbO

PbP

PbQ

PbR

PbS

PbT

PbU

PbV

PbW

PbX

PbY

PbZ

PbAA

PbAB

PbAC

PbAD

PbAE

PbAF

PbAG

PbAH

PbAI

PbAJ

PbAK

PbAL

PbAM

PbAN

PbAO

PbAP

PbAQ

PbAR

PbAS

PbAT

PbAU

PbAV

PbAW

PbAX

PbAY

PbAZ

PbBA

PbBB

PbBC

PbBD

PbBE

PbBF

PbBG

PbBH

PbBI

PbBJ

PbBK

PbBL

PbBM

PbBN

PbBO

PbBP

PbBQ

PbBR

PbBS

PbBT

PbBU

PbBV

PbBW

PbBX

PbBY

PbBZ

PbCA

PbCB

PbCC

PbCD

PbCE

PbCF

PbCG

PbCH

PbCI

PbCJ

PbCK

PbCL

PbCM

PbCN

PbCO

PbCP

PbCQ

PbCR

PbCS

PbCT

PbCU

PbCV

PbCW

PbCX

PbCY

PbCZ

PbDA

PbDB

PbDC

PbDD

PbDE

PbDF

PbDG

PbDH

PbDI

PbDJ

PbDK

PbDL

PbDM

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PbDQ

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PbDS

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PbFU

PbFV

PbFW

PbFX

PbFY

PbFZ

PbGA

PbGB

PbGC

PbGD

PbGE

PbGF

PbGG

PbGH

PbGI

PbGJ

PbGK

PbGL

PbGM

PbGN

PbGO

PbGP

PbGQ

PbGR

PbGS

PbGT

PbGU

PbGV

PbGW

PbGX

PbGY

PbGZ

PbHA

PbHB

PbHC

PbHD

PbHE

PbHF

PbHG

PbHH

PbHI

PbHJ

PbHK

PbHL

PbHM

PbHN

PbHO

PbHP

PbHQ

PbHR

PbHS

PbHT

PbHU

PbHV

PbHW

According to the Detailed Land Classification - Island of Maui, Land Study Bureau, 1967, the project site has an overall rating of "E" and land type of "E3" which is the lowest agricultural productivity rating. Although the land type selected crop productivity ratings are also within the "E" category, major existing uses include grazing, recreation and forest.

b. Potential Impacts and Mitigation Measures

Based on the Soils Survey and Land Classification, the subject property is unsuited for agricultural productivity. In addition, the subject property is not designated by the County for agricultural use in the community plan or by zoning. To mitigate impacts to existing agricultural resources, the 28 acres of agricultural designated lands located to the west of Stable Road will be retained as agricultural land and is not the subject of the proposed actions. Therefore, there will be no adverse impacts to existing agricultural resources.

2. Flood and Tsunami Hazards

a. Existing Conditions

As indicated by the Flood Insurance Rate Map for this part of the island, the project site is situated in Zone C, A4, and V23. Zone C is situated on the mauka side of the property adjacent to Hana Highway. This zone is an area of minimal flooding. Zone A4 is a strip which runs through the middle of the property, located on the makai half of the subdivision site. This zone is an area of the 100 year flood, with a base flood elevation of 15 to 18 feet. Zone V23 is located along

the coastline on the makai edge of the subject property. This zone is an area of the 100 year coastal flood with velocity. See Figure 6.

b. Potential Impacts and Mitigation Measures

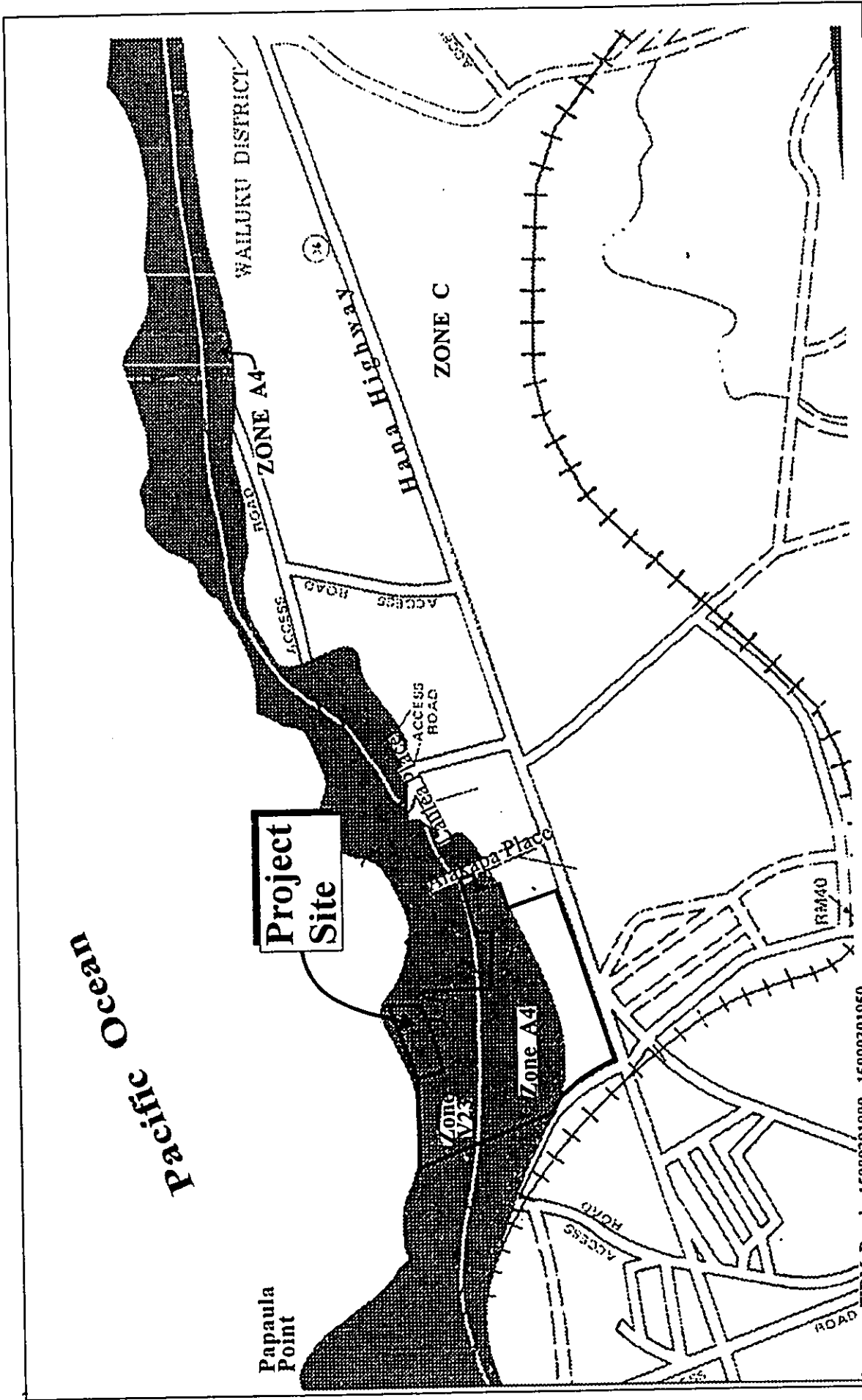
To mitigate impacts within the V23 Zone area, no development is proposed within this location. All residential development will take place behind existing developed single-family properties. Residential lots located within the A4 zone will be graded, and houses will be constructed in accordance with County standards above determined base flood elevations. Therefore, minimal impacts on flood and tsunami hazards are anticipated.

3. Wetlands

a. Existing Conditions

A wetland delineation survey was conducted and prepared by Vuich Environmental Consultants, Inc. See Appendix "A". The purpose of this survey was to delineate areas determined to have wetland type conditions. Three (3) separate potential wetland areas were delineated on the subject property. Thirty-two (32) boreholes were excavated in these three (3) areas. See Figure 7.

- **Area 1** covers approximately 9,960 square feet. No obligate wetland plants were noted in this area. Evidence of human manipulation (grading) was evident in this area
- **Area 2** covers approximately 35,075 square feet. No obligate wetland plants were noted in this area. Evidence of human manipulation (grading, road building and refuse dumping) was evident in this



Source: FIRM Panels 15000301900, 15000301950

Figure 6
E Paepae Ka Pūko`a
 Flood Insurance Rate Map

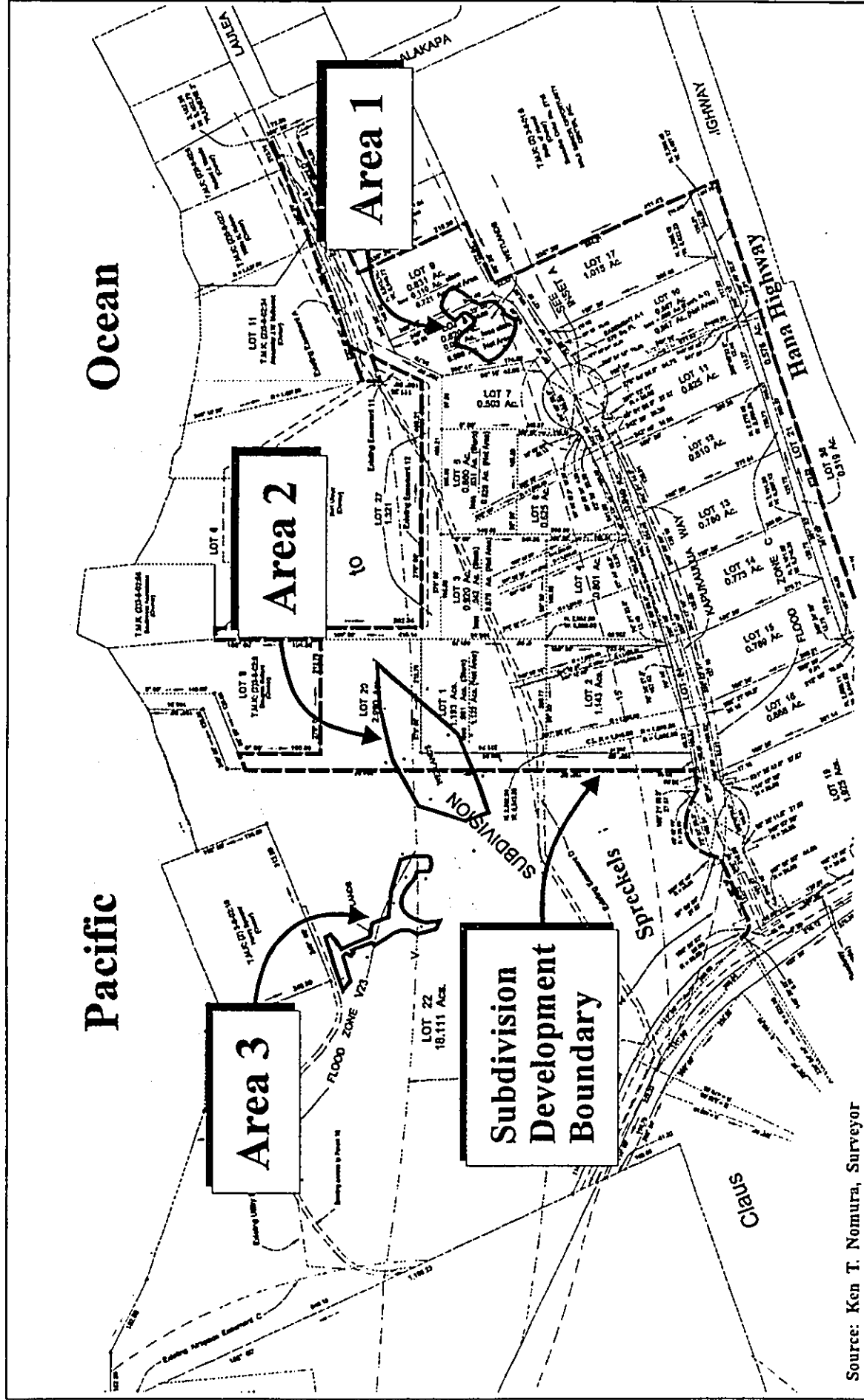
NOT TO SCALE



Prepared for: Old Stable LLC



MUNEKIYO & HIRAGA, INC.



Source: Ken T. Nomura, Surveyor

Figure 7



NOT TO SCALE

E Paepae-Ka Puko`a
Wetland Delineation Map

Prepared for: Old Stable LLC



MUNEKIYO & HIRAGA, INC.

area.

- **Area 3** covers approximately 9,696 square feet. This area appears to be the most representative of a natural wetland area. The obligate wetland plant, "makaloa" was noted in this area. The Hawaiian Stilt was observed in this area after a period of abnormal consistent rainfall, which resulted in significant water ponding. Evidence of human manipulation (grading and limited dumping) was evident in this area.

A final determination as to whether an area is a wetland and whether activities require jurisdictional permits is made by the U.S. Army Corps of Engineers.

b. Potential Impacts and Mitigation Measures

Fill activities are proposed within the subdivision development site as follows:

- **Area 1:** This wetland area will be fully impacted (filled in) by the proposed development (9,960 square feet).
- **Area 2:** This wetland area will be partially impacted (filled in) by the proposed development. Area to be filled in would be approximately 10,923 square feet.

Therefore, the proposed subdivision development will impact approximately 20,883 square feet in total. It is noted that Areas 1 and 2 consist of wetland habitats that have been significantly altered by historic human activities. Additionally, these areas do not appear to be productive as habitat for endangered Hawaiian waterbirds due to both excessive amounts of decaying woody debris and a dense overhead tree canopy (Area 1), and virtually impenetrable thickets of

Pluchea indica (Area 2). No obligate wetland species are located in these areas. Refer to Figure 7.

A wetland enhancement and mitigation plan was prepared by Vuich Environmental Consultants, Inc., for Area 3. This wetland area is situated at a significant distance from the proposed development site and would not be directly impacted by the proposed subdivision. Also, it is the only area with obligate wetland plant species; significant amounts of adjacent, low-lying land that could be utilized to increase the size of this wetland area; and where Hawaiian Stilt was observed after a period of consistent rainfall. As such, Area 3 is well-suited for mitigation and enhancement activities to compensate for the permanent loss of wetlands of Area 1 and a portion of Area 2. See Appendix "B".

The wetland enhancement and mitigation within and adjacent to Area 3 will be achieved by increasing the extent of low-lying areas to compensate for the 20,883 square feet of permanent loss of wetlands of Area 1 and a portion of Area 2. Other enhancement/mitigation methods include lowering the grade to enhance the potential for wetland conditions to develop; removing old animal pen structures, debris and trash; closing off vehicle trails; removing woody vegetation and invasive alien plant species; maintaining existing and promoting new wetland plant species; and constructing a fence sufficient to inhibit the entry of predators and unauthorized persons onto the mitigation site.

To further ensure the long term healthiness and success of the vegetation located in both the enhanced and expanded Area 3, the property owner will employ the subdivision's landscape personnel to regularly inspect and maintain the wetland area. This program will consist of regular manual weed control, removal of excessive decaying woody debris, and thinning of facultative woody shrubs. In order to undertake this often labor intensive (and financial) commitment, the property owner may also employ the assistance of a non-profit organization of volunteers that are dedicated to wetland enhancement activities on Maui.

Depending on a final determination by the US Army Corps of Engineers, wetland enhancement/mitigation activities may be subject to Section 404 Clean Water Act and Section 404 Permits for Placement of Fill Materials. Other reviewing agencies include the U.S. Fish and Wildlife Service and the State Department of Health. All required permits will be processed concurrently with these applications, but through separate permit actions.

4. **Flora and Fauna**

a. **Existing Conditions**

A Flora and Fauna survey was done for the subject property by Hank Oppenheimer and Bob Hobdy, respectively. See Appendix "C".

Flora: According to the flora survey, 71 plant species were identified in Class *Magnoliopsida* and *Liliopsida*. Refer to Appendix "C" for specific plant species. According to the

survey, some taxa are listed as cultivated, although they are known to be sparingly naturalized on Maui and other islands. The plants in the survey area are believed to be deliberate plantings, or a result of discarded yard trimmings.

Fauna: According to the fauna survey, a variety of mammal and bird species were identified. Refer to Appendix "C" for specific fauna types. Ten non-native bird species identified are widespread and quite common in diverse lowland sites throughout Hawaii. Three migratory birds found include the migratory golden plover, migratory ruddy turnstone, and migratory wandering tattler. One endemic species found include the Hawaiian Stilt which is also considered an endangered species.

While no insects in general were tallied, they were abundant throughout the area. Although the endangered Blackburn's sphinx moth occurs on Maui in an area less than two miles from the site, it was not observed in this area.

b. Potential Impacts and Mitigation Measures

Flora: Of the flora identified in the survey, none of them are listed as rare, threatened or endangered. As such, no impacts on existing flora are anticipated.

Fauna: The According to the Fauna survey, the Hawaiian Stilt is considered both an endemic Hawaiian subspecies as well as an endangered species under Federal law. These birds are obligate water birds that require permanent shallow water ponds for core habitat feeding and breeding. Both

Kealia Pond and Kanaha Pond are large well-managed wetlands that are ideal habitats which support the majority of Maui's stilts. Plantation reservoirs provide a second-tier of habitat with their near-permanent water supply and wide distribution. Temporary ponds, such as the one on the project site, provide a third-tier of habitat. The main value of these temporary ponds lies in their providing an opportunistic alternate foraging area that allows core habitat recovery. Stilts quickly disperse following major rain events to locate and utilize temporary ponds, even flying between islands in their quest. Thus, while not a major component of the stilt habitat, the importance of this small, temporary pond cannot be ignored. This referenced temporary pond where the stilts were observed is located outside of the subdivision development area (refer to Figure 7, Area 3).

In order to mitigate this essential wetland habitat for the endemic and endangered Hawaiian Stilt, a wetland mitigation and enhancement plan has been prepared as described in Appendix "B". This mitigation/enhancement plan recommends expansion of the existing wetland area by grading the adjacent areas at similar contours as the existing wetlands in order to increase surface water ponding. This increase will provide additional and favorable conditions for use by waterbirds, including the Hawaiian Stilt.

5. **Archaeological Resources**

a. **Existing Conditions**

The subject property is currently undeveloped, consisting of trees, weeds, and shrubs. Historic period occupation,

including a horse stable and associated structures and a staging area, occurred in the project area since the early 20th century (which have since moved to another location).

An Archaeological Inventory Survey of the subject property was prepared by Archaeological Services Hawaii, LLC, in March 2004. See Appendix "D". Results of the archaeological testing in the project area produced no evidence for sedentary cultural activities during the prehistoric period. No prehistoric surface cultural remains were present, and backhoe testing showed that subsurface cultural remains were also absent.

A total of 18 backhoe trenches were excavated and showed that subsurface cultural remains were absent in all exposed stratigraphic layers. Two (2) to four (4) stratigraphic layers were revealed, consisting of various layers of sand and silty sand. Dark reddish-brown silty clay underlying sand was exposed in the northeastern portion of the project area, and water was encountered in the majority of the trenches at relatively shallow depths. Although previously recorded Site No. 1777 appeared to be located outside the development portion of the project area, several trenches were excavated in this vicinity where this site may be located. Site No. 1777 generally consisted of cultural material and deposits including volcanic glass, basalt and coral artifacts, charcoal, and midden. No evidence of this site was found as a result of the trenching.

b. **Potential Impacts and Mitigation Measures**

The archaeological inventory survey recommended that archaeological monitoring take place during all ground-altering activities to ensure that any unanticipated subsurface remains or deposits encountered are properly documented. In the event portions of Site No. 50-50-05-1777 or any other significant subsurface cultural remains or deposits are encountered during construction activities, all work in the immediate vicinity shall be halted, and a data recovery plan shall be formulated and submitted to the Department of Land and Natural Resources, State Historic Preservation Division (SHPD) for approval. If human skeletal remains are encountered during monitoring, all work in the immediate vicinity shall be halted, and SHPD and the Maui/Lana'i Islands Burial Council shall be notified.

6. **Cultural Resources**

a. **Existing Conditions**

As previously mentioned, the subject property is currently undeveloped, consisting of trees, weeds, and shrubs. Historic period occupation, including a horse stable and associated structures and a staging area, occurred in the project area since the early 20th century (which have since moved to another location).

To analyze the impact on cultural practices and features associated with the project area, a Cultural Assessment Report was prepared by CKM Resources, in February 2004. See Appendix "E".

This report states that this area was once called Kapukaulua which is a small land district or *'ili* on the northern shores of Maui, the area that is now called Spreckelsville. Its shoreline is also named Kapukaulua, meaning the *ulua* (certain species of jack or crevalle fish) pit. It was given this name because of the abundance of *ulua* during the certain fishing season.

Since Kapukaulua consists mainly of shoreline property, not much has been written about this area. Another area near Kapukaulua was a place named Wawa'u. Due to the lack of indepth recorded historical facts of these areas, the majority of the report came from recorded information of the adjacent *'ili Pa'ia*.

The report concludes that Pa'ia, Kapukaulua, and Wawa'u were full of life with different plants and people to *malama* (care for) the *'aina* (land). Today, many generations of families have resided near these areas and have found solace and joy in the surrounding shoreline. The extensive shoreline in this area provided for many generations of people who lived on this northern coastline. Various species of native fauna inhabited the area, and quite possibly, some plants that grew there no longer exist in Hawai'i. It is important to stress the sanctity of these areas: Pa'ia, Kapukaulua and Wawa'u, respectively. Pa'ia is an extremely diverse *ahupua'a*, reaching from Ku'au to Pukalani, and back down to Spreckelsville. Thus, the *ahupua'a* covered vast lands and different landscapes. Today, the majority of Pa'ia land is now covered by sugar

cane crops. Kapukaulua was once home to traditional farmers and fishermen, and historically, home to generations of plantation workers.

The Cultural Assessment Report also documents interviews and statements of various people who have historical & cultural knowledge of the Spreckelsville area. (Refer to Appendix "E".)

b. Potential Impacts and Mitigation Measures

To mitigate any impacts on cultural resources, the assessment recommends that full-time archaeological monitoring take place during all ground-altering activities, similar to the recommendations of the Archaeological Inventory Survey.

7. Air Quality

a. Existing Conditions

Air quality in the Wailuku-Kahului region is considered good as emissions from point sources, including Maui Electric Company's power plant and Hawaiian Commercial & Sugar Company's sugar mill, as well as non-point sources such as automobile emissions do not generate problematic concentration of pollutants. The relatively high quality of air can also be attributed to the region's constant exposure to the trade winds which quickly disperse concentrations of emissions.

b. Potential Impacts and Mitigation Measures

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

Fugitive dust generated during construction can be mitigated by utilizing dust barriers, waterwagons and/or sprinklers. Grassing immediately after finished grading activities can also help stabilize soils and control dust generated from the project site. Emissions can be mitigated through proper maintenance of construction equipment and vehicles.

On a long-term basis, the proposed project is not anticipated to result in adverse air quality impacts.

8. Noise Characteristics

a. Existing Conditions

Aircraft noise is the predominant source of background noise around the vicinity of the project site. Traffic noise from nearby Hana Highway can also add to the background noise levels of the surrounding areas.

b. Potential Impacts and Mitigation Measures

In the short-term, construction related activities will be the primary source of noise. This short-term impact can be mitigated by limiting construction activities to daylight hours only. To further mitigate short-term construction noise

impacts to the residents along Laulea Place, the applicant is proposing to construct a berm with a low wall along Laulea Place. This measure would prohibit construction vehicles from accessing the subdivision along Laulea Place during the construction of individual homes. This berm/wall will be retained to prohibit automobile access from Laulea Place.

In the long-term, the applicant will disclose that this area is within the airport zone and is subject to airport related noise and activities. This disclosure will be addressed through an "aviation easement agreement" that all future landowners must acknowledge and sign. Essentially, this agreement discloses existing airport operations, associated flight patterns and noise impacts. It is noted that this agreement acknowledges existing conditions, and does not preclude owners from objecting to future airport operations or expansions.

9. **Scenic and Open Space Resources**

a. **Existing Conditions**

Scenic resources in the vicinity of the project site from Hana Highway include open space agricultural lands and Haleakala to the south of the project site. More open agricultural lands and the West Maui Mountains can be viewed to the west of the project site. Immediately adjacent to the southern border of the property is a line of mature monkeypod trees which contribute to the scenic beauty of the Spreckelsville area. No ocean views are visible from Hana Highway.

Scenic resources in the vicinity of the project site from Stable Road include open agricultural and airport lands to the west and open vacant lands consisting of trees, grasses, and shrubs to the east. A sliver of the ocean can be viewed to the east of Stable Road over existing vegetation.

There are coastal scenic resources on the project site along the shoreline area. A non-dedicated beach access road leads to the shoreline area and consists of coastal sand dunes and an undeveloped beach area presently used for ocean recreation activities.

b. Potential Impacts and Mitigation Measures

Scenic resources from Hana Highway (fronting the project site) to Haleakala and the West Maui Mountains will not be affected as a result of this project. Scenic open-space resources from Old Stable Road will be retained by designating approximately 20.93 acres of land to an Open-Space Land Use designation. Scenic open-space resources from Old Stable Road (fronting project subdivision site) will be enhanced with an open-space park area located between Old Stable Road and the subdivision site. It is noted that the subdivision development site was strategically placed mauka of existing single-family lots along the shoreline to further address impacts on scenic resources.

In order to preserve the character of the Spreckelsville area, the existing monkeypod trees located on the subject property will be preserved and maintained throughout its lifespan. Security fencing/walls along Hana Highway will be

designed to blend in with proposed landscaping and the existing mature monkey pod trees. It is proposed that any fence/wall structure be constructed in back of any privacy-type landscaping such as wiliwili or other tall hedge material. A view analysis was prepared for the applicant showing before-and-after views from Hana Highway. See Appendix "F". As such, existing conditions can be preserved with minimal impacts anticipated.

10. Shoreline Character

a. Existing Conditions

The shoreline area consists of a natural coastal sand dune system and pristine white sand beach. Unfortunately over the years, the sand dune has been degraded as foot and vehicular traffic, along with cutting of vegetation has caused "blow-out" areas of dunes. This beach area is used for ocean recreation activities, including fishing, diving, surfing, windsurfing and sunbathing.

b. Potential Impacts and Mitigation Measures

In order to mitigate impacts to the coastal dune area, a dune restoration plan was drafted with the assistance of the University of Hawaii, Sea Grant Extension program. See Appendix "G". Dune plantings, temporary fencing, and educational signage are proposed to further mitigate impacts on this natural feature. Access to the beach, as well as the dune area will be by way of the existing sand parking area. The applicant has been in contact with the Maui Coastal Land Trust, and is in the process of negotiating a

conservation easement, which would implement a dune restoration plan and protect the entire open space area.

The conservation easement area consisting of approximately 20.93 acres, which include the coastal dunes and approximately 1,300 linear feet of shoreline, will be left in its natural state. Again, the applicant is requesting land use amendments to change the zoning and community plan in this area to an open space designation to ensure that this beach resource is preserved in perpetuity. The proposed open space designations would also prevent any future urban-type development.

Finally, the subdivision development is proposed behind existing single-family homes and outside of the V23 zone as designated by FIRM maps. Although coastal erosion rates range from 1 foot to 3 feet per year, the rural subdivision site is located approximately 500 feet from the shoreline which is beyond the maximum shoreline setback requirements. See Appendix "H". Given the distance from the shoreline to the subdivision development site, the open space dedication area, and the proposed dune restoration plan, impacts on shoreline resources are anticipated to be minimal.

11. **Marine Environment**

a. **Existing Conditions**

Based on field observations, the water quality in the area appears to be relatively clean. Recreational activities such as swimming, fishing, diving, surfing, and windsurfing were observed in this area. There are no known turtle habitat in this area.

b. **Potential Impacts and Mitigation Measures**

The drainage system for the project will be designed and constructed, to produce no adverse effects to adjacent and downstream properties, and will be designed and reviewed in accordance with applicable governmental standards. Best Management Practices and appropriate erosion control measures will be implemented to minimize the effects of runoff during construction of the project. Since no development is proposed within 500 feet from the shoreline, impacts to coastal ecosystems and marine resources would be minimal.

12. **Hazardous Wastes**

a. **Existing Conditions**

A Phase I Environmental Site Assessment (ESA) was prepared for the applicant by Vuich Environmental Consultants, Inc. See Executive Summary in Appendix "I". The purpose of a Phase I ESA is to determine if a site may be contaminated with hazardous or toxic substances or wastes resulting from current or past site activities, unauthorized dumping or disposal, or migration of contaminants from adjacent or nearby properties. Another

function of an ESA is to provide the buyer, receiver, or lender making a loan secured by the subject real property with a basis to qualify for the *innocent landowner defense* should any legal action be initiated for environmental impairment to the property.

The services of Environmental Data Resources, Inc., were utilized to obtain and review records that will help identify recognized environmental conditions in connection with the subject property. Records review did not discover any current investigation of the subject site under any programs conducted by a federal, state, or local environmental agency.

A site investigation in accessible areas was conducted by Vuich personnel. The following are significant observations of field conditions:

- (1) Significant quantities of refuse dumping
- (2) Two (2) non-operational storage tanks
- (3) Regulated items such as limited quantities of household-sized petroleum-based liquids and pesticides; derelict vehicles, automobile tires and batteries; and white goods (refrigerators)
- (4) Two (2) containers with unidentifiable liquids
- (5) A moderate portion of the property's surface soils may have been impacted at times (saturated) by the diversion of HC&S's south adjacent property's agricultural irrigation "backflush" water onto the subject site.

-
- (6) Areas along northern property appear to have wetland characteristics.

b. **Potential Impacts and Mitigation Measures**

The ESA was performed in conformance with the scope, limitations, and guidelines of the American Society of Testing and Materials Publication for the project site. The assessment revealed no evidence of recognized environmental conditions in connection with the property. The ESA concludes that all regulated items and storage tanks should be managed and disposed of properly to avoid any possible future releases onto surface soils, in accordance with applicable governmental standards. A limited soil sampling survey may be performed in suspect locations to determine the residual levels, if any, of chemicals of potential concern. There is however, no regulatory requirement to conduct such sampling. The limited petroleum-stained area noted should be excavated and properly managed in accordance with applicable governmental standards. Prior to the demolition of the existing structures, further sampling of asbestos-containing material and lead-based paints shall be conducted. All demolition work shall be in accordance with Department of Health and Occupational Safety and Health Administration (OSHA) standards relating to worker safety and waste management. Refer to Section A.3 of this Chapter for discussion on wetlands.

B. SOCIO-ECONOMIC CONDITIONS

1. Population

a. Existing Conditions

The population of the island of Maui has exhibited relatively strong growth over the past decade with the 2000 population of 117,644 reflecting a 28.8 percent increase over the 1990 population of 91,361 (SMS, June 2002). Growth on the island is expected to continue with population forecasts for 2010 and 2020 estimated to be 138,665 and 160,090, respectively (SMS, June 2002). These projections reflect gains of 17.9 percent and 36.1 percent over the historical 2000 population.

b. Potential Impacts and Mitigation Measures

The proposed 16-lot residential subdivision is not expected to have an adverse effect on short- or long-term population parameters.

2. Economy

a. Existing Conditions

The Kahului region is the island's center of commerce. Combined with neighboring Wailuku, 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 include sugar cane fields and pineapple fields. The vast expanse of agricultural land, managed by HC&S and Wailuku Agribusiness Company, is considered a key component of the local economy.

b. Potential Impacts and Mitigation Measures

On a short-term basis, the proposed project will support construction and construction-related employment through the payment of wages and salaries, the contribution of taxes and benefits, and purchase of goods and services.

From a long-term point of view, the provision of 16 rural residential lots will provide increased property tax revenues, as well as provide for an ongoing source of demand for services to support the project's residents. Moreover, the provision of the 1.16-acre site for the expansion of the Kaunoa Senior Center will provide similar future economic benefits to the County by enabling the provision of new facilities and expanded services to the island's growing elderly population. There are no long-term adverse impacts to the local economy anticipated as a result of the proposed actions.

3. Housing

a. Existing Conditions

According to the SMS Socio-Economic Forecast for Maui County, the island of Maui's housing supply in the year 2000 totaled 40,041 units, of which 32 percent, or 12,852, were located in the Wailuku-Kahului Community Plan region. It is noted that the project location is within this region. This area accounts for the largest percentage of housing units on the island. Demand for housing in this region in year 2000 was 13,528 units. Housing demand in the Wailuku-Kahului area is projected to grow to 16,826 units in the year 2010, while the expected number of households is estimated at

15,985 units. By the year 2020, the housing demand is expected to reach 20,054 units compared to the projected household count of 19,051 units (SMS, June 2002).

Within the Paia-Haiku Community Plan region, demand for housing in year 2000 was 4,234 units. Housing demand in this region is projected to grow to 5,257 units in the year 2010, while the expected number of households is estimated at 4,994 units. By the year 2020, the housing demand is expected to reach 6,259 units compared to the projected household count of 5,946 units (SMS, June 2002).

Current median sales price for homes in Central Maui were noticeably lower than the county-wide median. During the months of January through February 2004, the median sales price of a Central Maui home was \$362,500.00 compared to a county-wide median of \$530,000.00. Current median sales price for homes in the Spreckelsville/Paia/Kuau area for the months of January through February 2004 was \$577,500.00 compared to the county-wide median of \$530,000.00 (Source: Realtors Association Maui).

b. Potential Impacts and Mitigation Measures

The proposed subdivision will provide an increase in choice and supply of land areas for residential growth and opportunities. In lieu of providing affordable housing units as may be required by the Department of Housing and Human Concerns, the applicant will be donating approximately 1.16 acres of land for the future expansion of

Kaunoa Senior Center. Although the project will not be providing affordable housing units, it can be viewed that a greater public benefit will be achieved through this 1.16-acre donation and the approximately 20.93-acre conservation area dedication.

C. PUBLIC SERVICES AND FACILITIES

1. Police and Fire Protection Services

a. Existing Conditions

Police protection for the Wailuku-Kahului region is provided by the Maui Police Department headquartered in Wailuku, about 4.0 miles to the west of the project site. The region is served by the department's Central Maui patrol.

Fire prevention, suppression, and protection services for the Wailuku-Kahului region are provided by the County Department of Fire and Public Safety's Kahului Station, approximately 2.5 miles west of the project site. In addition, the department's Paia Station is located about 2.75 miles to the east of the project site along the Hana Highway in Paia Town.

b. Potential Impacts and Mitigation Measures

Police and fire services are not expected to be adversely impacted by the proposed project. The project location will not extend existing service area limits for these services.

2. **Health Facilities**

a. **Existing Conditions**

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 facility, which is licensed for about 196 beds and is located in Wailuku, approximately 4.5 miles to the west of the project site. In addition, numerous privately operated medical/dental clinics and offices are located in Kahului and Paia Town to serve the region's residents.

b. **Potential Impacts and Mitigation Measures**

Health care services are not expected to be adversely impacted by the proposed project. The project location will not extend existing service area limits for emergency services.

3. **Recreational Facilities**

a. **Existing Conditions**

The Wailuku-Kahului region provides a full range of recreational opportunities, including shoreline and ocean recreation activities such as boating, fishing, tdiving, surfing, canoeing, kayaking, picnicking, kite surfing, and windsurfing at Kahului Harbor and nearby beach parks. Individual and organized athletic activities are held at numerous County parks and the War Memorial Sports Complex. County parks in the vicinity include Kanaha Beach Park and the H.A. Baldwin Park.

Along the shoreline area, recreational activities such as swimming, fishing, diving, surfing, and windsurfing were observed.

b. Potential Impacts and Mitigation Measures

One (1) park totaling approximately 2.0 acres will be provided for the residents of the subdivision. The proposed development will have minimal impacts on existing shoreline recreational activities as the subdivision will be located approximately 500 feet from the shoreline, and no other development is proposed within the 20.73 acre conservation easement area.

4. Educational Facilities

a. Existing Conditions

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 school students. Department of Education facilities 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). Existing 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). Paia Elementary School, covering kindergarten to grade 5, is the only public school facility in nearby Paia Town.

b. Potential Impacts and Mitigation Measures

The proposed project is not expected to create a need for additional school facilities. The proposed 16-lot subdivision consisting of no ohana units is under the current policy of the Department of Education which requires a fair share contribution for educational facilities if the total number of units is 50 or more.

5. Solid Waste

a. Existing Conditions

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 is disposed of at the County's 55-acre Central Maui Landfill, located approximately 4.0 miles southeast of the subject site.

b. Potential Impacts and Mitigation Measures

Clearing and grubbing activities will require disposal of construction-related waste material. As required by the Department of Public Works and Environmental Management, a Solid Waste Management Plan will be submitted to include composting of cleared and grubbed material and recycling/disposal of construction waste.

D. INFRASTRUCTURE

1. Roadways

a. Existing Conditions

Access to and egress from the project will be via Old Stable Road and Hana Highway. All traffic will use the intersection

of Old Stable Road at Hana Highway. Hana Highway is a two-lane State Highway. The posted speed limit is 55 miles per hour for westbound traffic and 45 miles per hour for eastbound traffic.

The section of Old Stable Road that is contiguous to the project is a two-lane private roadway. The intersection of Old Stable Road at Hana Highway is a stop sign controlled intersection and there are no separate left turn lanes along Hana Highway in the vicinity of the study intersection.

"Level-of-Service", or "LOS", is a term which denotes any of a multiple number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. 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 (6) levels of service, A through F, which relate to the driving conditions from best (little or no delay) to worst (extreme delays), respectively.

According to the Traffic Impact Assessment Report prepared for the project, existing levels-of-service along Hana Highway operate at a LOS A during the morning and afternoon peak hour as determined from the traffic counts performed at the intersection. See Appendix "J". Traffic along the northbound approach of Old Stable Road operates at LOS B (short traffic delays) during the afternoon peak hour. No LOS was calculated for the morning peak hour

because no traffic was observed during the survey. Traffic along the southbound approach of Old Stable Road operates at LOS C (average traffic delays) during the morning and afternoon peak hours.

b. Potential Impacts and Mitigation Measures

Subdivision Roadway Improvements:

The subject subdivision will consist of a single cul-de-sac which connects to Old Stable Road and extends towards the east. The street within the subdivision will have a 48-foot right-of-way with a curb to curb width of 32 feet with 8-foot shoulders on each side. The cul-de-sac will have an edge of pavement radius of 40 feet. The larger traffic lanes and cul-de-sac pavement radius are designed to accommodate the larger fire trucks in this district. The subdivision roadway will have concrete curbs and gutters with a 4-foot wide sidewalk along one side of the street in compliance with ADA standards. Although the Department of Public Works and Environmental Management comments that two (2) vehicular accesses are required to service this subdivision, it is noted that the applicant will be either seeking a variance to this requirement or providing an emergency only access through Laulea Place.

Old Stable Road will also be improved to County standards in accordance with the requirements of the Department of Public Works and Environmental Management.

Traffic Impact Assessment:

The Traffic Impact Assessment Report used 2008 background traffic conditions plus project-generated traffic to calculate future LOS. The proposed project will generate three (3) inbound and nine (9) outbound trips during the morning peak hour. During the afternoon peak hour, the project will generate ten (10) inbound and six (6) outbound trips.

The traffic using the study intersection will increase by 12 vehicles per hour, or 0.81 percent during the morning peak hour and 16 vehicles per hour or 0.94 percent during the afternoon peak hour.

The Institute of Transportation Engineers recommends that a traffic impact study should be performed, if, in lieu of another locally preferred criterion, development generates an additional 100 vehicle trips in the peak direction (inbound or outbound) during this site's peak hour. Based on the criterion, the report concludes that a traffic impact study is not warranted.

Based on the findings of the level-of-service analysis for 2008 background plus project conditions, traffic generated by the project has an insignificant impact on traffic operation at the intersection of Old Stable Road at Hana Highway. All traffic movements are expected to operate at level-of-service C or better for existing roadway conditions. Traffic generated by the project did not result in a change in delay or level-of-service and therefore has no impact.

At the time of the drafting of this report, the State Department of Transportation, Maui Highways Division, has indicated that funding has been secured for the design of Hana Highway roadway improvements in 2004. Roadway improvements include provisions of a separate left turn lane along Hana Highway for eastbound to northbound left turns, refuge and acceleration lanes for left turns onto Hana Highway, acceleration lanes for right turns onto Hana Highway and separate left and right turn lanes from Old Stable Road at Hana Highway.

Although not recommended by the traffic report, it is noted that the applicant acknowledges that these roadway improvements will provide safer road conditions. Therefore, the applicant has agreed to participate with the State Department of Transportation in the intersection improvements on Hana Highway and Old Stable Road.

2. Water/Fire Flow

a. Existing Conditions

The project area is served by the Central Maui Water System. The main sources for this system are the Iao and Waihee aquifers, the Iao tunnel and the Iao-Waikapu ditch. There is an existing 12-inch waterline within Hana Highway to provide potable water for the project.

b. Potential Impacts and Mitigation Measures

Domestic water and fire flow for the proposed project will be provided by the County's water system. In accordance with the Department of Water Supply's Domestic Consumption

Guidelines for single-family residential development, the average daily demand for the subdivision is approximately 51,000 gallons per day. Fire flow demand for single-family residential development is 1,000 gallons per minute for a 2-hour duration. Fire hydrants will be installed with a maximum spacing of 350 feet.

Potable water for the project will be serviced by an existing 12-inch waterline within Hana Highway. A new 12-inch waterline will be installed along Old Stable Road and into the project site to service each of the 16 lots of the subdivision. As part of the building permit process, domestic water and fire flow calculations will be provided to determine the adequacy of the existing water system. See Appendix "K".

In accordance with standard comments provided by the Department of Water Supply, the applicant is aware that water for this project may not be available until new sources are brought on-line.

3. **Wastewater**

a. **Existing Conditions**

The project area is served by an existing gravity flow system which transports wastewater to the existing Spreckelsville Pump Station, adjacent to the eastern boundary of the project site. An existing 12-inch force main, which traverses through the project site then along Old Stable Road, transports wastewater to the Wailuku-Kahului Wastewater Reclamation Facility.

b. Potential Impacts and Mitigation Measures

The proposed subdivision will generate approximately 5,950 gallons per day of wastewater when all homes are constructed. The onsite sewerage collection system will be designed to accommodate this flow. The existing collection and transmission systems, pumping facilities and treatment plant have the capacity to handle the anticipated wastewater generated by the subdivision. An 8-inch sewerline will be installed to collect the wastewater generated from this project. It will connect to an existing sewer manhole at the end of Laulea Place which transports the wastewater to the Spreckelsville Pump Station along the eastern boundary of the project site. An existing 12-inch force main, which traverses through the project site then along Old Stable Road, transports wastewater to the Kahului Wastewater Treatment Plant. Refer to Appendix "K".

Although the Department of Public Works and Environmental Management indicates that wastewater system capacity is currently available as of February 20, 2004, the applicant is aware that wastewater system capacity cannot be ensured until the issuance of the building permit. In addition, the applicant is aware of assessment fees for treatment plant expansion costs and required funding of necessary offsite improvements to the collection system and wastewater pump stations.

4. **Drainage**

a. **Existing Conditions**

According to the Preliminary Drainage Report prepared for the project, runoff sheet flows across the parcel in the southerly to northerly direction towards the ocean. It is estimated that the existing 50-year storm runoff from the project site is 17.8 cfs. See Appendix "L".

An existing 24-inch culvert crosses Hana Highway approximately 350 feet west of the property line between the project site and the Kaunoa Senior Center. The existing culvert conveys approximately 24 cfs of surface runoff from the existing sugar cane fields mauka of the highway to the makai side onto the project site. This offsite runoff also sheet flows across the parcel to the ocean. Approximately 20 feet into the property is a bikeway constructed by the County of Maui. Two 18-inch culverts have been constructed under the bikeway to allow the runoff from the existing 24-inch culvert to continue downstream in the same direction.

b. **Potential Impacts and Mitigation Measures**

After the development of the proposed project, it is estimated that the 50-year storm runoff will be approximately 26.6 cfs, a net increase of 8.8 cfs.

Surface runoff from the project will be allowed to sheet flow towards the proposed subdivision roadway where runoff will be captured and conveyed by the underground drainage system to a proposed retention basin. This retention basin

will be located to the west of the subdivision, between the common area open space and the subdivision road. See Appendix "M", Grading Plan.

The retention basin has been sized to accommodate all the additional onsite surface runoff generated by the proposed 16-lot subdivision. A proposed drainline will be connected to the existing drainage culverts beneath the existing bikeway. The drainline will outlet into the proposed retention basin. The surface runoff generated makai of the proposed improvements will be allowed to continue downstream towards the ocean.

5. **Electrical and Communication Systems**

a. **Existing Conditions**

The existing electrical distribution system in the Speckelsville area is overhead. Existing overhead utility lines are located along Hana Highway fronting the project site. See Appendix "K".

b. **Potential Impacts and Mitigation Measures**

The proposed electrical, telephone and cable TV distribution systems in the subject subdivision will be installed underground. Street lights will be installed along the subdivision street at regular intervals. The installation of electrical, telephone and cable TV systems for the project will be coordinated with Maui Electric Company, Verizon Hawaii, and Hawaiian Cablevision, respectively. No impacts are anticipated on electrical and communication systems.

E. CUMULATIVE AND SECONDARY IMPACTS

A cumulative impact is defined as an impact to the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. Some actions may also stimulate secondary impacts such as increases in population and growth, or increases in the demand for public services.

Recognizing current land use designations of State Urban classification and County R-3, Residential zoning, foreseeable actions to develop a residential community appear reasonable. By re-designating the subdivision development site to rural residential and re-designating the conservation easement area to open space, future cumulative impacts of additional residential use on the subject property would be limited. Given the project density of 16 single-family homes on approximately 40 acres (0.4 dwellings units/acre), cumulative and secondary impacts to the environment and surrounding areas are considered minimal.

Although there will be cumulative and secondary impacts by re-designating and donating approximately one (1) acre to the County, Kaunoa Senior Center for future facility expansion, these impacts are anticipated to be minimal. The public benefit of this future expansion will enhance public services for seniors, as well as the community who utilizes the facilities.

F. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The proposed action will result in unavoidable construction related impacts, which include noise-generated impacts occurring from the proposed improvements. In addition, there may be temporary air quality impacts associated with dust generated from exhaust emissions

discharged by construction equipment. Appropriate mitigation measures will be implemented to minimize these construction related impacts.

G. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed project would involve the commitment of land for the proposed residential subdivision, conservation easement, and Kaunoha Senior Center expansion. This commitment of land is consistent with the State Land Use Classification which designates the property for "Urban" type uses. Land use amendment actions would bring the project into conformance with land use policies and plans within the region. The proposed project is also designed to be compatible with existing land uses surrounding the project site. In this context, the proposed action is not considered to have a negative effect on land resource commitment or place significant additional requirements upon public services and infrastructure.

Chapter IV

***Relationship to Governmental
Plans, Policies and Controls***

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE LAND USE DISTRICTS

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, establishes the four (4) major land use districts in which all lands in the State are placed. These districts are designated "Urban", "Rural", "Agricultural", and "Conservation". The project site is situated within the "Urban" district. See Figure 8. The proposed use of the project site for this purpose is consistent with "Urban" district standards.

B. HAWAII STATE PLAN

Chapter 226, HRS, also known as the Hawaii State Plan, is a long-range comprehensive plan which serves as a guide for the future long-range development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. The proposed action is in concert with the following goals of the Hawaii State Plan.

- A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii's present and future generations.
- A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- Physical, social, and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring, and of participation in community life.

1. Objectives and Policies of the Hawaii State Plan

The proposed action is in conformance with the following objectives and policies of the Hawaii State Plan:

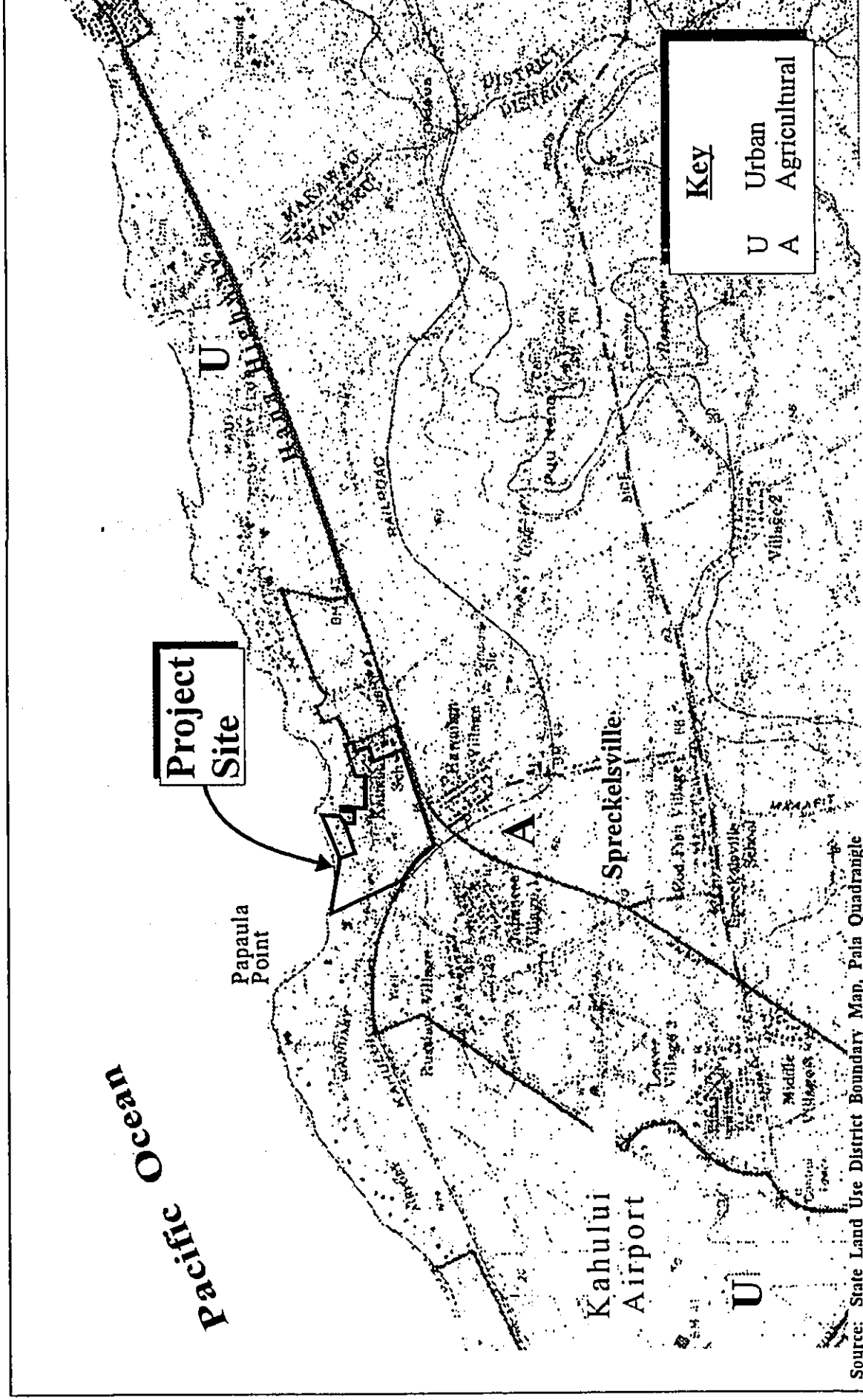


Figure 8

E Paepae Ka Pūko`a
State Land Use Classifications



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

226-5(a), HRS: It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter.

226-5(b)(1), HRS: Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.

226-5(b)(3), HRS: Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.

Chapter 226-6, HRS, Objective and Policies for the Economy - in General

226-6(b)(b), HRS: Strive to achieve a level of construction activity responsive to, and consistent with, State growth objectives.

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

226-11(a)(2), HRS: Effective protection of Hawaii's unique and fragile environmental resources.

226-11(b)(3), HRS: Take into account the physical attributes of areas when planning and designing activities and facilities.

226-11(b)(8), HRS: Pursue compatible relationships among activities, facilities, and natural resources.

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

226-12(b)(5), HRS: Encourage the design of developments and activities that complement the natural beauty of the islands.

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

226-13(b)(2), HRS: Promote the proper management of Hawaii's land and water resources.

226-13(b)(6), HRS: Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.

226-13(b)(7), HRS: Encourage urban developments in close proximity to existing services and facilities.

Chapter 226-19, HRS, Objectives and Policies for Socio-Cultural Advancement - Housing.

226-19(a)(2), HRS: The orderly development of residential areas sensitive to community needs and other land uses.

226-19(b)(1), HRS: Effectively accommodate the housing needs of Hawaii's people.

226-19(b)(3), HRS: Increase home ownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.

226-19(b)(5), HRS: Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.

226-19(b)(7), HRS: Foster a variety of lifestyles traditional to Hawaii through the design and

maintenance of neighborhoods that reflect the culture and values of the community.

Chapter 226-23, HRS, Objective and Policies for Socio-Cultural Advancement - Leisure.

226-23(b)(4), HRS: Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.

2. Priority Guidelines of the Hawaii State Plan

The proposed action is in keeping with the following priority guidelines of the Hawaii State Plan:

Chapter 226-103, HRS, Economic Priority Guidelines:

226-103(1), HRS: Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.

a. Encourage investments which:

- (i) Reflect long term commitments to the State;
- (ii) Rely on economic linkages within the local economy;
- (iii) Diversify the economy;
- (iv) Reinvest in the local economy;
- (v) Are sensitive to community needs and priorities; and
- (vi) Demonstrate a commitment to management opportunities to Hawaii residents.

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

226-104(a)(1), HRS: Encourage planning and resource management to ensure that population growth rates throughout the

State are consistent with available and planned resource capacities and reflect the needs and desires of Hawaii's people.

226-104(b)(1), HRS: Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.

226-104(b)(2), HRS: Make available marginal or non-essential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.

226-104(b)(12), HRS: Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline conservation lands, and other limited resources for future generations.

Chapter 226-106, HRS, Affordable Housing Priority Guidelines

226-106(1), HRS: Seek to use marginal or nonessential agricultural land and public land to meet housing needs of low- and moderate-income and gap-group households.

226-106(8), HRS: Give higher priority to the provision of quality housing that is affordable for Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawaii.

C. MAUI COUNTY GENERAL PLAN

The 1990 update of the Maui County General Plan establishes broad objectives and policies to guide the long-range development of the County. As indicated by the Maui County Charter:

The general plan shall indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain the opportunities and the social, economic, and environmental consequences related to potential developments; and shall

set forth the desired sequence, patterns, and characteristics of future developments.

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

* * *

Theme Number 5

Provide for needed resident housing

- Amendments to the General Plan address the development of resident housing as a major social need in our community.

The proposed action is in keeping with the following General Plan objectives relating to population, land use, economic activity, housing and urban design:

POPULATION

Objective

To plan the growth of resident and visitor population through a directed and managed growth plan so as to avoid social, economic and environmental disruptions.

Policies

- a. Manage population growth so that the County's economic growth will be stable and the development of public and private infrastructures will not expand beyond growth limits specified in the appropriate community plans or negatively impact our natural resources.
- b. Balance population growth by achieving concurrence between the resident employee work force, the job inventory created by new industries, affordable resident/employee housing, constraints on the environment and its natural

resources, public and private infrastructure, and essential social services such as schools, hospitals, etc.

LAND USE

Objective

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

Policy

- b. Provide and maintain a range of land uses districts sufficient to meet the social, physical, environmental and economic needs of the community.

Objective

2. To use the land within the County for the social and economic benefit of all the County's residents.

Policy

- c. Encourage land use methods that will provide a continuous balanced inventory of housing types in all price ranges.

ECONOMIC ACTIVITY (General)

Objective

Utilize an equitable growth management program which will guide the economic well-being of the community.

HOUSING

Objective

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

Policy

- b. Encourage the construction of housing in a variety of price ranges and geographic locations.

Objective

- 2. Provide affordable housing to be fulfilled by a broad cross-section of housing types.

URBAN DESIGN

Objective

- 2. To encourage developments which reflect the character and the culture of Maui County's people.

Policy

- b. Encourage community design which establishes a cohesive identity.

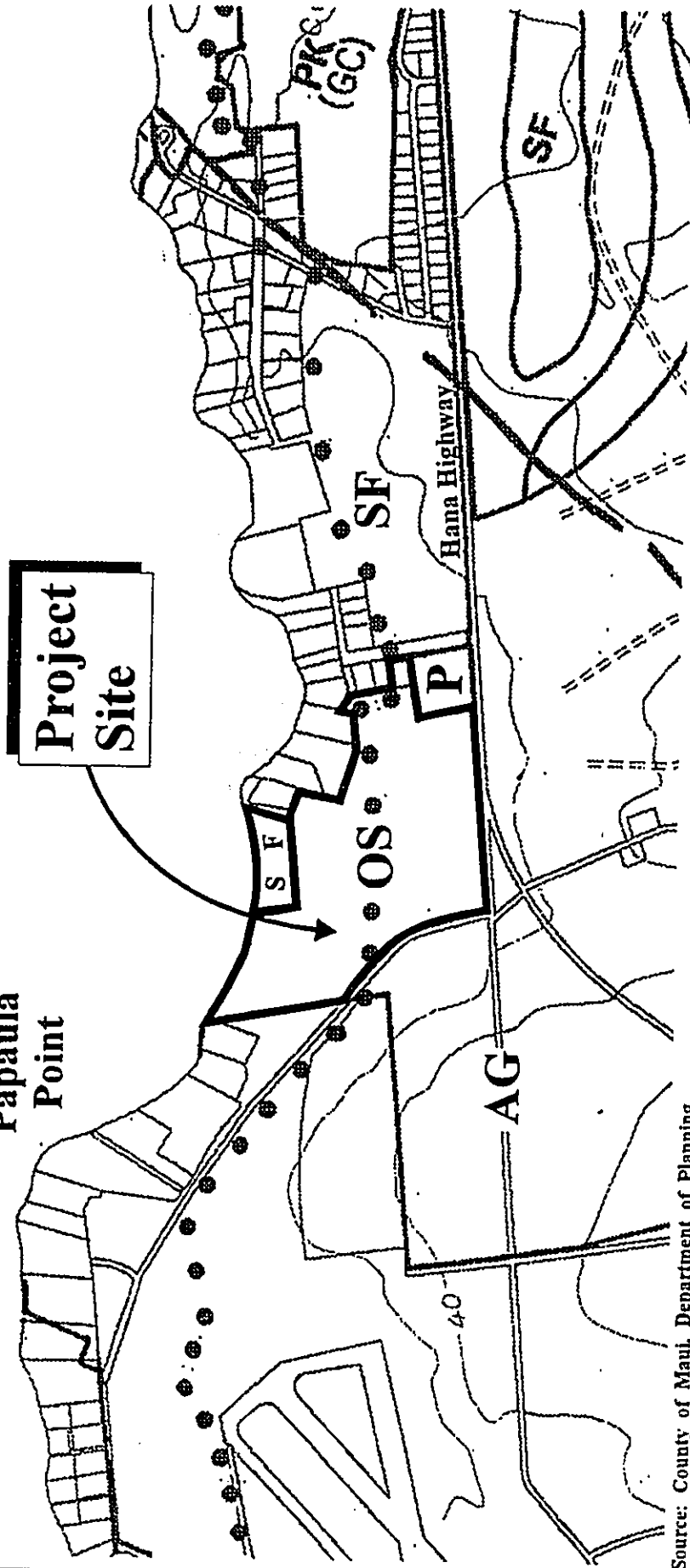
D. WAILUKU-KAHULUI COMMUNITY PLAN

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. According to the land use map of the Wailuku-Kahului Community Plan, the subject property is designated for open space and single family use. See Figure 9. It is noted that during the community plan review process in 1993, the Wailuku-Kahului Citizen Advisory Committee (CAC) recommended

Pacific Ocean

Papaula Point

Project Site



Source: County of Maui, Department of Planning

Figure 9

E Paepae Ka Pūko`a
 Wailuku-Kahului Community Plan
 Land Use Designations



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approximately 36 acres within the project site to be re-designated from open space to multi-family use. At the time, the CAC felt that multi-family housing could provide opportunities for elderly housing in close proximity to the existing Kaunoa Senior Center and the coastal recreational resources. However, the Planning Department felt at the time that there were already sufficient lands available for such development within the community plan region and recommended keeping this area under an open space designation. The Maui County Council subsequently adopted the community plan in 2002 with the open space designation.

A community plan amendment is being requested for approximately 14.86 acres from open space to rural for the subdivision development site and approximately one (1) acre from open space to public/quasi-public for donation to the Kaunoa Senior Center. The applicant will also be facilitating land use consistency by requesting a down-zoning for approximately 24.50 acres from R-3, Residential to OS-2, Open Space to bring this area in line with the Open Space designation of the community plan. Refer to Figure 3 .

The proposed actions creates a desirable design and land use pattern as follows:

- Recognizes existing residential land uses by creating low-density rural lots consistent with surrounding areas, and locating the subdivision lots mauka of existing single-family lots and mauka of the tsunami inundation limits;
- Protects the natural environment by future dedication of a conservation easement area. (It is noted that this area contains environmentally sensitive areas such as the shoreline, wetlands conducive to wetland habitat, and coastal sand dunes); and
- Provides a public benefit by donating the bike path and land for the Kaunoa Senior Center future expansion.

The proposed action is also in keeping with the following goals, objectives and policies of the Wailuku-Kahului Community Plan:

Goal (Housing):

A sufficient supply and choice of attractive, sanitary and affordable housing accommodations for the broad cross section of residents, including the elderly.

Objectives and Policies:

2. Provide sufficient land areas for new residential growth which relax constraints on the housing market and afford variety in type, price, and location of units. Opportunities for the provision of housing are presently constrained by a lack of expansion areas. This condition should be relieved by a choice of housing in a variety of locations, both rural and urban in character.
3. Seek alternative residential growth areas within the planning region, with high priority given to the Wailuku and Kahului areas. This action should recognize that crucial issues of maintaining important agricultural lands, achieving efficient patterns of growth, and providing adequate housing supply and choice of price and location must be addressed and resolved.
8. Promote efficient housing designs in order to reduce residential home energy and water consumption.

Goal (Social Infrastructure):

Develop and maintain an efficient and responsive system of public services which promotes a safe, healthy and enjoyable lifestyle, accommodates the needs of young, elderly, disabled and disadvantaged persons, and offers opportunities for self-improvement and community well-being.

Objectives and Policies:

16. Ensure that adequate regional/community park facilities are provided to service new residential developments.

Goal (Urban Design):

An attractive and functionally integrated urban environment that enhances neighborhood character, promotes quality design, defines a unified landscape planting and beautification theme along major public roads and highways, watercourses and at major public facilities and recognizes the historic importance and traditions of the region.

E. COUNTY ZONING

The proposed project site is zoned "R-3", "Residential" by Maui County Zoning. As mentioned previously, the applicant will be requesting a down-zoning for approximately 24.50 acres from "R-3", "Residential" to "OS-2", "Open Space" to bring consistency with the "Open Space" designation of the community plan. To be consistent with the proposed rural community plan designation of the subdivision development area, a zoning change is being requested from the "R-3, Residential" to "RU-0.5, Rural" district. This zoning change would lessen the potential density of the project from a minimum lot size of 10,000 square feet to 21,780 square feet, (or 0.5 acres). A change in zoning for approximately one (1) acre is also being requested from the "R-3, Residential" to "P-1, Public/Quasi-Public" for donation to the County of Maui (State of Hawaii), Kaunoa Senior Center for future expansion capabilities. Refer to Figure 3.

According to Chapter 19.510.040, the following addresses criteria that the County Council would consider when granting a change in zoning:

-
- The proposed request meets the intent of the general plan and the objectives and policies of the community plans of the county.
 - The proposed request is consistent with the applicable community plan land use map of the county, provided that the requested community plan amendment is granted.
 - The proposed request meets the intent and purpose of the district being requested.
 - The application, if granted would not adversely affect or interfere with public or private schools, parks, playgrounds, water systems, sewage and solid waste disposal, drainage, roadway and transportation systems, or other public requirement, conveniences and improvements.
 - The application, if granted would not adversely impact the social, cultural, economic, environmental, and ecological character and quality of the surrounding area.

F. SPECIAL MANAGEMENT AREA

The subject property is located within the County of Maui's Special Management Area (SMA). Pursuant to Chapter 205A, Hawaii Revised Statutes (HRS), and the Rules and Regulations of the Maui Planning Commission, actions proposed within the SMA area evaluated with respect to SMA objectives, policies and guidelines. This section addresses the project's relationship to applicable Coastal Zone Management (CZM) considerations as set forth in Chapter 205A, HRS and the Rules and Regulations of the Maui Planning Commission.

(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 action is not anticipated to adversely affect existing public access to the beach area and ocean recreational resources. Public access to the beach will continue to be provided within the conservation easement dedication area. Re-

designating land uses to open space use in this area will ensure that public access, and recreational/open space resources are preserved. It is noted that the subdivision development site is located approximately 500 feet inland from the shoreline area.

(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: In accordance with the Archaeological Inventory Survey and the Cultural Assessment Report prepared for the project, no impacts are anticipated on archaeological or cultural resources. To mitigate any potential impacts, archaeological monitoring will be conducted during ground altering activities. Should any artifacts or human remains be encountered during construction, work will stop in the immediate vicinity of the find and the State Historic Preservation Division and/or the Maui/Lana'i Islands Burial Council will be appropriately and immediately notified to establish an appropriate mitigation strategy.

(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: There will be no impacts on existing mountain and ocean views from Hana Highway and Stable Road as a result of the proposed action. As mentioned previously, the subdivision development site is located directly mauka of the developed single-family lots along the shoreline. Also, by designating approximately 24.50 acres of land to open space, existing open space and scenic resources will be preserved.

In order to preserve the character of the Spreckelsville area, the existing monkeypod trees located on the subject property will be preserved and maintained. Security fencing/walls along Hana Highway will be designed to blend in with the existing mature monkey pod trees. It is proposed that any fence/wall structure will be constructed in the back of privacy-type landscaping, such as wiliwili or other tall hedge material. See Appendix "F". As such, existing conditions can be preserved with minimal impacts anticipated.

(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: The drainage system for the project will be designed and constructed to produce no adverse effects to adjacent and downstream properties, and will be designed and reviewed in accordance with applicable governmental standards. Best management practices (BMPs) and appropriate erosion control measures will be implemented, to minimize the effects of runoff during construction of the project. Since no development is proposed within 500 feet from the shoreline, impacts to coastal ecosystems would be minimal.

(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 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 additional housing inventory will benefit the social welfare for the community. The economic and social welfare needs of the community will not be adversely impacted by the proposed subdivision. Community needs will be enhanced by proposed dedication of the conservation easement area, donation of the bike path, and donation of approximately one (1) acre to the Kaunoa Senior Center, County of Maui, State of Hawaii.

(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 proposed subdivision site is located outside the tsunami inundation limits. Also, it is located approximately 500 feet away from the shoreline. Therefore, there will be minimal impacts on coastal hazards. It is noted that a dune restoration plan was prepared for the project to better mitigate "human-induced" impacts on this natural coastal ecosystem. The proposed drainage system will be designed to produce no adverse effects on adjacent and downstream properties.

(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: All aspects of the project will be conducted in accordance with applicable State and County requirements. Opportunities for public review and consideration of the proposed action is offered through the SMA permitting process.

(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: A public hearing is required as part of the SMA review process. As such, the proposed project addresses the SMA objective of stimulating public awareness, education and

participation in coastal management. In addition, neighborhood and group meetings were conducted prior to the preparation of the Draft Environmental Assessment to further facilitate public participation. Refer to Chapter VIII.

(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: As previously noted, the subdivision development site is located approximately 500 feet inland from the shoreline and outside of the Maui County's shoreline setback area. A dune restoration plan was prepared for the project to better mitigate "human-induced" impacts on this natural coastal ecosystem.

(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: As previously noted, BMPs will be implemented to minimize construction-related impacts to marine resources. Also, the proposed drainage system will be designed to produce no adverse effects on adjacent and downstream properties. Adverse impacts to marine resources are not anticipated as a result of the proposed action.

Chapter V

Alternative Analysis

V. ALTERNATIVE ANALYSIS

A. NO ACTION ALTERNATIVE

The no action alternative would keep this area undeveloped. This alternative would not recognize the underlying State "Urban" Land Use designation of the project site. Although beach use and open space benefits would continue, it is noted that the illegal trash dumping, (including abandoned cars), sand mining, and drug activity has occurred on the project site when under current and previous ownership.

B. DEVELOPMENT UNDER EXISTING CONDITIONS ALTERNATIVE

Under current county zoning, each of the shoreline lots could be developed with a single-family dwelling plus one ohana unit, provided it is determined to be an exempt action under Special Management Area Rules. In addition, one (1) single-family dwelling plus one (1) ohana unit may be constructed on the larger parcel, again, provided that it is determined to be an exempt action under Special Management Area Rules. Although not part of these applications, the 28-acre agriculturally zoned portion located to the west of Old Stable Road could be further subdivided into seven, 2-acre agricultural lots.

C. DESIGN ALTERNATIVES

1. Full Build out alternative was considered for the entire 40.52 acre area zoned R-3, Residential. Approximately 26 ±1 acre single-family lots with a potential of 26 homes plus 26 ohana units were considered. This alternative was not viewed as a desired project density when considering the impacts of 50+ single-family homes on surrounding areas.
2. Developing only the two (2) shoreline properties was an alternative suggested at a neighborhood meeting conducted on April 26, 2004.

This alternative was not considered as it would limit public access and use of the shoreline area.

3. Subdividing only 14.86 acres consisting of 16 lots, including ohanas was looked at. This alternative was not considered because the inclusion of ohana units could potentially double the project density.
4. Subdividing 14.86 acres consisting of 16 lots prohibiting ohanas with nine (9) lots abutting Laulea Place was viewed. This alternative was considered, however, the project has been reconfigured to reduce the number of lots abutting Laulea Place. Fewer lots abutting Laulea Place (6 lots) may reduce potential impacts to neighbors who reside along this private roadway.
5. Roadway Alternatives
 - a. A through street from Old Stable Road to Alakapa Place was considered. This alternative was not considered due to overwhelming concerns raised by neighbors along Laulea Place and Alakapa Place relative to an increase in traffic impacts.
 - b. Utilizing the County's Flexible Roadway Design standards was considered to construct a roadway with a more "rural" character of the Spreckelsville area (narrower pavement widths with no curb-cuts). This alternative was not considered as it was recently determined that the Director of Public Works and Environmental Management does not have the authority to deviate from typical county standards for roadways. As such, the subdivision roadway will be constructed to county standards, consisting of curb, gutter, and sidewalks.
 - c. The preferred Roadway alternative would be to construct a cul-de-sac roadway which restricts access to Laulea Place and Alakapa Place. This alternative would address the concerns raised by the surrounding neighbors regarding additional traffic impacts. If required by the Department of

Public Works and Environmental Management, constructing a gated emergency access to Laulea Place can be accommodated.

D. OPEN SPACE ZONING ALTERNATIVES

An OS-1 zoning designation was considered for environmentally sensitive areas, such as the wetlands and coastal sand dunes to better protect and preserve these features. However, it is noted that preservation of these features are already regulated through existing legislation, jurisdictional review, and applicable governmental rules/regulations (i.e., Grading Ordinance, Department of the Army Permits, Shoreline Setback Rules). In addition, split zoning designations of OS-1 and OS-2 on one (1) lot can get rather cumbersome and complicated from a land use zoning perspective. Additional preservation controls can be incorporated into the project through conditional zoning, or SMA conditions.

E. PREFERRED ALTERNATIVE

The proposed action represents the preferred alternative. Larger lots prohibiting ohana units are proposed to lessen project density and minimize impacts on surrounding properties. The size of the lots are also compatible with the lots sizes of the surrounding areas. The residential lots are situated behind established single-family residences in order to minimize impacts to coastal recreational resources. The subdivision design also reduces the number of lots abutting Laulea Place, thus reducing potential impacts to residents along this roadway. Not providing a through access from the subdivision to Alakapa Place addresses concerns of the neighbors regarding additional traffic impacts on Alakapa Place. The open space land use amendments of the conservation easement area would further preserve coastal recreational resources in perpetuity.

Chapter VI

***Findings and
Conclusions***

VI. 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 action 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 significant adverse environmental impacts. Although wetland areas will be filled within the subdivision development site, these areas were determined not to be significant from a wetland habitat perspective. More importantly, a more suited wetland area in the conservation easement area will be expanded and enhanced to better support wetland habitat. Wetland mitigation/enhancement is subject to review by the U.S. Fish and Wildlife Service and the Department of Army Corps of Engineers to ensure proper mitigation and maintenance.

In accordance with the Archaeological Inventory Survey and the Cultural Assessment Report prepared for the project, no impacts are anticipated on archaeological or cultural resources. To mitigate any potential impacts, archaeological monitoring will be conducted during ground altering activities. Should any artifacts or human remains be encountered during construction, work will stop in the immediate vicinity of the find and the State Historic Preservation Division 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 use of the subject property for rural residential use is deemed appropriate as it provides for new housing inventory adjacent to other single-family uses. In addition, this use recognizes the underlying residential zoning. Public open space, shoreline access, and coastal recreational resources will be retained with the proposed open space land use designations and the dedication of this area as a conservation easement. The proposed project and the commitment of land resources will 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, HRS, and were reviewed in connection with the proposed action. The purpose of this chapter is to establish a state policy, which will encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere, and stimulate the health and welfare of humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawaii.

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 additional housing inventory will benefit the social welfare for the community. The economic and social welfare needs of the community will not be adversely impacted by the proposed subdivision. Community needs will be enhanced by proposed dedication of the conservation easement area, donation of the bike path, and donation of approximately one (1) acre to the Kaunoa Senior Center, County of Maui, State of Hawaii.

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

No impacts on public 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 subdivision development area will include tie-in to existing water and wastewater systems. Appropriate design coordination will be undertaken with responsible State and County agencies to ensure service availability. The proposed action is within the urban core where public services such as police, fire, schools, and medical facilities are available. No significant impacts are anticipated on these public facilities.

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 proposed project is not anticipated to significantly affect the open space and scenic character in the area.

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

The proposed action as described herein, represents the entire project. Accordingly, there are no cumulative impacts, which would result in larger effects on the environment.

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

Potential wetland areas are found on the property. As mentioned previously, a wetland mitigation/enhancement plan has been developed for this property. This plan would provide additional wetland area and suitable enhancement of the Area 3 wetland as mitigation for the loss of the Area 1 and portion of Area 2 wetlands.

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

No substantial long-term impacts on air, water, or noise quality are anticipated. Short-term impacts relative to construction activities will be mitigated through standard construction practices (i.e., dust screen as appropriate, silt fences, and limiting construction to normal daylight hours). Site preparation and construction activities will require the design and implementation of Best Management Practices to mitigate other construction activity impacts.

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 development site is located outside the tsunami inundation limits. Also, it is located approximately 500 feet away from the shoreline.

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

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

13. **The Proposed Action Would Not Require Substantial Energy Consumption**

The proposed project will involve 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, its demand is not deemed substantial or excessive within the context of the region's overall energy consumption.

Based on the foregoing findings, and proposed mitigation measures, it is anticipated that the proposed action will result in a Findings of No Significant Impact. See Site Photographs, Appendix "N".

Chapter VII

***List of Permits
and Approvals***

VII. LIST OF PERMITS AND APPROVALS

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

Federal

1. Army Corps of Engineer's Section 404 permits for filling of wetlands
2. U.S. Fish and Wildlife Services, wetland enhancement/mitigation review

County

1. County Community Plan Amendment
2. County Change in Zoning
3. County Special Management Area Use Permt
4. Subdivision approval
5. Grading and building permits.

Chapter VIII

***Neighborhood/Group
Information Meetings***

VIII. NEIGHBORHOOD/GROUP INFORMATION MEETINGS

SUMMARY OF MEETINGS *E Paepae Ka Puko'a*

1. **Date:** March 15, 2004 (See Exhibit "A")
Location: MOA Center
Present: Maui Tomorrow Board Meeting:
Ron Sturtz
Lucienne DeNaie
Lance Holter
Sean Lester
Ed Lindsey,
Mark Sheehan
Judith Michaels
Richard Michaels
Maile Luuwai
Staff:
Marty McMahon
Katie Romanchuk
Guests:
Marcia Godinez
Dale Bonar
Dick Mayer
Jamei
Glen Shepherd
Kathy McDuff
Henry Spencer

2. **Date:** April 7, 2004 (See Exhibit "B")
Location: 451 Laulea Street
Present: Jim Bendon
Susan Bendon
Alec McBarnett
Mary Jane McBarnett
Pete Siracusa
Barbara Woods
Cathy Williams
Lynn Keller
Ken Horiszney
Henry Spencer
Daren Suzuki

-
3. **Date:** April 12, 2004 (See Exhibit "C")
 Location: Country Club
 Present: Jack Thompson
 Jane Thompson
 Linda Wassen
 Fiona Leigh
 Henry Spencer
 Daren Suzuki
4. **Date:** April 13, 2004
 Location: Paia Main Street Association
 Present: (Refer to Chapter IX, Agency Comments)
5. **Date:** April 14, 2004 (See Exhibit "D")
 Location: Country Club
 Present: Doug McFetridge
 Lisa McFetridge
 Martin Lenny
 Paula Lenny
 Jill Monroe
 Henry Spencer
6. **Date:** April 15, 2004 (See Exhibit "E")
 Location: Country Club
 Present: Henry Spencer
 Daren Suzuki
 (No one attended)
7. **Date:** April 18, 2004 (See Exhibit "F")
 Location: Haynes Residence, Stable Road
 Present: Eric Pung
 Kim Pung
 Jim Riley
 Jeanne Riley
 Honeybun Haines
 Jim Haines
 Glen Beadles
 Renata Foster-Au
 Bob Perlman
 Ann Perlman
 Henry Spencer

8. **Date:** April 22, 2004 (See Exhibit "G")
 Location: Kaunoa Sr. Center
 Present: Sierra Club Members:
 Lance Holter
 Dan Grantham
 Dot Buck
 David M. Johnston
 Ann Fielding
 Henry Spencer
 Daren Suzuki

9. **Date:** April 26, 2004 (See Exhibit "H")
 Location: Country Club
 Present: Barbara Woods
 Sheri Thorson
 Louise Severson
 Kurt Ulmer
 Annie Nelson
 Henry Spencer
 Daren Suzuki

**INDIVIDUAL MEETINGS WITH RESIDENTS OF
SPRECKELSVILLE BETWEEN DECEMBER 2003
AND MAY 2004**

Greg Chisholm
Beirne Chisholm
Phillip Golm
Lauren Golm
Michael Ruben
Eric Golting
Mrs. Eric Golting
Jeff Henderson
Peter Martin
Jimmy Diaz
Albert Zeman
Robert Merriman
Cynthia Merriman
Sam Grossman
Mrs. Sam Grossman
Doug Gallant
Rob Kaplan
Tom Welch
Claudia Welch
Dick Emery
Chris Appleton
John Stemet
David Spee
Pia Spee
Peter Merriman
Glen Kunihsa
Fred Haywood
Mercer Vicens
Dorene Vicens
Darlene Vicens
Ron Dahlquist
Scott Sanchez
Rhonda Smith
Daniel Sayles

EXHIBIT "A"

March 15, 2004 Meeting

Maui Tomorrow Board Meeting Minutes
March 15, 2004

Board Members: Ron Sturtz, Lucienne DeNaie, Lance Holter, Sean Lester, Ed Lindsey, Mark Sheehan, Judith and Richard Michaels, Maile Luuwai

Staff: Marty McMahon, Katie Romanchuk

Guests: Marcia Godinez, Henry Spencer, Dale Bonnar, Dick Mayer, Jamei, Glen Shepherd, Kathy McDuff

Ron called meeting to order at 5:40 pm at the Moa Center and welcomed guests. He thanked Marcia and Malia for excellent job on Makena Video Contest, and also thanked Media Committee and others for fine job on Makena hearing.

Guest Presenter: Harry Spencer, landowner of Sprecklesville Subdivision, proposed project. He has revised the proposal from 26 lots with ohanas fairly close to shore, to 16 with no ohanas, 400' from shore, behind tsunami flood zone line. He passed around maps with breakdown of existing and proposed zoning designations for State, County and Community Plan for his subdivision. He plans to donate one acre to Kaunoa Sr. Center, have 23-acre conservation easement, county bike path and two common areas. Dale Bonnar from MCLT spoke also and said he is advising that the project move forward. Harry has gotten input from many, including Hugh Star, Bob Horcajo, MT, planning and public works depts.

Dale announced that Inouye will be in Maui, Wed. March 17, 3-4 pm. Million dollar grant from NOA will be discussed.

Meeting with David Cole CEO of ML&P, March 29, 11 am, corporate headquarters.

Fundraising Committee report: Marty: \$220 in pledges since last meeting and more on the way including \$1000 from Margaret Hecht. Marty will email us re: upcoming fundraiser. He will strategize with Lucienne re: 2 grants.

Executive Session: (including Kathy, Dick and Marcia)

- 1) **E Maui stream lawsuit updates: Lucienne:** Kapua Sproat from Earth Justice plans to file a petition to appeal stream flow standards, to increase stream flows and not divert stream water to Makena developments. The Duey's are eager to get things going. The original plan was to petition to return water to 3 streams: Waihe'e, Waiehu and Iao. The new idea is to jump on Iao Stream first, before County cuts deal which could be soon (April). Paul from Earth Justice felt the original plan would be better. MT discussed pros and cons of both plans. Ron and Lucienne felt it would probably be better to keep the 3 streams together though it is not an easy choice. This issue will be on agenda for Mayor's Mtg. **MOTION:** Ron: MT will support action as outlined by Ed, Lucienne and Kapua who will talk with the Dueys regarding what is best plan to protect E Maui Stream flows re: 3

streams together v starting with Iao Stream. Sean seconded the motion and all were in favor, motion passed.

- 2) **E Maui Lawsuits, Na Wai Eha streams: Lucienne:** Water has been released already to a number of E Maui stream users to show good faith, however they are trying to release as little as possible. Wailua and Keanae people are getting more water in their pipes. We still want actual increased stream flows, not just more piped in water to individuals. Isaac working on this. Lucienne questioned at what point should this issue become public, in the media.
- 3) **Makena Resort Rezoning and building bridges with Hawaiian community:**
ACTION: Ron and Lucienne will put together a Viewpoint article re: history of Makena etc. MT accused of being late to jump in. Marcia suggested obtaining a report of what actually happened with Paulauaea, where historical sites were moved or obliterated in contrast to Community Plans. MT is concerned that Makena residents including Hawaiian community are being hoodwinked to believe that all the historical and cultural sites will be protected. MT discussed how to bridge gap between Hawaiian community and others who really have same ultimate goal of keeping open space, coastal access, protecting sites etc.

ACTION PLAN:

Maile will talk to Aunty Patty

Ed will call Bumpy to get info so he can relay it to Patty

Kathy will research historical preservation and comments on any of the 10 surveys.

Channel 4 tomorrow, opportunity to discuss Seibu scandal and say our side. **ACTION** Maile, Richard and Judith will participate.

Next Meeting: MARCH 29, 2004, MONDAY 2 pm at the MOA Center

Minutes by Katie Romanchuk, Aloha.

Daren

From: henry spencer [henspen@hawaii.rr.com]
Sent: Thursday, May 06, 2004 12:48 PM
To: daren@mhinonline.com
Subject: Fw: MT mtg attendees



MT Minutes
-15-04.dat (23 KB)..

Hi Daren-

Here is the info from my meeting with Maui Tomorrow.

Thanks

Henry

----- Original Message -----

From: "Katie Romanchuk" <ohialani@verizon.net>
To: <henspen@hawaii.rr.com>
Sent: Saturday, May 01, 2004 5:14 PM
Subject: MT mtg attendees

- > Hi Henry
- >
- > Here are the names of people who attended and the minutes from the
- > meeting (see attachment). Hope this is helpful. Good luck, Katie, Maui
- > Tomorrow Admin. Assistant
- >
- > Board Members: Ron Sturtz, Lucienne DeNaie, Lance Holter, Sean Lester,
- > Ed Lindsey, Mark Sheehan, Judith and Richard Michaels, Maile Luuwai
- > Staff: Marty McMahon, Katie Romanchuk
- > Guests: Marcia Godinez, Henry Spencer, Dale Bonnar, Dick Mayer, Jamei,
- > Glen Shepherd, Kathy McDuff
- >
- >

EXHIBIT "B"

April 7, 2004 Meeting

**Informal Laulea Street Neighborhood Informational Meeting
451 Laulea Street (Jim Bendon Residence)
Spreckelsville, Maui**

April 7, 2004

**Attendance: Henry Spencer, Applicant
Daren Suzuki, Munekiyo & Hiraga, Inc.**

**Jim Bendon
Susan Bendon
Alec McBarnett
Mary Jane McBarnett
Pete Siracusa
Barbara Woods
Cathy Williams
Lynn Keller
Ken Horiszney**

10:05 a.m.

Mr. Spencer gave a brief overview of the project history. A colored site map consisting of proposed land use amendments was provided. Mr. Spencer and Mr. Suzuki provided overview of the project describing existing uses and proposed uses in accordance with the colored site map.

Questions were raised about the project density. Mr. Spencer responded that no ohanas will be permitted through CC & R's or deed restrictions. Also, that if the County feels that the density should not exceed the represented 16 single family homes, then there will be no objections to incorporating a "no ohana" condition in the change in zoning request.

Concerns were raised about the potential increase in vehicular traffic from the lots abutting Laulea Place. Mr. Spencer responded that access to Laulea will be controlled through deed restrictions. Mr. Suzuki responded that this prohibition can also be incorporated as a condition of zoning. Concerns were still raised that individual lot owners along Laulea can still access this roadway. Therefore, constructing a wall along Laulea Place to prohibit vehicular access was proposed. Also, the wall should continue from the Galant property to the end of the roadway to prevent vehicles from accessing the common area. Mr. Spencer indicated he had no objections to constructing a short wall on top of a berm in this area.

Liability issues were raised on the ownership of Laulea Place. Currently, Mr. Spencer owns this private roadway. It was suggested that residents along Laulea be given "first right of refusal" to purchase this roadway. Mr. Spencer indicated

that ownership will remain under his name until the subdivision is complete because only then will it become a separate parcel with a separate deed that can be transferred. At that time Mr. Spencer would gladly transfer the deed or give a first right of refusal for the acquisition of Laulea Place to the property owners on Laulea.

Mr. Spencer represented that the County may require an access for emergency vehicles from the subdivision roadway to Laulea. This access will be gated at both ends to ensure only emergency vehicles can access this area. Mr. Spencer indicated that access to the subdivision from Stable Road will not be gated.

Issue raised on preserving the existing Monkeypod trees along Hana Highway. It was indicated that they will be preserved, and that this preservation was also a concern of the Planning Department.

Due to the residential nature of Laulea Place a concern was raised that construction vehicle access should also be limited to Stable Road. No objection by Mr. Spencer.

It was suggested that another neighborhood meeting be held to follow up on issues raised at this meeting. Also to include Annie, Kurt, and Sam and others in this meeting.

Meeting ended at approximately 11:20 a.m.

henry spencer

From: "Lynn Keller" <lynn@hkadesign.com>
To: "Tammy Bexton" <bexton@hawaii.rr.com>
Cc: <jjmaui@maui.net>; <jamesbendon@aol.com>; <nelson@maui.net>; <sevsurf@maui.net>; <siracusa@aol.com>; <williams@maui.net>; <henspen@hawaii.rr.com>
Sent: Thursday, April 08, 2004 2:52 PM
Subject: Laulea Neighborhood meeting report

Thank you Henry for the prompt reply. We appreciate your clarifying these specifics. Thank you also for your verbal notice today of the next Laulea neighborhood meeting on Monday April 26. Lynn Keller

Hi Lynn and Ken-

1. I did agree to no ohana's as part of the zoning request.
2. I will not be including a commitment to a beach replenishment plan as part of my zoning request.
3. I will make the commitment to building a berm with a wall on top a part of the zoning request.
4. After the property is subdivided so that Laulea Pl. is a separate parcel I will promptly transfer an undivided interest in the deed to the property owners who abut the road or I will do whatever the majority of property owners want including a right of first refusal to acquire title at a future date.
5. I did agree to building the berm/rock wall prior to any construction commencing.
6. I did not agree to notice the next meeting two weeks in advance but I will definitely do that, probably in the next couple of days.

Thank you for the comments.

Please e-mail me or call me (280-4130) with any additional comments or questions.

Thank you,

Henry

-----Original Message-----

From: Lynn Keller [mailto:lynn@hkadesign.com]

Sent: April 8, 2004 11:21 AM

To: Tammy Bexton

Cc: jjmaui@maui.net; jamesbendon@aol.com; mcbarnet@maui.net; nelson@maui.net; sevsurf@maui.net; siracusa@aol.com; williams@maui.net; henspen@hawaii.rr.com; douggallantak@aol.com

4/28/2004

sevsurf@maui.net; siracusa@aol.com; williams@maui.net; henspen@hawaii.rr.com;
dougallantak@aol.com

Subject: Re: InformalLaulea Street Neighborhood Informational Meeting.doc

Dear Tommy and Henry:

There are a few items that we understood differently. We have marked those items with *****and underline to make it easy to see our comments. We would appreciate your review and comment, or inclusion in revised notes.

Thank you for the timely report.

Lynn Keller and Ken Horiszny

**Informal Laulea Street Neighborhood Informational Meeting
451 Laulea Street (Jim Bendon Residence)
Spreckelsville, Maui**

April 7, 2004

*******PLEASE SEE NOTES ADDED BY LYNN KELLER AND KEN
HORISZNY.**

Attendance: Henry Spencer, Applicant

Daren Suzuki, Munekiyo & Hiraga, Inc.

Mr. Spencer gave a brief overview of the project history. A colored site map consisting of proposed land use amendments was provided. Mr. Spencer and Mr. Suzuki provided overview of the project describing existing uses and proposed uses in accordance with the colored site map.

Questions were raised about the project density. Mr. Spencer responded that no ohanas will be permitted through CC & R's or deed restrictions. Also, that if the County feels that the density should not exceed the represented 16 single family homes, then there will be no objections to incorporating a "no ohana" condition in the change in zoning request.

*******It was our understanding that Henry agreed to include the no ohanas in the change in zoning request - regardless of County perspective.**

It was requested that access to the shoreline be provided from the Stable Rd. beach

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access for any sand replenishment projects in the future. Mr. Spencer responded that the access will be available.

*****Mr Spencer also said that he is working on a beach replenishment plan. It is our perspective that this beach replenishment plan should be presented to the County as part of the change in zoning request. Is Henry open to this?

Concerns were raised about the potential increase in vehicular traffic from the lots abutting Laulea Place. Mr. Spencer responded that access to Laulea will be controlled through deed restrictions. Mr. Suzuki responded that this prohibition can also be incorporated as a condition of zoning. Concerns were still raised that individual lot owners along Laulea can still access this roadway. Therefore, constructing a wall along Laulea Place to prohibit vehicular access was proposed. Also, the wall should continue from the Galant property to the end of the roadway to prevent vehicles from accessing the common area. Mr. Spencer indicated he had no objections to constructing a short wall on top of a berm in this area.

*****It is our understanding this wall will be included in plans submitted for the change in zoning request. The wall would be 3-4 foot high berm with rock wall above. There would be pathways for each property, each path not wide enough for a vehicle to pass through.

Liability issues were raised on the ownership of Laulea Place. Currently, Mr. Spencer owns this private roadway. It was suggested that residents along Laulea be given "first right of refusal" to purchase this roadway. Mr. Spencer indicated that ownership will remain under his name until the subdivision is complete because only then will it become a separate parcel with a separate deed that can be transferred. At that time Mr. Spencer would gladly transfer the deed or give a first right of refusal for the acquisition of Laulea Place to the property owners on Laulea.

*****It was brought up that most residents who would most be affected by and may want to own the Laulea roadway were not invited to the meeting including Kurt Ulmer, Louise and John Severson, Annie and Will Nelson, Grossmans.

***** Henry said that if this group wanted to discuss buying the road from him, he would sell the road for \$1.00. Henry agreed to discuss this with residents not present at the meeting.

Mr. Spencer represented that the County may require an access for emergency vehicles from the subdivision roadway to Laulea. This access will be gated at both ends to ensure only emergency vehicles can access this area. Mr. Spencer indicated that access to the subdivision from Stable Road will not be gated.

Issue raised on preserving the existing Monkeypod trees along Hana Highway. It was indicated that they will be preserved, and that this preservation was also a concern of the Planning Department.

Due to the residential nature of Laulea Place a concern was raised that construction vehicle access should also be limited to Stable Road. No objection by Mr. Spencer.
*****It was agreed that this would be controlled by Henry's building the berm/rock wall prior to the commencement of any residential construction. Henry

agreed.

It was suggested that another neighborhood meeting be held to follow up on issues raised at this meeting. Also to include Annie, Kurt, and Sam and others in this meeting.

*****Residents requested written notification of the meeting, at least two weeks in advance so that they can make plans to attend.

Meeting ended at approximately 11:20 a.m.

EXHIBIT "C"

April 12, 2004 Meeting

**NEIGHBORHOOD INFORMATIONAL MEETING
COUNTRY CLUB
SPRECKELSVILLE, MAUI**

**April 12, 2004
7:00 p.m.**

Attendance: Henry Spencer, Applicant
Daren Suzuki, Munekiyo & Hiraga, Inc.

Jack Thompson
Jane Thompson
Linda Wassen
Fiona Leigh

Mr. Spencer and Mr. Suzuki gave a brief overview of the project history and proposed project. Mr. Spencer also mentioned the concerns raised at the April 7th meeting with some of the Laulea Street residences.

It was suggested that a public informational meeting inviting the entire neighborhood may be better than several small group meetings. Mr. Spencer and Mr. Suzuki acknowledged that although there are advantages to holding large neighborhood group meetings, holding smaller group meetings may be more conducive to individual participation.

Concerns were raised if there will be guarantees that representations made by Mr. Spencer will be followed through (i.e., impacts along Laulea Street). Mr. Spencer and Mr. Suzuki discussed the approval process and offered guarantees by way of deed restrictions and conditions of zoning or SMA. Conditions could include restricting vehicular access to the subdivision along Laulea Street, and constructing a berm along Laulea Place to further ensure vehicular access is restricted

Various other issues were raised and clarified relative to the bike path dedication, subdivision requirements, airport noise aviation agreement, and the findings of the archaeological inventory survey.

spencer\spreckel\041204.rtf

**NEIGHBORHOOD INFORMATIONAL MEETING
COUNTRY CLUB
SPRECKELSVILLE, MAUI**

**April 12, 2004
7:00 p.m.**

Attendance: Henry Spencer, Applicant
Daren Suzuki, Munekiyo & Hiraga, Inc.

Jack Thompson
Jane Thompson
Linda Wassen
Fiona Leigh

Mr. Spencer and Mr. Suzuki gave a brief overview of the project history and proposed project. Mr. Spencer also mentioned the concerns raised at the April 7th meeting with some of the Laulea Street residences.

It was suggested that a public informational meeting inviting the entire neighborhood may be better than several small group meetings. Mr. Spencer and Mr. Suzuki acknowledged that although there are advantages to holding large neighborhood group meetings, holding smaller group meetings may be more conducive to individual participation.

Concerns were raised if there will be guarantees that representations made by Mr. Spencer will be followed through (i.e., impacts along Laulea Street). Mr. Spencer and Mr. Suzuki discussed the approval process and offered guarantees by way of deed restrictions and conditions of zoning or SMA. Conditions could include restricting vehicular access to the subdivision along Laulea Street, and constructing a berm along Laulea Place to further ensure vehicular access is restricted

Various other issues were raised and clarified relative to the bike path dedication, subdivision requirements, airport noise aviation agreement, and the findings of the archaeological inventory survey.

spencer@spreckel041204.rmg

henry spencer

From: "henry spencer" <henspen@hawaii.rr.com>
To: "Thompson/Maui" <jjmaui@maui.net>
Sent: Thursday, April 08, 2004 10:08 AM
Subject: Re: presentations

Thank you.

— Original Message —

From: Thompson/Maui
To: henry spencer
Sent: Thursday, April 08, 2004 9:36 AM
Subject: Re: presentations

Henry,
I have scheduled the downstairs of the Country Club for 7:00 pm, Monday, April 12. I will invite all residents in the Country Club neighborhood - that's Nonohe, Paani and Kealakai. See you there.
jack t

— Original Message —

From: henry spencer
To: Thompson/Maui
Sent: Thursday, April 08, 2004 8:01 AM
Subject: Re: presentations

Hi Jack-
A neighborhood meeting at the Country club sometime next week would be good.
I will copy you with the e-mails that I send to the individuals on the list below.
Thank you,
Henry

— Original Message —

From: "Thompson/Maui" <jjmaui@maui.net>
To: <henspen@telus.net>
Sent: Wednesday, April 07, 2004 12:54 PM
Subject: presentations

> Henry,
> Here is the list of Association, neighborhood representatives. I
> suggest that you contact them about their interests in hosting a
> group for your presentation. I will write them and let them know
> about your plans and your search for hosts.
> I understand that you held such a meeting today and there were
> several people who should have been invited who weren't. This
> bothers me because each resident in that neighborhood deserves to
> hear your plans and question those plans. Your answer to that
> concern I expressed this morning was that anyone can call you and set
> that up. I don't see that as answering my concern. I have changed
> my mind about hosting such a group as you would wish. What I will do
> is call a neighborhood meeting and hold it at the Country Club. If

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> this doesn't work for you, please let me know and I won't call the
> meeting.
>
> Jeanne Riley <riley@aloha.net> Claudia Welch <cmarvilene@aol.com>
> Jill Monroe <kuleana@maui.net> John Gilmor <emryglmr@earthlink.net>
> Wendy Sayles <dano@maui.net> Patti Cadiz <hstcadiz@maui.net>
> Susan Bendon <jamesbendon@aol.com>
>

4/28/2004

EXHIBIT "D"

April 14, 2004 Meeting

**NEIGHBORHOOD INFORMATIONAL MEETING
COUNTRY CLUB
SPRECKELSVILLE, MAUI**

April 14, 2004

Attendance: Henry Spencer, Applicant
Doug McFetridge
Lisa McFetridge
Martin Lenny
Paula Lenny
Jill Monroe

Summary: Presentation made by Henry Spencer that covered existing circumstances, development plan, permitting process and community issues. Jill Monroe expressed concern regarding car access onto Laulea Place. Other comments were generally positive regarding density, the conservation land and maintaining public beach access.

spencer\spreckel\041404.mtg

Tammy Bexton

From: Tammy Bexton [bexton@hawaii.rr.com]
Sent: April 8, 2004 12:19 PM
To: 'kuleana@maui.net'
Cc: 'jjmaui@maui.net'
Subject: sprecks meeting

Hi Jill-

As the community representative for Cane Place, Makahiki Street and Sugar Cove would you be interested in helping me to coordinate an informational meeting regarding the proposed subdivision on Wednesday April 14th on the Lanai at the Country Club at 7pm? What I would need would be for you to e-mail everyone in your neighborhood with the date and time of the meeting. Jack Thompson has scheduled a meeting on Monday April 12th at the Country Club for Nonohe, Paani and Kealakai and I have tentatively reserved the lanai at the Country Club on Thursday April 15th at 7 pm for Waipua and Ulupua. I have tentatively scheduled a meeting for Stable Rd. on Sunday April 18th at 9 am at Honeybun's on Stable Rd.. You can e-mail me or call me on my cell 280-4130.

Thank you,
Henry Spencer

28/04/2004

Tammy Bexton

From: Cyrus Monroe [kuleana@maui.net]
Sent: April 8, 2004 1:47 PM
To: Tammy Bexton
Subject: Re: sprecks meeting

Hi Henry,

I will inform the Cane Pl., Makahiki St. and Sugar Cove residents concerning the April 14th meeting at the Country Club. Please go ahead and reserve the club and I will inform those in my area. See you then.

Aloha, JILL

Tammy Bexton

From: Tammy Bexton [bexton@hawaii.rr.com]
Sent: April 8, 2004 3:57 PM
To: 'Cyrus Monroe'
Subject: RE: sprecks meeting

Hi Jill=
Thank you.
Henry

-----Original Message-----

From: Cyrus Monroe [mailto:kuleana@maui.net]
Sent: April 8, 2004 1:47 PM
To: Tammy Bexton
Subject: Re: sprecks meeting

Hi Henry,

I will inform the Cane Pl., Makahiki St. and Sugar Cove residents concerning the April 14th meeting at the Country Club. Please go ahead and reserve the club and I will inform those in my area. See you then.

Aloha, JILL

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EXHIBIT "E"

April 15, 2004 Meeting

henry spencer

From: "henry spencer" <henspen@hawaii.rr.com>
To: <hstcadiz@maui.net>
Cc: <dano@maui.net>; "Jack Thompson" <jjmaui@maui.net>
Sent: Thursday, April 08, 2004 1:13 PM
Subject: sprecks meeting

Hi Patti and Wendy-

I have tentatively scheduled an informational meeting for the old stable subdivision at the Country club on Thursday April 15th at 7 pm. As the representatives for your community (Waipua and Ulupua) would you and Wendy please e-mail or phone your community residents the date, place and time for the meeting. If this is a problem would you please provide the e-mail addresses to me so that I can inform them. Any questions call me (280-4130) or e-mail me.
Thank you,
Henry

4/28/2004

henry spencer

From: "Cadiz" <info@hstwindsurfing.com>
To: "henry spencer" <henspen@hawaii.rr.com>
Sent: Wednesday, April 28, 2004 5:51 PM
Subject: Re: sprecks meeting

Hi Henry,

I just forwarded your email to the 17 or so addresses that I have for SprecksV (Ulupua and Waipua.) Here is a complete copy of the announcement as it was printed. Alan rode his bike around and passed them out to everyone that didn't get an email.

Henry Spencer will host an informational meeting regarding his Old Stable subdivision plans. The meeting will be at the Maui Country Club on Thursday April 15th at 7 p.m.

His email address is: henspen@hawaii.rr.com if you cannot attend and have questions or concerns.

Also, I would like to invite you to provide your email address for notification of matters like this that may interest residents our Spreckelsville V community. If you would like to be included, please email to me: patti@hstwindsurfing.com

Don't forget: Sprecks V Homeowners Association Annual Meeting May 6, at 6 p.m. also at the CC.

Hope this helps. I saw another BAD accident at stable road today. I hope no one was seriously hurt. Looked like newer cars, so hopefully airbags deployed and all ok. Several cars - at least two looked totaled.

Aloha and let me know if there is anything else we can do to help.

-Patti

HST, Inc.
P.O. Box 791199, Paia, HI 96779
1-800-968-5423 (1-800-YOU-JIBE)
from outside the US: 808 871-5423
Fax 808-877-3061
www.hstwindsurfing.com

— Original Message —

From: [henry spencer](mailto:henry_spencer)
To: hstcadiz@maui.net
Sent: Wednesday, April 28, 2004 4:15 PM
Subject: Fw: sprecks meeting

Hi Patti-

As part of my environmental assessment I am documenting the meetings that I held in the different neighborhoods of Spreckelsville. With that in mind would you mind forwarding to me a copy of the e-mail that

4/29/2004

EXHIBIT "F"

April 18, 2004 Meeting

**NEIGHBORHOOD INFORMATIONAL MEETING
COUNTRY CLUB
SPRECKELSVILLE, MAUI**

April 18, 2004

Attendance:

Henry Spencer
Eric Pung
Kim Pung
Jim Riley
Jeanne Riley
Honeybun Haines
Jim Haines
Glen Beadles
Renata Foster-Au
Bob Perlman
Ann Perlman

Meeting Summary:

Presentation made by Henry Spencer that covered existing circumstances, development plan, permitting process and community issues. Security for the general neighborhood and the opportunity for Stable Road residents to access my waterline were concerns that were expressed . Traffic impact, density and continued public beach access were received with positive comments from the group.

spencer/sprecke/041804.mtg

henry spencer

From: "henry spencer" <henspen@hawaii.rr.com>
To: "jeanne riley" <riley@aloha.net>
Cc: "Jack Thompson" <jjmaui@maui.net>
Sent: Thursday, April 08, 2004 12:58 PM
Subject: sprecks meeting

Hi Jeanne-

As you and I discussed, I have scheduled an informational meeting for the subdivision on Sunday April 18th at 9 am at Honeybun's house on Stable Rd.. Jack Thompson has recommended to me that I coordinate this meeting with you since you are the community representative and you have the e-mail addresses of the residents of Stable Road. Would you mind e-mailing everyone on Stable Rd. with the date, time and place for the meeting?

Thank you,
Henry

4/28/2004

henry spencer

From: "jeanne riley" <riley@aloha.net>
To: <hot@hotsailsmaui.com>; <glenn@onloc.com>; <dcrist@maui.net>; <renata1@hawaii.rr.com>;
<pkm@maui.net>; <elma@hawaii.rr.com>; <info@mauisurfandlurf.com>;
<rob@robmeriman.com>; <abmichel@msn.com>; <ainalani@maui.net>; <NPu8@aol.com>;
<Mauimaude@aol.com>; <beirne@chisco.com>; <gregg@chisco.com>;
<ray@friendlybeach.com>; <henspen@telus.net>
Cc: <jjmaui@maui.net>
Sent: Thursday, April 08, 2004 3:34 PM
Subject: Spreckelsville Stable Road Meeting

Aloha Stable Road Residents and Owners

**Sunday April 18th 9:00 am at Hale Ola
(Honeybun and Jimmy Hayne's house)**

**Informational meeting on the
Stable Road subdivision
(up by the old stable)**

Each area of Spreckelsville is having their own Informational meeting. Some meetings have already been held. Please forward this to any Stable Road resident that is not on my list or anyone on Stable Road with a new e-mail address. I'll bring coffee! See you there.

4/28/2004

henry spencer

From: "jeanne riley" <riley@aloha.net>
To: <hot@hotsailsmaui.com>; <glenn@onloc.com>; <dcrist@maui.net>; <renata1@hawaii.rr.com>;
<pkm@maui.net>; <elma@hawaii.rr.com>; <info@mauisurfandturf.com>;
<rob@robmeriman.com>; <abmichel@msn.com>; <ainalani@maui.net>; <NPu8@aol.com>;
<MauiMaude@aol.com>; <beirne@chisco.com>; <gregg@chisco.com>;
<ray@friendlybeach.com>; <henspen@telus.net>
Sent: Sunday, April 18, 2004 8:18 AM
Subject: Today-Sunday-9:00

Aloha Stable Road Residents and Owners

**Today
coffee and snacks**

**Sunday April 18th 9:00 am at Hale Ola
(Honeybun and Jimmy Hayne's house)**

**Informational meeting on the
Stable Road subdivision
(up by the old stable)
by Henry Spencer and**

Daren Suzuki (Firm of Munekiyo and Hiraga)

4/28/2004

Exhibit "G"

April 22, 2004 Meeting

**SIERRA CLUB INFORMATIONAL MEETING
KAUNOA SENIOR CENTER
SPRECKELSVILLE, MAUI**

April 22, 2004

Attendance: Henry Spencer, Applicant
Daren Suzuki, Munekiyo & Hiraga, Inc.

Sierra Club Members:
Lance Holter
Dan Grantham
Dot Buck
David M. Johnston
Ann Fielding

Summary: Presentation made by Henry Spencer and Daren Suzuki covering existing circumstances, development plan, permitting process and community issues.

Comments were raised and issues clarified relative to drainage plan, runoff into the ocean, use of pesticides and fertilizers, and wetland areas. Other comments made were generally positive relative to project design, density, the open space/conservation land dedication, coastal dune preservation, and maintaining public beach access.

A site visit along the shoreline and the property followed the meeting.

Exhibit "H"

April 26, 2004 Meeting

**Neighborhood Informational Meeting
Country Club
Spreckelsville, Maui**

April 26, 2004

**Attendance: Henry Spencer, Applicant
Daren Suzuki, Munekiyo & Hiraga, Inc.**

Barbara Woods	461 Laulea Pl
Sheri Thorson	207 Kealakai Pl
Louise Severson	475 Laulea Pl
Kurt Ulmer	473 Laulea Pl.
Annie Nelson	

Approx 7:15 p.m.

Mr. Spencer gave a brief overview of the project. A colored site map consisting of proposed land use amendments was provided. Mr. Spencer and Mr. Suzuki provided overview of the project describing existing uses and proposed uses in accordance with the colored site map.

Impacts on traffic accessing Laulea Place were brought up by neighbors. Mr. Spencer represented that a berm and low wall will be constructed along the boundaries of the lots abutting Laulea Place. This berm and low wall will permit pedestrian, bicycle, and perhaps golf carts to access Laulea Place, but no automobile vehicle access. To ensure vehicular access is prohibited throughout the life of the project, Mr. Spencer represented that such access will be prohibited through the CC&R's and also through conditions imposed by the county as part of conditional zoning and sma permit.

The neighbors raised credibility issues of Mr. Spencer as to whether these representations will be followed through. Neighbors also mentioned that the County is too busy to enforce applicable laws and conditions of permits/zoning. Concerns over parking on Laulea to access the abutting lots were raised.

Concerns were raised that 16 lots is too dense. 16 additional homes will cause major impacts to the existing neighborhood in regards to traffic and beach usage. Potential privacy and trespassing issues were also raised as a result of the project. The need for a traffic light at the intersection of Stable Road and Hana Highway was mentioned as a result of this project. Mr. Spencer and Mr. Suzuki responded that no ohanas will be permitted through CC&R's or deed restrictions and conditions of zoning or SMA. The zoning request essentially down zones the property from R-3 Residential (10,000 sf) to RU-0.5 (1/2 acre). Also, the down zoning from R-3 to OS-2 in the conservation dedication area would ensure no

further development can take place in these areas. Mr. Spencer gave a summary of the findings of the Traffic Impact Analysis Report.

As an alternative, neighbors recommended subdividing property into perhaps 4 lots. This would make for a nicer less dense project and would be more desirable for people to live. Another alternative recommended is for the applicant to sell the entire parcel to a "hui" which would preserve the land from future development. Another alternative mentioned was to only develop the two oceanfront parcels and leave the rest of the property alone.

Neighbors were concerned how Laulea Place was sold by A&B without notification to the abutting land owners. Mr. Spencer responded that he was willing to sell Laulea Street for \$1.00 to all abutting landowners. Neighbors still shared concerns over the sale of Laulea.

Neighbors concerned that single family homes will be developed for transient rental accommodations. Made reference to a lot along Alakapa that rents out to several short-term renters and impacts on street parking. Mr. Spencer represented that under existing county law, transient accommodations are not permitted. The neighbors didn't feel that this response was a reality as there are transient rentals all over the place. They felt that county enforcement was lacking.

Concerns were raised on how all neighbors were notified of these neighborhood meetings and why not everyone invited. Mr. Spencer explained his notification procedures. Concerns still expressed that not everyone was invited.

Mr. Suzuki explained the process of the EA, Community Plan Amendment, Change in Zoning and SMA requests. Notification, public hearing, and public meetings for all planning commission and council actions were mentioned. It was recommended that neighbors read the Draft EA. Comments can be provided at public meetings. When the EA is prepared and submitted to Planning, interested neighbors will be notified via email.

Meeting ended at approximately 8:35 p.m.

Tammy Bexton

From: Tammy Bexton [bexton@hawaii.rr.com]

Sent: April 9, 2004 9:04 AM

To: 'lynn@hkadesign.com'

Cc: 'Ken@hkadesign.com'; 'jjmaui@maui.net'; 'jamesbendon@aol.com'; 'amcbsnr@cs.com'; 'mcbarnet@maui.net'; 'dougallantak@aol.com'; 'pegarini2@aol.com'; 'Nelson@maui.net'; 'sevsurf@maui.net'; 'siracusa@aol.com'; 'TDW@mrwlaw.com'; 'cmarvilene@aol.com'; 'williams@maui.net'; 'williamsb007@hawaii.rr.com'; 'henspen@hawaii.rr.com'

Subject: RE:Laulea Street Neighborhood Informational Meeting

There will be an informational meeting regarding the old stable development for everyone who lives on Laulea Place on Monday April 26th at 7 pm at the country club.
Please pass this information on to anyone you might talk to that is residing on Laulea that is not on the e-mail list.

Thank you,
Henry

28/04/2004

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. George Young, P.E.
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. Chiyome L. Fukino, M.D., Director
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801
5. Peter T. Young, Chairperson
State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809
6. P. Holly McEldowney, Administrator
State of Hawaii
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaii 96707
7. Fred Cajigal, Maui District Engineer
State of Hawaii
Department of Transportation
Highways Division
650 Palapala Drive
Kahului, Hawaii 96732
8. Clyde Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813
9. Carl Kaupololo, Chief
County of Maui
Department of Fire Control
200 Dairy Road
Kahului, Hawaii 96732
10. Alice Lee, Director
Department of Housing and Human Concerns
200 South High Street
Wailuku, Hawaii 96793
11. Michael W. Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

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12. Glenn Correa, Director
County of Maui
**Department of Parks and
Recreation**
1580 C. Kaahumanu Avenue
Wailuku, Hawaii 96793
 13. Tom Phillips, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793
 14. Gilbert Coloma-Agaran, Director
County of Maui
**Department of Public Works
and Waste Management**
200 South High Street
Wailuku, Hawaii 96793
 15. George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793
 16. Paia Main Street Association
P.O. Box 995
Paia, Hawaii 96779-0995
 17. Jimmy Lawrence
Kahului Town Association
117 West Papa Avenue
Kahului, Hawaii 96732
 18. Maui Electric Company, Ltd.
P.O. Box 398
Kahului, Hawaii 96732
 19. Jack Thompson, President
**Spreckelsville Community
Association**
204 Kealakai Place
Paia, Hawaii 96779

FEB 25 2004



REPLY TO
ATTENTION OF

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

February 23, 2004

Regulatory Branch

Mr. Daren Suzuki
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Suzuki:

This letter is written in regards to our letter dated February 11, 2004 commenting on the 16-Lot Subdivision on a parcel identified as TMK: 3-8-01:03, 3-8-02:09 and 10 located in Spreckelsville, Maui. Based on new information received, we would like to rescind our letter. It is my understanding that the Draft Environmental Assessment (EA) is being prepared and a final determination regarding waters of the U.S., to include wetlands will be made after our office has had the opportunity to review the draft EA. When the draft EA is available for distribution, please provide our office with a copy.

In future correspondence with our office, please correct our mailing address by replacing "Operations Division" with "Regulatory Branch".

Should you have questions, you may contact Ms. Lolly Silva of my staff at (808) 438-7023 or by fax at (808) 438-4060. Please reference file number 200400064 in all future correspondence with our office regarding this project.

Sincerely,

A handwritten signature in black ink, appearing to read "George P. Young".

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

FEB 12 2004



REPLY TO
ATTENTION OF

Regulatory Branch

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

February 11, 2004

Mr. Daren Suzuki, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Suzuki:

This letter responds to your request for comments on the Environmental Assessment Preparation Notice for a 16-Lot Subdivision at Spreckelsville, Maui, dated February 9, 2004. Based on the information you provided and a site visit by a member of my staff on November 5, 2003, I have determined there are no waters of the U.S., including wetlands at the site and therefore a Department of the Army (DA) permit will not be required for this project. This does not relieve the applicant from obtaining other authorizations from the State of Hawaii or the County of Maui.

If you have any questions concerning this determination, please contact Mr. William Lennan of my staff at 808-438-6986 or FAX 808-438-4060, and reference File No. 200400064.

Sincerely,

A handwritten signature in cursive script, appearing to read "George P. Young".

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



June 10, 2004

George Young, P.E.
Chief, Regulatory Branch
U.S. Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Fort Shafter, Hawaii 96858-5440

SUBJECT: Pre-Consultation for the Preparation of a Draft Environmental Assessment (DEA) for the Proposed 16-Lot Subdivision and Related Improvements, TMK 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Young:

This letter responds to your letter dated February 23, 2004, providing comment for the preparation of a Draft Environmental Assessment (DEA) for the proposed 16-lot subdivision and related improvements.

Please be advised that a wetland delineation study will be carried out for the subject property and the results will be included in the DEA. As requested, the DEA will be transmitted to you for review a comment when completed.

Should you have any questions, please call me at 244-2015.

Very truly yours,

Daren Suzuki, Staff Planner

DS:yp
cc: Henry Spencer
spencer@spreckel.com

LINDA LINGLE
GOVERNOR OF HAWAII



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

MAR 15 2004

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EPO-04-027a

March 11, 2004

Mr. Daren Suzuki, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Suzuki:

SUBJECT: Early Consultation Request for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements, TMK: 3-8-001:003, 3-8-002:009, and 3-8-002:010, Spreckelsville, Maui

Thank you for allowing us to review and comment on the subject document. We have the following comments to offer:

Wastewater Branch

We have reviewed the subject document, which requests an early consultation for the preparation of an environmental assessment (EA) for a 16-lot subdivision and related improvements. The proposed action is a 16-lot residential subdivision and related improvements on approximately 21 acres where the minimum lot size will be 0.5 acre.

The subject project is located in the Critical Wastewater Disposal Area (CWDA) as determined by the Maui County Wastewater Advisory Committee where no new cesspools will be allowed. For the EA, we will review wastewater treatment and disposal plans – whether the intent is to connect to the County fields. In a related matter, we will also be checking on the means of potable water being supplied to the project as it relates to wastewater disposal.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at 586-4294.

Sincerely,

A handwritten signature in cursive script that reads "June F. Harrigan-Lum".

JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

c: WWB

MAR 15 2004

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EPO-04-027

March 11, 2004

Mr. Daren Suzuki, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Suzuki:

SUBJECT: Early Consultation Request for the Preparation of an Environmental
Assessment for a 16-Lot Subdivision and Related Improvements,
TMK: 3-8-001:003, 3-8-002:009, and 3-8-002:010, Spreckelsville, Maui

Thank you for allowing us to review and comment on the subject document. We have
the attached standard comments to offer. If you have any questions about the attached
standard comments please contact Ryan Davenport at 586-4346.

Sincerely,

A handwritten signature in cursive script that reads "June F. Harrigan-Lum".

JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

Enclosures

c: CAB
EPO
SHWB
NRAIQ
CWB
WWB
HEER

Standard Comments

Environmental Planning Office Dated 3/2/04

The Environmental Planning Office (EPO) is responsible for several surface water quality management programs mandated by the federal Clean Water Act or dictated by State policy . (<http://www.state.hi.us/doh/eh/epo/wqm/wqm.htm>). Among these responsibilities, EPO:

- maintains the *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)* (<http://www.state.hi.us/doh/eh/epo/wqm/303dpcfinal.pdf>);
- develops and establishes Total Maximum Daily Loads (TMDLs) for listed waters (suggesting how much existing pollutant loads should be reduced in order to attain water quality standards, please see <http://www.epa.gov/owow/tmdl/intro.html>);
- writes TMDL Implementation Plans describing how suggested pollutant load reductions can be achieved; and
- conducts assessments of stream habitat quality and biological integrity.

To facilitate TMDL development and planning, and to assist our assessment of the potential impact of proposed actions upon water quality, pollutant loading, and biological resources in receiving waters, we suggest that environmental review documents, permit applications, and related submittals include the following standard information and analyses:

Waterbody type and class

1. Identify the waterbody type and class, as defined in Hawaii Administrative Rules Chapter 11-54 (<http://www.state.hi.us/doh/rules/11-54.pdf>), of all potentially affected water bodies¹.

Existing water quality management actions

2. Identify any existing National Pollutant Discharge Elimination System (NPDES) permits and related connection permits (issued by permittees) that will govern the management of water that runs off or is discharged from the proposed project site or facility. Please include NPDES and other permit numbers; names of permittees, permitted facilities, and receiving waters (including waterbody type and class as in 1. above); diagrams showing drainage/discharge pathways and outfall locations; and note any permit conditions that may specifically apply to the proposed project.
3. Identify any planning documents, groups, and projects that include specific prescriptions for water quality management at the proposed project site and in the

potentially affected waterbodies. Please note those prescriptions that may specifically apply to the proposed project.

Pending water quality management actions

4. Identify all potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)* including the listed waterbody, geographic scope of listing, and pollutant(s) (See Table 7 at <http://www.state.hi.us/doh/eh/epo/wqm/303dpcfinal.pdf>).
5. If the proposed project involves potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)*, identify and quantify expected changes in the following site and watershed conditions and characteristics:
 - surface permeability
 - hydrologic response of surface (timing, magnitude, and pathways)
 - receiving water hydrology
 - runoff and discharge constituents
 - pollutant concentrations and loads in receiving waters
 - aquatic habitat quality and the integrity of aquatic biota

Where TMDLs are already established they include pollutant load allocations for the surrounding lands and point source discharges. In these cases, we suggest that the submittal specify how the proposed project would contribute to achieving the applicable load reductions.

Where TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads. This is generally accomplished through the proper application of suitable best management practices in all phases of the project and adherence to any applicable ordinances, standards, and permit conditions. In these cases we suggest that the submittal specify how the proposed project would contribute to reducing the polluted discharge and runoff entering the receiving waters, including plans for additional pollutant load reduction practices in future management of the surrounding lands and drainage/discharge systems.

Proposed Action and Alternatives Considered

We suggest that each submittal identify and analyze potential project impacts at a watershed scale by considering consider the potential contribution of the proposed project to cumulative, multi-project watershed effects on hydrology, water quality, and aquatic and riparian ecosystems.

We also suggest that each submittal broadly evaluate project alternatives by identifying more than one engineering solution for proposed projects. In particular, we suggest the consideration of "alternative," "soft," and "green" engineering solutions for channel

modifications that would provide a more environmentally friendly and aesthetically pleasing channel environment and minimize the destruction of natural landscapes.

If you have any questions about these comments or EPO programs, please contact Ryan Davenport at 586-4346.

"Potentially affected waterbodies" means those in which proposed project activity would take place and any that could receive water discharged by the proposed project activity or water flowing down from the proposed project site. These waterbodies can be presented as a chain of receiving waters whose top link is at the project site upslope and whose bottom link is in the Pacific Ocean, and can be named according to conventions established by Chapter 11-54 and the *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)*. For example, a recent project proposed for Nuhelewai Stream, Oahu might potentially affect Nuhelewai Stream, Kapalama Canal, and Honolulu Harbor and Shore Areas.

[OTHER EXAMPLES OR DIAGRAM??]

Solid and Hazardous Waste Branch Dated 3/2/04

1)

The OSWM recommends the development of a solid waste management plan that encompasses all project phases including demolition, construction, and occupation/operation of the completed project.

Specific examples of elements that the plan should address include:

- The recycling of green-waste during clear and grub activities;
- Recycling construction and demolition wastes, if appropriate;
- The use of locally produced compost in landscaping;
- The use of recycled content building materials;
- The provision of recycling facilities in the design of the project.

2)

The developer shall ensure that all solid waste generated during project construction is directed to a Department of Health permitted solid waste disposal or recycling facility.

3)

The developer should consider providing space in the development for recycling activities. The provision of space for recycling bins for paper, glass, and food/wet waste would help to encourage the recycling of solid waste(s) generated by building occupants.

4)

The discussion of solid waste issues contained in the document is restricted to activities within the completed project. The OSWM recommends the development of a solid waste management plan that encompasses all project phases, from construction (and or demolition) to occupation of the project.

Specific examples of plan elements include: the recycling of green-waste during clear and grub activities; maximizing the recycling of construction and demolition wastes; the use of locally produced compost in the landscaping of the project; and the provision of recycling facilities in the design of the project.

5)

Hawaii Revised Statutes Chapter 103D-407 stipulates that all highway and road construction and improvement projects funded by the State or a county or roadways that are to be accepted by the State or a county as public roads shall utilize a minimum of ten per cent crushed glass aggregate as specified by the department of transportation in all base-course (treated or untreated) and sub-base when the glass is available to the quarry or contractor at a price no greater than that of the equivalent aggregate.

If you have any questions, please contact the Solid and Hazardous Waste Branch at (808) 586-4240.

Noise, Radiation & Indoor Air Quality Branch Dated 3/2/04

"Project activities shall comply with the Administrative Rules of the Department of Health:

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

Should there be any questions, please contact Russell S. Takata, Environmental Health Program Manager, Noise, Radiation and Indoor Air Quality Branch, at 586-4701."

Clean Water Branch Dated 3/2/04

1. The Army Corps of Engineers should be contacted at (808) 438-9258 to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...."
2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:
 - a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).

- b. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.**
- c. Discharges of treated effluent from leaking underground storage tank remedial activities.
- d. Discharges of once through cooling water less than one (1) million gallons per day.
- e. Discharges of hydrotesting water.
- f. Discharges of construction dewatering effluent.
- g. Discharges of treated effluent from petroleum bulk stations and terminals.
- h. Discharges of treated effluent from well drilling activities.
- i. Discharges of treated effluent from recycled water distribution systems.
- j. Discharges of storm water from a small municipal separate storm sewer system.
- k. Discharges of circulation water from decorative ponds or tanks.

The CWB requires that a Notice of Intent (NOI) to be covered by a NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at <http://www.state.hi.us/health/eh/cwb/forms/genl-index.html>.

- 3. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. NPDES general permits do not cover discharges into Class 1 or Class AA receiving waters). An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at <http://www.state.hi.us/health/eh/cwb/forms/indiv-index.html>.
- 4. Hawaii Administrative Rules, Section 11-55-38, also requires the owner to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. Please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

If you have any questions, please contact the CWB at 586-4309.

Waste Water Branch Dated 3/2/04

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems". We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at 586-4294.

Clean Air Branch Dated 3/2/04

Construction/Demolition Involving Asbestos:

Since the proposed project would entail renovation/demolition activities which may involve asbestos, the applicant should contact the Asbestos Abatement Office in the Noise, Radiation and Indoor Air Quality Branch at 586-5800.

Control of Fugitive Dust:

A significant potential for fugitive dust emissions exists during all phases of construction. Proposed construction activities will occur in proximity to **existing residences, businesses, public areas and thoroughfares**, thereby exacerbating potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. Implementation of adequate dust control measures during all phases of development and construction activities is warranted.

Construction activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust.

The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following:

- a) Plan the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
- b) Provide an adequate water source at the site prior to start-up of construction activities;
- c) Landscape and provide rapid covering of bare areas, including slopes, starting from the initial grading phase;
- d) Minimize dust from shoulders and access roads;
- e) Provide adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- f) Control dust from debris being hauled away from the project site.

Hazard Evaluation and Emergency Response Office(HEER) Dated 3/2/04

1. A phase I Environmental Site Assessment (ESA) should be conducted for developments or redevelopments. If the investigation shows that a release of petroleum, hazardous substance, pollutants or contaminants occurred at the site, the site should be properly characterized through an approved Hawaii State Department of Health (DOH)/Hazard Evaluation and Emergency Response Office (HEER).soil and or groundwater sampling plan. If the site is found to be contaminated, then all removal and remedial actions to clean up hazardous substance or oil releases by past and present owners/tenants must comply with chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.
2. All lands formerly in the production of sugarcane should be characterized for arsenic contamination, If arsenic is detected above the US EPA Region (preliminary remediation goal (PRG) for non-cancer effects, then a removal and or remedial plan must be submitted to the Hazard Evaluation and Emergency Response (HEER) Office of the State Department of Health for approval. The plan must comply with Chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.
3. If the land has a history of previous releases of petroleum, hazardous substances, pollutants, or contaminants, we recommend that the applicant request a "no further action" (NFA) letter from the Hawaii State Department of Health (DOH)/ Hazard Evaluation and Emergency Response (HEER) Office prior to the approval of the land use change or permit approval.

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

MAR 10 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAH DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

Ref: OCCL: DE

March 8, 2004

Darren Suzuki
Munekiyo & Hiraga, Inc
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Suzuki,

Subject: Early Consultation for Draft Environmental Assessment 16-lot Subdivision Project. Spreckelsville, Maui.

The State of Hawaii Department of Land and Natural Resources (DLNR) Office of Conservation and Coastal Lands (OCCL) has received your request for early consultation on a Draft Environmental Assessment (DEA) for a 16-lot subdivision project at Spreckelsville, Maui. Although the Department asserts no regulatory jurisdiction in this county land use matter the Department offers the following comments and suggestions in the hopes that the state's beaches are protected for present and future generations:

1. It is understood that two ocean-front parcels (3-8-002:009 & :010) with an area of approximately 3 acres, will be donated to the Maui Coastal Land Trust or other non-profit organization. Will these parcels remain undeveloped in perpetuity?
2. Given the complex nature of coastal processes in this area, it is advisable that potential impacts to the coastal processes be addressed and that erosion mitigation plans be discussed. The Department would like to see discussion of the erosion hazards and what erosion control measures could be implemented to mitigate erosion, such as appropriate shoreline setbacks or other proactive hazard avoidance measures. Public access to the shoreline should be addressed as well.
3. The coastal parcels contain fast migrating coastal dunes that play an important part on the local coastal processes. A coastal management plan should be developed for these dunes with some discussion of management of the dunes and coastal system and what responsibilities the non-profit group will play in the

management of the area. There is a good selection of coastal management guidelines specific to Maui that can be applied to the DEA. Contact Zoe Norcross, Coastal Processes Extension Agent for the University of Hawaii, Sea Grant, for more information on these references (984-3335).

4. Erosion maps for the Spreckelsville area indicate the average erosion since 1912 to be approximately 1.5 feet per year. Potential erosion hazard and coastal process interference in relation to historical shoreline trends and dominant sediment transport should be discussed in the DEA.

Thank you for the opportunity to comment on the proposed project. Should you have any questions, please contact Sam Lemmo of the Office of Conservation and Coastal Lands at 587-0381 or Dolan Eversole of the University of Hawaii Sea Grant Program 587-0439.

Aloha,

Sam Lemmo, Administrator
Office of Conservation and Coastal Lands

CC: Maui District Land Office
County of Maui, Planning Department
Zoe Norcross University of Hawaii, Sea Grant Maui Community College 310 Kaahumanu Ave
Kahului, HI 96732



June 14, 2004

Sam Lemmo, Administrator
Department of Land and Natural Resources
Office of Conservation and
Coastal Lands
P.O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Pre-Consultation for the Preparation of a Draft Environmental Assessment (DEA) for the Proposed 16-Lot Subdivision and Related Improvements, TMK 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Lemmo:

This letter responds to your letter dated March 8, 2004, providing comments for the preparation of a Draft Environmental Assessment (DEA) for the proposed 16-lot subdivision and related improvements.

1. The two (2) oceanfront parcels to be either donated to a nonprofit organization or dedicated as a conservation easement are proposed to be county zoned OS-2, Open Space district. Areas zoned OS-2 are intended to primarily recognize scenic and recreational resources; hazardous areas; drainage ways; and open space greenbelts that provide visual relief from building mass and buffer sensitive ecological resources or agricultural activities from urbanized areas. If the zoning change to OS-2, Open Space is approved, then the two (2) ocean front parcels will remain undeveloped in perpetuity.
2. Coastal processes will be discussed in the DEA. It is noted that the 16-lot development site is located beyond the coastal erosion hazard zone as defined by the County shoreline setback rules and outside of the shoreline setback area. In addition, the development site is located mauka of developed single-family uses along the shoreline, as well as located mauka of the V-23 tsunami flood zone line. Public shoreline access within the area proposed to be county zoned OS-2 will be maintained and addressed in DEA.

environment
planning

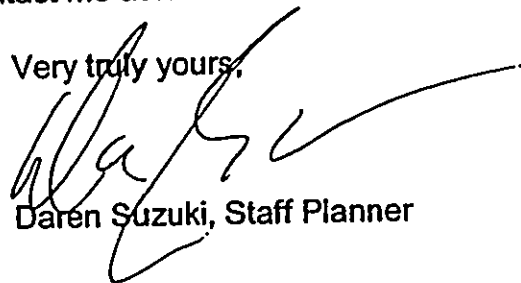
Sam Lemmo, Administrator
June 14, 2004
Page 2

3. Ms. Zoe Norcross, Coastal Processes Extension Agent, has been contacted to provide recommendations on coastal dune restoration/preservation. Findings and recommendations from her review will be incorporated into the DEA.
4. The DEA will reference the coastal erosion hazard study developed for the County as part of its shoreline setback rules. Again, it is noted that the 16-lot development site is located beyond the coastal erosion hazard zone as defined by the County shoreline setback rules, outside of the shoreline setback area and mauka of the V-23 tsunami flood zone line.

The DEA will be transmitted to your office for review and comment when completed.

Should you have any questions, please contact me at 244-2015.

Very truly yours,



Daren Suzuki, Staff Planner

DS:yp

cc: Henry Spencer

Zoe Norcross, Coastal Processes Extension Agent

spencer@speckle.com

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 2, 2004

LD-NAV
SPENCER16LOTSUB.RCM

Munekiyo and Hiraga, Inc.
Daren Suzuki, Planner
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Suzuki:

SUBJECT: Early Consultation, for Preparation of an Environmental Assessment
for a 16-Lot Subdivision and Related Improvements at Spreckelville,
Island of Maui, Hawaii

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

The Department of Land and Natural Resources' (DLNR) Land Division
distributed a copy of your letter (summary of the project) and site map to the
following DLNR Divisions for their review and comment:

- Division of Forestry and Wildlife
- Division of State Parks
- Division of Boating and Ocean Recreation
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land Division Maui District Land Office
- Land-Planning and Development

Enclosed please find a copy of the Commission on Water Resource
Management and Engineering Division comment.

Based on the attached responses, the Department of Land and Natural
Resources has no other comment to offer.

If you have any questions, please feel free to contact Nicholas A.
Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Dierdre S. Mamiya".

DIERDRE S. MAMIYA
Administrator

C: MDLO

MAR 04 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
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AQUATIC RESOURCES
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 18, 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

LD/NAV
MUNEKIYO/HIRAGA
SPENCER16LOTSUB.COM

Suspense Date: 2/26/04

MEMORANDUM:

TO:

- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Division of Boating and Ocean Recreation
- ✓ XXX Engineering Division
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office
- XXX Land-Planning and Development

FROM: Deirdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements at Spreckelsville, Maui, Hawaii
Consultant: Munekiyo and Hiraga, Inc.

Please review the attached letter (project description) dated February 9, 2004, pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

Comments attached.

Division Engineering

Signed: _____

Date: FEB 24 2004

Title: CHIEF ENGINEER

DATE: 18 FEB 2004 10:07 AM

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LA/NAV

Ref.: MUNEKIYO/HIRANO SPENCER 16 LOTSUB 2019

COMMENTS

- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zones C, A4 and V23.
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

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

- () Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
 - () Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
 - Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
 - () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- () The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
 - () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.
 - () Additional Comments: _____
 - () Other: _____

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed: Eric T. Hirano
For ERIC T. HIRANO, CHIEF ENGINEER
Date: 2/24/09

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



2004 FEB 25 P 2:05 4 FEB 24 AM 11:27

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809



PETER Y. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

February 18, 2004

LD/NAV
MUNEKIYO/HIRAGA
SPENCER16LOTSUB.COM

Suspense Date 2/26/04

MEMORANDUM:

TO:

- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Division of Boating and Ocean Recreation
- XXX Engineering Division
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office
- XXX Land-Planning and Development

FROM: Deirdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements at Spreckelsville, Maui, Hawaii
Consultant: Munekiyo and Hiraga, Inc.

Please review the attached letter (project description) dated February 9, 2004, pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division DOBOR

Signed: [Signature]

Date: 2/25/04

Title: Maui Dist Mgr

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER



2004 FEB 25 A 9:19
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

February 18, 2004

LD/NAV
MUNEKIYO/HIRAGA
SPENCER16LOTSUB.COM

Suspense Date: 2/26/04

MEMORANDUM:

TO:

- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Division of Boating and Ocean Recreation
- XXX Engineering Division
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office
- XXX Land-Planning and Development

FROM:

Deirdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements at Spreckelsville, Maui, Hawaii
Consultant: Munekiyo and Hiraga, Inc.

Please review the attached letter (project description) dated February 9, 2004, pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached

Division _____

Signed:

Date: FEB 19 2004

Title: **MICHAEL G. BUCK, ADMINISTRATOR**
DIVISION OF FORESTRY AND WILDLIFE

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER



4 FEB 24 AM 11:27
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
DEPT. OF LAND & NAT. RESOUR.
POST OFFICE BOX 621 REC-MA
HONOLULU, HAWAII 96809

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

February 18, 2004

LD/NAV
MUNEKIYO/HIRAGA
SPENCER16LOTSUB.COM

Suspense Date: 2/26/04

MEMORANDUM:

TO:

- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- ✓ XXX Division of Boating and Ocean Recreation
- XXX Engineering Division
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office
- XXX Land-Planning and Development

FROM: Deirdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements at Spreckelsville, Maui, Hawaii
Consultant: Munekiyo and Hiraga, Inc.

RECEIVED
LAND DIVISION
2004 FEB 21 A 10:00
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

Please review the attached letter (project description) dated February 9, 2004, pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division DOBOR

Signed: [Signature]

Date: 2/25/04

Title: Maui Dist Mgr

FEBRUARY 25 2004

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED



04 FEB 19 8:57

COMMISSION ON WATER
RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 18, 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

LD/NAV
MUNEKIYO/HIRAGA
SPENCER16LOTSUB.COM

Suspense Date: 2/26/04

MEMORANDUM:

TO:

- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Division of Boating and Ocean Recreation
- XXX Engineering Division
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office
- XXX Land-Planning and Development

FROM: Deirdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements at Spreckelsville, Maui, Hawaii
Consultant: Munekiyo and Hiraga, Inc.

Please review the attached letter (project description) dated February 9, 2004, pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

(✓) Comments attached.

Division _____

Signed: _____

Date: _____

Title: _____

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION

2004 FEB 26 P 3: 54

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII



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

PETER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHIYOME L. FUKINO, M.D.
STEPHANIE A. WHALEN

ERNEST Y.W. LAU
DEPUTY DIRECTOR

February 24, 2004

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Ernest Y.W. Lau, Deputy Director *EY Lau*
Commission on Water Resource Management (CWRM)

SUBJECT: Spreckelsville 16-lot Subdivision

FILE NO.: SPENCER16LOTSUB.COM

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.

- 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.
- OTHER: Water use should be estimated, and expected source identified. Potential sources of water supply for this project are limited, with many similar projects vying for new source.

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

2405

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DIVISION OF
STATE PARKS



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER



FEB 19 10 53 AM '04

2004 STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 18, 2004

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

LD/NAV
MUNEKIYO/HIRAGA
SPENCER16LOTSUB.COM

Suspense Date: 2/26/04

MEMORANDUM:

TO:

- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Division of Boating and Ocean Recreation
- XXX Engineering Division
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office
- XXX Land-Planning and Development

FROM: Deirdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements at Spreckelsville, Maui, Hawaii
Consultant: Munekiyo and Hiraga, Inc.

Please review the attached letter (project description) dated February 9, 2004, pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division State Parks

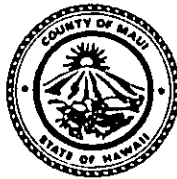
Signed: [Signature]

Date: 2/20/04

Title: State Parks Administrator

- ADMINISTRATOR
- ASST ADMIN
- DIR BR
- PLAN BR
- ASST BR
- TECHNICAL
- ADMIN ASST
- INTERP BR
- RC/POST/STAFF RM
- EVENTS & REC
- INST REPLY
- FILE
- FOLLOW UP
- INFO
- RUN COPIES
- RUSH DUE
- SEE ME
- FAX/SEND COPY TO

ALAN M. ARAKAWA
MAYOR



FEB 17 2004

CARL M. KAUPALOLO
CHIEF

NEAL A. BAL
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY

200 DAIRY ROAD
KAHULUI, MAUI, HAWAII 96732
(808) 270-7561
FAX (808) 270-7919
February 12, 2004

Mr. Darren Suzuki
Munekiyo & Hiraga, Inc
305 High St. Suite 104
Wailuku, HI 96793

Dear Mr. Suzuki,

I have reviewed a general plan for your early consultation request for a 16 lot subdivision in Spreckelsville, Maui TMK 3-8-001:003, 3-8-002:009, 3-8-002:010. We have no comments or objections at this time. We will be looking at the following in the future:

1. Roadway width
2. Fire Apparatus turnaround requirements
3. Fire hydrant locations and adequacy

This is a very short list. A complete review will be done when stamped plans are submitted with the permit application. Please feel free to contact Lt. Scott English, in writing, for future assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Valeriano F. Martin".

Valeriano F. Martin
Captain
Fire Prevention Bureau



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

FEB 24 2004

ALAN M. ARAKAWA
Mayor

ALICE L. LEE
Director

HERMAN T. ANDAYA
Deputy Director

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

February 17, 2004

Mr. Daren Suzuki, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Suzuki:

**SUBJECT: EARLY CONSULTATION REQUEST FOR THE
PREPARATION OF AN ENVIRONMENTAL
ASSESSMENT FOR A 16-LOT SUBDIVISION
AND RELATED IMPROVEMENTS,
TMK 3-8-001:003, 3-8-002:009 AND
3-8-002:010, SPRECKELSVILLE, MAUI**

The subject project does not involve a County change-in-zoning which will establish land use designations under which a residential housing project will be developed. Therefore, the provisions of the County's affordable housing policy does not apply to the project. In addition, the applicant will be donating approximately one acre to the County of Maui for the expansion of the Kaunoa Senior Center. Therefore, please be advised that we support the proposed 16-lot subdivision.

Thank you for the opportunity to comment.

Very truly yours,

ALICE L. LEE
Director

ETO:hs

c: Housing Administrator
Senior Services Administrator



June 10, 2004

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

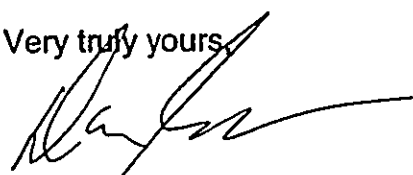
SUBJECT: Early Consultation Request for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements, TMK 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Ms. Lee:

This letter responds to your letter dated February 17, 2004. Upon consultation with the County Planning Department, a zoning change is now proposed for the project. As you are aware, the applicant will be donating to the County approximately one (1) acre next to the Kaunoa Senior Center for future expansion of the facility. Recognizing this public benefit, we hope that your department will accept this donation in lieu of providing affordable housing units.

A copy of the Draft Environmental Assessment will be circulated to your office for further review and comment.

Very truly yours,



Daren Suzuki, Staff Planner

DS:yp

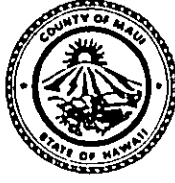
cc: Henry Spencer
spencer@spreckelshhc.res

MAR 03 2004

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

February 27, 2004

Mr. Daren Suzuki
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Suzuki:

RE: Pre-Consultation Comments for the Preparation of a Draft Environmental Assessment for the Proposed 16-Lot Subdivision and Related Improvements Located at TMK 3-8-001: 003, 3-8-002: 009, and 3-8-002: 010, Sprecklesville, Island of Maui, Hawaii (LTR 2004/0537)

The Maui Planning Department (Department) received your request for the above referenced project on February 11, 2004. Based on further discussions on February 25, 2004, the Department recommends the land use designations for the proposed action as follows:

- **16-Lot Subdivision (approximate 21 acres)**

State - No Change

Community Plan - Rural and Open Space (clarify acreage for each)

County Zoning - Rural District (RU-0.5)

The purpose and intent of this district is to provide low density development preserving the rural character of the area and to serve as a transition between standard residential or other urban density development and agricultural lands. This district preserves the 0.5 acre lot size and permits one (1) single-family dwelling and one (1) ohana unit per one-half acre lot size. The Department concludes that this zoning designation would appropriately preserve the intent of the proposed action as indicated in discussions with you and your client. Although you indicate there will be no ohanas, the report should discuss the impacts of full build-out.

- **Adjacent Lot to Kaunoa Senior Center**

State - No Change
Community Plan - Public
County Zoning - Public/Quasi Public District

As indicated by you, the intent is to donate this lot to Kaunoa Senior Center for future expansion purposes. As such, the Public/Quasi Public designations would be consistent with the proposed intent. Without the re-zoning, the Center would be required to obtain Special Use Permits for expansion activities.

- **Two (2) "Common Areas" (adjacent to 16-lot Subdivision)**

State - No Change
Community Plan - No Change
County Zoning - Open Space District

Per our discussions, you indicate the intent of the two (2) areas designated as "Common Area" are to preserve potential archaeologically significant features and public access for one area and to serve as a park for the other area. The Department concludes that these proposed uses are consistent with the purpose and intent of the Open Space Zoning District and should be re-zoned as such in lieu of the present R-3, Residential District.

In addition to the content requirements listed in Section 11-200-10, HAR, the Department requests that the following items be addressed in the Draft EA (DEA):

1. The Alternatives Section of the report should address, at a minimum, the following:
 - a. The pre-consultation request indicates the zoning designation for the proposed 16-lot subdivision will remain R-3, Residential, and the minimum lot size will measure 0.5 acres. No ohanas are proposed. However, this alternative should include a discussion of the full build-out potential indicating the potential for a minimum of 32 lots, if re-subdivided, and a total of 64 dwelling units, one main and one ohana dwelling per lot.
 - b. The Zoning designation of the approximate 20 acres of land is proposed to change from R-3, Residential, to OS-2, Open Space. The Department supports this land use designation.

Mr. Daren Suzuki
February 27, 2004
Page 3

However, as you have indicated there are several locations that can potentially be characterized as environmentally sensitive areas, specifically wetlands and sand dunes. The DEA should analyze designating these environmentally sensitive areas as OS-1, Open Space, to further preserve and protect these locations.

- c. The plans indicate one access point at Stable Road. The DEA should address the construction of a second accessway for safety purposes should Stable Road be blocked. Secondary access points could be located either at Laulea Place or across the Kaunoa Senior Center to Alakapa Place.
 - d. Development potential for no changes to existing land use designations.
2. Roadway improvements along Hana Highway should be discussed with the State Department of Transportation (DOT), Honolulu and Maui offices. Please note that any improvements within the State right-of-way will trigger the Chapter 343, HRS, review process. These improvements should be included within the scope of this document unless otherwise conducted and determined exempt by DOT.
 3. Based on further discussion, you have indicated the following technical studies will be included within the DEA:
 - a. Phase I, Environmental Site Assessment (ESA)
 - b. Flora and Fauna Analysis for wetland areas
 - c. Dune Restoration Plan
 - d. Traffic Impact Assessment Report
 - e. Cultural Assessment
 - f. Archaeological Assessment
 - g. Engineering Report
 - h. Drainage Analysis and Plan
 4. Discuss potential impacts on the proposed subdivision from the Kahului Airport.
 5. Discuss methods for maintaining and formalizing public access to the shoreline.
 6. Discuss proposed landscape features, buffers, berms, streetscapes, and boundary walls for the subdivision, of particular concern is the

Mr. Daren Suzuki
February 27, 2004
Page 4

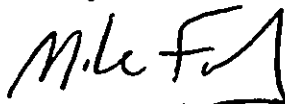
frontage along Hana Highway and the impact of urban development on the existing open space character of the area. The analysis should address significant landscaping features such as the existing Monkey Pod trees.

7. Provide the flora and fauna analysis and further consult with the U.S. Fish and Wildlife Service and Army Corp of Engineers regarding the wetland areas, sensitive habitats, etc.
8. Include pre-consultation comments from other agencies and community groups.
9. View analysis from Hana Highway to the ocean. The site layouts of future houses and other vertical structures that may impact the area.
10. Impacts of agricultural operations on future residential uses, such as prescribed burning on cane fields.
11. The Engineering Report should address alternative street and infrastructure designs that may be more in character with the Sprecklesville area. Such alternative street designs shall address, in addition to vehicular movement, both bicycle and pedestrian movements through the subdivision from the Sprecklesville area, especially access to the shoreline.

Please remit two (2) copies of the DEA upon completion. The DEA will be reviewed for consistency with the foregoing comments, Chapter 11-200, HAR, and Chapter 343, HRS, prior to transmittal.

Thank you for your cooperation. Should you need additional clarification on these comments or the DEA process, please contact Ms. Kivette A. Caigoy, Environmental Planner at 270-7735. Any questions regarding the permit applications should be referred to Mrs. Colleen Suyama, Staff Planner, at 270-7735.

Sincerely,



MICHAEL W. FOLEY
Planning Director

Mr. Daren Suzuki
February 27, 2004
Page 5

MWF:KAC:lar

c: Wayne Boteilho, Deputy Planning Director
Clayton Yoshida, AICP, Planning Program Administrator
Kivette Caigoy, Environmental Planner
Colleen Suyama, Staff Planner
General File
K:\WP_DOCS\PLANNING\EA\2004\xxx_16\LoiSubdSpencer\PreConsultationComments.wpd



June 10, 2004

Mr. Michael W. Foley, Director
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: Pre-Consultation for the Preparation of a Draft Environmental Assessment (DEA) for the Proposed 16-Lot Subdivision and Related Improvements, TMK 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Foley:

This letter responds to your letter dated February 27, 2004 providing comments for the preparation of a Draft Environmental Assessment (DEA) for the proposed 16-lot subdivision and related improvements.

The applicant, Mr. Henry Spencer, agrees that a rural community plan designation and a rural district zoning (RU-O.5) is appropriate for the 16-lot development area. As such, the DEA will reflect these land uses including a discussion on not allowing ohanas. Impacts on full build-out will be discussed in the alternative section of the DEA.

In order to assist the Department of Housing and Human Concerns in future expansion of the Kaunoa Senior Center property, the applicant is willing to redesignate the 1-acre parcel adjacent to the Kaunoa property to Public/Quasi-Public use in the community plan and P-1, Public/Quasi-Public district zoning. These actions will bring consistency with the community plan, zoning, and any future expansion activities of the Kaunoa Senior Center. Discussions on the community plan amendment and change in zoning pursuant to Maui County Code, Section 2.80A.060 and 19.510.040 will be included in the DEA.

The applicant has no objections to rezoning the two (2) common areas within the 16-lot development site to OS-2, Open Space district, consistent with the existing Open Space designation of the community plan. It is agreed that this Open Space category is consistent with the intended use of the area which is to serve as a park, provide shoreline access, and to preserve potential archaeological features. It is noted that the easement area along the western boundary of the common area is to be used as a shoreline access for residents that reside within the subdivision. The DEA will discuss public shoreline access on the adjacent

Mr. Michael W. Foley, Director
June 10, 2004
Page 2

area located to the west of the subdivision site. This area is proposed to be re-zoned to OS-2, Open Space district, consistent with the existing Open Space designation of the community plan, and will be dedicated as a conservation easement to ensure that public access is preserved.

The following responses are provided in the same order as your specific comments relative to additional content requirements of the DEA.

1.
 - a. The DEA will discuss various alternatives including various full build-out alternatives within existing zoning and various other land use districts.
 - b. The DEA will analyze designating environmentally sensitive areas including wetlands, coastal sand dunes, and significant archaeological features within the Open Space designated areas as OS-1. Included in this discussion will be the option of preserving these areas through conditional zoning within the OS-2 district.
 - c. Alternatives on secondary access to the 16-lot development site will be discussed.
 - d. Development potential for no changes to existing land use designations will be discussed in the Alternatives section of the DEA.
2. All roadway improvements will be discussed in the DEA, including improvements to Hana Highway. The traffic impact assessment report will identify if project related improvements are recommended.
3. The DEA will append the various technical studies indicated on your letter dated February 27, 2004.
4. Potential impacts from airport operations will be discussed in the DEA. Specifically, there will be full disclosure of noise impacts generated from airport operations prior to sale, and included in covenants and sales documents.
5. Existing public shoreline access will be maintained by way of zoning the open space designated area to OS-2 and by dedication of a conservation easement. This land use designation would ensure that the area will remain undeveloped, thereby preserving public access in perpetuity.

Mr. Michael W. Foley, Director
June 10, 2004
Page 3

6. Landscape features, streetscapes, boundary walls, and preservation of significant open space landscaping features (i.e., Monkey Pod trees), will be discussed in the DEA. Since the proposed development is for vacant lots, there will not be any conceptual renderings to submit to the Maui Urban Design Review Board.
7. Flora and fauna analysis will be conducted by Vuich Consulting, and their findings will be incorporated into the DEA. Both the U.S. Fish & Wildlife and the Army Corps has been consulted with regards to identifying and delineating the wetland areas of the property.
8. Pre-consultation comments will be included in the DEA.
9. A view analysis from Hana Highway will be incorporated in the DEA.
10. Potential impacts from agricultural operations on future residential uses will be discussed in the DEA. Specifically, there will be full disclosure of potential dust, noise and odor impacts generated from agricultural operations prior to sale and included in covenants and sales documents.
11. Alternative street design will be analyzed in the DEA. Alternatives will include, designs for preserving the character of the area, bicycle and pedestrian movements, and access to shoreline areas.

Thank you for your comments and participation in the early consultation for the preparation of the Draft Environmental Assessment.

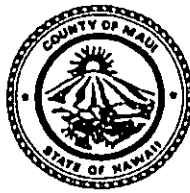
Should you have any questions, please contact me at 244-2015

Very truly yours,


Daren Suzuki, Staff Planner

DS:yp
cc: Henry Spencer
spencer@spreckelhof.com

ALAN M. ARAKAWA
Mayor



MAR 15 2004

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7230
Fax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

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

March 10, 2004

Mr. Daren Suzuki, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Suzuki:

SUBJECT: Early Consultation Request for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements, TMK 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

We have reviewed the Early Consultation Request for the subject project and find that we have no comments at this time.

Thank you for the opportunity to review and comment. Should there be any questions, please contact Mr. Patrick Matsui, Chief of Parks Planning and Development, at 270-7387.

Sincerely,

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

GLENN T. CORREA
Director

c: Patrick Matsui, Chief of Planning and Development



ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

55 MAHALANI STREET
WAILUKU, HAWAII 96703
(808) 244-6400
FAX (808) 244-6411

March 9, 2004

MAR 15 2004



THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

Mr. Daren Suzuki, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Suzuki:

SUBJECT: Early Consultation Request for the preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements, TMK 3-8-001:003, 3-8-002:009, and 3-8-002:010, Spreckelsville, Maui

We reviewed the proposal and have no recommendation or comments to offer at this time.

As always, thank you for giving us the opportunity to comment on this project.

Very truly yours,

Assistant Chief Sydney Kikuchi
for: Thomas M. Phillips
Chief of Police

c: Michael Foley, Planning Department

APR 06 2004

ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

MILTON M. ARAKAWA, A.I.C.P.
Deputy Director

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



COUNTY OF MAUI
**DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT**
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

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

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

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

BRIAN HASHIRO, P.E.
Highways Division

JOHN D. HARDER
Solid Waste Division

March 30, 2004

Mr. Daren Suzuki, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Mr. Suzuki:

**SUBJECT: EARLY CONSULTATION REQUEST FOR THE
PREPARATION OF AN ENVIRONMENTAL ASSESSMENT
FOR A 16-LOT SUBDIVISION AND RELATED
IMPROVEMENTS
TMK: 3-8-001:003, 009, & 010**

We reviewed the subject application and have the following comments:

1. Submit Solid Waste Management Plan for composting/disposal of cleared and grubbed material and recycling/disposal of construction waste.
2. Although wastewater system capacity is currently available as of February 20, 2004, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
3. Wastewater contribution calculations are required before building permit is issued.
4. Developer shall pay assessment fees for treatment plan expansion costs in accordance with ordinance setting forth such fees.
5. Developer is required to fund any necessary off-site improvements to the collection system and wastewater pump stations.

Mr. Daren Suzuki, Planner
March 30, 2004
Page 2

6. Plans should show the installation of a single service lateral and advance riser for each lot.
7. Indicate on the plans the ownership of each easement (in favor of which party). Note: County will not accept sewer easements that traverse private property.
8. Vehicular access shall be provided to all subdivided and "land locked" land.
9. Two (2) vehicular accesses are required to service this subdivision.
10. All standard County "urban" street design standards shall be imposed and all streets shall be constructed to County standards.
11. Radius returns shall be required for all intersections.
12. "Stable Road" shall be improved to County standards for Hana Highway to end of property limits.
13. The existing bike route shall be maintained to provide continuous access.
14. The proposed project shall comply with Title 18 (Subdivision Ordinance) of the Maui County Code.

If you have any questions regarding this letter, please call Milton Arakawa at 270-7845.

Very truly yours,


GILBERT S. COLOMA-AGARAN
Director



June 10, 2004

Gilbert Coloma-Agaran, Director
Department of Public Works
and Environmental Management
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements, TMK 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Coloma-Agaran:

This letter responds to your letter dated March 30, 2004.

The applicant acknowledges all standard comments provided in your letter and will address them more specifically during the Draft Environmental Assessment (EA) and subdivision review. It is noted that the applicant will either be seeking a variance to the length of the proposed subdivision cul-de-sac, or providing an emergency access to Laulea Place or Alakapa Place. These alternatives will be discussed in applicable sections of the Draft EA.

It is further noted that the existing bike route is proposed to be donated to the County.

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

Very truly yours,

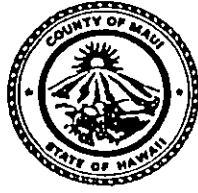
A handwritten signature in black ink, appearing to read "Daren Suzuki", is written over a dotted line.

Daren Suzuki, Staff Planner

DS:yp

cc: Henry Spencer
spencerspreckel@dpwem.res

MAR 02 2004



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

February 23, 2004

Mr. Daren Suzuki, Planner
Munekiyo & Hiraga, Inc.
305 High Street Suite 104
Wailuku HI 96793

Subject: Early Consultation Request for the Preparation of an Environmental Assessment for a 16-lot Subdivision and Related Improvements, TMK 3-8-01:003, 3-8-02:009 and 3-8-02:010, Spreckelsville, Maui

Dear Mr. Suzuki:

Thank you for the opportunity to provide comments on the preparation of this Environmental Assessment (EA). The Department of Water Supply provides the following information:

The project area is served by the Central Maui System. The main sources of water for this system are the Iao and Waihee aquifers, the Iao tunnel and the Iao-Waikapu Ditch. As of July 21, 2003, the Commission on Water Resource Management (CWRM) has designated Iao aquifer as Groundwater Management Area. DWS will not issue reservations for future meters until new sources are brought on-line. Although the Department continues to issue meters for those ready to receive service at this time, it may also become necessary to stop issuing new meters altogether. Water for this project may not be available until new sources are on-line. Water use for the 21-acre single-family development would be about 13,000 gallons per day (GPD) based on empirical use for Spreckelsville.

The subject property is served by an 8-inch and a 12-inch water line along Hana Highway, an 8-inch water line along the West end of Laulea Place and a 4-inch water line at the West border of the property. The existing easements for the 8-inch line and appurtenances West of Laulea Place must be maintained and easement for the portion of the 12-inch line that is located within parcel 3-8-01:003 must be provided. Please find attached a copy of the fire protection map section for this area. Fire flow requirements for the residential subdivision is 1000 gallons per minute per 2 hours with fire hydrants installed at 350 ft spacing.

The project overlies the Kahului and Paia aquifers. The Department of Water Supply strives to protect the integrity of surface and groundwater resources by encouraging the applicant to adopt best management practices (BMPs) designed to minimize infiltration and runoff from all construction and vehicle operations. We have attached sample BMPs for principle operations for reference. Additional information can be obtained from the State Department of Health.

We recommend that the following water conservation measures be included in the EA and implemented in project design and construction:

Eliminate Single-Pass Cooling: Single-pass, water-cooled system should be eliminated per Maui County Code

By Water All Things Find Life

Subsection 14.21.20. Although prohibited by code, single-pass water cooling is still manufactured into some models of air-conditioners, freezers, and commercial refrigerators.

Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures and devices in faucets, showerheads, urinals, water closets and hose bibs. Water conserving washing machines, ice-makers and other units are also available.

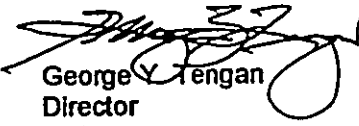
Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. Refer to the attached handout, "The Costly Drip". The applicant should establish a regular maintenance program!

Use Climate-adapted Plants: The project is located in the "Maui County Planting Plan" - Plant Zone 5. Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species. Please refer to the attached brochure: "Saving Water In The Yard - What and How to Plant In Your Area" for landscaping of common areas and for distribution to future homeowners.

Prevent Over-Watering By Automated Systems: Provide rain-sensors on all automated irrigation controllers in common areas. Check and reset controllers at least once a month to reflect the monthly changes in evapo-transpiration rates at the site. As an alternative, provide the more automated, soil-moisture sensors on controllers.

Should you have any questions, please call our Water Resources and Planning Division at 270-7199.

Sincerely,


George Tengan
Director
emb

attachments:

Section of DWS fire protection map

"The Costly Drip"

"Saving Water in the Yard-What and How to Plant in your Area"

"Guidance Specifying Management Measures For Sources Of Nonpoint Pollution In Coastal Waters"

Ordinance 2108 - An Ordinance Amending Chapter 16.20 of the Maui County Code, Pertaining to the Plumbing Code

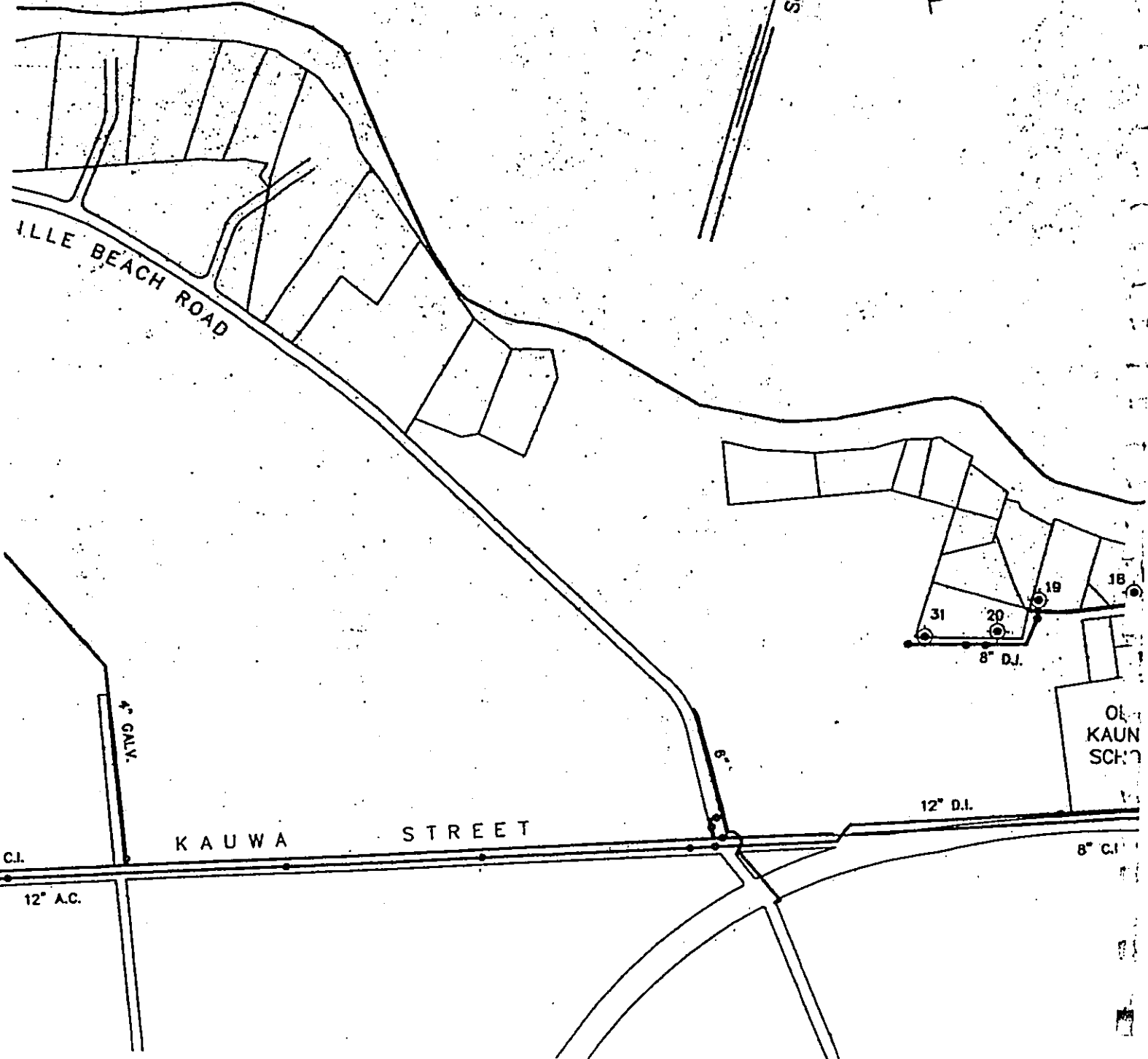
cc: engineering division

C:\WPdocs\EA's EISs\Spreckelsville 16-lot SD DEA.wpd

By Water All Things Find Life

TRUE NORTH

Scale: 1 inch = 500 feet

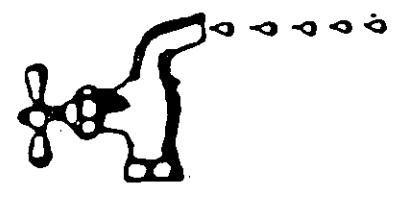


UNITED STATES DEPARTMENT OF THE INTERIOR

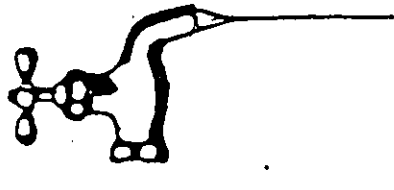
"THE COSTLY DRIP"



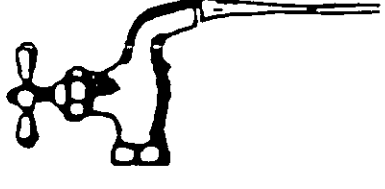
Slowly Dripping
Spigot Wastes
15 Gallons a day.



1/32" Leak Wastes
25 Gallons a day.



1/16" Stream Wastes
100 Gallons a Day.



1/8" Stream Wastes
400 Gallons a day.

ORDINANCE NO. 2108

BILL NO. 6 (1992)

Draft 1

A BILL FOR AN ORDINANCE AMENDING
CHAPTER 16.20 OF THE MAUI COUNTY
CODE, PERTAINING TO THE PLUMBING CODE

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Title 16 of the Maui County Code is amended by adding a new section to Chapter 10 of the Uniform Plumbing Code to be designated and to read as follows:

*16.20.675 Section 1050 added. Chapter 10 of the Uniform Plumbing Code is amended by adding a new section, pertaining to low-flow water fixtures and devices, to be designated and to read as follows:

Sec. 1050 Low-flow water fixtures and devices. (a) This section establishes maximum rates of water flow or discharge for plumbing fixtures and devices in order to promote water conservation.

(b) For the plumbing fixtures and devices covered in this section, manufacturers or their local distributors shall provide proof of compliance with the performance requirements established by the American National Standards Institute (ANSI) and such other proof as may be required by the director of public works. There shall be no charge for this registration process.

(c) Effective December 31, 1992, only plumbing fixtures and devices specified in this section shall be offered for sale or installed in the County of Maui, unless otherwise indicated in this section. All plumbing fixtures and devices which were installed before December 31, 1992, shall be allowed to be used, repaired or replaced after December 31, 1992.

(1) Faucets (kitchen): All kitchen and bar sink faucets shall be designed, manufactured, installed or equipped with a flow control device or aerator which will prevent a water flow rate in excess of two and two-tenths gallons per minute at sixty pounds per square inch of water pressure.

(2) Faucets (lavatory): All lavatory faucets shall be designed, manufactured, installed or equipped with a flow control device or aerator which will prevent a water flow rate in excess of two and two tenths gallons per minute at sixty pounds per square inch of water

pressure.

(3) Faucets (public rest rooms): In addition to the lavatory requirements set forth in paragraph (2), lavatory faucets located in rest rooms intended for use by the general public shall be of the metering or self-closing types.

(4) Hose bibbs: Water supply faucets or valves shall be provided with approved flow control devices which limit flow to a maximum three gallons per minute.

EXCEPTIONS: (A) Hose bibbs or valves not used for fixtures or equipment designated by the director of public works.

(B) Hose bibbs, faucets, or valves serving fixed demand, timing, or water level control appliances, and equipment or holding structures such as water closets, pools, automatic washers, and other similar equipment.

(5) Showerheads: Showerheads, except where provided for safety or emergency reasons, shall be designed, manufactured, or installed with a flow limitation device which will prevent a water flow rate in excess of two and one-half gallons per minute at eighty pounds per square inch of water pressure. The flow limitation device must be a permanent and integral part of the showerhead and must not be removable to allow flow rates in excess of two and one-half gallons per minute or must be mechanically retained requiring force in excess of eight pounds to remove.

(6) Urinals: Urinals shall be designed, manufactured, or installed so that the maximum flush will not exceed one gallon of water. Adjustable type flushometer valves may be used provided they are adjusted so the maximum flush will not exceed one and six tenths gallons of water.

(7) Water closets (toilets): Water closets shall be designed, manufactured, or installed so that the maximum flush will not exceed one and six tenths gallons of water.

(d) Beginning December 31, 1992, it is unlawful to sell or install any plumbing fixtures or devices not specified in this section, except as permitted under this section.


(e) The director of public works may exempt the use of low-flow water fixtures and devices if there is a finding that the use of such fixtures and devices would not be consistent with accepted engineering practices and would be detrimental to the public health, safety and welfare.

(f) Any person violating this section shall be fined \$250 for each violation and shall correct all instances of non-compliance for which a citation is issued. Violation of this section shall constitute a violation as defined in section 701-107 Hawaii Revised Statutes and shall be enforceable by employees of the department of public works. The foregoing fine may also be imposed in a civil, administrative proceeding pursuant to Rules and Regulations adopted by the department of public works in accordance with chapter 91 Hawaii Revised Statutes."

SECTION 2. New material is underscored. In printing this bill, the County Clerk need not include the underscoring.

SECTION 3. This ordinance shall take effect upon its approval.

APPROVED AS TO FORM
AND LEGALITY:



HOWARD M. FOKUSHIMA
Deputy Corporation Counsel
County of Maui
c:\wp51\ords\flows4\pk

I HEREBY CERTIFY that the foregoing BILL NO. 6 (19 92), Draft 1

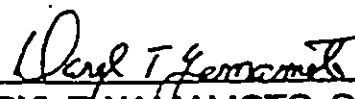
1. Passed FINAL READING at the meeting of the Council of the County of Maui, State of Hawaii, held on the 1st day of May, 1992, by the following votes:

Howard S. KIHUNE Chair	Patrick S. KAWANO Vice-Chair	Vince G. BAGOYO, Jr.	Goro HOKAMA	Alice L. LEE	Ricardo MEDINA	Wayne K. NISHIKI	Joe S. TANAKA	Lainala TERUYA DRUMMOND
Aye	Aye	Excused	Excused	Aye	Aye	Aye	Aye	Aye

2. Was transmitted to the Mayor of the County of Maui, State of Hawaii, on the 1st day of May, 1992.

DATED AT WAILUKU, MAUI, HAWAII, this 1st day of May, 1992.

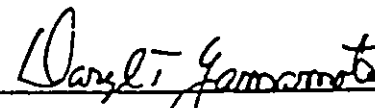

HOWARD S. KIHUNE, CHAIR
Council of the County of Maui


DARYL T. YAMAMOTO, COUNTY CLERK
County of Maui

THE FOREGOING BILL IS HEREBY APPROVED THIS 5th DAY OF MAY, 1992.


LINDA CROCKETT LINGLE, MAYOR
County of Maui

I HEREBY CERTIFY that upon approval of the foregoing BILL by the Mayor of the County of Maui, the said BILL was designated as ORDINANCE NO. 2108 of the County of Maui, State of Hawaii.


DARYL T. YAMAMOTO, COUNTY CLERK
County of Maui

Passed First Reading on January 17, 1992.
Effective date of Ordinance May 5, 1992.

I HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. 2108, the original of which is on file in the Office of the County Clerk, County of Maui, State of Hawaii.

Dated at Wailuku, Hawaii, on

County Clerk, County of Maui

RECORDED

Selection

As a general rule, it is best to select the largest and healthiest specimens. However, be sure to note that they are not pot-bound. Smaller, younger plants may result in a low rate of plant survival.¹ When selecting native species, consider the site they are to be planted in, and the space that you have to plant. For example: Mountain species such as koa and maile will not grow well in hot coastal areas exposed to strong ocean breezes. Lowland and coastal species such as wiliwili and Kou require abundant sunshine and porous soil. They will not grow well with frequent cloud cover, high rainfall and heavy soil.

Consider too, the size that the species will grow to be. It is not wise to plant trees that will grow too large.² Overplanting tends to be a big problem in the landscape due to the underestimation of a species' height, width or spread.

A large, dense canopied tree such as the kukui is a good shade tree for a lawn. However, it's canopy size and density of shade will limit what can be planted in the surrounding area. Shade cast by a koa and ohia lehua is relatively light and will not inhibit growth beneath it.

Keep seasons in mind when you are selecting your plants. Not all plants look good year round, some plants such as ilima will look scraggly after they have flowered and formed seeds. Avoid planting large areas with only one native plant. Mixing plants which naturally grow together will ensure the garden will look good all year round.³ Looking at natural habitats helps to show how plants grow naturally in the landscape.

When planting an area with a mixed-ecosystem, keep in mind the size and ecological requirements of each plant. Start with the hardiest and most easily grown species, but allow space for fragile ones in subsequent plantings.

Acquiring natives

Plants in their wild habitat must be protected and maintained. It is best and easiest to get your plants from nurseries (see list), or friend's gardens. Obtain proper permits from landowners and make sure you follow a few common sense rules:

- ▶ collect sparingly from each plant or area.
- ▶ some plants are on the state or Federal Endangered Species list. Make sure you get permits (see app. A,B)

¹ K. Nagata, P.6

² K. Nagata, P.9

³ Nagata, P.9

Soil

Once you have selected your site and the plants you wish to establish there, you must look at the soil conditions on the site. Proper soil is necessary for the successful growth of most native plants, which perform poorly in hard pan, clay or adobe soils. If natives are to be planted in these types of soil, it would be wise to dig planting holes several times the size of the rootball and backfill with 50-75% compost.⁴ A large planting hole ensures the development of a strong root system. The plant will have a headstart before the roots penetrate the surrounding poor soil.⁵

It is recommended that native plants not be planted in ground that is more dense than potting soil. If there is no alternative, dig a hole in a mound of soil mixed with volcanic cinder which encourages maximum root development. Fill the hole with water, if the water tends to puddle or drain too slowly, dig a deeper hole until the water does not puddle longer than 1 or 2 minutes.⁶ Well-drained soil is one of the most important things when planting natives as you will see in the next section.

Irrigation

Most natives do very poorly in waterlogged conditions. Do not water if the soil is damp. Water when the soil is dry and the plants are wilting. Once established, a good soaking twice a week should suffice. Deep soaking encourages the development of stronger, and deeper root systems. This is better than frequent and shallow watering which encourage weaker, more shallow root systems.

The following is a watering schedule from Kenneth Nagata's Booklet, *How To Plant A Native Hawaiian Garden*:

WATER REQUIREMENT

Heavy

Moderate

Light

WATERING FREQUENCY

3x / week

2x / week

1x / week

Red clay soils hold more water for a longer period of time than sandy soils do. If your area is very sunny or near a beach, things will dry out faster. Even in the area of one garden, there are parts that will need more or less water. Soils can vary and amount of shade and wind differ. After plants are established (a month or two for most plants, up to a year for some trees), you can back off watering.

⁴ Nagata, p. 6.

⁵ Nagata, p. 8.

⁶ Nagata, p. 8.

Automatic sprinkler systems are expensive to install and must be checked and adjusted regularly. Above-ground systems allow you to monitor how much water is being put out, but you lose a lot due to malfunctioning of sprinkler heads and wind. The most efficient way to save water and make sure your plants get enough water, is to hand-water. This way you are getting our precious water to the right places in the right amounts.⁷

Fertilizer

An all-purpose fertilizer 10-10-10 is adequate for most species. They should be applied at planting time, 3 months later, and 6 months thereafter. Use half the dosage recommended for ornamentals and pay special attention to native ferns which are sensitive to strong fertilizers. Use of organic composts and aged animal manures is suggested instead of chemical fertilizers. In addition, use of cinders for providing trace minerals is strongly recommended.⁸

Natives are plants which were here hundreds of years before the polynesians inhabited the Hawaiian Islands. They were brought here by birds, or survived the harsh ocean conditions to float here. They are well-adapted to Hawaii's varying soil and environmental conditions. This is why they make prime specimens for a xeriscape garden. However, natives will not thrive on their own, especially under harsh conditions. On the other hand, like any other plant, if you over-water and over-fertilize them, they will die. Follow the instructions given to you by the nursery you buy the plant from, or from this booklet. Better yet, buy a book (suggested readings can be found in the bibliography in the back of this pamphlet), read it, and learn more about native plants. I guarantee that you will be pleased with the results.

⁷ Bornhorst, p. 19-20

⁸ Nagata, p. 6

Propagation

There are many ways to propagate and plant-out native Hawaiian species. One of the most thorough and helpful book is Heidi Bornhorst's book, *Growing Native Hawaiian Plants*. The easiest, and best way to obtain natives for the novice gardener is to get them from a reputable nursery (see appendix c). That way all you will have to do is know how to transplant (if necessary) and plant-out when you are ready. These are the two methods I have listed here.

Transplanting

1. Use pots that are one size bigger than the potted plant is in
2. Get your potting medium ready

Good potting medium is a ½, ½ mixture of peat moss and perlite. If the plant is from a dry or coastal area, add chunks of cinder or extra perlite. If it is a wet forest species, add more peat moss or compost. Be aware that peat moss is very acidic and certain plants react severely to acidity.

If the plant is to eventually be planted into the ground, make a mix of equal parts peat moss, perlite, and soil from the area in which the plant is to be planted. Slow-release fertilizer can be mixed into the potting medium.

3. Once pots, potting medium, fertilizer and water are ready, you can begin re-potting. Keep the plant stem at the same depth it was in the original pot. Avoid putting the plant in too large a pot, as the plant may not be able to soak up all the water in the soil and the roots may drown and rot.

Mix potting medium and add slow-release fertilizer at this time. Pre-wet the medium to keep dust down and lessen shock to the plant. Put medium in bottom of pot. Measure for the correct depth in the new pot. Make sure there is from ½ to 2 inches from the top of the pot so the plant can get adequate water. Try to stand the plant upright and center the stem in the middle of the pot.

Water the plant thoroughly after transplanting. A vitamin B-1 transplanting solution can help to lessen the transplant shock. Keep the plant in the same type of environment as it was before, sun or shade. If roots were broken, trim off some of the leaves to compensate for the loss.⁹

Planting out

1. Plant most native Hawaiian plants in a sunny location in soil that is well-drained.
 2. Make the planting hole twice as wide as the root ball or present pot, and just as deep.
- If the soil is clay-like, and drains slowly, mix in some coarse red or bland cinder, coarse perlite or

⁹ Bornhorst, p.20-21

coarse compost. Place some slow-release fertilizer at the bottom of the hole.

3. Carefully remove the plant from the container and place it in the hole.

The top of the soil should be at the same level as the top of the hole, if it is too high or too low, adjust the soil level so that the plant is at the right depth.

4. Water thoroughly after you transplant.

Mulch

Most natives cannot compete with weeds, and therefore must be weeded around constantly in order to thrive. Mulch is a practical alternative, which discourages and prevents weeds from growing.

Hawaii's hot, humid climate leads to the breaking down of organic mulches. Thick organic mulches such as wood chips and leaves, may also be hiding places for pests.

Stone mulches are attractive, permanent and can help to improve soil quality. Red or black cinder, blue rock chips, smooth river rocks and coral chips are some natural choices.¹⁰ Macadamia nut hulls are also easy to find and can make a nice mulch.¹¹

Never pile up mulch right next to the stem or trunk of a plant, keep it a few inches away.

¹⁰ Bornhorst, p. 24

¹¹ Nagata, p. 7

ZONES

The Maui County Planting Plan has compiled a system of 5 zones of plant growth for Maui County. The descriptions of zones and maps for these zones are as follows:

Zone 1:

Wet areas on the windward side of the island. More than 40 inches of rain per year. Higher than 3,000 feet.

Zone 2:

Cool, dry areas in higher elevations (above 1,000 feet). 20 to 40 inches of rain per year.

Zone 3:

Low, drier areas, warm to hot. Less than 20 inches of rain per year. Sea level to 1,000 feet.

Zone 4:

Lower elevations which are wetter due to proximity of mountains. 1,000 to 3,000 feet.

Zone 5:

Salt spray zones in coastal areas on the windward side.

These zones are to be used as a general guide to planting for Maui County. In addition to looking at the maps, read the descriptions of the zones and decide which zone best fits your area. Plants can be listed in more than one zone and can be planted in a variety of conditions. For best results, take notes on the rainfall, wind, sun and salt conditions of your site. Use the zones as a general guide for selection and read about the plants to decide which best fits your needs as far as care and or function.

PLACES TO SEE NATIVES ON:

The following places propagate native Hawaiian plants from seeds and/or cuttings. Their purpose is to protect and preserve these native plants. Please contact them before going to view the sites, they can provide valuable information and referral to other sources.

Maui:

1. Hoolawa Farms, P.O. Box 731, Haiku, Hawaii, 96708 572-4835
2. The Hawaiian Collection, 1127 Manu St., Kula, Hawaii, 96790 878-1701
3. Kula Botanical Gardens, RR 4, Box 228, Kula, Hawaii, 96790 878-1715
4. Maui Botanical Gardens, Kanaloa Avenue across from stadium 243-7337
5. Kula Forest Reserve, access road at the end of Waipouli Rd.
Call the Maui District Forester 984-8100
6. Wailea Point, Private Condominium residence, 4000 Wailea Alanui,
public access points at Four Seasons Resort or Polo Beach 875-9557
7. Kahanu Gardens, National Tropical Botanical Garden,
Alau Pl, Hana, Hawaii, 96713 248-8912
9. Kahului Library Courtyard, 20 School Street, Kahului, Hawaii 873-3097

Purple

Zone 5

Zone-specific Native and Polynesian plants for Maui County

Type	F Fern	G Grass	Gr Ground Cover	Sh Shrub	P Palm	S Sedge	Tr Tree	V Vine	Water req.
G		<i>Oplubrina asiatica</i>		'anapanapa		10'	sea to 1,000'		Dry to Wet
G		<i>Eragrostis variabilis</i>		'emo-iaa		2'	sea to 3,000'		Dry to Medium
G		<i>Fimbristylis cymosa</i> ssp. <i>spathacea</i>		mau'u'aki'aki, timbrilayila		1'	sea to 1,000'		Dry to Medium
Gr		<i>Borhavia repens</i>		'aiena		4'	sea to 1,000'		Dry to Medium
Gr		<i>Chamaesyce celastroides</i> var. <i>laehiana</i>		'akoko		3'	sea to 1,000'		Dry to Medium
Gr		<i>Cressa truxillensis</i>		'cressa		1'	sea to 1,000'		Dry to Medium
Gr		<i>Heliotropium anomalum</i> var. <i>argenteum</i>		hinahina ku kahakai		2'	sea to 1,000'		Dry to Medium
Gr		<i>Jacquemontia ovalifolia</i> ssp. <i>sandwicensis</i>		pa'u o hi'aka		6'	sea to 1,000'		Dry to Medium
Gr		<i>Lipochaeta integrifolia</i>		'nehe		5'	sea to 1,000'		Dry to Medium
Gr		<i>Sesuvium portulacastrum</i>		'akulikuli, sea-purslane		2'	sea to 1,000'		Dry to Wet
Gr		<i>Sida fallax</i>		'ilima		3'	sea to 1,000'		Dry to Medium
Gr		<i>Tephrosia purpurea</i> var. <i>purpurea</i>		'auhuhu		2'	sea to 1,000'		Dry to Medium
Gr - Sh		<i>Hibiscus calyphyllus</i>		ma'o hau hele, Rock's hibiscus		2'	sea to 3,000'		Dry to Medium
Gr - Sh		<i>Lycium sandwicense</i>		'ohelo-kai, 'ae'ae		2'	sea to 1,000'		Dry to Medium
P		<i>Cocos nucifera</i>		coconut, niu		30'	sea to 1,000'		Dry to Wet
P		<i>Pritchardia hillebrandii</i>		'lo'ulu, fan palm		15'	sea to 1,000'		Dry to Wet
S		<i>Mariscus javanicus</i>		marsh cypress, 'ahu'awa		0.5'	sea to 1,000'		Dry to Medium
Sh		<i>Argemone glauca</i> var. <i>decipiens</i>		'pua kala		2'	sea to 3,000'		Dry to Medium
Sh		<i>Artemisia australis</i>		'ahinahina		3'	sea to 3,000'		Dry to Medium
Sh		<i>Bidens hillebrandiana</i> ssp. <i>hillebrandiana</i>		ko'oko'olau		2'	sea to 1,000'		Dry to Wet
Sh		<i>Bidens mauiensis</i>		ko'oko'olau		3'	sea to 1,000'		Dry to Medium
Sh		<i>Chenopodium oahuense</i>		'ahaeaea, 'aweoweo		6'	sea to higher		Dry to Medium
Sh		<i>Dianella sandwicensis</i>		'uki		2'	1,000' to higher		Dry to Medium
Sh		<i>Gossypium tomentosum</i>		mao, Hawaiian cotton		5'	sea to 1,000'		Dry to Medium

Zone 5

Zone-specific Native and Polynesian plants for Maui County

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Sh	Hedyotis spp.	au, plo	3'	2'	1,000' to 3,000'	Dry to Wet
Sh	Lipochaete laevatum	nehe	3'	3'	sea to 3,000'	Dry to Medium
Sh	Osteomeles anthyllifolia	ule, aiehe	4'	6'	sea to 3,000'	Dry to Medium
Sh	Scaevola sericea	naupaka, naupaka-kahakai	8'	8'	sea to 1,000'	Dry to Medium
Sh	Sanna gaudichaudii	kolomana	5'	5'	sea to 3,000'	Dry to Medium
Sh	Solanum nelsonii	akia, beach solanum	3'	3'	sea to 1,00'	Dry to Medium
Sh	Villex rotundifolia	pohinahina	3'	4'	sea to 1,000'	Dry to Medium
Sh	Wikstroemia uva-ursi kauaiensis kauaiensis	akia, Moloka'i oamanihus	10'	10'	sea to higher	Dry to Medium
Sh-Tr	Myoporum sandwicense	naio, aise sandalwood	6'	8'	sea to higher	Dry to Medium
Sh-Tr	Dodonaea viscosa	a'ali'i	50'	50'	sea to 3,000'	Medium to Wet
Tr	Aleurites moluccana	candlanui, kukui	60'	40'	sea to 3,000'	Medium to Wet
Tr	Calophyllum inophyllum	kamani, alexandrian laurel	30'	25'	sea to 1,000'	Dry to Wet
Tr	Cordia subcordata	kou	8'			
Tr	Hibiscus furcatus	'akiohale, hau, hale	20'	15'	sea to 1,000'	Dry to Wet
Tr	Morinda citrifolia	indian mulberry, noni	35'	25'	sea to 1,000'	Dry to Wet
Tr	Pandanus tectorius	hale, puhaia (HALELIST)	30'	30'	sea to 3,000'	Dry to Wet
Tr	Thespesia populnea	mito				
V	Ipomoea pes-caprae	beach morning glory, pohuehue	1'			

DO NOT PLANT THESE PLANTS !!!

Common name	Scientific name	Plant family
black wattle	Acacia mearnsii	Mimosaceae
blackberry	Rubus argulus	Rosaceae
blue gum	Eucalyptus globulus	Myrtaceae
bocconia	Bocconia frutescens	Papaveraceae
broad-leaved cordia	Cordia alliodora	Boraginaceae
broomsedge, yellow bluestem	Andropogon virginicus	Poaceae
buffelgrass	Cenchrus ciliaris	Poaceae
butterfly bush, smoke bush	Buddleia madagascariensis	Buddleiaceae
cats claw, Mysore thorn, wai-a-bil	Caesalpinhia decapetala	Caesalpinjiaceae
common ironwood	Casuarina equisetifolia	Casuarinaceae
common velvet grass, Yorkshire fog	Holcus lanatus	Poaceae
liddlewood	Cilicaryxylum spinosum	Verbenaceae
fire tree, faya tree	Myrica faya	Myricaceae
glorybower	Clorodendrum laponicum	Verbenaceae
hairy call's ear, gosmore	Hypochoeris radicata	Asteraceae
haole koa	Leucaena leucocephala	Fabaceae
ivy gourd, scarlet-fruited gourd	Coccinia grandis	Cucurbitaceae
juniper berry	Cilicaryxylum caudatum	Verbenaceae
kahili flower	Grevillea banksii	Proteaceae
klau, popinac	Acacia farnesiana	Mimosaceae
logwood, bloodwood, tree	Haematoxylon campechianum	Caesalpinjiaceae
loquat	Eriobotrya japonica	Rosaceae
meadow ricegrass	Ehrharta stipoides	Poaceae
melaleuca	Melaleuca quinquenervia	Myrtaceae
miconia, velvet leaf	Miconia calvescens	Melastomataceae
narrow-leaved carpetgrass	Axonopus fissifolius	Poaceae
oleaster	Elaeagnus umbellata	Elaeagnaceae
oriental mangrove	Bruguiera gymnorhiza	Rhizophoraceae
padang cassia	Cinnamomum burmanni	Lauraceae
palmgrass	Setaria palmifolia	Poaceae
pearl flower	Heterocentron subtripinervium	Melastomataceae
quinine tree	Cinchona pubescens	Rubiaceae
salin leaf, cainitillo	Chrysophyllum oliviforme	Sapotaceae
silkwood, Queensland maple	Flindersia brayleyana	Rubiaceae
silky oak, silver oak	Grevillea robusta	Proteaceae
sirawberry guava	Psidium cattleianum	Myrtaceae
swamp oak, saltmarsh, longleaf ironwood	Casuarina glauca	Casuarinaceae
sweet vernalgrass	Anthoxanthum odoratum	Poaceae
tree of heaven	Ailanthus altissima	Simaroubaceae
trumpet tree, quarumo	Cecropia obtusifolia	Cecropiaceae
white ginger	Hedychium coronarium	Zingiberaceae
white moho	Heliconia popayanensis	Tiliaceae
yellow ginger	Hedychium flavescens	Zingiberaceae

DO NOT PLANT THESE PLANTS !!!

Common name	Scientific name	Plant family
	<i>Jasminum fluminense</i>	Oleaceae
	<i>Arthrostele ciliatum</i>	Melastomataceae
	<i>Dissotis rotundifolia</i>	Melastomataceae
	<i>Erigeron karvinskianus</i>	Asteraceae
	<i>Eucalyptus robusta</i>	Myrtaceae
	<i>Hedychium gardnerianum</i>	Zingiberaceae
	<i>Juncus pianifolius</i>	Juncaceae
	<i>Lophosiemon confertus</i>	Myrtaceae
	<i>Medinilla cunningii</i>	Melastomataceae
	<i>Medinilla magnifica</i>	Melastomataceae
	<i>Medinilla venosa</i>	Melastomataceae
	<i>Melastoma candidum</i>	Melastomataceae
	<i>Melinis minutiflora</i>	Poaceae
	<i>Olea europaea</i>	Melastomataceae
	<i>Oxyropa paniculata</i>	Melastomataceae
	<i>Panicum maximum</i>	Poaceae
	<i>Paspalum urvillei</i>	Poaceae
	<i>Passiflora edulis</i>	Passifloraceae
	<i>Phormium tenax</i>	Agavaceae
	<i>Pinus taeda</i>	Pinaceae
	<i>Prosopis pallida</i>	Fabaceae
	<i>Pterolepis glomerata</i>	Melastomataceae
	<i>Rhodomyrtus tomentosa</i>	Myrtaceae
	<i>Schefflera actinophylla</i>	Araliaceae
	<i>Syzygium jambos</i>	Myrtaceae
	<i>Acacia melanoxylon</i>	Mimosaceae
Australian blackwood	<i>Cyathia cooperi</i>	Cyathaceae
Australian tree fern	<i>Sphaeropteris cooperi</i>	Cyatheaceae
Beggar's tick, Spanish needle	<i>Bidens pilosa</i>	Asteraceae
California grass	<i>Bracharia mutica</i>	Poaceae
Chinese banyon, Maylayan banyon	<i>Ficus microcarpa</i>	Moraceae
Chinese violet	<i>Asystasia gangetica</i>	Acanthaceae
Christmasberry, Brazilian pepper	<i>Schinus terebinthifolius</i>	Anacardiaceae
Formosan koa	<i>Acacia confusa</i>	Mimosaceae
German ivy	<i>Senecio mikanoides</i>	Asteraceae
Japanese honeysuckle	<i>Lonicera japonica</i>	Caprifoliaceae
Koster's curse	<i>Clidemia hirta</i>	Melastomataceae
Lantana	<i>Lantana camara</i>	Verbenaceae
Mauritius hemp	<i>Furcraea foetida</i>	Agavaceae
Mexican ash, tropical ash	<i>Fraxinus uhdei</i>	Oleaceae
Mexican tulip poppy	<i>Hunnemannia tumaritifolia</i>	Papaveraceae
Mules foot, Madagascar tree fern	<i>Angiopteris evecta</i>	Marattiaceae
New Zealand laurel, karakaramui	<i>Corynocarpus laevigatus</i>	Corynocarpaceae
New Zealand tea	<i>Lepidospermum scoparium</i>	Myrtaceae
Pampas grass	<i>Coriaria jubata</i>	Poaceae
Panama rubber tree, Mexican rubber tree	<i>Castilleja elastica</i>	Moraceae
Shoebutton ardisia	<i>Ardisia elliptica</i>	Myrsinaceae
banana poka	<i>Passiflora mollissima</i>	Passifloraceae

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Environmental Protection
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Guidance Specifying Management Measures For Sources Of Nonpoint Pollution In Coastal Waters

Issued Under the Authority of
Section 6217(g) of the Coastal Zone Act
Reauthorization Amendments of 1990

III. CONSTRUCTION ACTIVITIES

A. Construction Site Erosion and Sediment Control Management Measure

- (1) Reduce erosion and, to the extent practicable, retain sediment onsite during and after construction, and
- (2) Prior to land disturbance, prepare and implement an approved erosion and sediment control plan or similar administrative document that contains erosion and sediment control provisions.

1. Applicability

This management measure is intended to be applied by States to all construction activities on sites less than 5 acres in areas that do not have an NPDES permit¹ in order to control erosion and sediment loss from those sites. This management measure does not apply to: (1) construction of a detached single family home on a site of 1/2 acre or more or (2) construction that does not disturb over 5,000 square feet of land on a site. (NOTE: All construction activities, including clearing, grading, and excavation, that result in the disturbance of areas greater than or equal to 5 acres or are a part of a larger development plan are covered by the NPDES regulations and are thus excluded from these requirements.) Under the Coastal Zone Act Reauthorization Amendments of 1990, States are subject to a number of requirements as they develop coastal NPS programs in conformity with this management measure and will have flexibility in doing so. The application of management measures by States is described more fully in *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance*, published jointly by the U.S. Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce.

2. Description

The goal of this management measure is to reduce the sediment loadings from construction sites in coastal areas that enter surface waterbodies. This measure requires that coastal States establish new or enhance existing State erosion and sediment control (ESC) programs and/or require ESC programs at the local level. It is intended to be part of a comprehensive land use or watershed management program, as previously detailed in the *Watershed and Site Development Management Measures*. It is expected that State and local programs will establish criteria determined by local conditions (e.g., soil types, climate, meteorology) that reduce erosion and sediment transport from construction sites.

Runoff from construction sites is by far the largest source of sediment in urban areas under development (York County Soil and Water Conservation District, 1990). Soil erosion removes over 90 percent of sediment by tonnage in urbanizing areas where most construction activities occur (Canning, 1988). Table 4-14 illustrates some of the

¹ On May 27, 1992, the United States Court of Appeals for the Ninth Circuit invalidated EPA's exemption of construction sites smaller than 5 acres from the storm water permit program in *Natural Resources Defense Council v. EPA*, 965 F.2d 759 (9th Cir. 1992). EPA is conducting further rulemaking proceedings on this issue and will not require permit applications for construction activities under 5 acres until further rulemaking has been completed.

measured sediment loading rates associated with construction activities found across the United States. As seen in Table 4-14, erosion rates from natural areas such as undisturbed forested lands are typically less than one ton/acre/year, while erosion from construction sites ranges from 7.2 to over 1,000 tons/acre/year.

Table 4-14. Erosion and Sediment Problems Associated With Construction

Location	Problem	Reference
United States	Sediment loading rates vary from 36.5 to 1,000 ton/ac/yr. These are 5 to 500 times greater than those from undeveloped land. Approximately 600 million tons of soil erodes from developed sites each year. Construction site sediment in runoff can be 10 to 20 times greater than that from agricultural lands.	York County Soil and Water Conservation District, 1990
Franklin County, FL	Sediment yield (ton/ac/yr): forest < 0.5 rangeland < 0.5 tilled 1.4 construction site 30 established urban < 0.5	Franklin County, FL
Wisconsin	Erosion rates range from 30 to 200 ton/ac/yr (10 to 20 times those of cropland).	Wisconsin Legislative Council, 1991
Washington, DC	Erosion rates range from 35 to 45 ton/ac/yr (10 to 100 times greater than agriculture and stabilized urban land uses).	MWCOG, 1987
Anacostia River Basin, VA, MD, DC	Sediment yields from portions of the Anacostia Basin have been estimated at 75,000 to 132,000 ton/yr.	U.S. Army Corps of Engineers, 1990
Washington	Erosion rates range from 50 to 500 ton/ac/yr. Natural erosion rates from forests or well-sodded prairies are 0.01 to 1.0 ton/ac/yr.	Washington Department of Ecology, 1989
Anacostia River Basin, VA, MD, DC	Erosion rates range from 7.2 to 100.8 ton/ac/yr.	USGS, 1978
Alabama North Carolina Louisiana Oklahoma Georgia Texas Tennessee Pennsylvania Ohio Kentucky	1.4 million tons eroded per year. 6.7 million tons eroded per year. 5.1 million tons eroded per year. 4.2 million tons eroded per year. 3.8 million tons eroded per year. 3.5 million tons eroded per year. 3.3 million tons eroded per year. 3.1 million tons eroded per year. 3.0 million tons eroded per year. 3.0 million tons eroded per year.	Woodward-Clyde, 1991

Eroded sediment from construction sites creates many problems in coastal areas including adverse impacts on water quality, critical habitats, submerged aquatic vegetation (SAV) beds, recreational activities, and navigation (APWA, 1991). For example, the Miami River in Florida has been severely affected by pollution associated with upland erosion. This watershed has undergone extensive urbanization, which has included the construction of many commercial and residential buildings over the past 50 years. Sediment deposited in the Miami River channel contributes to the severe water quality and navigation problems of this once-thriving waterway, as well as Biscayne Bay (SFWMD, 1988).

ESC plans are important for controlling the adverse impacts of construction and land development and have been required by many State and local governments, as shown in Table 4-13 (in the Site Development section of this chapter). An ESC plan is a document that explains and illustrates the measures to be taken to control erosion and sediment problems on construction sites (Connecticut Council on Soil and Water Conservation, 1988). It is intended that existing State and local erosion and sediment control plans may be used to fulfill the requirements of this management measure. Where existing ESC plans do not meet the management measure criteria, inadequate plans may be enhanced to meet the management measure guidelines.

Typically, an ESC plan is part of a larger site plan and includes the following elements:

- Description of predominant soil types;
- Details of site grading including existing and proposed contours;
- Design details and locations for structural controls;
- Provisions to preserve topsoil and limit disturbance;
- Details of temporary and permanent stabilization measures; and
- Description of the sequence of construction.

ESC plans ensure that provisions for control measures are incorporated into the site planning stage of development and provide for the reduction of erosion and sediment problems and accountability if a problem occurs (York County Soil and Water Conservation District, 1990). An effective plan for urban runoff management on construction sites will control erosion, retain sediments on site, to the extent practicable, and reduce the adverse effects of runoff. Climate, topography, soils, drainage patterns, and vegetation will affect how erosion and sediment should be controlled on a site (Washington State Department of Ecology, 1989). An effective ESC plan includes both structural and nonstructural controls. Nonstructural controls address erosion control by decreasing erosion potential, whereas structural controls are both preventive and mitigative because they control both erosion and sediment movement.

Typical nonstructural erosion controls include (APWA, 1991; York County Soil and Water Conservation District, 1990):

- Planning and designing the development within the natural constraints of the site;
- Minimizing the area of bare soil exposed at one time (phased grading);
- Providing for stream crossing areas for natural and man-made areas; and
- Stabilizing cut-and-fill slopes caused by construction activities.

Structural controls include:

- Perimeter controls;
- Mulching and seeding exposed areas;
- Sediment basins and traps; and
- Filter fabric, or silt fences.

Some erosion and soil loss are unavoidable during land-disturbing activities. While proper siting and design will help prevent areas prone to erosion from being developed, construction activities will invariably produce conditions where erosion may occur. To reduce the adverse impacts associated with construction, the construction management measure suggests a system of nonstructural and structural erosion and sediment controls for incorporation into an

ESC plan. Erosion controls have distinct advantages over sediment controls. Erosion controls reduce the amount of sediment transported off-site, thereby reducing the need for sediment controls. When erosion controls are used in conjunction with sediment controls, the size of the sediment control structures and associated maintenance may be reduced, decreasing the overall treatment costs (SWRPC, 1991).

3. Management Measure Selection

This management measure was selected to minimize sediment being transported outside the perimeter of a construction site through two broad performance goals: (1) reduce erosion and (2) retain sediment onsite, to the extent practicable. These performance goals were chosen to allow States and local governments flexibility in specifying practices appropriate for local conditions.

While several commentors responding to the draft (May 1991) guidance expressed the need to define "more measurable, enforceable ways" to control sediment loadings, other commentors stressed the need to draft management measures that do not conflict with existing State programs and allow States and local governments to determine appropriate practices and design standards for their communities. These management measures were selected because virtually all coastal States control construction activities to prevent erosion and sediment loss.

The measures were specifically written for the following reasons:

- (1) Predevelopment loadings may vary greatly, and some sediment loss is usually inevitable;
- (2) Current practice is built on the use of systems of practices selected based on site-specific conditions; and
- (3) The combined effectiveness of erosion and sediment controls in systems is not easily quantified.

4. Erosion Control Practices

As discussed more fully at the beginning of this chapter and in Chapter 1, the following practices are described for illustrative purposes only. State programs need not require implementation of these practices. However, as a practical matter, EPA anticipates that the management measure set forth above generally will be implemented by applying one or more management practices appropriate to the source, location, and climate. The practices set forth below have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the management measure described above.

Erosion controls are used to reduce the amount of sediment that is detached during construction and to prevent sediment from entering runoff. Erosion control is based on two main concepts: (1) disturb the smallest area of land possible for the shortest period of time, and (2) stabilize disturbed soils to prevent erosion from occurring.

■ a. *Schedule projects so clearing and grading are done during the time of minimum erosion potential.*

Often a project can be scheduled during the time of year that the erosion potential of the site is relatively low. In many parts of the country, there is a certain period of the year when erosion potential is relatively low and construction scheduling could be very effective. For example, in the Pacific region if construction can be completed during the 6-month dry season (May 1 - October 31), temporary erosion and sediment controls may not be needed. In addition, in some parts of the country erosion potential is very high during certain parts of the year such as the spring thaw in northern areas. During this time of year, melting snowfall generates a constant runoff that can erode soil. In addition, construction vehicles can easily turn the soft, wet ground into mud, which is more easily washed offsite. Therefore, in the north, limitations should be placed on grading during the spring thaw (Goldman et al., 1986).

b. Stage construction.

Avoid areawide clearance of construction sites. Plan and stage land disturbance activities so that only the area currently under construction is exposed. As soon as the grading and construction in an area are complete, the area should be stabilized.

By clearing only those areas immediately essential for completing site construction, buffer zones are preserved and soil remains undisturbed until construction begins. Physical markers, such as tape, signs, or barriers, indicating the limits of land disturbance, can ensure that equipment operators know the proposed limits of clearing. The area of the watershed that is exposed to construction is important for determining the net amount of erosion. Reducing the extent of the disturbed area will ultimately reduce sediment loads to surface waters. Existing or newly planted vegetation that has been planted to stabilize disturbed areas should be protected by routing construction traffic around and protecting natural vegetation with fencing, tree armoring, retaining walls, or tree wells.

c. Clear only areas essential for construction.

Often areas of a construction site are unnecessarily cleared. Only those areas essential for completing construction activities should be cleared, and other areas should remain undisturbed. Additionally, the proposed limits of land disturbance should be physically marked off to ensure that only the required land area is cleared. Avoid disturbing vegetation on steep slopes or other critical areas.

d. Locate potential nonpoint pollutant sources away from steep slopes, waterbodies, and critical areas.

Material stockpiles, borrow areas, access roads, and other land-disturbing activities can often be located away from critical areas such as steep slopes, highly erodible soils, and areas that drain directly into sensitive waterbodies.

e. Route construction traffic to avoid existing or newly planted vegetation.

Where possible, construction traffic should travel over areas that must be disturbed for other construction activity. This practice will reduce the area that is cleared and susceptible to erosion.

f. Protect natural vegetation with fencing, tree armoring, and retaining walls or tree wells.

Tree armoring protects tree trunks from being damaged by construction equipment. Fencing can also protect tree trunks, but should be placed at the tree's drip line so that construction equipment is kept away from the tree. The tree drip line is the minimum area around a tree in which the tree's root system should not be disturbed by cut, fill, or soil compaction caused by heavy equipment. When cutting or filling must be done near a tree, a retaining wall or tree well should be used to minimize the cutting of the tree's roots or the quantity of fill placed over the tree's roots.

g. Stockpile topsoil and reapply to revegetate site.

Because of the high organic content of topsoil, it cannot be used as fill material or under pavement. After a site is cleared, the topsoil is typically removed. Since topsoil is essential to establish new vegetation, it should be stockpiled and then reapplied to the site for revegetation, if appropriate. Although topsoil salvaged from the existing site can often be used, it must meet certain standards and topsoil may need to be imported onto the site if the existing topsoil is not adequate for establishing new vegetation.

h. Cover or stabilize topsoil stockpiles.

Unprotected stockpiles are very prone to erosion and therefore stockpiles must be protected. Small stockpiles can be covered with a tarp to prevent erosion. Large stockpiles should be stabilized by erosion blankets, seeding, and/or mulching.

i. Use wind erosion controls.

Wind erosion controls limit the movement of dust from disturbed soil surfaces and include many different practices. Wind barriers block air currents and are effective in controlling soil blowing. Many different materials can be used as wind barriers, including solid board fence, snow fences, and bales of hay. Sprinkling moistens the soil surface with water and must be repeated as needed to be effective for preventing wind erosion (Delaware DNREC, 1989); however, applications must be monitored to prevent excessive runoff and erosion.

j. Intercept runoff above disturbed slopes and convey it to a permanent channel or storm drain.

Earth dikes, perimeter dikes or swales, or diversions can be used to intercept and convey runoff above disturbed areas. An earth dike is a temporary berm or ridge of compacted soil that channels water to a desired location. A perimeter dike/swale or diversion is a swale with a supporting ridge on the lower side that is constructed from the soil excavated from the adjoining swale (Delaware DNREC, 1989). These practices should be used to intercept flow from denuded areas or newly seeded areas to keep the disturbed areas from being eroded from the uphill runoff. The structures should be stabilized within 14 days of installation. A pipe slope drain, also known as a pipe drop structure, is a temporary pipe placed from the top of a slope to the bottom of the slope to convey concentrated runoff down the slope without causing erosion (Delaware DNREC, 1989).

k. On long or steep, disturbed, or man-made slopes, construct benches, terraces, or ditches at regular intervals to intercept runoff.

Benches, terraces, or ditches break up a slope by providing areas of low slope in the reverse direction. This keeps water from proceeding down the slope at increasing volume and velocity. Instead, the flow is directed to a suitable outlet, such as a sediment basin or trap. The frequency of benches, terraces, or ditches will depend on the erodibility of the soils, steepness and length of the slope, and rock outcrops. This practice should be used if there is a potential for erosion along the slope.

l. Use retaining walls.

Often retaining walls can be used to decrease the steepness of a slope. If the steepness of a slope is reduced, the runoff velocity is decreased and, therefore, the erosion potential is decreased.

m. Provide linings for urban runoff conveyance channels.

Often construction increases the velocity and volume of runoff, which causes erosion in newly constructed or existing urban runoff conveyance channels. If the runoff during or after construction will cause erosion in a channel, the channel should be lined or flow control BMPs installed. The first choice of lining should be grass or sod since this reduces runoff velocities and provides water quality benefits through filtration and infiltration. If the velocity in the channel would erode the grass or sod, then riprap, concrete, or gabions can be used.

n. Use check dams.

Check dams are small, temporary dams constructed across a swale or channel. They can be constructed using gravel or straw bales. They are used to reduce the velocity of concentrated flow and, therefore, to reduce the erosion in

a swale or channel. Check dams should be used when a swale or channel will be used for a short time and therefore it is not feasible or practical to line the channel or implement flow control BMPs (Delaware DNREC, 1989).

■ o. *Seed and fertilize.*

Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once a dense vegetative cover has been established. However, often seeding and fertilizing do not produce as thick a vegetative cover as do seed and mulch or netting. Newly established vegetation does not have as extensive a root system as existing vegetation and therefore is more prone to erosion, especially on steep slopes. Care should be taken when fertilizing to avoid untimely or excessive application. Since the practice of seeding and fertilizing does not provide any protection during the time of vegetative establishment, it should be used only on favorable soils in very flat areas and not in sensitive areas.

■ p. *Use seeding and mulch/mats.*

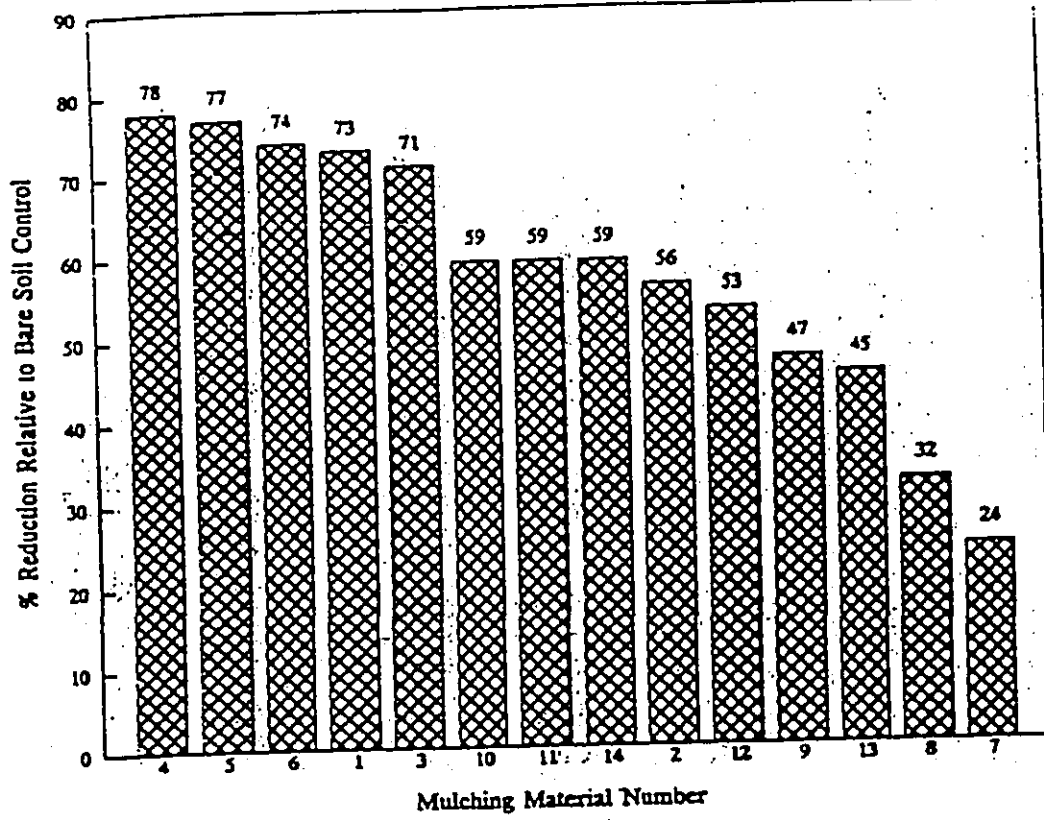
Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once the vegetative cover has been established. The mulching/mats protect the disturbed area while the vegetation becomes established.

The management of land by using ground cover reduces erosion by reducing the flow rate of runoff and the raindrop impact. Bare soils should be seeded or otherwise stabilized within 15 calendar days after final grading. Denuded areas that are inactive and will be exposed to rain for 30 days or more should also be temporarily stabilized, usually by planting seeds and establishing vegetation during favorable seasons in areas where vegetation can be established. In very flat, non-sensitive areas with favorable soils, stabilization may involve simply seeding and fertilizing. Mulching and/or sodding may be necessary as slopes become moderate to steep, as soils become more erosive, and as areas become more sensitive.

■ q. *Use mulch/mats.*

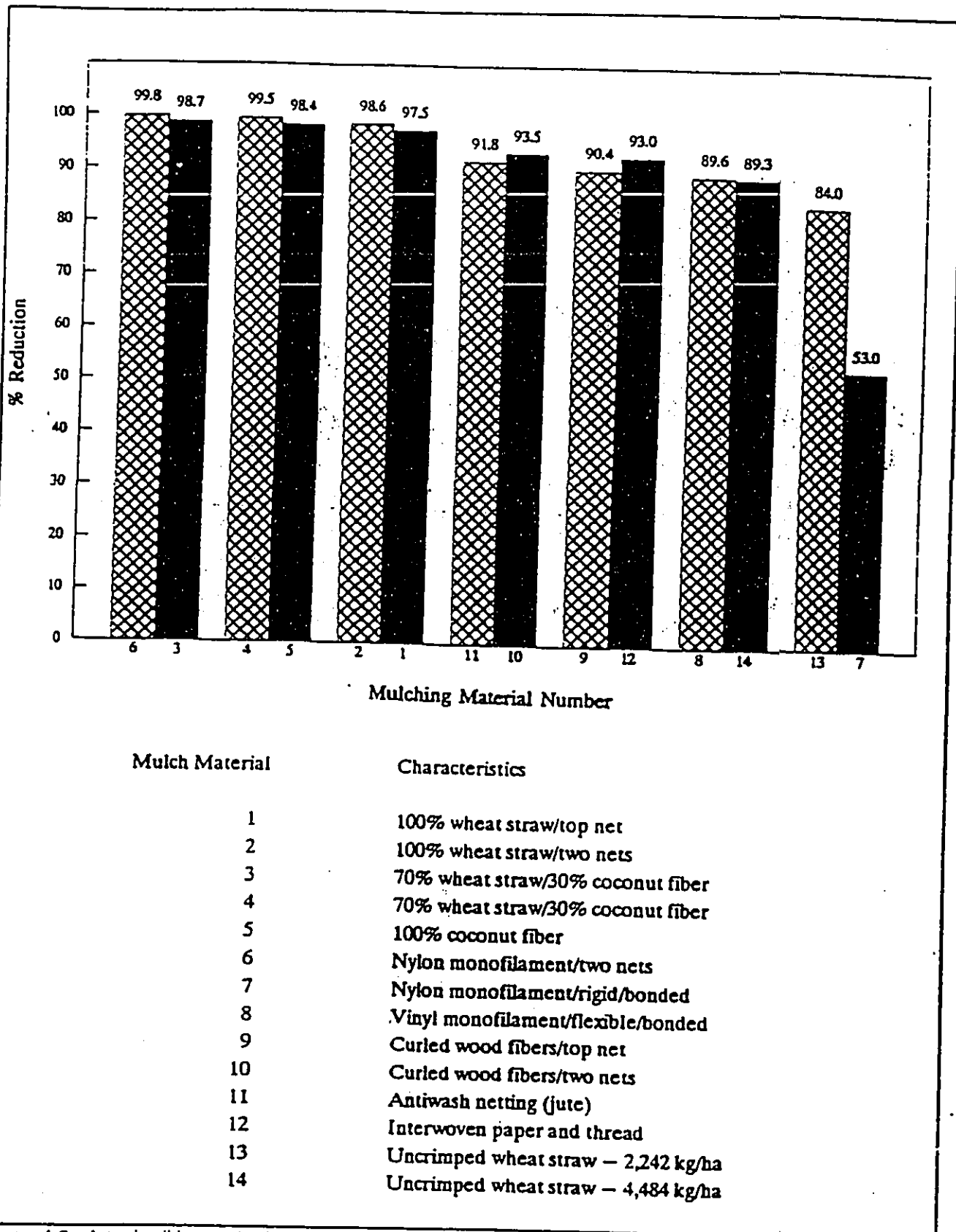
Mulching involves applying plant residues or other suitable materials on disturbed soil surfaces. Mulchs/mats used include tacked straw, wood chips, and jute netting and are often covered by blankets or netting. Mulching alone should be used only for temporary protection of the soil surface or when permanent seeding is not feasible. The useful life of mulch varies with the material used and the amount of precipitation, but is approximately 2 to 6 months. Figure 4-5 shows water velocity reductions that could be expected using various mulching techniques. Similarly, Figure 4-6 shows reductions in soil loss achievable using various mulching techniques. During times of year when vegetation cannot be established, soil mulching should be applied to moderate slopes and soils that are not highly erodible. On steep slopes or highly erodible soils, multiple mulching treatments should be used. On a high-elevation or desert site where grasses cannot survive the harsh environment, native shrubs may be planted. Interlocking ceramic materials, filter fabric, and netting are available for this purpose. Before stabilizing an area, it is important to have installed all sediment controls and diverted runoff away from the area to be planted. Runoff may be diverted away from denuded areas or newly planted areas using dikes, swales, or pipe slope drains to intercept runoff and convey it to a permanent channel or storm drain. Reserved topsoil may be used to revegetate a site if the stockpile has been covered and stabilized.

Consideration should be given to maintenance when designing mulching and matting schemes. Plastic nets are often used to cover the mulch or mats; however, they can foul lawn mower blades if the area requires mowing.



Mulch Material	Characteristics
1	100% wheat straw/top net
2	100% wheat straw/two nets
3	70% wheat straw/30% coconut fiber
4	70% wheat straw/30% coconut fiber
5	100% coconut fiber
6	Nylon monofilament/two nets
7	Nylon monofilament/rigid/bonded
8	Vinyl monofilament/flexible/bonded
9	Curled wood fibers/top net
10	Curled wood fibers/two nets
11	Antiwash netting (jute)
12	Interwoven paper and thread
13	Uncrimped wheat straw - 2,242 kg/ha
14	Uncrimped wheat straw - 4,484 kg/ha

Figure 4-5. Water velocity reductions for different mulch treatments (adapted from Harding, 1990).



Mulch Material	Characteristics
1	100% wheat straw/top net
2	100% wheat straw/two nets
3	70% wheat straw/30% coconut fiber
4	70% wheat straw/30% coconut fiber
5	100% coconut fiber
6	Nylon monofilament/two nets
7	Nylon monofilament/rigid/bonded
8	Vinyl monofilament/flexible/bonded
9	Curled wood fibers/top net
10	Curled wood fibers/two nets
11	Antiwash netting (jute)
12	Interwoven paper and thread
13	Uncrimped wheat straw - 2,242 kg/ha
14	Uncrimped wheat straw - 4,484 kg/ha

Figure 4-6. Actual soil loss reductions for different mulch treatments (adapted from Harding, 1990).

r. Use sodding.

Sodding permanently stabilizes an area. Sodding provides immediate stabilization of an area and should be used in critical areas or where establishment of permanent vegetation by seeding and mulching would be difficult. Sodding is also a preferred option when there is a high erosion potential during the period of vegetative establishment from seeding.

s. Use wildflower cover.

Because of the hardy drought-resistant nature of wildflowers, they may be more beneficial as an erosion control practice than turf grass. While not as dense as turfgrass, wildflower thatches and associated grasses are expected to be as effective in erosion control and contaminant absorption. Because thatches of wildflowers do not need fertilizers, pesticides, or herbicides, and watering is minimal, implementation of this practice may result in a cost savings (Brash et al., undated). In 1987, Howard County, Maryland, spent \$690.00 per acre to maintain turfgrass areas, compared to only \$31.00 per acre for wildflower meadows (Wilson, 1990).

A wildflower stand requires several years to become established; maintenance requirements are minimal once the area is established (Brash et al., undated).

5. Sediment Control Practices⁴

As discussed more fully at the beginning of this chapter and in Chapter 1, the following practices are described for illustrative purposes only. State programs need not require implementation of these practices. However, as a practical matter, EPA anticipates that the management measure set forth above generally will be implemented by applying one or more management practices appropriate to the source, location, and climate. The practices set forth below have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the management measure described above.

Sediment controls capture sediment that is transported in runoff. Filtration and detention (gravitational settling) are the main processes used to remove sediment from urban runoff.

a. Sediment Basins

Sediment basins, also known as silt basins, are engineered impoundment structures that allow sediment to settle out of the urban runoff. They are installed prior to full-scale grading and remain in place until the disturbed portions of the drainage area are fully stabilized. They are generally located at the low point of sites, away from construction traffic, where they will be able to trap sediment-laden runoff.

Sediment basins are typically used for drainage areas between 5 and 100 acres. They can be classified as either temporary or permanent structures, depending on the length of service of the structure. If they are designed to function for less than 36 months, they are classified as "temporary"; otherwise, they are considered permanent structures. Temporary sediment basins can also be converted into permanent urban runoff management ponds. When sediment basins are designed as permanent structures, they must meet all standards for wet ponds.

b. Sediment Trap

Sediment traps are small impoundments that allow sediment to settle out of runoff water. Sediment traps are typically installed in a drainageway or other point of discharge from a disturbed area. Temporary diversions can be

⁴Adapted from Goldman (1986).

used to direct runoff to the sediment trap. Sediment traps should not be used for drainage areas greater than 5 acres and typically have a useful life of approximately 18 to 24 months.

■ c. Filter Fabric Fence

Filter fabric fence is available from many manufacturers and in several mesh sizes. Sediment is filtered out as urban runoff flows through the fabric. Such fences should be used only where there is sheet flow (i.e., no concentrated flow), and the maximum drainage area to the fence should be 0.5 acre or less per 100 feet of fence. Filter fabric fences have a useful life of approximately 6 to 12 months.

■ d. Straw Bale Barrier

A straw bale barrier is a row of anchored straw bales that detain and filter urban runoff. Straw bales are less effective than filter fabric, which can usually be used in place of straw bales. However, straw bales have been effectively used as temporary check dams in channels. As with filter fabric fences, straw bale barriers should be used only where there is sheet flow. The maximum drainage area to the barrier should be 0.25 acre or less per 100 feet of barrier. The useful life of straw bales is approximately 3 months.

■ e. Inlet Protection

Inlet protection consists of a barrier placed around a storm drain drop inlet, which traps sediment before it enters the storm sewer system. Filter fabric, straw bales, gravel, or sand bags are often used for inlet protection.

■ f. Construction Entrance

A construction entrance is a pad of gravel over filter cloth located where traffic leaves a construction site. As vehicles drive over the gravel, mud, and sediment are collected from the vehicles' wheels and offsite transport of sediment is reduced.

■ g. Vegetated Filter Strips

Vegetated filter strips are low-gradient vegetated areas that filter overland sheet flow. Runoff must be evenly distributed across the filter strip. Channelized flows decrease the effectiveness of filter strips. Level spreading devices are often used to distribute the runoff evenly across the strip (Dillaha et al., 1989).

Vegetated filter strips should have relatively low slopes and adequate length and should be planted with erosion-resistant plant species. The main factors that influence the removal efficiency are the vegetation type, soil infiltration rate, and flow depth and travel time. These factors are dependent on the contributing drainage area, slope of strip, degree and type of vegetative cover, and strip length. Maintenance requirements for vegetated filter strips include sediment removal and inspections to ensure that dense, vigorous vegetation is established and concentrated flows do not occur. Maintenance of these structures is discussed in Section II.A of this chapter.

6. Effectiveness and Cost Information

■ a. Erosion Control Practices

The effectiveness of erosion control practices can vary based on land slope, the size of the disturbed area, rainfall frequency and intensity, wind conditions, soil type, use of heavy machinery, length of time soils are exposed and unprotected, and other factors. In general, a system of erosion and sediment control practices can more effectively reduce offsite sediment transport than can a single system. Numerous nonstructural measures such as protecting natural or newly planted vegetation, minimizing the disturbance of vegetation on steep slopes and other highly

erodible areas, maximizing the distance eroded material must travel before reaching the drainage system, and locating roads away from sensitive areas may be used to reduce erosion.

Table 4-15 contains the available cost and effectiveness data for some of the erosion controls listed above. Information on the effectiveness of individual nonstructural controls was not available. All reported effectiveness data assume that controls are properly designed, constructed, and maintained. Costs have been broken down into annual capital costs, annual maintenance costs, and total annual costs (including annualization of the capital costs).

■ b. Sediment Control Practices

Regular inspection and maintenance are needed for most erosion control practices to remain effective. The effectiveness of sediment controls will depend on the size of the construction site and the nature of the runoff flows. Sediment basins are most appropriate for drainage areas of 5 acres or greater. In smaller areas with concentrated flows, silt traps may suffice. Where concentrated flow leaves the site and the drainage area is less than 0.5 ac/100 ft of flow, filter fabric fences may be effective. In areas where sheet flow leaves the site and the drainage area is greater than 0.5 acre/100 ft of flow, perimeter dikes may be used to divert the flow to a sediment trap or sediment basin. Urban runoff inlets may be protected using straw bales or diversions to filter or route runoff away from the inlets.

Table 4-16 describes the general cost and effectiveness of some common sediment control practices.

■ c. Comparisons

Figure 4-7 illustrates the estimated TSS loading reductions from Maryland construction sites possible using a combination of erosion and sediment controls in contrast to using only sediment controls. Figure 4-8 shows a comparison of the cost and effectiveness of various erosion control practices. As can be seen in Figure 4-8, seeding or seeding and mulching provide the highest levels of control at the lowest cost.

Table 4-15. ESC Quantitative Effectiveness and Cost Summary

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years) ^a	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Sod	Immediate erosion protection where there is high erosion potential during vegetative establishment.	Average: 99% Observed range: 88% - 99% References: Minnesota Pollution Control Agency, 1989; Pennsylvania, 1983 cited in USEPA, 1991	2	Average: \$0.2 per ft ² [\$11,300 per acre] Range: \$0.1 - \$1.1 References: SWRPC, 1991; Schueler, 1987; Virginia, 1980	Average: 5% Range: 5% Reference: SWRPC, 1991	\$0.20 per ft ² \$7,500 per acre
Seed	Establish vegetation on disturbed area.	After vegetation established- Average: 80% Observed range: 50% - 100% References: SCS, 1985 cited in EPA, 1991; Minnesota Pollution Control Agency, 1989; Oberts, 1984 cited in City of Austin, 1988; Delaware Department of Natural Resources, 1989	2	Average: \$400 per acre Range: \$200 - \$1000 per acre References: Wisconsin DOT cited in SWRPC, 1991; SWRPC, 1991; Goldman, 1986; Virginia, 1980	Average: 20% Range: 15% - 25% References: Wisconsin DOT cited in SWRPC, 1991; SWRPC, 1991	\$300 per acre
Seed and Mulch	Establish vegetation on disturbed area.	After vegetation established- Average: 80% Observed range: 50% - 100% References: SCS, 1985 cited in EPA, 1991; Minnesota Pollution Control Agency, 1989; Oberts, 1984 cited in City of Austin, 1988; Delaware Department of Natural Resources, 1989	2	Average: \$1,500 per acre Range: \$800 - \$3,500 per acre References: Goldman, 1986; Washington DOT, 1990; NC State, 1990; Schueler, 1987; Virginia, 1980; SWRPC, 1991	Average: NA ^b Range: NA References: None	\$1,100 per acre

Table 4-15. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years) ^a	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Mulch	Temporary stabilization of disturbed area.	Observed range:	Straw mulch: 0.25	Straw mulch: Average: \$1,700 per acre Range: \$500 - \$5,000 per acre References: Wisconsin DOT cited in SWRPC, 1991; Washington DOT, 1990; Virginia, 1980	Average: NA ^b Range: NA References: None	Straw mulch: \$7,500 per acre
		<u>sand:</u>	50% slope			
		wood fiber @ 1500 lb/ac wood fiber @ 3000 lb/ac straw @ 3000 lb/ac	20% slope 50-60% 50-85% 80-100%	50% slope 0-20% 50-70% 85%		
Mulch	Temporary stabilization of disturbed area.	<u>Silt-loam:</u>	Wood fiber mulch: 0.33	Wood fiber mulch: Average: \$1,000 per acre Range: \$100 - \$2,300 per acre References: Washington DOT, 1990; Virginia, 1980		Wood fiber mulch: \$3,500 per acre
		wood fiber @ 1500 lb/ac wood fiber @ 3000 lb/ac straw @ 3000 lb/ac	20% slope 20-60% 60-90% 80-95%	50% slope 40-60% 60-70% 70-90%		
		<u>Silt-clay-loam:</u>	10-30% slope			
Mulch	Temporary stabilization of disturbed area.	wood fiber @ 1500 lb/ac	30-50% slope	Jute netting: Average: \$3,700 per acre Range: \$3,500-\$4,100 per acre References: Washington DOT, 1990; Virginia, 1980		Jute netting: \$12,500 per acre
		wood fiber @ 3000 lb/ac	5% slope			
		jute netting	40%	Jute netting: Average: \$3,700 per acre Range: \$3,500-\$4,100 per acre References: Washington DOT, 1990; Virginia, 1980		
		straw @ 3000 lb/ac	30-60% slope			
		wood chips @ 10,000 lb/ac	40-70% slope			
		mulch blanket	60-80% slope			
excelsior blanket	multiple treatment (straw and jute)	60-80%	30% slope	Straw and jute: Average: \$5,400 per acre Range: \$4,000-\$9,100 per acre References: Washington DOT, 1990; Virginia, 1980		Straw and jute: \$18,000 per acre
		80%	50-60% and 80% slope			

References: Minnesota Pollution Control Agency, 1989; Kay, 1983 cited in Goldman, 1986

Table 4-15. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years) ^a	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Terraces	Break up long or steep slopes.	Observed range: Land Slope 1-12% 12-18% 18-24% Reduction in Erosion 70% 60% 55% Additionally, if the slope steepness is halved, while other factors are held constant, the soil loss potential decreases 2-1/2 times. If both the slope and length are halved, the soil loss potential is decreased 4 times. References: Goldman, 1986; Beasley, 1972	2	Average: \$5 per lin ft Range: \$1 - \$12 References: SWRPC, 1991; Goldman, 1986; Virginia, 1991	Average: 20% Range: 20% Reference: SWRPC, 1991	\$4 per lin ft
All Erosion Controls	Reduce amount of sediment entering runoff.	Average: 85% Observed range: 85% Reference: Schueler, 1990	--	Varies but typically low	Varies but typically low	Varies but typically low

NA - Not available.

^a Useful life estimated as length of construction project (assumed to be 2 years).^b For Total Annual Cost, assume Annual Maintenance Cost = 2% of construction cost.

Table 4-16. ESC Quantitative Effectiveness and Cost Summary for Sediment Control Practices

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years) ^a	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Sediment basin	Minimum drainage area = 5 acres, maximum drainage area = 100 acres	Average: 70% Observed range: 55% - 100% References: Schueler, 1990; Engle, BW and Jarrett, AR, 1990; Baumann, 1990	2	Less than 50,000 ft ³ storage Average: \$0.60 per ft ³ storage (\$1,100 per drainage acre) ^b Range: \$0.20 - \$1.30 per ft ³ Greater than 50,000 ft ³ storage Average: \$0.3 per ft ³ storage (\$550 per drainage acre) ^b Range: \$0.10 - \$0.40 per ft ³ References: SWRPC, 1991	Average: 25% Range: 25% References: Denver COG cited in SWRPC, 1991; SWRPC, 1991	Less than 50,000 ft ³ storage \$0.40 per ft ³ storage \$700 per drainage acre ^b Greater than 50,000 ft ³ storage \$0.20 per ft ³ storage \$900 per drainage acre ^c
Sediment trap	Maximum drainage area = 5 acres	Average: 60% Observed range: (-7%) - 100% References: Schueler, et al., 1990; Tahoe Regional Planning Agency, 1989; Baumann, 1990	1.5	Average: \$0.60 per ft ³ storage (\$1,100 per drainage acre) ^b Range: \$0.20 - \$2.00 per ft ³ References: Denver COG cited in SWRPC, 1991; SWRPC, 1991; Goldman, 1986	Average: 20% Range: 20% References: Denver COG cited in SWRPC, 1991; SWRPC, 1991	\$0.70 per ft ³ storage \$1,300 per drainage acre ^c
Filter Fabric Fence	Maximum drainage area = 0.5 acre per 100 feet of fence. Not to be used in concentrated flow areas.	Average: 70% Observed range: 0% - 100% sand: 80% - 99% silt-loam: 50% - 80% silt-clay-loam: 0% - 20% References: Munson, 1991; Fisher et al., 1984; Minnesota Pollution Control Agency, 1989	0.5	Average: \$3 per lin ft (\$700 per drainage acre) ^c Range: \$1 - \$8 per lin ft References: Wisconsin DOT cited in SWRPC, 1991; SWRPC, 1991; Goldman, 1986; Virginia, 1991; NC State, 1980	Average: 100% Range: 100% References: SWRPC, 1991	\$7 per lin ft \$850 per drainage acre ^c

Table 4-16. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years) ^a	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Straw Bale Barrier	Maximum drainage area = 0.25 acre per 100 feet of barrier. Not to be used in concentrated flow areas.	Average: 70% Observed Range: 70% References: Virginia, 1980 cited in EPA, 1991	0.25	Average: \$4 per lin ft (\$1,800 per drainage acre ^d) Range: \$2 - \$6 per lin ft References: Goldman, 1986; Virginia, 1991	Average: 100% Range: 100% References: SWRPC, 1991	\$17 per lin ft \$6,800 per drainage acre ^d
Inlet Protection	Protect storm drain inlet.	Average: NA Observed Range: NA References: None	1	Average: \$100 per inlet Range: \$50 - \$150 References: SWRPC, 1991; Denver COG cited in SWRPC, 1991; Virginia, 1991; EPA cited in SWRPC, 1991	Average: 60% Range: 20% - 100% References: SWRPC, 1991; Denver COG cited in SWRPC, 1991	\$150 per inlet
Construction Entrance	Removes sediment from vehicles wheels.	Average: NA Observed Range: NA References: None	2	Average: \$2,000 each Range: \$1,000 - \$4,000 References: Goldman, 1986; NC State, 1990	Average: NA ^e Range: NA References: None	\$1,500 each
				With washrack: Average: \$3,000 each Range: \$1,000 - \$5,000 References: Virginia, 1991		\$2,200 each

Table 4-16. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years) ^a	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Vegetative Filter Strip	Must have sheet flow.	Average: 70% Observed Range: 20% - 80% References: Hayes and Hairston, 1983 cited in Casman, 1990; Dillaha et al., 1989, cited in Glick et al., 1991; Virginia Department of Conservation, 1987; Nonpoint Source Control Task Force, 1983 cited in Minnesota PCA, 1989; Schueler, 1987	2	Established from existing vegetation. Average: \$0 Range: \$0 References: Schueler, 1987	Average: NA Range: NA References: None	NA
				Established from sod. Average: \$11,300 per acre Range: \$4,500 - \$48,000 per acre References: Schueler, 1987; SWRPC, 1991		

NA - Not available.

- ^a Useful life estimated as length of construction project (assumed to be 2 years)
- ^b For Total Annual Cost, assume Annual Maintenance Cost=20% of construction cost.
- ^c Assumes trap volume = 1800 cfi/ac (0.5 inches runoff per acre).
- ^d Assumes drainage area of 0.5 acre per 100 feet of fence (maximum allowed).
- ^e Assumes drainage area of 0.25 acre per 100 feet of barrier (maximum allowed).

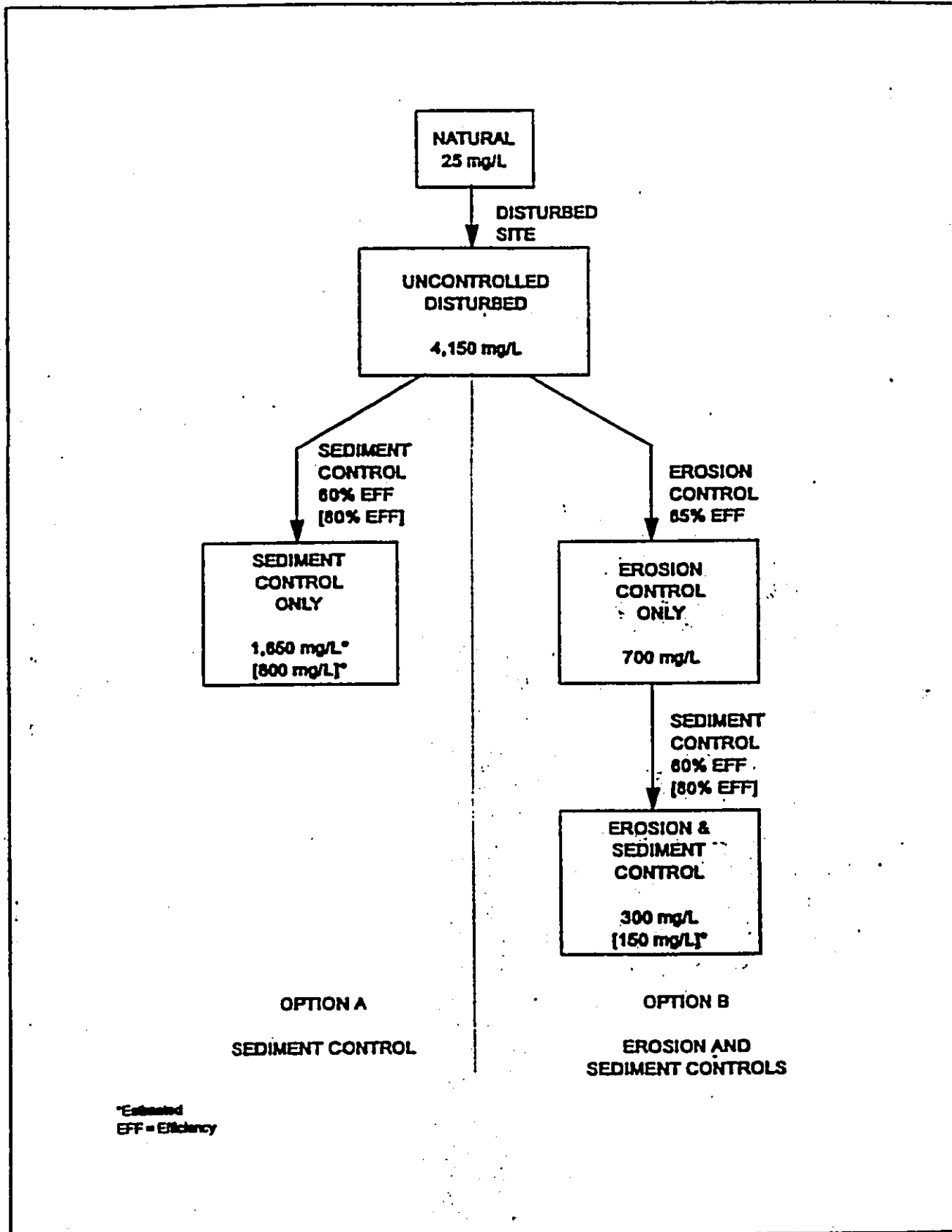


Figure 4-7. TSS concentrations from Maryland construction sites (Schueler, 1987).

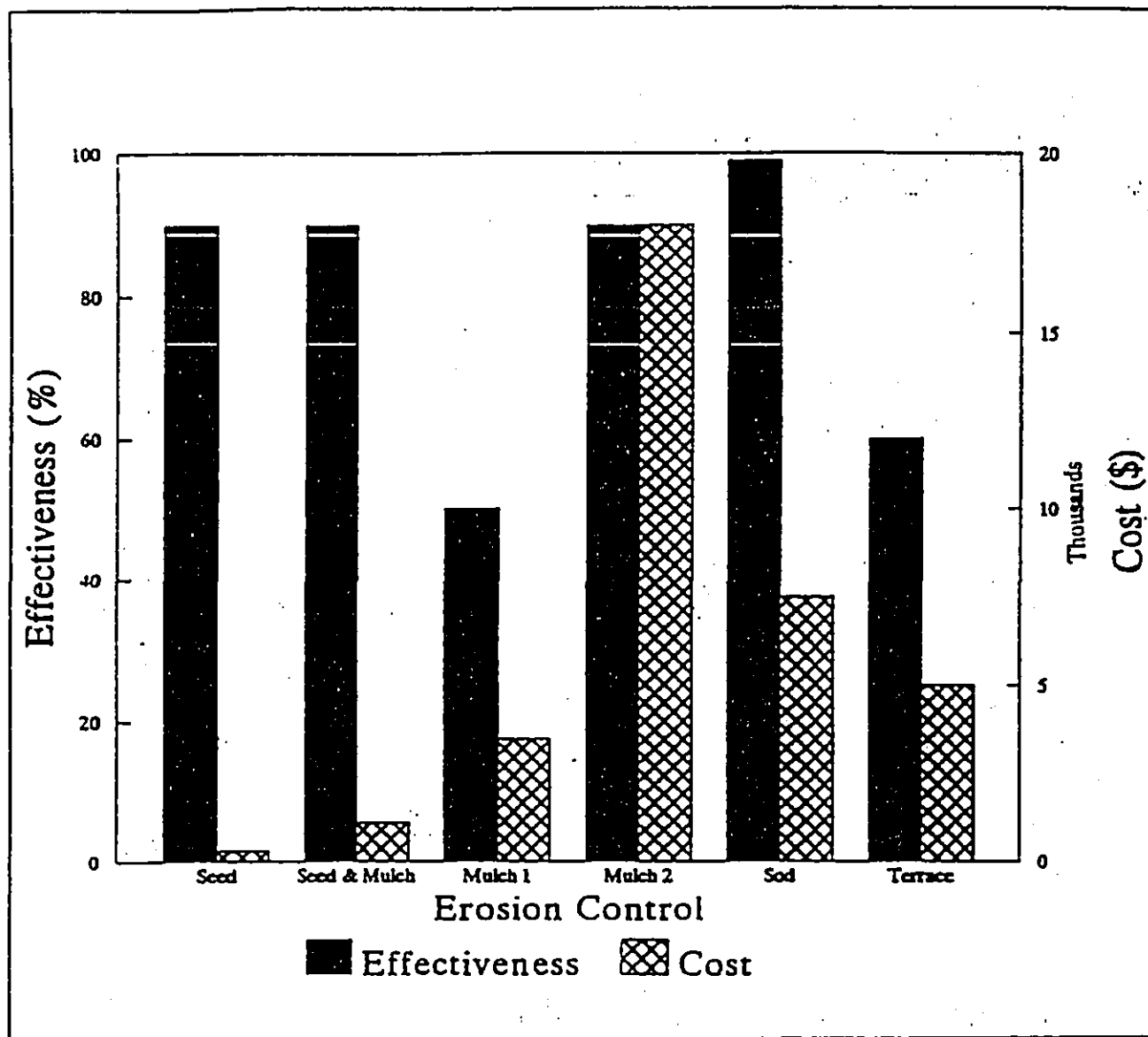


Figure 4-8. Comparison of cost and effectiveness for erosion control practices (based on information in Tables 4-15 and 4-16).

B. Construction Site Chemical Control Management Measure

- (1) Limit application, generation, and migration of toxic substances;
- (2) Ensure the proper storage and disposal of toxic materials; and
- (3) Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters.

1. Applicability

This management measure is intended to be applied by States to all construction sites less than 5 acres in area and to new, resurfaced, restored, and reconstructed road, highway, and bridge construction projects. This management measure does not apply to: (1) construction of a detached single family home on a site of 1/2 acre or more or (2) construction that does not disturb over 5,000 square feet of land on a site. (NOTE: All construction activities, including clearing, grading, and excavation, that result in the disturbance of areas greater than or equal to 5 acres or are a part of a larger development plan are covered by the NPDES regulations and are thus excluded from these requirements.) Under the Coastal Zone Act Reauthorization Amendments of 1990, States are subject to a number of requirements as they develop coastal NPS programs in conformance with this management measure and will have flexibility in doing so. The application of management measures by States is described more fully in *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance*, published jointly by the U.S. Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce.

2. Description

The purpose of this management measure is to prevent the generation of nonpoint source pollution from construction sites due to improper handling and usage of nutrients and toxic substances, and to prevent the movement of toxic substances from the construction site.

Many potential pollutants other than sediment are associated with construction activities. These pollutants include pesticides (insecticides, fungicides, herbicides, and rodenticides); fertilizers used for vegetative stabilization; petrochemicals (oils, gasoline, and asphalt degreasers); construction chemicals such as concrete products, sealers, and paints; wash water associated with these products; paper, wood; garbage; and sanitary wastes (Washington State Department of Ecology, 1991).

The variety of pollutants present and the severity of their effects are dependent on a number of factors:

- (1) The nature of the construction activity. For example, potential pollution associated with fertilizer usage may be greater along a highway or at a housing development than it would be at a shopping center development because highways and housing developments usually have greater landscaping requirements.
- (2) The physical characteristics of the construction site. The majority of all pollutants generated at construction sites are carried to surface waters via runoff. Therefore, the factors affecting runoff volume,

such as the amount, intensity, and frequency of rainfall; soil infiltration rates; surface roughness; slope length and steepness; and area denuded, all contribute to pollutant loadings.

- (3) The proximity of surface waters to the nonpoint pollutant source. As the distance separating pollutant-generating activities from surface waters decreases, the likelihood of water quality impacts increases.

a. Pesticides

Insecticides, rodenticides, and herbicides are used on construction sites to provide safe and healthy conditions, reduce maintenance and fire hazards, and curb weeds and woody plants. Rodenticides are also used to control rodents attracted to construction sites. Common insecticides employed include synthetic, relatively water-insoluble chlorinated hydrocarbons, organophosphates, carbamates, and pyrethrins.

b. Petroleum Products

Petroleum products used during construction include fuels and lubricants for vehicles, for power tools, and for general equipment maintenance. Specific petroleum pollutants include gasoline, diesel oil, kerosene, lubricating oils, and grease. Asphalt paving also can be particularly harmful since it releases various oils for a considerable time period after application. Asphalt overloads might be dumped and covered without inspection. However, many of these pollutants adhere to soil particles and other surfaces and can therefore be more easily controlled.

c. Nutrients

Fertilizers are used on construction sites when revegetating graded or disturbed areas. Fertilizers contain nitrogen and phosphorus, which in large doses can adversely affect surface waters, causing eutrophication.

d. Solid Wastes

Solid wastes on construction sites are generated from trees and shrubs removed during land clearing and structure installation. Other wastes include wood and paper from packaging and building materials, scrap metals, sanitary wastes, rubber, plastic and glass, and masonry and asphalt products. Food containers, cigarette packages, leftover food, and aluminum foil also contribute solid wastes to the construction site.

e. Construction Chemicals

Chemical pollutants, such as paints, acids for cleaning masonry surfaces, cleaning solvents, asphalt products, soil additives used for stabilization, and concrete-curing compounds, may also be used on construction sites and carried in runoff.

f. Other Pollutants

Other pollutants, such as wash water from concrete mixers, acid and alkaline solutions from exposed soil or rock, and alkaline-forming natural elements, may also be present and contribute to nonpoint source pollution.

Revegetation of disturbed areas may require the use of fertilizers and pesticides, which, if not applied properly, may become nonpoint source pollutants. Many pesticides are restricted by Federal and/or State regulations.

Hydroseeding operations, in which seed, fertilizers, and lime are applied to the ground surface in a one-step operation, are more conducive to nutrient pollution than are the conventional seedbed-preparation operations, in which fertilizers and lime are tilled into the soil. Use of fertilizers containing little or no phosphorus may be required by

local authorities if the development is near sensitive waterbodies. The addition of lime can also affect the pH of sensitive waters, making them more alkaline.

Improper fueling and servicing of vehicles can lead to significant quantities of petroleum products being dumped onto the ground. These pollutants can then be washed off site in urban runoff, even when proper erosion and sediment controls are in place. Pollutants carried in solution in runoff water, or fixed with sediment crystalline structures, may not be adequately controlled by erosion and sediment control practices (Washington Department of Ecology, 1991). Oils, waxes, and water-insoluble pesticides can form surface films on water and solid particles. Oil films can also concentrate water-soluble insecticides. These pollutants can be nearly impossible to control once present in runoff other than by the use of very costly water-treatment facilities (Washington Department of Ecology, 1991).

After spill prevention, one of the best methods to control petroleum pollutants is to retain sediments containing oil on the construction site through use of erosion and sediment control practices. Improved maintenance and safe storage facilities will reduce the chance of contaminating a construction site. One of the greatest concerns related to use of petroleum products is the method for waste disposal. The dumping of petroleum product wastes into sewers and other drainage channels is illegal and could result in fines or job shutdown.

The primary control method for solid wastes is to provide adequate disposal facilities. Erosion and sediment control structures usually capture much of the solid waste from construction sites. Periodic removal of litter from these structures will reduce solid waste accumulations. Collected solid waste should be removed and disposed of at authorized disposal areas.

Improperly stored construction materials, such as pressure-treated lumber or solvents, may lead to leaching of toxics to surface water and ground water. Disposal of construction chemicals should follow all applicable State and local laws that may require disposal by a licensed waste management firm.

3. Management Measure Selection

This management measure was selected based on the potential for many construction activities to contribute to nutrient and toxic NPS pollution.

This management measure was selected because (1) construction activities have the potential to contribute to increased loadings of toxic substances and nutrients to waterbodies; (2) various States and local governments regulate the control of chemicals on construction sites through spill prevention plans, erosion and sediment control plans, or other administrative devices; (3) the practices described are commonly used and presented in a number of best management practice handbooks and guidance manuals for construction sites; and (4) the practices selected are the most economical and effective.

4. Practices

As discussed more fully at the beginning of this chapter and in Chapter 1, the following practices are described for illustrative purposes only. State programs need not require implementation of these practices. However, as a practical matter, EPA anticipates that the management measure set forth above generally will be implemented by applying one or more management practices appropriate to the source, location, and climate. The practices set forth below have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the management measure described above.

■ a. *Property store, handle, apply, and dispose of pesticides.*

Pesticide storage areas on construction sites should be protected from the elements. Warning signs should be placed in areas recently sprayed or treated. Persons mixing and applying these chemicals should wear suitable protective clothing, in accordance with the law.

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Pesticide storage areas on construction sites should be protected from the elements. Warning signs should be placed in areas recently sprayed or treated. Persons mixing and applying these chemicals should wear suitable protective clothing, in accordance with the law.

Application rates should conform to registered label directions. Disposal of excess pesticides and pesticide-related wastes should conform to registered label directions for the disposal and storage of pesticides and pesticide containers set forth in applicable Federal, State, and local regulations that govern their usage, handling, storage, and disposal. Pesticides and herbicides should be used only in conjunction with Integrated Pest Management (IPM) (see Chapter 2). Pesticides should be the tool of last resort; methods that are the least disruptive to the environment and human health should be used first.

Pesticides should be disposed of through either a licensed waste management firm or a treatment, storage, and disposal (TSD) facility. Containers should be triple-rinsed before disposal, and rinse waters should be reused as product.

Other practices include setting aside a locked storage area, tightly closing lids, storing in a cool, dry place, checking containers periodically for leaks or deterioration, maintaining a list of products in storage, using plastic sheeting to line the storage area, and notifying neighboring property owners prior to spraying.

■ **b. Properly store, handle, use, and dispose of petroleum products.**

When storing petroleum products, follow these guidelines:

- Create a shelter around the area with cover and wind protection;
- Line the storage area with a double layer of plastic sheeting or similar material;
- Create an impervious berm around the perimeter with a capacity 110 percent greater than that of the largest container;
- Clearly label all products;
- Keep tanks off the ground; and
- Keep lids securely fastened.

Oil and oily wastes such as crankcase oil, cans, rags, and paper dropped into oils and lubricants should be disposed of in proper receptacles or recycled. Waste oil for recycling should not be mixed with degreasers, solvents, antifreeze, or brake fluid.

■ **c. Establish fuel and vehicle maintenance staging areas located away from all drainage courses, and design these areas to control runoff.**

Proper maintenance of equipment and installation of proper stream crossings will further reduce pollution of water by these sources. Stream crossings should be minimized through proper planning of access roads. Refer to Chapter 3 for additional information on stream crossings.

■ **d. Provide sanitary facilities for construction workers.**

■ **e. Store, cover, and isolate construction materials, including topsoil and chemicals, to prevent runoff of pollutants and contamination of ground water.**

■ **f. Develop and implement a spill prevention and control plan. Agencies, contractors, and other commercial entities that store, handle, or transport fuel, oil, or hazardous materials should develop a spill response plan.**

Post spill procedure information and have persons trained in spill handling on site or on call at all times. Materials for cleaning up spills should be kept on site and easily available. Spills should be cleaned up immediately and the contaminated material properly disposed of. Spill control plan components should include:

- Stop the source of the spill.
- Contain any liquid.
- Cover the spill with absorbent material such as kitty litter or sawdust, but do not use straw. Dispose of the used absorbent properly.

■ **g. Maintain and wash equipment and machinery in confined areas specifically designed to control runoff.**

Thinners or solvents should not be discharged into sanitary or storm sewer systems when cleaning machinery. Use alternative methods for cleaning larger equipment parts, such as high-pressure, high-temperature water washes, or steam cleaning. Equipment-washing detergents can be used, and wash water may be discharged into sanitary sewers if solids are removed from the solution first. (This practice should be verified with the local sewer authority.) Small parts can be cleaned with degreasing solvents, which can then be reused or recycled. Do not discharge any solvents into sewers.

Washout from concrete trucks should be disposed of into:

- A designated area that will later be backfilled;
- An area where the concrete wash can harden, can be broken up, and then can be placed in a dumpster; or
- A location not subject to urban runoff and more than 50 feet away from a storm drain, open ditch, or surface water.

Never dump washout into a sanitary sewer or storm drain, or onto soil or pavement that carries urban runoff.

■ **h. Develop and implement nutrient management plans.**

Properly time applications, and work fertilizers and liming materials into the soil to depths of 4 to 6 inches. Using soil tests to determine specific nutrient needs at the site can greatly decrease the amount of nutrients applied.

■ **i. Provide adequate disposal facilities for solid waste, including excess asphalt, produced during construction.**

■ **j. Educate construction workers about proper materials handling and spill response procedures. Distribute or post informational material regarding chemical control.**



June 10, 2004

George Tengan, Director
Department of Water
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for the Preparation of an Environmental Assessment for a 16-Lot Subdivision and Related Improvements, TMK 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Tengan:

This letter responds to your letter dated February 23, 2004.

The applicant acknowledges that water for the project may not be available until new water sources are online. Best management practices and water conservation measures will be incorporated in the project design and construction plans.

The applicant further acknowledges the existing easements for the 8-inch line west of Laulea Place will be maintained. An easement for the portion of the 12-inch line that is located within Parcel 3-8-01:003 will be provided. Fire flow requirements and provision of fire hydrants will be submitted for review during the building permit application process.

A copy of the Draft Environmental Assessment will be circulated to your office for further review and comment.

Very truly yours,

A handwritten signature in black ink, appearing to read "Daren Suzuki", is written over a dotted line.

Daren Suzuki, Staff Planner

DS:yp
cc: Henry Spencer
spencerspreckels@hawaii.gov

PĀ'IA



APR 16 2004
**MAIN STREET
ASSOCIATION**

April 14, 2004

TO: Mr. Henry Spencer

Daren Suzuki, Planner
Munekiyo & Hiraga, Inc.
305 High St. Suite 104
Wailuku, HI. 96793
244-2015
fax: 244-8729

RE: Early consultation request for the preparation of an Environmental Assessment for a 16 lot Subdivision and related improvements. TMK 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

The Paia Main Street Board of Directors and Officers thank you for your informative presentation on April 14 at our board meeting. We also appreciate the deadline extension for comment from March 1st to April 16, 2004. We reviewed the documents dated February 9, 2004 at the conclusion of our April Board Meeting.

The sensitive issues are Sprecklesville Beach, the access to the beach and the land surrounding it, the beautiful monkeypods along the Hana Hwy., the bike path right of way, Kaunoa senior center expansions, and a left hand turn lane on Hana Highway.

Sprecklesville Beach and surrounding land.

We are very grateful Mr. Spencer has respected the land and generously is proposing to protect the beach front and the land just mauka forever. The dirt beach access road will also continue to be accessible to the public.

Monkeypods.

The monkeypods will not be displaced and will be protected for their lifetime.

Bike Path.

Mr. Spencer is donating the existing bike path land to the proper authority.

Kaunoa Senior Center

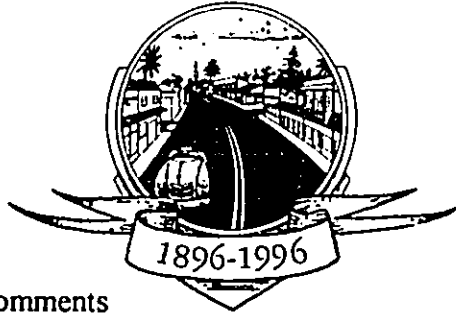
Mr. Spencer is donating 1 acre of land for future expansion for the Senior Center.

Left turn Hana Highway

Mr. Spencer is working with the state to provide a left turn lane for Stable road access.

P.O. BOX 995, PĀ'IA, MAUI, HI 96779-0995

PĀ'IA



MAIN STREET ASSOCIATION

p. 2 Paia Main Street comments

In addition, 27 other acres will remain Agriculture/Sugar cane.

The 16 .5 acre lots to be sold will have *deed restrictions* which will allow one structure with no Ohana and will also restrict future sub division of the individual .5 acres. Low density helps the impact on all resources.

Drainage of the sub division will need further review but seems to have been resolved with the natural setting of the open space area designated in green.

Water is easily accessible for the properties.

Mr. Henry Spencer and his planner Daren Suzuki have addressed all of the Boards concerns and then some.

We unanimously support this project and hope it to be a model for future developers to help protect the natural assets of the North Shore of Maui.

We appreciate the opportunity to review the project.

Sincerely,
Paia Main Street Association

A handwritten signature in cursive script that reads 'Debra Schonewill'.

Debra Schonewill
Chairperson, Paia Main Street

Jocelyn Perreira, Executive Director
Tri-Isle Main Street Program Coordinator

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

A Draft Environmental Assessment for the subject project was filed and published in the Office of Environmental Quality Control's The Environmental Notice on September 8, 2004. During the 30-day public comment period, agencies were provided the opportunity to comment on the proposed action. This section incorporates the comments received during the 30-day comment period between September 8, 2004 and October 8, 2004. Responses to the substantive comments are also incorporated herein.

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

October 11, 2004

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIAN W. FANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

04 OCT 12 08:33

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Attention: Kivette A. Caigoy

Dear Mr. Foley:

Subject: **E Paepae Ka Puko`a 16 Lot Rural Subdivision**
TMK: (2) 3-8-001: 003 por., 3-8-002: 009 & 010
EA 2004/0013, CPA 2004/0007, CIZ 2004/0015, SM1 2004/0021

Thank you for the opportunity to comment on the proposed E Paepae Ka Puko`a project.
The following comments are offered:

1. National Pollutant Discharge Elimination System (NPDES) permit coverage is required for this project. The Clean Water Branch should be contacted at 808 586-4309.
2. The property may be harboring rodents that will be dispersed to the surrounding areas when any buildings are demolished or the site is cleared. The applicant is required by Hawaii Administrative Rules (HAR), Chapter 11-26, "Vector Control" to eradicate any rodents prior to demolition or site clearing activities and to notify the Department of Health by submitting Form VC-12 to the Maui Vector Control program when such action is taken. Rodent traps and/or rodenticides should be set out on the project site for at least a week or until the rodent activity ceases. The Maui Vector Control program phone number is 873-3560.
3. The retention basin shall be designed, built, and maintained in such a way as to prevent and/or facilitate the control of mosquito breeding.
4. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in HAR, Chapter 11-46 "Community Noise Control". A noise permit may be required and should be obtained before the commencement of work.

Mr. Michael W. Foley
October 11, 2004
Page 2

Should you have any questions, please call me at 984-8230.

Sincerely,

A handwritten signature in black ink, appearing to be 'H. Matsubayashi', enclosed within a hand-drawn oval.

Herbert S. Matsubayashi
District Environmental Health Program Chief



October 26, 2004

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

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot Subdivision and Related Improvements, TMK Nos. 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Matsubayashi:

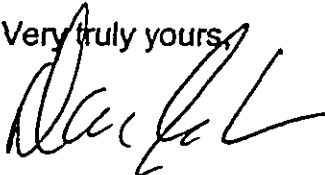
Thank you for your letter to Mr. Michael Foley dated October 11, 2004, providing comments on the subject Draft Environmental Assessment (EA). On behalf of Old Stable LLC, we offer the following responses:

1. It is acknowledged that a National Pollutant Discharge Elimination System (NPDES) permit coverage is required for the project. Compliance with applicable permit requirements will be done prior to initiation of construction.
2. The applicant will comply with the Hawaii Administrative Rules (HAR), Chapter 11-26, pertaining to Vector Control.
3. The soils within the project site are classified as having different types sands. According to the soil classification index, these sands are classified as having rapid permeability. The bottom of the retention basin is at elevation 4.0 feet above mean sea level. At high tide, the bottom of the retention basin will be designed to be approximately 18" higher than the water table and at low tide, the bottom of the basin will be approximately 4' lower than the water table. Because of the close proximity of the ground water and the permeability of the soil, it is anticipated that any retained water after a storm will not stand in the basin for a long period of time. In addition, due to the surface area of the basin, some of the retained water will be subject to evaporation. The basin will be also be regularly maintained to prevent mosquito breeding.

Mr. Herbert Matsubayashi, Chief
District Environmental Health Program
October 26, 2004
Page 2

4. It is acknowledged that noise created during construction may exceed the maximum allowable levels as set forth in HAR, Chapter 11-46, pertaining to Community Noise Control. As such a noise permit will be obtained prior to commencement of work, as applicable.

Thank you for your comments. Should you have any questions, please call me at 244-2015.

Very truly yours,


Daren Suzuki, Planner

DS:yp

cc: Kivette Caigoy, Department of Planning
Henry Spencer

spencer@spreckelohmaui.deares

LINDA LINGLE
GOVERNOR



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

SEP 02 2004
RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1330

August 30, 2004

Mr. Daren Suzuki
Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Suzuki:

Subject: 16-lot Subdivision and Related Improvements
Environmental Pre-Assessment Consultation
TMK: 3-8-001: 003, 3-8-002: 009 and 3-8-002: 0010, Spreckelsville, Maui

Thank you for your transmittal requesting our comments on the subject project.

The following are our comments:

1. A traffic assessment should be submitted, addressing the impact to the intersection of Stable Road and Hana Highway. The applicant should meet with our Highways Division, Maui District Office to discuss any operational and safety concerns.
2. No driveways will be allowed direct access on to Hana Highway.
3. The applicant must prepare a drainage report for our review and approval.
4. Plans for construction work within/or adjoining the highway right-of-way must be submitted for review and approval to our Highways Division, Maui District Office. This shall also include obtaining required permits from our Highways Division and other appropriate government agencies.
5. The proposed development is within the Kahului Airport's 65-70 DNL noise contour, making it incompatible for residential use. We recommend that the single-family residences be constructed for sound attenuation to provide interior noise levels of 45 DNL or less.
6. The applicant should disclose to the potential homeowners the potential noise, fumes, smoke, vibrations and overflights from aircraft flying into and out of the Kahului Airport.

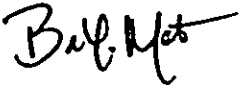
Mr. Daren Suzuki
Page 2
August 30, 2004

STP 8.1330

7. We request that an aviation and noise easement be granted to the Department of Transportation, Airports Division.
8. We request that the applicant file Form 7460-1 (Notice of Proposed Construction or Alteration) with the FAA District Office if it has not been already completed.
9. The applicant should disclose to the potential homeowners that the Airports Division has a future project for a parallel runway in its twenty (20) year Master Plan, which would be south of runway 2-23. Although this would not occur for some time, if in the future it is built, it may impact the development further, as the runway will be significantly closer to the development.

We appreciate the opportunity to provide our initial comments to you and look forward to more definitive plans in the DEIS.

Very truly yours,



for RODNEY K. HARAGA
Director of Transportation



October 26, 2004

Mr. Rodney Haraga, Director
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

SUBJECT: Pre-Consultation for the Preparation of a Draft Environmental Assessment (EA) for the Proposed 16-Lot Subdivision and Related Improvements, TMK Nos. 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Haraga:

Thank you for your letter dated August 30, 2004, providing comments on the subject pre-assessment consultation for a Draft EA. Please be advised that your comments were received after the Draft EA was initially filed with the Planning Department on August 2, 2004. As such, your comments were not incorporated into this document, but will be incorporated into the Final EA document.

On behalf of Old Stable LLC, we offer the following responses:

1. The Draft EA and Applications for a Community Plan Amendment, Change in Zoning, and Special Management Area Use Permit was submitted to your office for review and comment via transmittal from the Planning Department on September 9, 2004. This document appended a traffic assessment report for your review and comment. It is noted that the applicant, Mr. Henry Spencer has been in contact with Mr. Fred Cajigal of the Maui District Office to discuss operational and safety concerns. As represented in the Draft EA, discussions included provisions of a separate left-turn lane along Hana Highway for eastbound to northbound left turns, refuge and acceleration lanes for left-turns onto Hana Highway, acceleration lanes for right-turns onto Hana Highway, and separate left- and right-turn lanes from Old Stable Road at Hana Highway.

Although, not recommended by the traffic report based on negligible trips generated during peak hour traffic, the applicant acknowledges that these roadway improvements will provide safer road conditions. Therefore, the applicant has agreed to participate

Mr. Rodney Haraga, Director
October 26, 2004
Page 2

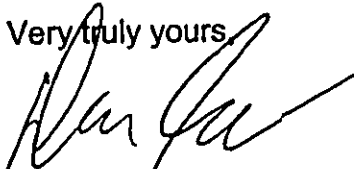
with the State Department of Transportation in the intersection improvements on Hana Highway and Old Stable Road.

2. It is confirmed that no driveways are proposed or will be allowed to have direct access onto Hana Highway.
3. A drainage report was appended to the Draft EA. It is noted that existing and proposed drainage conditions directs post-development runoff towards an onsite retention basin, and not onto State highway facilities.
4. It is acknowledged that plans for construction work within or adjoining the highway right-of-way will be submitted to the Maui District Office for review and approval, as applicable.
5. Your recommendation on incorporating sound attenuation measures in the construction of the single-family residences are noted. This recommendation will be passed on the individual lot owners who will be constructing these homes.
6. A disclosure statement to all homeowners on potential noise, fumes, smoke, vibrations and overflights from aircraft operations will be provided in all ownership deeds.
7. An aviation and noise easement agreement will be granted to the Department of Transportation, Airports Division for every homeowner.
8. We acknowledge filing a Notice of Proposed Construction or Alteration with the FAA District Office.
9. Similar to Item No. 6, a disclosure statement to all homeowners on the future plans of a parallel runway will be provided in all ownership deeds.

Mr. Rodney Haraga, Director
October 26, 2004
Page 3

Thank you for the opportunity to comment. Should you have any questions, please contact me at 244-2015.

Very truly yours,



Daren Suzuki, Planner

DS:yp

cc: Philip Rowell, Phillip Rowell & Associates
Ferdinand Cajigal, Department of Transportation, Maui District
Henry Spencer

dpsncertsprecket@dot.res

LINDA LINGUE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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

LD-NAV

September 24, 2004
CIZ 2004-0015.RCM2

Honorable Michael W. Foley
Planning Director
County of Maui, Planning Department
250 S. High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

Subject: I.D. No.: CIZ 2004-0015/CIZ
Applicant: Old State Road, LLC/16-lot subdivision
Authority: County of Maui Department of Planning
TMK: (2) 3-8-001: 003 (portion) - 3-8-2: 009 & 010

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
04 SEP 28 P 1:26

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

The Department of Land and Natural Resources' (DLNR) Land Division made available or distributed a copy of the document pertaining to the subject matter to the following DLNR Divisions for their review and comment:

- Division of Forestry and Wildlife
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office

Enclosed please find a copy of the Engineering Division comment and Division of Forestry and Wildlife response. The Department of Land and Natural Resources has no other comment to offer on the subject matter. If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



2004 SEP 20 A 10:30



DEPARTMENT OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 821
HONOLULU, HAWAII 96809

PETER Y. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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

September 15, 2004
LD/NAV
SM1 CIZ 2004-0015.CMT2

SPENCER16LOTSUB
Suspense Date: 9/25/04

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Change In Zoning
I. D. No.: CIZ 2004-0015
Applicant: Old Stable Road LLC
Project: 16 Lot Rural Subdivision
TMK: 2nd/ 3-8-1: 003 (portion). 3-8-2: 009 & 010
Authority: County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

Comments attached.

Division: Engineering

Signed: Eric Hirano

Date: 9/18/04

Print Name: ERIC HIRANO, CHIEF ENGINEER

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LANAI

Ref.: SM1 CIZ 2004-0015.CMT2

COMMENTS

- (X) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zones C, A4 and V23. National Flood Insurance Program (NFIP) does not regulate development within Zone C, however, it does regulate development within Zones A4 and V23 as indicated in bold letters below.
- () Please take note that the project site according to the Flood Insurance Rate Map (FIRM), is located in _____.
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is _____.
- (X) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

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

- () Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
- (X) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
- () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- () The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
- () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.
- () Additional Comments: _____
- () Other: _____

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed: Eric T. Hirano
ERIC T. HIRANO, CHIEF ENGINEER

Date: 9/18/04

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



2004 SEP 22 P 3 40



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IJU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING

FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
HAWAIIAN ISLAND RESERVE COMMISSION
LAND
STATE PARKS

September 15, 2004
LD/NAV
SM1 CIZ 2004-0015.CMT2

SPENCER16LOTSUB
Suspense Date: 9/25/04

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Change In Zoning
I. D. No.: CIZ 2004-0015
Applicant: Old Stable Road LLC
Project: 16 Lot Rural Subdivision
TMK: 2nd/ 3-8-1: 003 (portion). 3-8-2: 009 & 010
Authority: County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division: _____

Signed: Paul J Conry

Date: SEP 20 2004

Print Name: **PAUL J. CONRY, ADMINISTRATOR**
DIVISION OF FORESTRY AND WILDLIFE



October 26, 2004

Ms. Dierdre Mamiya, Administrator
Department of Land and
Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Ms Mamiya:

Thank you for your letter to Mr. Michael Foley dated September 24, 2004, providing comments on the subject Draft EA. On behalf of Old Stable LLC, we offer the following response to your comments.

Engineering Division

We acknowledge and concur that the project site is located in Flood Zones C, A4, and V23. It is noted that the subdivision development site is located outside the V23 zone. All development within the A4 zone will comply with the rules and regulations of the National Flood Insurance Program, as set forth in Section 19.62, Flood Hazard Areas, Maui County Code, as amended.

Should you have any questions, please call me at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read "Daren Suzuki", written over a white background.

Daren Suzuki, Planner

DS:yp

cc: Kivette Caigoy Department of Planning
Henry Spencer

spencer@spreckelndnr.deares

LINDA LINDLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIMEWA BUILDING, ROOM 655
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 06707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

May 17, 2004

Jeffrey Pantaleo
Archaeological Services Hawaii, LLC
18 South Market Street, Suite G
Wailuku, Hawaii 96793

LOG NO: 2004.1459
DOC NO: 0405MK07

Dear Mr. Pantaleo,

SUBJECT: Chapter 6E-42 Historic Preservation Review - Archaeological Inventory
Survey of A 30-Acre Parcel of Land in Spreckelsville, prepared for
Mr. Henry Spencer
Wailuku Ahupua'a, Wailuku District, Maui
TMK (2) 3-8-001: por. of 003

Thank you for the opportunity to review this report which our staff received on March 20, 2004 (Pantaleo 2004, *Archaeological Inventory Survey of a 30-Acre Parcel of Land, Spreckelsville, Wailuku District, Maui Island, TMK 3-8-001: por. 003*. Archaeological Services Hawaii, LLC, ms). Our review is late, and we apologize for any inconvenience this may have caused your or your client.

We would like to request some clarification on what property or properties were actually surveyed. According to the title of the report, the survey area was 30.0 acres, but it appears that the proposed residential development constitutes only 21.0 acres. We understand from the discussion under Project Area on page 1 that 23 acres (TMKs 3-8-001: por. 003 and 3-8-002:009 & 010) are to remain in conservation or as open space, and that another 27 acres (TMK 3-8-001: por. 003) are to remain in its existing agricultural use. Although our review is overdue, we would appreciate it if you could clarify these matters for the record and for future reference by submitting revised descriptions of the project area. We note that any lands that did not undergo survey during this study - such as the 23 acres said to be proposed for conservation or the 27 acres of agricultural land - may need to have an inventory survey with subsurface testing, should there be any plans for future development. By copy of this letter, we request the opportunity to review all future applications and proposals for these properties.

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The historical information provided summarizes the history of the post-contact period land uses. The summary of previous archaeological work in the area provides a baseline for the current work.

Jeffrey Pantaleo
Page 2

The survey appears to have adequately covered the project area, documenting no historic properties in the project area. Subsurface testing (eighteen backhoe trenches) were also negative for evidence of cultural deposits. The trenches were placed fairly systematically across the parcel in an effort to document the nature and distribution of subsurface deposits, especially any remnant of Site 50-50-05-1777, previously documented during archaeological monitoring. No cultural properties were identified during the current study. Water was encountered in the trenches at depths between one and two meters below surface.

Although no finds were made during the survey, you have recommended that archaeological monitoring be conducted during any ground disturbance associated with future development on the subject property. We concur that archaeological monitoring is warranted during all phases of the proposed development and ground disturbing activities. The backhoe trenches, while sterile, exhibited a sandy and silty clay deposit, and cultural materials, including subsurface cultural layers and human burials, may be encountered in future work.

We find this report to be adequate, and can accept it as final. We will await a monitoring plan, submitted in response to permit applications for the development. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169) as soon as possible to resolve these concerns.

Aloha,

P. Holly McEldowney
P. Holly McEldowney, Administrator
State Historic Preservation Division

MK:jen

c: Michael Foley, Director, Department of Planning, County of Maui, FAX 270-7634
Bert Ratto, County of Maui, Land Use and Codes, FAX 270-7972
Glen Ueno, County of Maui, Land Use and Codes, FAX 270-7972
Lance Nakamura, County of Maui, Land Use and Codes, FAX 270-7972
Maui Cultural Resources Commission, Dept of Ping, 250 S. High St, Wailuku, HI 96793
Chair, Maui/Lana'i Islands Burial Council
Kana'i Kapoleia, Burial Sites Program

MAY 19 2004



October 26, 2004

Ms. Melanie Chinen, Administrator
Department of Land and Natural Resources
Historic Preservation Division
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

SUBJECT: Historic Preservation Review - Archaeological Inventory Survey
prepared for Mr. Henry Spencer at TMK 3-8-001:por. 003,
Spreckelsville, Maui

Dear Ms. Chinen:

Thank you for your letter to Mr. Jeffrey Pantaleo dated May 17, 2004, providing comments on the subject Archaeological Inventory Survey. On behalf of Old Stable LLC, we offer the following response.

Based on conversation with Jeffrey Pantaleo, Archaeological Services Hawaii, LLC, clarification on what property was actually surveyed was provided to your office. We acknowledge that you find this report adequate for final acceptance. An archaeological monitoring plan will be prepared for review and approval prior to any ground altering activities.

Should you have any questions, please call me at 244-2015.

Very truly yours,

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

Daren Suzuki, Planner

DS:yp

cc: Jeffrey Pantaleo, Archaeological Services Hawaii, LLC
Melissa Kirkendall, State Historic Preservation Division, Maui
Kivette Caigoy, Department of Planning
Henry Spencer

spencer@spreckelsphpd.ltr

LINDA LINGLE
GOVERNOR



KUNO K. SAITO
Comptroller
KATHERINE H. THOMASON
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES
SURVEY DIVISION
P.O. BOX 119
HONOLULU, HAWAII 96810-0119

04 OCT -1 12:33

DEPT OF PLANNING
COUNTY OF MAUI
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September 30, 2004

MEMORANDUM

TO: Michael W. Foley, Planning Director
Maui County Planning Department

ATTN: Kivette A. Caigoy, Environmental Planner

FROM: Melvin M. Masuda, Acting State Land Surveyor
DAGS, Survey Division

SUBJECT: ID.: EA 2004/0013, CPA 2004/0007, CIZ 2004/0015, SM1 2004/0021
TMK: (2) 3-8-001:003 (portion), 3-8-002:009 & 010
Project Name: E Paepae Ka Puko'a 16 Lot Rural Subdivision,
Open Space Conservation Easement and Country/State
Donation Project
Applicant: Old Stable Road, LLC, c/o Munekiyo & Hiraga, Inc.

The subject proposal has been reviewed and confirmed that no Government Survey Triangulation Stations or Benchmarks are affected. Survey has no objections to the proposed project.

GOVERNOR



SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2380
HONOLULU, HAWAII 96810
OCT 13 P12:26

OFFICE OF BUSINESS SERVICES

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

October 8, 2004

Mr. Michael W. Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

Attention: Kivette A. Caigoy, Environmental Planner

Dear Mr. Foley:

Subject: Draft Environmental Assessment and Applications
for a Community Plan Amendment
Change in Zoning and Special Management Area Use Permit for
E Paepae Ka Puko 'a, Spreckelsville, Paia, TMK: 3-8-1: por.3; 3-8-2: 9 & 10

Old Stable LLC is proposing a 16-lot rural subdivision. The Department of Education (DOE) notes that the proposed project is less than the 50-unit minimum trigger for a request for a school fair-share contribution.

The DOE has no further comment on the resolution but appreciates the opportunity to review the plans. If you have any questions, please call me at 586-3444 or Heidi Meeker of the Facilities and Support Services Branch at 733-4862.

Sincerely,

A handwritten signature in cursive script, appearing to read "Rae M. Loui".

Rae M. Loui
Assistant Superintendent

RML:mp

c: Ken Nomura, CAS, Baldwin/Kekaulike/Maui Complex Area



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

OCT 21 2004

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
STEVE BRETSCHNEIDER
DEPUTY DIRECTOR
MARY LOU KOBAYASHI
ADMINISTRATOR
OFFICE OF PLANNING

OFFICE OF PLANNING
235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-10657

October 20, 2004

Mr. Michael W. Foley
Planning Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Attention: Ms. Kivette Caigoy
Environmental Planner

Dear Mr. Foley:

Subject: ID: EA 2004/0013, CPA 2004/0007, CIZ 2004/0015,
SM1 2004/0021
TMK: (2) 3-8-001: 003 (por.), 3-8-002: 009 & 010
Project Name: E Paepae Ka Puko'a
Applicant: Old Stable Road LLC

We have reviewed the above referenced draft environmental assessment and concurrent applications and offer the following comments.

The proposed 16-lot subdivision on a 14.80-acre portion of TMK: 3-8-001: 003 will not be in the tsunami inundation zone and will be situated 500 feet mauka of the shoreline.

The State Department of Transportation (DOT) is promoting the transportation planning principle of "Connectivity." We ask that you discuss your roadway design with DOT. The proposed cul-de-sac design with a single entry/exit onto Old Stable Road does not distribute traffic as well as an additional through connection to Alakapa Place.

The proposed project's existing Urban District designation and County R-3 zoning require a minimum lot size of 10,000 square feet with curbs, gutters and sidewalks as well as drainage, water, sewer, electrical distribution systems and landscaping. The proposed RU-0.5 County zoning district will allow the applicant to subdivide the

Mr. Michael W. Foley
Page 2
October 20, 2004

property into houselots ranging in size from .5 acres to greater than 1 acre with applicant-proposed curbs, gutters and sidewalks.

Rural lot developers should consider use of the State Rural District and the County RU-0.5 zoning district for low-density, reasonably-priced residential communities without streets that are built to urban standards.

Due to the project's close proximity to Kahului Airport, and the potential for lawsuits due to noise and other airport-related hazards, we recommend that you work with DOT on airport issues. .

Thank you for the opportunity to comment. If you have any questions, please contact Mary Alice Evans at (808) 587-2802.

Sincerely,

Mary Lou Kobayashi

Mary Lou Kobayashi
Administrator

c: Anthony Ching, LUC
✓ Daren Suzuki, Munekiyo & Hiraga, Inc.
Julia Tsumoto, DOT-Planning



October 26, 2004

Ms. Mary Lou Kobayashi
Department of Business,
Economic Development and Tourism
Office of Planning
P.O. Box 2359
Honolulu, Hawaii 96804

SUBJECT: Draft Environmental Assessment (DEA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Ms. Kobayashi:

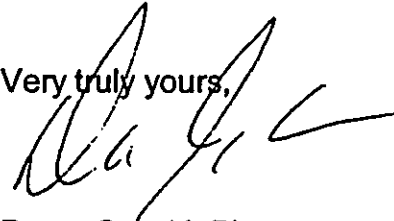
Thank you for your letter to Mr. Michael Foley dated October 20, 2004, providing comments on the subject Draft Environmental Assessment (EA). On behalf of Old Stable LLC, we offer the following response to your comments.

1. We acknowledge the planning principle of "*connectivity*" in roadway design to better distribute traffic patterns off of State Highway facilities. This roadway alternative was mentioned in the Draft EA (page 78), but was not considered due to overwhelming concerns raised by neighbors along Laulea Place and Alakapa Place relative to an increase in traffic impacts.
2. Utilizing the State Rural District for the 16-lot rural subdivision development was not considered. Since Maui County has a RU-0.5, Rural zoning district, a change to the State Land Use Boundaries from Urban to Rural would be unwarranted.
3. The applicant is working with the State Department of Transportation, Airports Division relative to noise and other airport related hazards. An aviation and noise easement will be granted to the State which discloses existing airport operations, associated flight patterns and noise impacts to all future landowners (page 30).

Ms. Mary Lou Kobayashi
October 26, 2004
Page 2

Thank you for your comments. Should you have any questions, please contact me at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Daren Suzuki', written over the closing text.

Daren Suzuki, Planner

DS:yp
cc: Kivette Caigoy, Department of Planning
Henry Spencer
spencer@spreckel@bedt.deares

ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

MILTON M. ARAKAWA, A.I.C.P.
Deputy Director

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



COUNTY OF MAUI
**DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT**
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

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

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

Solid Waste Division

October 21, 2004

04 OCT 22 P 1:23
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

MEMO TO: MICHAEL W. FOLEY, PLANNING DIRECTOR

FROM: *for* GILBERT S. COLOMA-AGARAN, DIRECTOR OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT *Milton Arakawa*

SUBJECT: APPLICATIONS FOR COMMUNITY PLAN AMENDMENT, CHANGE IN
ZONING, SPECIAL MANAGEMENT AREA USE PERMIT, AND
ENVIRONMENTAL ASSESSMENT
E PAEPAE KA PUKO'A - 16 LOT RURAL SUBDIVISION
TMK: (2) 3-8-001:POR 003, 3-8-002:009, 010
CPA 2004/0007, CIZ 2004/0015, SM1 2004/0021, EA 2004/0013

We reviewed the subject application and have the following comments:

1. Although wastewater system capacity is currently available as of October 5, 2004, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
2. Wastewater contribution calculations are required before building permit is issued.
3. Developer shall pay assessment fees for treatment plant expansion costs in accordance with ordinance setting forth such fees.
4. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.
5. Plans should show the installation of a single service lateral and an advance riser for each lot.

6. Non-contact cooling water, condensate, etc. should not drain to the wastewater system.
7. It is proposed that the subdivision road and a portion of Old Stable Road will be constructed to County standards. Please clarify whether the intent is to dedicate the roads and drainage systems to the County. However, please note that we will not accept any drainage facilities that are located outside of the road right-of-way (such as the drainage retention basin) and these facilities shall remain under private ownership and maintenance.
8. A detailed and final drainage report and a Best Management Practices Plan (BMP) shall be submitted with the grading plans for review and approval prior to issuance of grading permits. The drainage report shall include hydrologic and hydraulic calculations and the schemes for disposal of runoff waters. It must comply with the provisions of the "Rules and Design of Storm Drainage Facilities in the County of Maui" and must provide verification that the grading and runoff water generated by the project will not have an adverse effect on adjacent and downstream properties. The BMP plan shall show the location and details of structural and non-structural measures to control erosion and sedimentation to the maximum extent practicable.
9. Comply with the requirements of Title 18 (Subdivision Ordinance) of the Maui County Code. These requirements will be established during the subdivision process.
10. All grading/grubbing work for the subject project shall comply with Chapter 20.08 (Soil Erosion and Sedimentation Control) of the Maui County Code. Best Management Practices shall be implemented to the maximum extent practicable to prevent pollutants including dust and sediment from discharging off the project site.

If you have any questions regarding this memorandum, please call Milton Arakawa at 270-7845.



October 26, 2004

Gilbert Coloma-Agaran
Department of Public Works
and Environmental Management
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Coloma-Agaran:

Thank you for your letter to Mr. Michael Foley dated October 21, 2004, providing comments on the subject Draft Environmental Assessment. On behalf of Old Stable LLC, we acknowledge your standard comments pertaining to wastewater, roadways, drainage, and grading. These conditions will be addressed during the subdivision and building permit review process, as applicable.

Please note that it is the applicant's current intent to maintain the subdivision roadway under private ownership and dedicate the a portion of Old Stable Road to the County. It is also acknowledged that the drainage improvements and retention basin will remain under private ownership and maintenance.

Thank you for your comments. Should you have any questions, please contact me at 244-2015.

Very truly yours,

Daren Suzuki, Planner

DS:yp

cc: Kivette Caigoy, Department of Planning
Henry Spencer

spencer@spreckel/vpwwem.deares

ALAN M. ARAKAWA
Mayor



OCT 05 2004

GEORGE Y. TENGAN
Director

JEFFREY T. PEARSON, P.L.
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

September 27, 2004

Ms. Kivette Caigoy
Department of Planning
County of Maui
250 South High Street
Wailuku HI 96793

Re: I.D.: EA 2004/0013, CPA 2004/0007, CIZ 2004/0015, SM1 2004/0021
TMK: 3-8-01:003 (por), 3-8-02:009 & 010
Project Name: Paepae Ka Puko'a 16 lot Rural SD, Open Space Conservation Easement and County/State Donation Project

Dear Ms. Caigoy:

Thank you for the opportunity to comment on this application. We note that our comment letter to this project of February 23, 2004 is included in the application material. We provide the following additional information:

Source Availability and Consumption

There is currently no moratorium on issuance of meters in Central Maui. However, from now on the Department will not issue temporary construction meters for Central Maui projects. Reclaimed water is readily available from the Department of Public Works and Environmental Management Wastewater Division. The Department does not guarantee that water will be available for this project. The applicant should be made aware that the Department will continue to monitor withdrawals, demand, meter issuance and pending projects closely.

The applicant's water use estimate of 51,000 gallons per day (gpd) is consistent with system per acre standards. Based on current empirical use for single family services in Spreckelsville averaging 1,532 gpd, water use for the 16 home-lots and park portion would be about 30,600 gpd.

Conservation

No water conservation measures are proposed in the application material. We strongly encourage the applicant to include the following measures in project design and implementation to alleviate demand from the Central Maui system:

Use Non-potable Water: We encourage the applicant to use brackish irrigation well water for all landscaping purposes, where feasible. Brackish or reclaimed water should be used for dust control during construction.

Eliminate Single-Pass Cooling: Single-pass, water-cooled systems should be eliminated per Maui County Code Subsection 14.21.20. Although prohibited by code, single-pass water cooling is still manufactured into some models of air conditioners, freezers, and commercial refrigerators.

Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures and devices in faucets, showerheads, urinals, water closets and hose bibs. Water conserving washing machines, ice-makers and other units are also available.

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. The applicant should establish a regular maintenance program.

Use Climate-adapted Plants: The project is located in the "Maui County Planting Plan" - Plant Zone 5. Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species. Please refer to the attached brochure: "Saving Water In The Yard - What and How to Plant In Your

"By Water All Things Find Life"

Printed on recycled paper



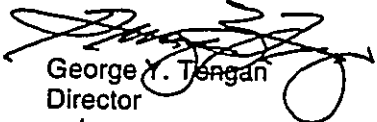
Kivette Caigoy
Paepae Ka Puko'a 16 lot Rural SD
Page 2

Area" and distribute it to future homeowners.

Prevent Over-Watering By Automated Systems: Provide rain-sensors on all automated irrigation controllers in common areas. Check and reset controllers at least once a month to reflect the monthly changes in evapo-transpiration rates at the site. As an alternative, provide the more automated, soil-moisture sensors on controllers.

Should you have any questions, please contact our Water Resources and Planning Division at 270-7199.

Sincerely,


George Y. Teragan
Director
emb

c: engineering division
applicant

C:\WPdocs\Permcomm\E Paepae Ka Puko'a 16 lot Rural SD EA CPA CIZ SM1.wpd



October 26, 2004

Mr. George Tengan, Director
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Tengan:

Thank you for your letter to Ms. Kivette Caigoy dated September 27, 2004, providing comments on the subject Draft Environmental Assessment (EA). On behalf of Old Stable LLC, we offer the following response to your comments:

Source Availability and Consumption

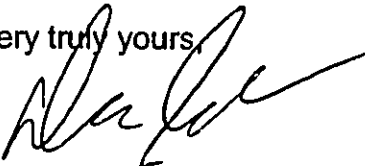
The applicant acknowledges that the Department will not issue temporary construction meters for Central Maui projects and that water for the project may not be available until new water sources are brought online. We concur with the water use estimate of 51,000 gallons per day based on a per acre standard.

Conservation

Utilizing brackish irrigation well water for all landscaping purposes is an option along with purchasing irrigation water from HC & S. Reclaimed water will be used for dust control during construction, if available. Other conservation measures such as eliminating single pass cooling systems, utilizing low flow fixtures, maintaining fixtures, and using climate adapted plant will be passed on to all future homeowners. Rain-sensors can be incorporated in the irrigation system of the common areas as a water conservation measure.

George Tengan, Director
October 26, 2004
Page 2

Thank you for the opportunity to comment. Should you have any questions, please contact me at 244-2015.

Very truly yours,

Daren Suzuki, Planner

DS:yp
cc: Kivette Caigoy, Department of Planning
Henry Spencer
spencer@spreckelands.deares

ALAN M. ARAKAWA
Mayor



GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7230
Fax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

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

September 17, 2004

MEMO TO: Michael W. Foley, Director
Department of Planning

FROM: 
GLENN T. CORREA, Director

SUBJECT: E PAEPAE KA PUKO'A 16-LOT RURAL SUBDIVISION, OPEN SPACE
TMK: (2) 3-8-001:003 (POR), 3-8-002:009 & 010.
EA 2004/0013, CP 2004/0007, CIZ 2004/0015, SM1 2004/0021

DEPT OF PLANNING
COUNTY OF MAUI
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04 OCT 14 P1:43

Our Department has reviewed the subject application and would like information on how the applicant proposes to satisfy the parks and playgrounds requirements, pursuant to Section 18.16.320 of the Maui County Code.

The applicant should schedule a meeting with our Department to discuss the parks and playgrounds requirements for the subject project.

Thank you for the opportunity to review and comment on this matter. Should you have any questions or concerns, please contact me, or Patrick Matsui, Chief of Parks Planning and Development Division, at extension 7387.

c: Patrick Matsui, Chief of Planning and Development Division



October 26, 2004

Mr. Glenn Correa, Director
Department of Parks and Recreation
700 Hali`a Nakoa Street, Unit 2
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

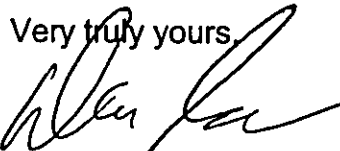
Dear Mr. Correa:

Thank you for your letter to Mr. Michael Foley received by the Maui Planning Department on October 14, 2004 (dated September 17, 2004), providing comments on the subject Draft Environmental Assessment (EA). On behalf of Old Stable LLC, we offer the following response.

On page 6 of the Draft EA, it states that the common area located adjacent to Old Stable Road will be developed as a park for the subdivision. This park area is approximately 2 acres, or approximately 87,000 square feet. The park area exceeds the minimum park dedication requirement of 500 feet for each lot or unit in excess of three (3) ($13 \times 500 = 6,500$ square feet), pursuant to Maui County Code, Section 18.16.320.

As recommended in your letter, the applicant will schedule a meeting with department representatives to discuss specific park and playground requirements, as a result of this subdivision.

Thank you for your comments. Should you have any questions, please call me at 244-2015.

Very truly yours,

Daren Suzuki, Planner

DS:yp
cc: Kivette Caigoy, Department of Planning
Henry Spencer
spencerspreckel@parksdept.deares

ALAN M. ARAKAWA
MAYOR



CARL M. KAUPALOLO
CHIEF

NEAL A. BAL
DEPUTY CHIEF

'04 SEP 15 P12:04

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY DEPT OF PLANNING
COUNTY OF MAUI
200 DAIRY ROAD
KAHULUI, MAUI, HAWAII 96732
(808) 270-7561
FAX (808) 270-7919
RECEIVED

September 15, 2004

Colleen Suyama, Staff Planner
Department of Planning
County of Maui
250 South High Street
Wailuku, HI 96793

Subject: SM1 2004/0021 E Paepae Ka Puko'a Subdivision

Dear Colleen Suyama,

I would like to thank you for the opportunity to review the above subject. A thorough review will be completed when the permit & plans are submitted to our office. The review will include but not limited to water supplies for fire protection & road/access widths for fire apparatus and evacuation by residents. Please feel free to contact Lt. Scott English at 270-7122 if there are any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Drechsel".

Jeff Drechsel
Fire Prevention Bureau



October 26, 2004

Mr. Jeff Drechsel
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawaii 96732

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Drechsel:

Thank you for your letter to Ms. Colleen Suyama dated September 15, 2004, providing comments on the subject Draft EA. On behalf of Old Stable LLC, we acknowledge that a thorough review of water supplies and road/access widths will be completed when they are submitted to your office during the building permit application process.

Should you have any questions, please call me at 244-2015.

Very truly yours,

Daren Suzuki, Planner

DS:yp

cc: Kivette Caigoy, Department of Planning
Henry Spencer

spencerspreckel@fire.deares



ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

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



THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAPIO R. AKANA
DEPUTY CHIEF OF POLICE

October 6, 2004

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
OCT -8 10:59

MEMORANDUM

TO : MICHAEL W. FOLEY, PLANNING DIRECTOR

FROM : THOMAS M. PHILLIPS, CHIEF OF POLICE

SUBJECT : I.D. : EA 2004/0013, CPA 2004/0007, CIZ
2004/0015, SM1 2004/0021
TMK : (2) 3-8-001:003 (portion), 3-8-002: 009 & 010
Project Name : E Paepae Ka Puko'a 16 Lot Rural Subdivision,
Open Space Conservation Easement and
County/State Donation Project
Applicant : Old Stable Road LLC c/o Munekiyo & Hiraga,
Inc.

No recommendation or comment to offer.

Refer to enclosed comments and/or recommendations.


Thank you for giving us the opportunity to comment on this project.

Assistant Chief Sydney Kikuchi
For: THOMAS M. PHILLIPS
Chief of Police

Enclosure

COPY

TO : THOMAS PHILLIPS, CHIEF OF POLICE, MAUI POLICE DEPARTMENT

VIA : CHANNELS 

FROM : JORGE MARZAN, CPO, KAHULUI, DISTRICT I

SUBJECT : DRAFT ENVIRONMENTAL ASSESSMENT AND SPECIAL MANAGEMENT AREA USE PERMIT APPLICATION FOR A 16 LOT SUBDIVISION AND RELATED IMPROVEMENTS, TMK 3-8-001:003, 3-8-002:009, AND 3-8-002:010, SPRECKELVILLE, MAUI

Assigned by Administrative Sergeant Mitchell PELLAZAR to review the above propose project.

SUMMARY OF PROJECT

The proposed project is for a 16-lot rural residential subdivision and related subdivision improvements on approximately 14.86 acres parcel identified as TMK 3-8-001:003. Related improvements include paved roadways with concrete curb, gutter, and sidewalk, as well as drainage, water, sewer, and electrical distribution systems and landscaping.

In addition with the project proposal, Old Stable LLC, who is the applicant, is requesting a community plan revision from open space to rural and a change in zoning from R-3, Residential District to the RU-0.5, Rural District.

INFRASTRUCTURE

1. Improvement of Stable Road

A review of the binder reiterates that Old Stable Road will be improved to county standards; however, it does not specify the plans of action. It is recommended that improvements to Stable Road should be noted on the application for review.

2. Improvement of Hana Highway and Old Stable Road Intersection

Upon review of this application, page #44, state that the Traffic Impact Assessment indicated that the existing LOS (level of service) (A) which denoted (best) along Hana Highway during the morning and afternoon peak hours. It was reported that the traffic along the northbound approach of Old Stable Road dictates at LOS (B) (short traffic delays) during the afternoon peak hours. In addition, traffic along the southbound approach of Old Stable Road operates at LOS (C) (average traffic delay) during the morning and afternoon hours.

The Traffic Impact Assessment findings of the level of service analysis for 2008 reveals that "background plus project conditions, traffic generated by the project has an insignificant impact on traffic operation at the intersection of Old Stable Road at Hana Highway. All traffic movements are expected to operate at level of service (C) or better for existing roadway condition. Traffic generated by the project did not result in a change in delay or level of service and therefore has no impact."

3. COMMENTS REFLECTED ON #2

The level of service along Hana Highway during the morning and afternoon hours indicated as level (A). This evaluation does not reflect the time and day of the study. A true and accurate report study should be conducted at various time and day.

The same study should be conducted on the northbound approach of Old Stable Road and southbound of Old Stable Road. Both findings should reflect during morning and afternoon peak hours.

The level of service at the intersection of Hana Highway and Old Stable Road will create an adverse condition to traffic impact and traffic safety. Mitigating factors should include a separate left turn lane (northbound) and a separate right lane (southbound).

To this date, I have seen and experienced the traffic impact (Paia direction) to be level of service (F) (worst) during afternoon peak hours. I have seen vehicles traveling Paia direction deadlock past the Old Stable Road. Therefore, it is suggested that Hana Highway at the intersection of Old Stable Road be mitigated before the start of the proposed project.

DEPARTMENT OF TRANSPORTATION, MAUI HIGHWAY DIVISION

A funding to improve Hana Highway has been appropriated for 2004. Improvements include provisions of a separate left turn lane into Old Stable Road from Hana Highway. I contacted Maui Highway Division on Tuesday, October 5, 2004, to inquiry about the timeline provisions. The projected date of the improvement project is slated at the ending of December 2004.

Submitted for your review.

CONCLUDE WITH OFFICER MARZAN IN THAT IMPROVEMENTS TO HANA HIGHWAY BE DONE AS SOON AS PRACTICALLY AND COULD COINCIDE WITH IMPROVEMENTS TO STABLE ROAD.
Off. Marzan

Jorge MARZAN
CPD District I
10/5/04 1330 hrs

concern,
10/8/04

Phillip Rowell and Associates

47-273 'O' Hui Iwa Street Kanoche, Hawaii 96744 Phone: (808) 239-8208 FAX: (808) 239-4175 Email: prowell@grt.net

PROPOSAL

October 25, 2004

Henry A. Spencer
P.O. Box 790829
Paia, Maui, HI 96779

Re: **Response to Comments from Maui Police Department
Impact Assessment for Proposed Single Family Residential Development
Spreckelsville, Maui, Hawaii**

Dear Mr. Spencer:

The following are my responses to comments from the Maui Police Department dated October 6, 2004. I have attached a copy for the comment letter for reference.

Regarding the day and date of the traffic surveys, this information is provided in the Methodology section, page 1 of the report. The traffic count summary worksheets are provided as Attachment A, which also indicate the day, date and hours of the traffic counts. Traffic counts are performed during the morning and afternoon peak peaks and summarized to determine the morning and afternoon peak hour traffic volumes. The morning and afternoon peak hour volumes are then used for the level-of-service analysis.

The objective of the level-of-service analysis is to assess traffic conditions during the peak hours (morning and afternoon) of a typical weekday. Accordingly, it should be no surprise that there are days when conditions are worse than those assessed, but there are also days when conditions are better.

The traffic surveys included Old Stable Road, both northbound and southbound. The reason that there is no analysis for the northbound approach during the morning peak hour is that no traffic was counted.

Mitigation measures for the intersection of Hana Highway at Old Stable Road have been discussed with Hawaii Department of Transportation and the developer has agreed to pay his pro rata share. These improvements include a separate left turn lane along Hana Highway and separate right and left turn lanes along southbound Old Stable Road. However, the timetable for these improvements is under the control of Hawaii Department of Transportation. Accordingly, the construction of the proposed project cannot be subject to implementation of the improvements by another agency such as Hawaii Department of Transportation.

Very truly yours,
PHILLIP ROWELL AND ASSOCIATES

Phillip J. Rowell
Phillip J. Rowell, P.E.
Principal

File: H Spencer.Response of MPD.wpd



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
 COUNTY OF MAUI

ALAN M. ARAKAWA
 Mayor
 ALICE L. LEE
 Director
 HERMAN T. ANDAYA
 Deputy Director

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

September 14, 2004

04 SEP 16 P2:14
 DEPT OF PLANNING
 COUNTY OF MAUI
 RECEIVED

TO: KIVETTE A. CAIGOY, Environmental Planner
 Department of Planning

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

SUBJECT: I.D.: EA 2004/0013, CPA 2004/0007,
 CZ 2004/0015, SM1 2004/0021
 TMK: (2) 3-8-001:003 (por.), 3-8-002:009 & 010
 PROJECT NAME: E PAEPAE KA PUKO'A (16-LOT RURAL
 SUBDIVISION, OPEN SPACE CONSERVATION
 EASEMENT AND COUNTY/STATE DONATION
 PROJECT)
 APPLICANT: OLD STABLE ROAD LLC
 C/O MUNEKIYO & HIRAGA, INC.

When I provided my February 17, 2004 comments to Mr. Daren Suzuki of Munekiyo and Hiraga, Inc., I stated that the project does not involve a County change-in-zoning that will establish land use designations under which a residential housing project may be developed, and that the provisions of the County's affordable housing policy does not apply to the project. However, Mr. Suzuki, in his June 10, 2004 letter informed me that following consultation with the Planning Department, that the project will now involve a change-in-zoning which will establish a zoning designation that will permit the development of residential housing.

That being the case, the Administration's Recommended Affordable Housing Guidelines (copy attached) is now applicable to the subject project. However, please be advised that pursuant to Section IV.C.1 of the Administration's Recommended

Memo to Kivette A. Caigoy
Page 2
September 14, 2004

Affordable Housing Guidelines, we have determined that the applicant's offer to donate 1.16 acres to the County of Maui/State of Hawaii for the expansion of the Kaunoa Senior Center will satisfy the requirements of the affordable housing guidelines.

Thank you for the opportunity to comment.

ETO:hs

Attachment

c: Housing Administrator w/attachment

Revised 06/07/04

**Maui County Administrative Affordable Housing
Recommended Guidelines for Land Use Approvals**

I. PURPOSE

The purpose of these guidelines is to enhance the public welfare by ensuring that the housing needs of Maui County's residents are addressed in accordance with the Maui County General Plan. The intent of these guidelines is to encourage the provision of housing units which will meet the needs of income qualified households.

II. DEFINITIONS

1. "Affordable Sales Price" means the following:

For multi-family units - The sales price which the Department of Housing and Human Concerns, County of Maui, has determined is affordable to individuals or families whose gross annual income does not exceed one hundred and ten percent (110%) of the County's median annual income as shown in the County's "Affordable Sales Price Guidelines (HUD)" table for the applicable year and island/geographic region.

For single-family units - The sales price which the Department of Housing and Human Concerns, County of Maui, has determined is affordable to individuals or families whose gross annual income does not exceed one hundred and twenty percent (120%) of the County's median annual income as shown in the County's "Affordable Sales Price Guidelines (HUD)" table for the applicable year and island/geographic region.

2. "Affordable Rent Price" means the monthly amount paid for housing rent and utilities (adjusting for unit size) which the Department of Housing and Human Concerns, County of Maui, has determined is affordable to individuals or families whose gross annual income does not exceed eighty (80%) of the County's median annual income as shown in the County's "Affordable Rent Guidelines" table for the applicable year and island/geographic region.
3. "County" means the County of Maui, State of Hawaii.
4. "Director" means the Director of the Department of Housing and Human Concerns.
5. "Dwelling Unit" means a room or group of rooms connected together constituting an independent housekeeping unit for family and containing a single kitchen.

6. "Income Qualified Households" means the following:

For rental units - Means an individual or family having a gross annual income that does not exceed eighty percent (80%) of the County's median annual income (adjusted for family size) as shown in the County's "Income Schedule By Family Size" table for the applicable year and island/geographic region.

For multi-family units - Means an individual or family having a gross annual income that does not exceed one hundred and ten percent (110%) of the County's median annual income and/or meeting the specific eligibility criteria which may be established by the County.

For single-family units - Means an individual or family having a gross annual income that does not exceed one hundred and twenty percent (120%) of the County's median annual income and/or meeting the specific eligibility criteria which may be established by the County.

7. "Median Family Income" means the following:

For the island of Maui (except the region of Hana) - The median family income that is established annually by the U.S. Department of Housing and Urban Development (HUD).

For the region of Hana, island of Moloka'i and regions of West Moloka'i and East Moloka'i - The median family income that is established by the Department of Housing and Human Concerns, County of Maui, by multiplying the Census Bureau's 2000 median family income for the applicable geographic region or island by the rate of change in HUD's median family income between the year 2000 and the applicable year.

8. "Multi-Family Unit" means a building or portion thereof which consists of two or more dwelling units and which is designed for occupancy by two or more families living independently of each other and is intended for ownership.
9. "Rental Housing Unit" means one or more rooms with private bath and kitchen facilities comprising of an independent self-contained dwelling unit that may be attached or detached and intended for long-term rental purposes.
10. "Residential Housing Project" means a project which provides ten (10) or more long-term residential housing units or lots.
11. "Single-Family Unit" means a building consisting of only one dwelling unit designed for or occupied exclusively by one family and is intended for ownership.

III. APPLICABILITY

- A. These guidelines shall apply to applications for County change in zoning which establish land use designations under which a residential housing project is developed. This trigger would enable the imposition of a housing condition on requests for change in zoning which currently allow for residential uses as permitted uses. Such condition may state that in the event any portion of a property which is the subject of the change in zoning request, is developed as a residential housing project, said project shall be subject to the provisions as provided in these guidelines. These guidelines may also be used in instances where the administration receives requests for comments and/or review concerning other land-use related requests, such as State land use district boundary amendments, where the County is called upon to effectuate an affordable housing requirement that may be imposed by the State Land Use Commission.
- B. These guidelines shall not apply to housing projects involving the use of County lands or funds, and shall not apply to projects that are approved pursuant to Section 201G-118, Hawaii Revised Statutes.

IV. AFFORDABLE HOUSING REQUIREMENTS

- A. The applicant for a change in zoning pursuant to Section III of these guidelines, shall offer for sale or rent, affordable housing units to income qualified households. The applicant may choose to provide either multi-family or single family units to satisfy these guidelines. The number of affordable units to be provided shall be calculated by multiplying the total number of units proposed in the residential housing project by 10 percent (i.e., 0.10). Thus, a residential housing project of 100 units shall be required to provide a total of 10 affordable units.

Affordable units shall be provided either within the same community plan region or subject to the approval of the Director of Housing and Human Concerns, outside of the community plan in which the proposed residential housing project is located. Units shall be sold at or below the applicable affordable sales price or rented at or below the applicable affordable rent.

Details of sales pricing and marketing shall be defined in the affordable housing agreement, as described in Section V of these guidelines.

- B. In lieu of providing affordable units, the applicant may choose to pay a monetary contribution. The monetary contribution shall be based upon the equivalent number of affordable units which would have otherwise been provided by the

applicant (i.e., 10 percent of the total number of units proposed for the residential housing project). The per unit monetary contribution shall be calculated by multiplying the affordable sales price by 10 percent (i.e., 0.10).

1. For residential housing projects proposing single-family units and/or lots only, the contribution shall be calculated by multiplying the affordable sales price (at the 120% of the County's median income level) for a single-family unit by 10 percent.
2. For residential housing projects proposing multi-family units, the contribution shall be calculated by multiplying the affordable sales price (at 110% of the County's median income level) for a multi-family unit by 10 percent.

C. In lieu of providing affordable units, the applicant may also choose to provide land or in-kind services:

1. Provision of developable lands (i.e. lands physiographically usable for residential development) which may be used to address the housing needs of income qualified households and special needs groups. Such lands may be used by the County of Maui or others acceptable to the County to develop resource centers for the homeless, day care centers for seniors or other types of projects which address the housing or support service needs of income qualified households and special needs groups. If the appraised value of the land is less than the value of the in-lieu monetary contribution amount which would otherwise be required, the applicant may address the shortfall through the provision of units, through in-lieu monetary contribution, or a combination of both.
2. Provision of other in-kind services which are approved by the Director. In-kind services may include the provision of infrastructure to a proposed or existing affordable housing project, facility upgrades to existing affordable housing projects as approved by the Director. If the value of in-kind services is less than the in-lieu monetary contribution amount which would otherwise be required, the applicant may address the shortfall through the provision of units, through in-lieu monetary contribution, or a combination of both.

V. AFFORDABLE HOUSING AGREEMENT

A. Prior to the filing of a building permit application for a residential housing project, as set forth herein, or prior to the granting of final subdivision approval, the applicant or developer shall execute an affordable housing agreement with the County which shall set forth the detailed terms and conditions of compliance with these housing guidelines, which may include, but not be limited to:

1. Affordable sales periods for the affordable units;
2. Affordable sales prices for the affordable units;
3. Identification of the number, type and location of units;
4. Marketing process for the affordable units;
5. Eligibility criteria for income qualified households;
6. Provision for credits (including duration and assignment), as applicable; and
7. Terms and conditions relating to provision of in-lieu monetary contribution, land or in-kind services.

With regard to the affordable sales periods (item no. 1), the agreement shall specify offering durations, as well as procedures for the release of units from the affordable sales requirements should there be unsold units following the expiration of the sales periods.

- B. The Director of Housing and Human Concerns may periodically adjust limits on sales prices, income and other requirements based on changes in interest rates and other relevant factors.

VI. CREDITS

- A. An applicant for a change in zoning under which a residential housing project may be developed may receive credits for affordable units if the number of affordable units provided exceeds the requirement set forth in Section IV of these guidelines. Such credits shall be subject to execution of an affordable housing agreement.
- B. Credits for affordable housing units may be granted in advance of the filing of a change in zoning application under which a residential housing project may be developed. Such credits shall be approved by the Director and subject to the execution of an affordable housing agreement.
- C. As warranted through case-by-case evaluation, the Director, may grant enhancement credits to provide incentives to applicants to offer rental units which are affordable to families having incomes 60% or lower than the median family income. Such enhancement credits shall be in accordance with the following guidelines.

<i>Family Income Range</i>	<i>Enhancement Credits</i>
51% to 60% of Median Income	2.5
up to 50% of Median Income	3

Thus, one (1) rental unit offered to families in the 51% to 60% median income range equals 2.5 enhancement credits, or 2.5 affordable units.

Any granting of approval for enhancement credits shall be subject to the execution

of an affordable housing agreement.



October 26, 2004

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

**SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui**

Dear Ms. Lee:

Thank you for your letter to Ms. Kivette Caigoy dated September 14, 2004, providing comments on the subject Draft Environmental Assessment (EA). On behalf of Old Stable LLC, we offer the following response.

We acknowledge and confirm that the applicant will donate approximately one (1) acre of land to the County of Maui for the expansion of the Kaunoa Senior Center, as a result of these applications. It is further noted that the applicant is requesting a change to the community plan and zoning to "*public/quasi-public*" designations to obtain land use consistency with any future expansion of Kaunoa Senior Center.

Thank you for your determination that the applicant's offer will satisfy the requirements of the affordable housing guidelines. Should you have any questions, please call me at 244-2015.

Very truly yours,

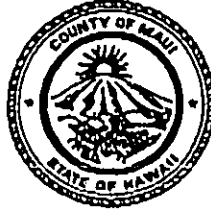
Daren Suzuki, Planner

DS:yp

cc: Kivette Caigoy, Department of Planning
Henry Spencer

spencer@spreckelshhc.deares

ALAN M. ARAKAWA
MAYOR



'04 OCT 15 P2:10



DEPT OF PLANNING
COUNTY OF MAUI
CIVIL DEFENSE AGENCY RECEIVED

Phone (808) 270-7285
FAX (808) 270-7275

200 South High Street
Wailuku, Maui, Hawaii 96793-2155
email: civil.defense@co.maui.hi.us

October 14, 2004

MEMO TO: Kivette A. Caigoy
Environmental Planner

THRU: Michael W. Foley
Planning Director

FROM: Allan J. DeLima *AJD*
Plans and Operations Officer

SUBJECT: CPA/CIZ APPLICATION REVIEW FOR E PAEPAE KA PUKO'A 16 LOT
RURAL SUBDIVISION, OPEN SPACE CONSERVATION EASEMENT
AND COUNTY/STATE DONATION PROJECT (DATED SEPTEMBER
9,2004)

Maui Civil Defense Agency has no comments and recommendations on the subject matter. The original submittal is being returned to you.

AJD:mku
Attachments

2004/3634

United States Department of Agriculture

04 SEP 21 12:45



NRCS Natural Resources Conservation Service

DEPT OF PLANNING

COUNTY OF MAUI Our People...Our Islands...In Harmony

210 Ima Kala Street, Suite #209, Wailuku, HI 96793-2100

RECEIVED

September 20, 2004

Ms Kivette Caigoy, Environmental Planner
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

Dear Ms Caigoy,

SUBJECT.: EA 2004/0013, CPA 2004/0007, CIZ 2004/0015, SM1 2004/0021
TMK: (2) 3-8-001:003 (portion), 3-8-002:009 & 010
PROJECT NAME: E PAEPAE KA PUKO'A 16 LOT Rural Subdivision
APPLICANT: Old Stable Road LLC C/O Munekiyo & Hiraga, INC.

We recommend identifying the drainage problems along Hana Highway from Stable Road to Paia. Inadequate outlets to the ocean are a major problem during rainstorms which creates flooding, silt, debris, and undesirable road conditions.

Thank you for the opportunity to comment.

Sincerely,

Ranae Ganske-Cerizo
Ranae Ganske-Cerizo
District Conservationist



October 26, 2004

Ms. Ranae Ganske-Cerizo
District Conservationist
Natural Resources Conservation Service
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793-2100

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot Subdivision and Related Improvements, TMK Nos. 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Ms. Ganske-Cerizo:

Thank you for your letter to Ms. Kivette Caigoy dated September 20, 2004, providing comments on the subject Draft EA. On behalf of Old Stable LLC, the following information is provided in response to your comments.

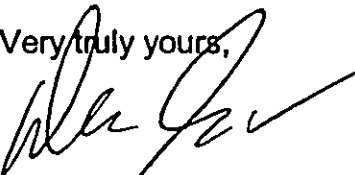
We acknowledge the regional problem of inadequate outlets to the ocean from Stable Road to Paia during rainstorms which creates flooding, silt, debris, and undesirable road conditions. It is noted that the project site is located makai and downstream of Hana Highway. Therefore, existing runoff flows towards the ocean and not onto State Highway facilities. Post development runoff will be retained onsite as described below.

As mentioned in the drainage report appended to the Draft EA, an existing 24" culvert crosses Hana Highway approximately 350 feet west of the property line between the project site and the Kaunoa Senior Center. The existing culvert conveys approximately 24 cfs of surface runoff from the existing sugar cane fields mauka of the highway to the makai side on to the project site. This offsite runoff also sheet flows across the parcel to the ocean. Approximately 20 feet into the property is a bikeway constructed by the County of Maui. Two (2) 18" culverts have been constructed under the bikeway to allow the runoff from the existing 24" culvert to continue downstream in the same direction.

In order to better facilitate regional drainage runoff in the vicinity of the project site, a proposed drain line will be connected to the two (2) existing drainage culverts located under the bikeway, and tied into the underground drainage system along the subdivision roadway. This underground drainage system will outlet into the proposed retention basin located on the makai side of the subdivision roadway at the intersection of the Stable Road.

Ms. Ranae Ganske-Cerizo
October 26, 2004
Page 2

Thank you for the opportunity to comment. Should you have any questions, please call me at 244-2015.

Very truly yours,

Daren Suzuki, Planner

DS:yp
cc: Kivette Caigoy, Department of Planning
Henry Spencer
spencerspreckel@rcs.deares



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 223
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF: CEPOH-ECT

September 27, 2004

Civil Works Technical Branch

04 SEP 29 08:36
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Mr. Kivette A. Caigoy, Staff Planner
County of Maui
Department of Planning
250 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Caigoy:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the E Paepae Ka ukoa Subdivision, Maui (TMKs 3-8-2: 9 and 10). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Our Regulatory Branch staff will be conducting a field investigation of the project site and will provide their comments under separate cover. For further information regarding the DA permit assessment, please contact Mr. Peter Galloway at (808) 438-8416.

b. We concur with the flood hazard information provided on page 16 of the DEA.

Should you require additional information, please contact Ms. Jessie Dobinchick of my staff at (808) 438-8876.

Sincerely,

James Pennaz, P.E.
Chief, Civil Works
Technical Branch



October 26, 2004

Mr. James Pennaz, P.E. Chief,
Civil Works Technical Branch
Department of the Army
U. S. Army Engineer District, Honolulu
Building 223
Fort Shafter, Hawaii 96858-5440

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Pennaz:

Thank you for your letter to Ms. Kivette Caigoy dated September 27, 2004, providing comments on the subject Draft Environmental Assessment (EA). On behalf of Old Stable LLC, we offer the following response to your comments.

The Draft EA included a "*Wetland Delineation Survey*" and a "*Wetland Enhancement and Mitigation Plan*" for your review. If it is determined that proposed actions within wetlands areas would be subject to Department of the Army permitting requirements, then we will work with your department, in collaboration the U.S. Fish and Wildlife Service and the Department of Health, to comply with said requirements through separate permit actions.

Should you have any questions, please call me at 244-2015.

Very truly yours,


Daren Suzuki, Planner

DS:yp

cc: Herbert Matsubayashi, Department of Health
Michael Molina, U.S. Fish and Wildlife Service
Kivette Caigoy, Department Of Planning
Henry Spencer

spencerspreckelarmy.deares

11/3740

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERNSTANIA STREET
STATE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeeq@hawaii.gov

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

04 SEP 29 AM 11

September 29, 2004

Michael Foley
Maui Planning Department
250 South High St.
Wailuku, HI 96793

Attn: Kiverte Caigoy

Dear Mr. Foley:

Subject: Draft environmental assessment (EA), Spreckelsville 16-lot rural subdivision

Cultural impacts assessment: The draft EA describes the process you have gone through to elicit information about cultural practices from community members, but there is no "assessment." From the background information and informant interviews you need to draw a conclusion regarding impacts of the project (or lack thereof) on any existing cultural practices. Please include this in the final EA.

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

Sincerely,

Genevieve Salmonson
GENEVIEVE SALMONSON
Director

c: Daren Suzuki, Munekiyo & Hiraga



October 26, 2004

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

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Ms Salmonson:

Enclosed is a letter from CKM Cultural Resources, L.L.C. which addresses your comment letter dated September 29, 2004 to Mr. Michael Foley.

Should you have any questions, please call me at 244-2015.

Very truly yours,

Daren Suzuki, Planner

DS:yp

Enclosure

cc: Kivette Caigoy, Department of Planning (w/enclosure)
Henry Spencer (w/out enclosure)

spencer@spreckeloeqc.deares



CKM CULTURAL RESOURCES, L.L.C.

Specializing in Cultural Impact Statements
(using State of Hawaii C.E.P.C. methods),
Meetings, Workshops, Lectures
and He'oponopono

BIHOA I KA MA'OHONO I PAHI LA MAHEI BIHOA
(Sharing the knowledge to push us forward)

Monday, October 04, 2004

Aloha,

Based on the background information and informant interviews for the Spreckelsville subdivision I conclude that there will be no negative impacts on any existing cultural practices.


Kahu Charles Kauhewehi Maxwell Sr.

Kahu Charles Kauhewehi Maxwell, Sr.
157 Aiea Place - Pukalani, Maui, HI 96768
Phone: (808) 572-8038 - Fax: (808) 572-0602 - Cell: 870-3345
Email: kalc@mooolelo.com - Website: www.mooolelo.com

SEP 22 2004

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

September 16, 2004

Mr. Daren Suzuki
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Suzuki;

RE: Draft Environmental Assessment for the Proposed 16-Lot Subdivision and Related Improvements Located at TMK: 3-8-001: 003, 3-8-002: 009, and 3-8-002: 010, Spreckelsville, Island of Maui, Hawaii (EA 2004/0006) (CPA 2004/0007) (CIZ 2004/0015) (SM1 2004/0021)

The Maui Planning Department (Department) provides the following comments on the above referenced document:

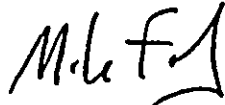
1. Section III.A.1 – Include the classification of the project site according to the *Agricultural Lands of Importance* designation.
2. Section III.A.2 – Identify the proposed residential lots that will be located within the A4 flood zone area.
3. Section III.D.4 – Discuss potential impacts, if any, the proposed drainage plan or grade alterations may have on the wetlands discussed in Section III.A.3.

Further, the Department is in receipt of a copy of the Phase I Environmental Site Assessment referenced in the report.

Mr. Daren Suzuki
September 16, 2004
Page 2

Thank you for the opportunity to comment. Should you require additional clarification, please contact Ms. Kivette A. Caigoy, Environmental Planner, at 270-7735.

Sincerely,



MICHAEL W. FOLEY
Planning Director

MWF:KAC:dm

c: Clayton Yoshida, Planning Program Administrator
Kivette A. Caigoy, Environmental Planner
Colleen Suyama, Staff Planner
EA Project File
General File
K:\WP_DOCS\PLANNING\EA\2004\13_EPaepaeKaPukoa\DEA_DeptComments.wpd

ALAN M. ARAKAWA
Mayor
MICHAEL W. FOLEY
Director
WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

September 30, 2004

Mr. Daren Suzuki
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Suzuki:

RE: Draft Environmental Assessment for the Proposed 16-Lot Subdivision and Related Improvements Located at TMK: 3-8-001: 003, 3-8-002: 009, and 3-8-002: 010, Spreckelsville, Island of Maui, Hawaii (EA 2004/0006) (CPA 2004/0007) (CIZ 2004/0015) (SM1 2004/0021)

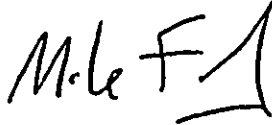
At its regular meeting on September 28, 2004, the Maui Planning Commission (Commission) reviewed the above-referenced document and provides the following comments:

1. Include a description of the boundary wall proposed along the perimeter of the Parcel 3 which abuts Laulea Place.
2. Clarify the dedication of land to the County/State for the Kaunoa Senior Center.
3. Describe how shoreline access will be provided on the portion of Parcel 3 proposed for OS-2, Open Space, Zoning.
4. Discuss any potential impacts on existing drainage by filling in the two (2) wetlands described as "Area 1" and "Area 2".

Mr. Daren Suzuki
September 30, 2004
Page 2

Thank you for your cooperation. If additional clarification is required, please contact Ms. Kivette A. Caigoy, Environmental Planner, of this office at 270-7735.

Sincerely,



MICHAEL W. FOLEY
Planning Director

MWF:KAC:do

c: Wayne A. Boteilho, Deputy Planning Director
Clayton I. Yoshida, AICP, Planning Program Administrator
Kivette A. Caigoy, Environmental Planner
Colleen Suyama, Staff Planner
EA Project File
General File
(K:\WP_DOCS\PLANNING\EA\2004\13_EPaepaeKaPukoa\MPCDEAComments.wpd)



October 26, 2004

Mr. Michael Foley, Director
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot Subdivision and Related Improvements, TMK Nos. 3-8-001:003, 3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Foley:

Thank you for your letter dated September 16, 2004, providing comments on the subject Draft Draft EA. On behalf of Old Stable LLC, we offer the following responses:

1. Tax Map Key No. 3-8-001:003 is located within lands identified as "*Prime Agricultural Land*" according to the Agricultural Lands of Importance to the State of Hawaii. Tax Map Key Nos. 3-8-002:009 and 010 (two (2) shoreline parcels) are located within lands identified for "*Urban*" use.

It is noted in the Draft EA, according to the "*Detailed Land Classification - Island of Maui Land Study Bureau, 1967*", the project site has an overall rating of "E" and land type of "E3" which is the lowest agricultural productivity rating and unsuited for agricultural productivity. Further, that the property is not designated for agricultural use by the State or County.

2. The residential lots located makai of the subdivision roadway are located within the A4 zone, but outside the limits of the V23 zone. The residential lots located mauka of the subdivision roadway are located within the C zone. (Refer to Appendix M of the Draft EA).
3. As described in the Draft EA, page nos. 17 to 22, Wetland Area 1 and a portion of Wetland Area 2 (both located within the limits of the rural subdivision) will be filled and graded. To accommodate the potential loss of wetlands, a wetland enhancement and mitigation plan was prepared for Area 3 to essentially increase the extent of low-lying areas to compensate for the loss of wetlands of Area 1 and a portion of Area 2.

Mr. Michael Foley, Director
October 26, 2004
Page 2

The surface runoff from the rural residential subdivision will be allowed to sheet flow towards the proposed subdivision roadway where the runoff will be captured and conveyed by the underground drainage system to the proposed retention basin (See Appendix M of the Draft EA). Since the retention basin will be sized to accommodate all the additional onsite surface runoff generated by the proposed subdivision, existing drainage patterns makai of the proposed improvements will be allowed to continue downstream towards the ocean. Similarly, existing drainage patterns to the enhanced Wetland Area 3 will remain unchanged as a result of this project.

On September 28, 2004, the Maui Planning Commission provided comments on the Draft EA. The following is a response to your letter dated September 30, 2004, which clarifies issues raised by the commission and other representations made by the applicant:

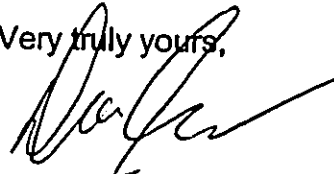
1. As part of these applications, the applicant represented that he will construct a three-foot high berm with a two-foot high boundary wall on top, along all lots abutting Laulea Place to prevent vehicular, bicycle and pedestrian traffic from accessing this private roadway. The applicant has no objections to such a condition being placed as a condition of zoning and/or Special Management Area Use permit.
2. The Kaunoa Senior Center site is owned by the State of Hawaii and is leased to the County through an Executive Order. Although it is yet to be determined whether the one (1) acre parcel of land will be donated to the State or the County, the purpose of this dedication is for the future expansion of the Kaunoa Senior Center, County of Maui.
3. There will be a private access to the beach for the subdivision residents along the 30 foot wide common area pathway (proposed for OS-2, Open Space) leading from the subdivision roadway to the ocean. The existing roadway to the beach provided off of Stable Road will remain unchanged. The applicant further noted that this existing roadway may be modified away from the active coastal dunes in the future.
4. Comments on potential impacts on existing drainage are addressed in the response to the Planning Department's letter dated September 16, 2004, Item No. 3 stated herein.
5. During the public testimony portion of the Planning Commission's deliberations, an issue was raised by a public testifier that a neighborhood meeting should consist of one large meeting. It was criticized that smaller meetings can be very limited when ideas are exchanged.

Mr. Michael Foley, Director
October 26, 2004
Page 3

Upon review of the Draft EA, we realized that we erroneously did not mention that on June 25, 2003, a neighborhood meeting was conducted at Kaunoa Senior Center with approximately 60 people attending (see attendance sheet attached). At this meeting, the applicant presented a plan which consisted of approximately 26 lots, with ohana units along the entire project area. This plan was not well received by the public due to infrastructural and environmental impacts related to project density and location. The information received at this meeting was used as a basis for formulating the current site plan.

Should you have any questions, please call me at 244-2015.

Very truly yours,



Daren Suzuki, Planner

DS:yp

Enclosure

cc: Kivette Caigoy, Department of Planning (w/enclosure)
Henry Spencer (w/out enclosure)

spencer@spockeplanning.deares

**PROPOSED 16-LOT SUBDIVISION AND RELATED IMPROVEMENTS
NEIGHBORHOOD MEETING AT KAUNOA SENIOR CENTER
ATTENDANCE SHEET
September 25, 2003**

NAMES

1	Nicole Pung
2	Gabrelcik
3	Rick Deu
4	Ken Horiz
5	Meri Fish
6	Jeanie Riley
7	Margit Tolmau
8	Jill Monroe
9	Dick Emery
10	TT McBarnet
11	Herb Squiers
12	Mike Gibbons
13	Sheila Magers
14	Masters
15	Lisa Daly
16	Rob Northroe
17	Ann Marie Valeazusk
18	Kingdom of Hawaii (Legal Representative)
19	Judy Siracusa
20	Rob and Cynthia Merriman
21	Robert Karpovich
22	Milton K. Martinson
23	Joanne Green
24	Greg Stump
25	Paula Lovell
26	Jeff Wiles
27	Aka Alfonsi

**PROPOSED 16-LOT SUBDIVISION AND RELATED IMPROVEMENTS
NEIGHBORHOOD MEETING AT KAUNOA SENIOR CENTER
ATTENDANCE SHEET
September 25, 2003**

NAMES

28	Peter Martin
29	Arnie Pratt
30	Ken Rendell
31	Brent Williams
32	Kathy Eismann
33	Ken Pinsky
34	Jack Thompson
35	Mike Foley
36	Lee Schulenburg
37	Fiona Leigh
38	Jan Welda Fleethan
39	Courtney Konad
40	Stacy Haniblelt
41	Thomas Clarke
42	Kim Ann Pung
43	Eric Pung
44	John Stemet
45	Jim Bendon
46	Margaret Marz
47	Alfred Marz
48	John Cahill
49	Iracema Briggs
50	Jim Riley
51	Jeanne Riley
52	Pete Syracuse
53	John Zilmar
54	Eddie McBarnett

**PROPOSED 16-LOT SUBDIVISION AND RELATED IMPROVEMENTS
NEIGHBORHOOD MEETING AT KAUNOA SENIOR CENTER
ATTENDANCE SHEET
September 25, 2003**

NAMES

55	Gene Wasson
56	Linda Wasson
57	Eda Kuinear
58	Ian Kuniear
59	James Clevenger
60	Zoe Norcross
61	Sally Kyser
62	J. Howard
63	Barbara Woods

spencerspreckel092504meeting.signup

Patricia B. Cadiz
2406 Waipua Street
Paia, HI 96779
808-871-2526

04 SEP 24 AIO 32

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Maui Planning Commission
c/o County of Maui Planning Department
250 South High Street
Wailuku, HI 96783

Aloha Members of the Planning Commission and Planning Department,

I am a 19 year resident of Spreckelsville writing to express my support of the Henry Spencer proposed 16 lot subdivision development in our neighborhood.

He has demonstrated an exemplary model for community based planning. He has held numerous meetings with small groups of interested parties and has invited input to ensure community support. I believe he has earned wide support for his efforts. We are lucky to have him in our community.

His awareness and respect for all of Maui is exemplified in numerous ways. He has given up the right to develop 2 oceanfront lots that have all land use designations in place. He has requested down zoning 20 acres including 1,300 feet of prime beachfront from R-3 (10,000 square foot minimum) to Open Space and putting a conservation easement on that land as well so that it can never be built upon. He is donating 1 acre of land to the County of Maui for the much-needed expansion of the Kaunoha Senior Center.

It is my hope that you will not only grant his approvals but that you will do so expeditiously to demonstrate to other developers how attention to the greater good is rewarded.

Mahalo and aloha,


Patricia Cadiz

P.S. I have no financial interest in this or any other project of Mr. Spencer's.

September 22, 2004

'04 SEP 22 P3 24

RE: Henry Spencer/ Old Stable LLC

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

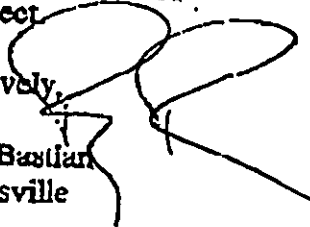
To the members of the Maui Planning Commission:

The purpose of this letter is to state my full support for Henry Spencer's application for the development of a 16-lot subdivision in Sprecklesville. When you combine the facts that he is donating 1 acre to the Kaunoa Senior Center, putting 20 acres, including 1,300ft of sandy shoreline, into conservation which can never be built upon and only developing 16 house lots with no Ohanas the end result is the most responsible development project I have ever seen on Maui.

Please show your support for the preservation of the North Shore of Maui by approving this project.

Respectively,

Barkley Bastian
Sprecklesville



DAVID R. SPEE

Attorney At Law
62 Baldwin Avenue, Suite 2B
P.O. Box 790478
Paia, Hawaii 96779

Home Office Phone & Fax: (808) 893-0080

E-Mail: DavidSpee@aol.com

Phone: (808) 579-8244

Fax: (808) 579-8600

VIA FACSIMILE ONLY: (808) 270-7634

September 22, 2004

Maui Planning Commission

04 SEP 22 09:09
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

RE: Old Stable LLC.

To Whom It May Concern:

I am writing in support of Old Stable LLC's application for its development of 16 residential lots off Old Stable Road in Spreckelsville, Maui, Hawaii. I am a resident of Spreckelsville and whole heartedly support this project. I am a real estate attorney and have lived on Maui for 15 years and I cannot remember a developer who has offered to give back so much at the beginning of the approval process.

The company's offer to protect almost 1,300 feet of shoreline and 20 acres of land behind it, together with the donation of an acre of land to the County of Maui for the expansion of the Kaunoa Senior Center is very generous and an example of balanced sensible development for the future.

Very truly yours,



David R. Spee

cc: Henry Spencer

OCT 12 2004

ISAAC DAVIS HALL

ATTORNEY AT LAW
2087 WELLS STREET
WAILUKU, MAUI, HAWAII 96793
(808) 244-9017
FAX (808) 244-6775

'04 OCT -8 P1:24

October 8, 2004

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Via Hand Delivery

Chairperson Randy Piltz and Members
of the Maui Planning Commission
County of Maui
c/o Department of Planning
County of Maui
250 South High Street
Wailuku, Maui, HI 96793

Re: Comments Upon Draft Environmental Assessment for "E Paepae Ka Puko'a", a 16-Lot Rural Subdivision, Open Space Conservation Easement and County/State Donation Project Prepared for Old Stable LLC by Munekiyo & Hiraga, Inc.; TMK Nos. (II) 3-8-001:por. 003, 3-8-002:009 and 010 in Spreckelsville, Paia, Maui, Hawaii

Dear Chairperson Randy Piltz and Members of the Maui Planning Commission:

These comments and objections to the entry of a Finding of No Significant Impact ("FONSI") on the Draft Environmental Assessment ("DEA") for the "E Paepae Ka Puko'a" a 16-Lot Rural Subdivision, Open Space Conservation Easement and County/State Donation Project Prepared for Old Stable LLC by Munekiyo & Hiraga, Inc.; TMK Nos. (II) 3-8-001:por. 003, 3-8-002:009 and 010 in Spreckelsville, Paia, Maui, Hawaii are submitted on behalf of John and Louise Severson, Jenna deRosnay and other owners of properties on Laulea Place which adjoin this proposed development. These commentors will be directly, immediately and adversely affected by the proposed project and, therefore, have standing to oppose the entry of any FONSI on this DEA.

I. STANDARD OF REVIEW

The Environmental Assessment ("EA") and Environmental Impact Statement process ("EIS") is described in Price v. Obayashi Haw. Corp. 81 Haw. 171, 914 P.2d 1364 (1996). An EA is prepared for non-exempt applicant or agency actions for which a "triggering" event is present, as here.

An EA is prepared for the limited purpose of determining whether, on a summary basis, the environmental process may be lawfully terminated, or whether a full-blown EIS must be prepared. A relatively low threshold test is applied.

If a proposed action "**may**" have a significant environmental impact, then a full-blown EIS must be prepared. See HRS § 343-5(b). In determining whether a proposed action "**may**" have a significant environmental effect, the "significance criteria" set out in the EIS Regulations must be properly applied. See HAR § 11-200-12. Stated conversely, if, in a short EA, it cannot be demonstrated on a summary basis that a proposed action will not have any significant adverse environmental impacts, then an EIS shall be prepared. An EA is not to be an attempted substitute for an EIS.

If substantial questions are raised regarding whether a proposed action may have a significant impact upon the environment, a decision not to prepare an EIS is unreasonable. Foundation For North American Wild Sheep v. United States Department of Agriculture, 681 F. 2d 1172, 1178 (9th Cir. 1982). The reasons given for why impacts are insignificant are crucial in determining whether the agency took the required "hard look" at the potential environmental impacts of the project. Kleppe v. Sierra Club, 427 U.S. 390, 410 (1976). Deference to a FONSI is only required when the agency decision is "fully informed and well-considered". Jones v. Gordon, 792 F. 2d 821, 828 (9th Cir. 1986).

The agency should have prepared an EIS where there are substantial questions on whether the project may have a significant effect on the environment. Public Citizen v. U.S. Department of Transportation, (9th Cir. 2003, not reported); Anderson v. Evans, (9th Cir. 2002, not reported).

As it will be demonstrated below an EIS is required, as a matter of fact and law, upon a correct application of the "significance criteria". A FONSI cannot be justified, if the legislative purposes of Chapter 343 are honored.

II. DEFICIENCIES IN THE DRAFT ENVIRONMENTAL ASSESSMENT

These commentors live along the westerly portion of Laulea Place which has for years been surrounded by undeveloped properties, sand dunes and wetlands. The developer offers a substantial area of land to be open to the public in perpetuity. If this is documented properly to assure the rights of the public to these beachfront properties forever, without interference, this is a substantial benefit. Still, the developed portion of this proposed project abuts the properties of these commentors, intensifies uses and will potentially adversely affect the beneficial uses enjoyed by these commentors for many years. In order for this project not to have any adverse impact upon these commentors, mitigation measures including but not limited to the following must be incorporated into this project:

(1) This roadway area should be widened to include some of the proposed project in order to create a buffer between the proposed project and the properties of these commentors;

(2) Vehicular access to and from the proposed project shall not be from the westerly portion of Laulea Place;

(3) The proposed project already provides for pedestrian access to and from the shoreline in alternative fashions so that there shall not be any pedestrian outlets from the project to and from the westerly portion of Laulea Place;

(4) The developer, at his sole cost, as part of the proposed project, shall construct a rock wall, as high as will be allowed by the County of Maui, on the project side for the full length of the westerly portion of Laulea Place; and

(5) The portion of Laulea Place westerly on Alakapa Place should be severed and sold to those owners who currently use this roadway, primarily these commentors.

The incompatibilities between the existing community and this proposed project can be mitigated if and only if these and other mitigations are incorporated into the project plans.

III. INCORPORATION BY REFERENCE OF OTHER COMMENTS

The commentors hereby incorporate by reference all other comments submitted by all others who commented on this DEA, in particular all other comments tending to indicate that the DEA is inadequate or that an EIS is required.

IV. THE DEA DOES NOT MEET THE TESTS FOR A FONSI

The authors of the EA improperly find that the proposed project meets the test for a FONSI in § 5.0 of the DEA.

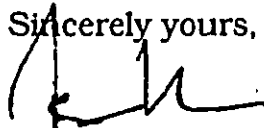
V. CONCLUSION/DEA SHOULD BE WITHDRAWN

We trust that you will take seriously your responsibility to enforce the environmental laws of our state, and refuse to accept or approve this document until it has been adequately prepared to serve its intended purpose.

Thank you for the opportunity to oppose the entry of a FONSI on this DEA. I request that you find either that (a) this DEA is inadequate, or (b) that substantial questions have been raised about whether the proposed action may

have a significant effect on the environment and therefore require the preparation of an EIS.

Sincerely yours,



Isaac Hall

IH/sn

cc: Applicant, Old Stable LLC
P.O. Box 790829
Paia, Hawaii 96779
Consultant, Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793
Contact: Daren Suzuki
Office of Environmental Quality Control
Clients
nelson/letcomment



October 26, 2004

Mr. Randy Piltz, Chairperson
and Members of the Maui Planning Commission
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Mr. Chairperson Piltz and Members of the Maui Planning Commission:

We received a copy of Isaac Hall's letter to Chairperson Randy Piltz and members of the Maui Planning Commission dated October 8, 2004, providing comments on the subject Draft Environmental Assessment. On behalf of Old Stable LLC, we offer the follow response.

As represented by Mr. Spencer at the Planning Commission meeting on September 28, 2004, a three-foot high berm with a two-foot high solid wall on its top will be constructed along along the entire southern and western boundaries of Laulea Place, throughout its length where it abuts the new subdivision. This representation would address proposed mitigation measures Nos. 1 through 4 of Mr. Hall's letter.

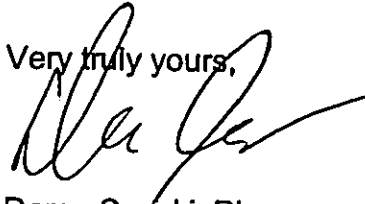
Further, Old Stable LLC has previously stated its willingness to sell Laulea Place (to the west of the Alakapa intersection) as a separate parcel for \$1.00 to the owners of all lots abutting Laulea Place (but not including the owners of any of the sixteen (16) residential lots in the development), or to any entity established by said lot owners for their mutual benefit for the purpose of owning and maintaining the road for the use and benefit of said lot owners. This offer was made as part of discussions with the neighbors to try to address their concerns. This representation would address proposed mitigation measure No. 5 of Mr. Hall's letter.

Based on these proposed mitigation measures provided by Mr. Spencer, we respectfully request that the Findings of No Significant Impact determination be upheld.

Mr. Randy Piltz, Chairperson
and Members of the Maui Planning Commission
October 26, 2004
Page 2

Should you have any questions, please call me at 244-2015.

Very truly yours,



Daren Suzuki, Planner

DS:yp

cc: Isaac Hall, Attorney at Law
Kivette Caigoy, Department of Planning
Henry Spencer

spencer@spreckelrands.com

NOV 01 2004

United States Department of Agriculture

USDA

 NRCS Natural Resources
Conservation Service

Our People...Our Islands...In Harmony

210 Imi Kala Street, Suite #209, Wailuku, HI 96793-2100

October 29, 2004

Mr. Daren Suzuki, Project Planner
Munekiyo & Hiraga, Inc.
305 High Street Suite 104
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot Subdivision and Related Improvements, TMK Nos. 3-8-001:003, 3-8-002:009 and 3-8-002:010, Sprecklesville, Maui

Dear Mr. Suzuki,

Thank you for your letter October 26, 2004 providing clarification concerning the drainage problems in the area.

We highly recommend the proposed retention basin located on the makai side of the subdivision roadway at the intersection of Stable Road have an operation and maintenance plan developed by the landowner. This should assign responsibilities to whoever has the responsibility to clean the basin and periodic inspections need to be scheduled.

Thank you for the opportunity to comment.

Sincerely,



Ranae F. Ganske-Cerizo
District Conservationist

cc: Ms Kivette Caigoy, Department of Planning



November 23, 2004

Ms. Ranae Ganske-Cerizo
District Conservationist
Natural Resources Conservation Service
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793-2100

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Ms. Ganske-Cerizo:

Thank you for your letter dated October 29, 2004, in response to our letter to you dated October 2, 2004 on the subject Draft EA. On behalf of Old Stable LLC, it is acknowledged that the retention basin will be monitored and regularly maintained.

Should you have any questions, please call me at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read "Daren Suzuki", is written over the typed name below.

Daren Suzuki, Planner

DS:yp
cc: Kivette Caigoy, Department of Planning
Henry Spencer
spencer@spreckelsnrcs2.deares

UNIVERSITY OF HAWAII

Sea Grant Extension Service
Maui Community College

04 OCT 27 P5:16

10/27/2004
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Michael Foley
Director
Maui Planning Department
250 South High Street
Wailuku, HI, 96793

Dear Mr. Foley,

Re: Draft Environmental Assessment and Applications for a Community Plan Amendment, Change in Zoning and Special Management Area Use Permit for the E Paepae Ka Pukoa 16-lot Rural Subdivision, Open Space Conservation Easement and County Donation Project

Thank you for the opportunity to comment on the above document. The plan is a refreshing example of a well-thought-out development that has placed environmental considerations and public concerns ahead of maximum economic returns to the developer.

The coastal parcels which will be dedicated as a conservation easement are extremely heavily used recreational areas which are suffering from rapid shoreline retreat, sand losses due to dune blowouts, unrestricted pedestrian and vehicular traffic across the dunes and sea level rise, as well as the long term effects of extensive sand mining that took place in the 1800s and 1900s. As the dune is migrating rapidly, it is critical that the dune has space in which to move, which the conservation easement will provide. The developer has expressed to me a keen and genuine interest in restoring both the beach and dunes on these parcels, which will add considerable benefits to the ecological and recreational uses of these areas, and I look forward to working with him on these projects.

The fact that no development will take place in the V23 zone is also excellent planning as this will greatly minimize storm and tsunami damage and potential threats to life and property from coastal hazards.

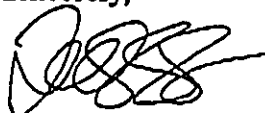
It is unfortunate that wetlands will be impacted. However, the commitment to expanding, improving, and maintaining one of the wetland area goes a long way toward minimizing the overall impact on wetland-dependant species.

My understanding of the drainage plan is that all the additional surface runoff from the proposed 16-lot subdivision will be captured by the proposed retention basin, and that while runoff makai of the subdivision will still sheet-flow toward the ocean, the amount of runoff toward the ocean will not be increased. If I did not understand this correctly

and runoff levels to the ocean will indeed be increased, I would make the recommendation that the runoff to the ocean should not be increased, and that the retention basin should be large enough to accommodate runoff from the 50-year storm.

In summary, as no development is proposed within 500 feet from the shoreline, impacts to coastal ecosystems should be minimal. Plans to create a conservation easement, restore the beach and dune, and restore and maintain wetlands, will be beneficial to protection of the natural resources of this area. Thank you for your consideration.

Sincerely,



Zoe Norcross-Nu'u
Sea Grant Extension Agent



November 23, 2004

Ms. Zoe Norcross-Nu`u
Sea Grant Extension Agent
Maui Community College
310 Kaahumanu Avenue
Kahului, Hawaii 96732

SUBJECT: Draft Environmental Assessment (EA) for the Proposed 16-Lot
Subdivision and Related Improvements, TMK Nos. 3-8-001:003,
3-8-002:009 and 3-8-002:010, Spreckelsville, Maui

Dear Ms. Norcross-Nu`u:

Thank you for your letter to Mr. Michael Foley received on October 27, 2004, providing comments on the subject Draft EA. On behalf of Old Stable LLC, we verify that the proposed retention basin will be sized to accommodate the increase in runoff generated by the proposed project; therefore, not increasing the volume of runoff continuing downstream. In addition, the project drainage plan is designed for a 50-year storm.

Thank you for your review of the subject Draft EA. Should you have any questions, please contact me at 244-2015.

Very truly yours,

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

Daren Suzuki, Planner

DS:yp

cc: Kivette Caigoy, Department of Planning
Henry Spencer

spencertspreckel@mcc.deares

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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CONSERVATION AND RESOURCES ENFORCEMENT
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

October 25, 2004
CIZ 2004-0015.RCM3

Honorable Michael W. Foley
Planning Director
County of Maui, Planning Department
250 S. High Street
Wailuku, Hawaii 96793

ED-NAV
OCT 27 P 1:27
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Dear Mr. Foley:

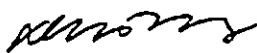
Subject: I.D. No.: CIZ 2004-0015
Applicant: Old State Road, LLC/16-lot subdivision
Authority: County of Maui Department of Planning
TMK: (2) 3-8-001: 003 (portion) - 3-8-2: 009 & 010

This is a follow-up to our letter to you dated September 24, 2004, pertaining to the subject matter.

Enclosed please find a copy of the Commission on Water Resource Management comment and Maui District Land Office response.

The Department of Land and Natural Resources has no other comment to offer on the subject matter. If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,


DIERDRE S. MAMIYA
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII



RECEIVED

04 SEP 15 P 3: 58



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LAND DIVISION

2004 SEP 31 A 10: 12

COMMISSION ON WATER RESOURCES
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
STATE OF HAWAII

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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KAOLOAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

September 15, 2004
LD/NAV
SM1 CIZ 2004-0015.CMT2

SPENCER16LOTSUB
Suspense Date: 9/25/04

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator *Dierdre Mamiya*
Land Division

SUBJECT: Change In Zoning
I. D. No.: CIZ 2004-0015
Applicant: Old Stable Road LLC
Project: 16 Lot Rural Subdivision
TMK: 2nd/ 3-8-1: 003 (portion). 3-8-2: 009 & 010
Authority: County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

() Comments attached.

Division: _____

Signed: _____

Date: _____

Print Name: _____

LINDA LINGLE
GOVERNOR OF HAWAII



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LAND DIVISION

OCT 1
2004 SEP 30 A 10:12

PETER T. YOUNG
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CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHIYOME L. FUKINO, M.D.
LAWRENCE H. MIKE, M.D., J.D.
STEPHANIE A. WHALEN

YVONNE Y. IZU
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96802

September 30, 2004

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Yvonne Y. Izu, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Old Stable Road 16-lot Rural Subn, Spreckelsville, Maui

FILE NO.: SM1 CIZ 2004-0015.CMT2

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.

- 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 Engineering 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.
- OTHER:

Water demand is estimated at 51,000 gpd. The primary water source for this project is now a ground-water management area under the State Commission on Water Resource Management (CWRM), and the current water supply infrastructure is maximized. Other water sources for the service area face full commitment as soon as they are available. Well owners in the Iao Aquifer must apply for water use permit applications prior to pumping. Permits will initially be issued for uses existing as of July 21, 2003. Uses initiated after that will be addressed after existing uses are considered. If pumpage from Iao is restricted, it could result in restrictions of use within the service area. New uses within the Central Maui Service Area not relying on Iao sources may also be affected if Iao sources are restricted.

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

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
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DEPUTY DIRECTOR - LAND

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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

September 15, 2004
LD/NAV
SM1 CIZ 2004-0015.CMT2

SPENCER16LOTSUB
Suspense Date: 9/25/04

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Change In Zoning
I. D. No.: CIZ 2004-0015
Applicant: Old Stable Road LLC
Project: 16 Lot Rural Subdivision
TMK: 2nd/ 3-8-1: 003 (portion). 3-8-2: 009 & 010
Authority: County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division: LAND

Signed: Cecil Santos

Date: 10/12/04

Print Name: CECIL SANTOS

u

References

References

County of Maui Charter (2003 Edition).

County of Maui, General Plan of the County of Maui, (1990 Update).

County of Maui, Wailuku-Kahului Community Plan, (June 2002).

Federal Emergency Management Agency, Flood Insurance Rate Map, Community Panel No. 150003/0190D and 150003/0195C.

Realtor Association of Maui, February 2004.

SMS, Maui County Community Plan Update Program: Socio-Economic Forecast - Phase I Report (Final Version), June 14, 2002.

State of Hawaii, Department of Agriculture, Agricultural Lands of Importance to the State of Hawaii, January 1997.

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

Appendices

Appendix A

***Wetland Delineation
Survey***



Consultants, Inc.

WETLAND DELINEATION SURVEY SPRECKELSVILLE, Lot 12 of the Ulmer Subdivision

Subject Site:

VACANT LAND
Ulmer Subdivision, Lot 12
Stable Road, Spreckelsville
Maui, Hawaii 96732
T.M.K. (2) 3-8-1:3 (Portion)



Prepared for:

MR. HENRY SPENCER
P.O. Box 790829
Paia, Hawaii 96799

Conducted and Compiled by:

Vuich Environmental Consultants, Inc.
VEC Project Number #0403-749
June 8, 2004

Notice: Confidential and privileged client communication. Do not distribute, communicate, quote or duplicate without prior approval from the report recipient listed above. © 2004 VEC

1498 Lower Main Street, Suite C • Wailuku, Hawaii 96793 • 808.249.2777 Phone • 808.249.2778 Fax

SPRECKELSVILLE WETLAND DELINEATION SUMMARY

Prepared by
Vuich Environmental Consultants, Inc (VEC)
VEC Project # 0403-749

VEC conducted wetland delineation surveys on the subject property located at the intersection of Hana Highway and Stable Road [TMK No. II-3-8-1:3(portion)]. The property is also known as Lot 12 of the Ulmer Subdivision. The purpose of the survey was to delineate areas previously determined by VEC (November 2003) of having wetland conditions. Three (3) separate areas were delineated on the subject property by this investigation. (See attached maps, Appendix A). The wetland delineation work was conducted on April 8, 29 and 30, 2004. This work was conducted following a period of exceptionally heavy and consistent rainfall that impacted the island of Maui.

From the early 1900's to very recently the subject property has been used primarily for livestock and stable use. Earlier in the 19th century, the property was a plantation farm that boarded horses used in the cane industry. After horses were replaced with motorized vehicles, the property was still used for ranching purposes (grazing land, raising livestock, rodeo arena, and horse boarding). All three of the wetland areas have been negatively impacted to varying degrees over the years by grading activities, road building, and limited refuse disposal.

Thirty-two (32) separate boreholes were excavated in the three areas. Soil types (profiles), hydrology, and vegetation were surveyed at all of these locations. The Corps of Engineer's Routine Wetland Determination Forms were used at each borehole to assist in determining if wetland conditions existed. These forms are located in Appendix C.

Descriptions of the three separate areas and the wetland area coverage follows:

Area 1 - A complex of small-area wetlands surrounded by sandy berms, located in the northeast corner of the subject property closest to a road named Alakapa Place. The delineation area was determined to cover approximately 9,960 square feet. The wetland boundary was basically determined to lie just outside the area of most recent ponding water. Beyond this area the surrounding land quickly gained elevation in very sandy soil where the required wetland characteristics ended. No obligate wetland plants were noted in this area. Additionally, this area consists of significant amounts of woody debris (dead kiawe) and a dense overhead canopy. Evidence of human manipulation (grading) was evident in this area.

Area 2 - An area east of a former rodeo arena that extends in an approximate west-east direction toward the paved private road located between Lot 7 and Lot 9 (See attached subdivision map, Figure 4, Appendix A). The delineation area was determined to cover approximately 35,075 square feet. However, within this area are several sections of raised dune sand (natural and human altered) that

VEC Project # 0403-749

Confidential & Privileged

run both north-south and east-west. The raised dune areas are not included in the definition of a wetland, however, due to the extremely dense thickets these areas were not delineated out of the main area. These raised dune areas that do not meet the wetland criteria likely comprise of up to 20 % of the total area. No significant areas of surface water ponding were noted in this area. The northern and southern wetland boundaries were basically limited by the presence of sand dunes where land quickly gained elevation in very sandy soil and wetland characteristics ended. The western boundary was limited by the absence of wetland vegetation. No obligate wetland plants were noted in this area. Area 2 had been taken over primarily by the woody shrub *Pluchea indica* and has resulted in an impenetrable mass of vegetation. Trail cutting was required to survey the area. Evidence of human manipulation (grading, road building and refuse dumping) was evident in this area.

Area 3 - This area is located north of the former rodeo arena and adjacent to (south of) the unpaved beach access road and coastal sand dunes. The delineation area was determined to cover approximately 9,696 square feet. Limited areas of surface water ponding were noted in this area. The wetland boundaries were basically limited by the sand dunes where land quickly gained elevation in very sandy soil or in areas where the land was significantly altered by human activities (former rodeo and beach roads). Of the three (3) areas, Area 3 is the wetland that appears to be the most representative of a natural wetland area. The obligate wetland plant *Cyperus laevigatus* or "makaloa" was noted in this area. This area is also where the bird species the Hawaiian Stilt was noted during a fauna survey. The fauna survey was conducted after a period of abnormal significant rainfall, which resulted in significant water ponding in this area. Evidence of human manipulation (grading and limited dumping) was evident in this area.

Areas 1, 2, and 3 were delineated based on the information collected at the sampling points. (See Figures 3 & 4, Appendix A).

On November 5, 2003, a field meeting was conducted between VEC, the property owner, and the Army Corps of Engineers (Mr. William Lennan, Honolulu Office). At that time, all three (3) wetland areas were considered by Mr. Lennan to be "isolated" wetlands, meaning that they are not connected to "waters of the United States". Therefore, this would mean these wetlands do not fall under the jurisdiction of the Army Corps of Engineers and are not subject to Section 404 of the Clean Water Act. Since this meeting, the Army Corps of Engineers has informed the property owner that they will be reassessing their original decision and will now review this delineation report to make a final decision.

If the Army Corps of Engineers is in agreement with the above-noted findings, and it is determined that Area 1, Area 2 or Area 3 are under the jurisdiction of the Army Corp of Engineers, the property owner may be subject to Section 404 of the Clean Water Act. "Activities in wetlands for which Section 404 permits may be required include, but are not limited to:

- Placement of fill and/or dredged material;
- Ditching activities when the excavated material is sidelast;

VEC Project # 0403-749

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- Levee and dike construction;
- Mechanized land clearing;
- Land leveling;
- Most road construction;
- Dam Construction.

The final determination as to whether an area is a wetland and whether the activity requires a permit must be made by the appropriate Corps District Office. (Recognizing Wetlands, US Army Corps of Engineers, 1998 Edition).

The proposed subdivision development will result in the filling in of Area #1 (9,960 ft²) and a portion of Area #2 (10,923 ft²) for a total of (20,883 ft²). In order to offset these losses, the property owner proposes to set up a mitigation/enhancement plan for Area #3. Area #3 is the best of the three areas to conduct such work for three reasons: 1.) It has the only obligate wetland plant species present and most closely resembles a productive natural wetland, 2.) There is a significant amount of adjacent low-lying land that could be mitigated to increase the wetland resources of Area 3, and 3.) The Hawaiian Stilt was observed in this area after a period of consistent rainfall.

Appendix A includes: a regional setting map; an aerial map with the wetland areas noted; a site survey plan with wetland areas delineated and borehole (sample points) plotted; and a subdivision plan with the wetland areas delineated and proposed areas of wetland impact noted.

- Appendix B includes the site photographs.
- Appendix C includes the COE Routine Wetland Determination Forms.
- Appendix D includes Statement of Qualifications.

- Mr. John Vuich (soils and hydrology)
- Mr. Jeffrey Kermod (soils, hydrology and mapping)
- Mr. Hank Oppenheimer (vegetation)
- Ken Nomura of A&B Properties, Inc. (delineation mapping)

VEC Project # 0403-749

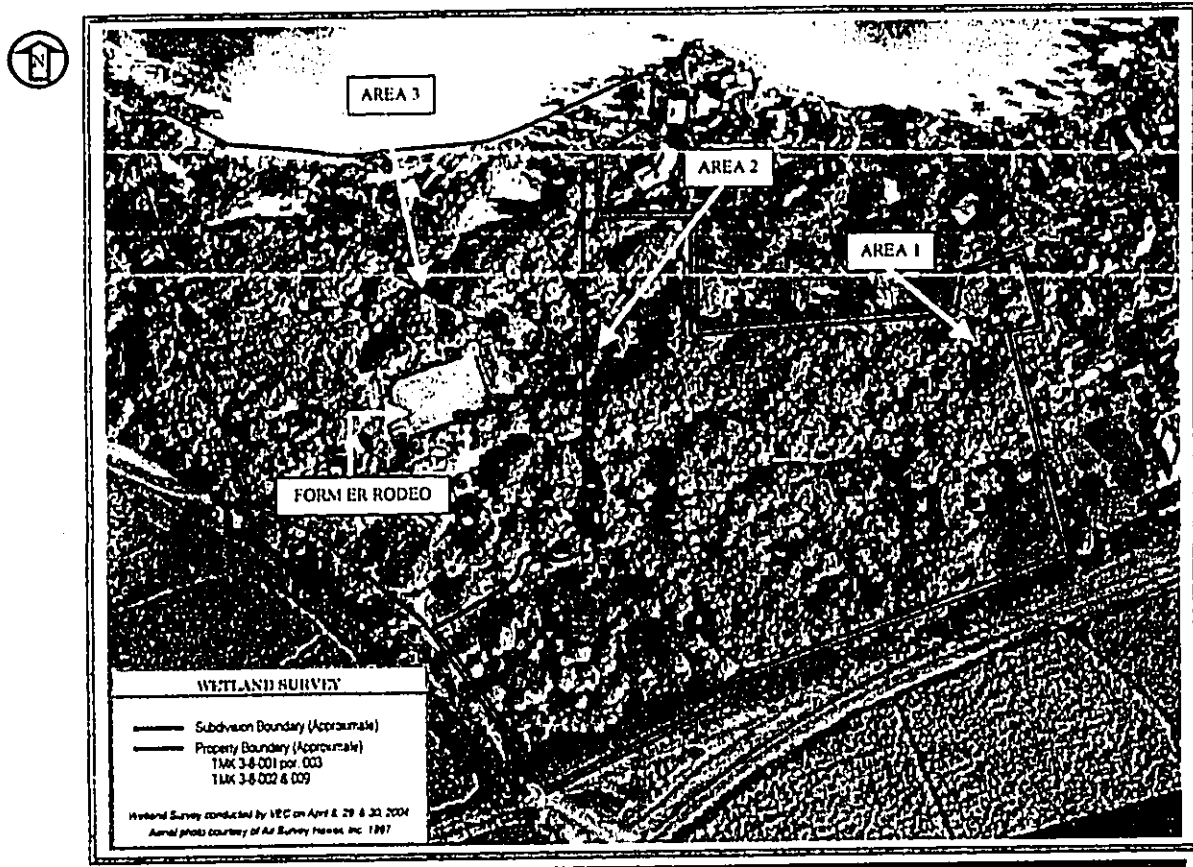
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APPENDIX A

- Figure 1 - Regional Setting Map
- Figure 2 - Site Plan Aerial Photo
- Figure 3 - Survey Plan with
Wetland Delineation
- Figure 4 - Subdivision Plan with
Wetland Delineation

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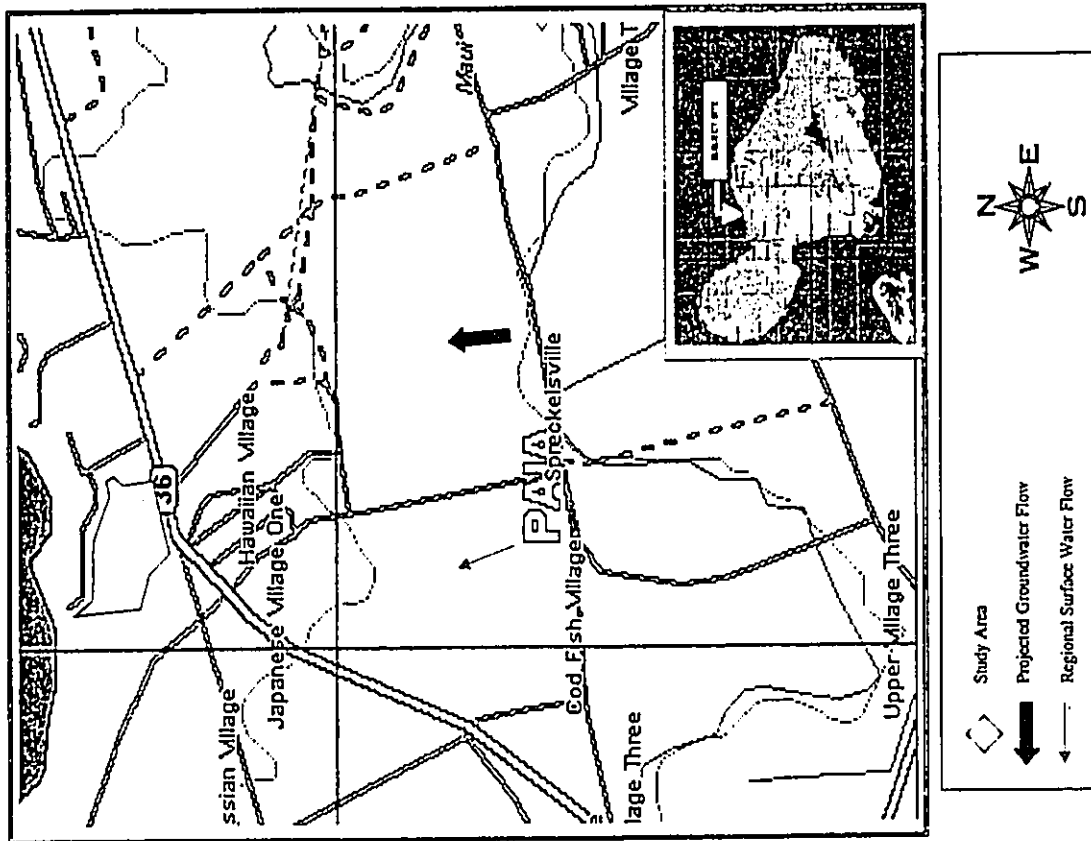
FIGURE 2: AERIAL MAP SHOWING WETLAND AREAS



VEC Project 0403-749

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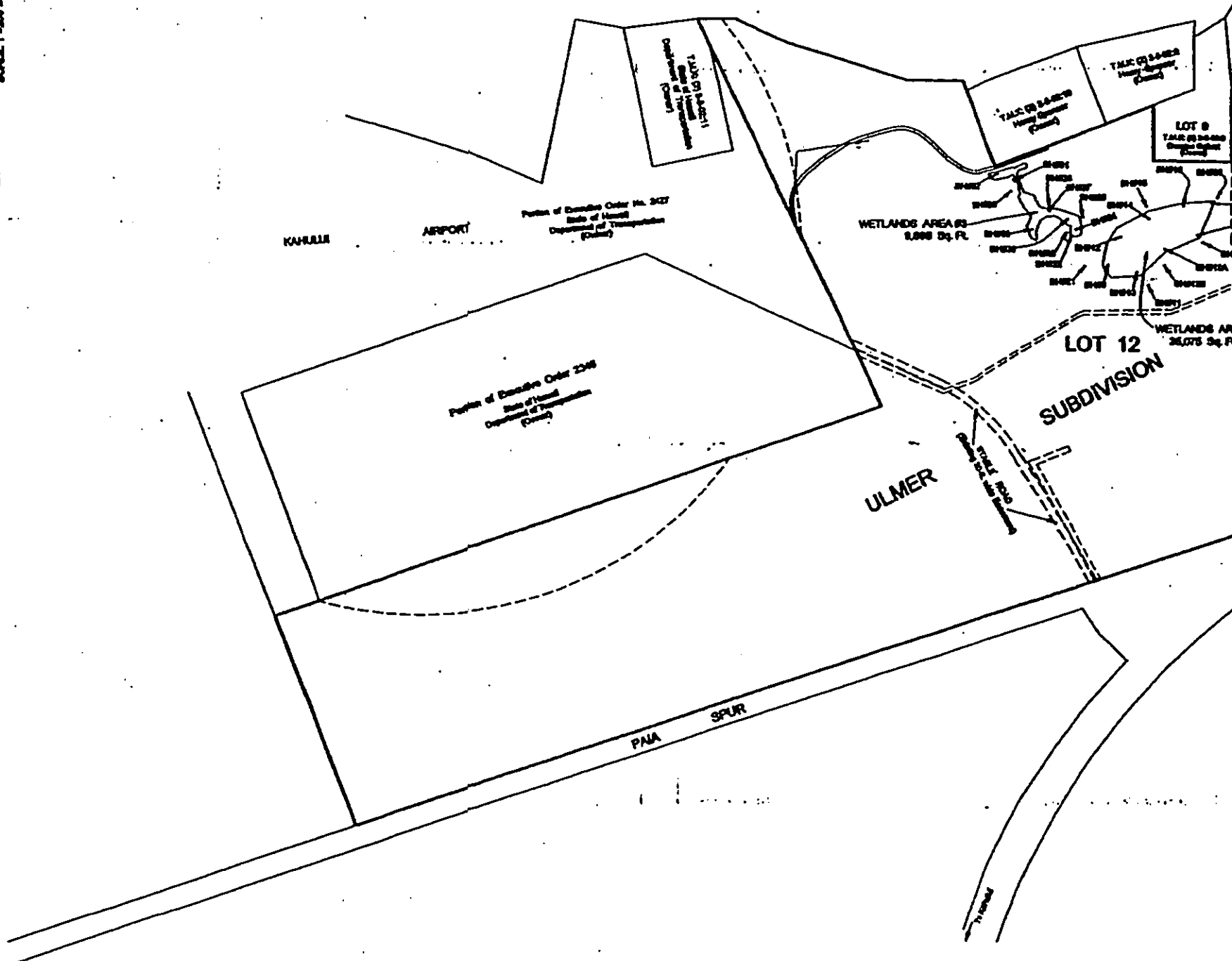
FIGURE 1: REGIONAL SETTING MAP



VEC Project # 0403-749

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O C E A N



NOTES:

1. Azimuths and coordinates referred to Government Survey Triangulation Station "TUNENEZ".
2. Owners of adjacent parcels taken from records of the Real Property Mapping Branch.
3. Location of Wetlands area based on a field breast survey performed on May 5 and 10, 2004.



E A N

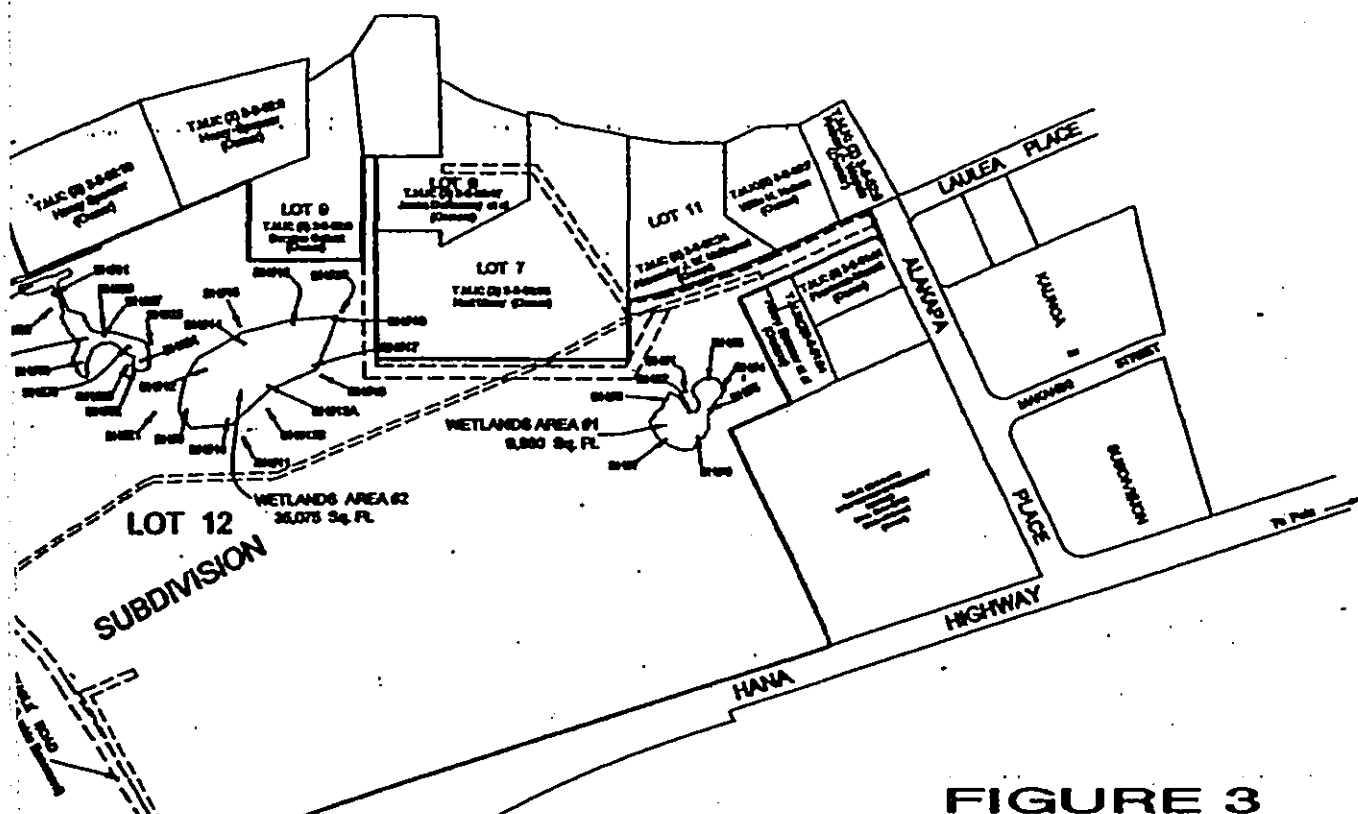


FIGURE 3

**PLAT SHOWING
WETLANDS LOCATION IN LOT 12
OF THE ULMER SUBDIVISION**

Being a portion of Grant 3343 to Claus Spreckels

SCALE: 1 inch = 200 feet

DATE: JUNE 4, 2004

Prepared by: A & B Properties, Inc
23 Lono Avenue, Suite 400
Kahala, HI 96732

Owner of Lot 12: Henry Spomer
P.O. Box 780628
Palo, HI 96778



This work was prepared by me or under my supervision.

K. T. Spomer 4/3/06
 K. T. Spomer
 Licensed Professional Land Surveyor
 Certificate No. 14000



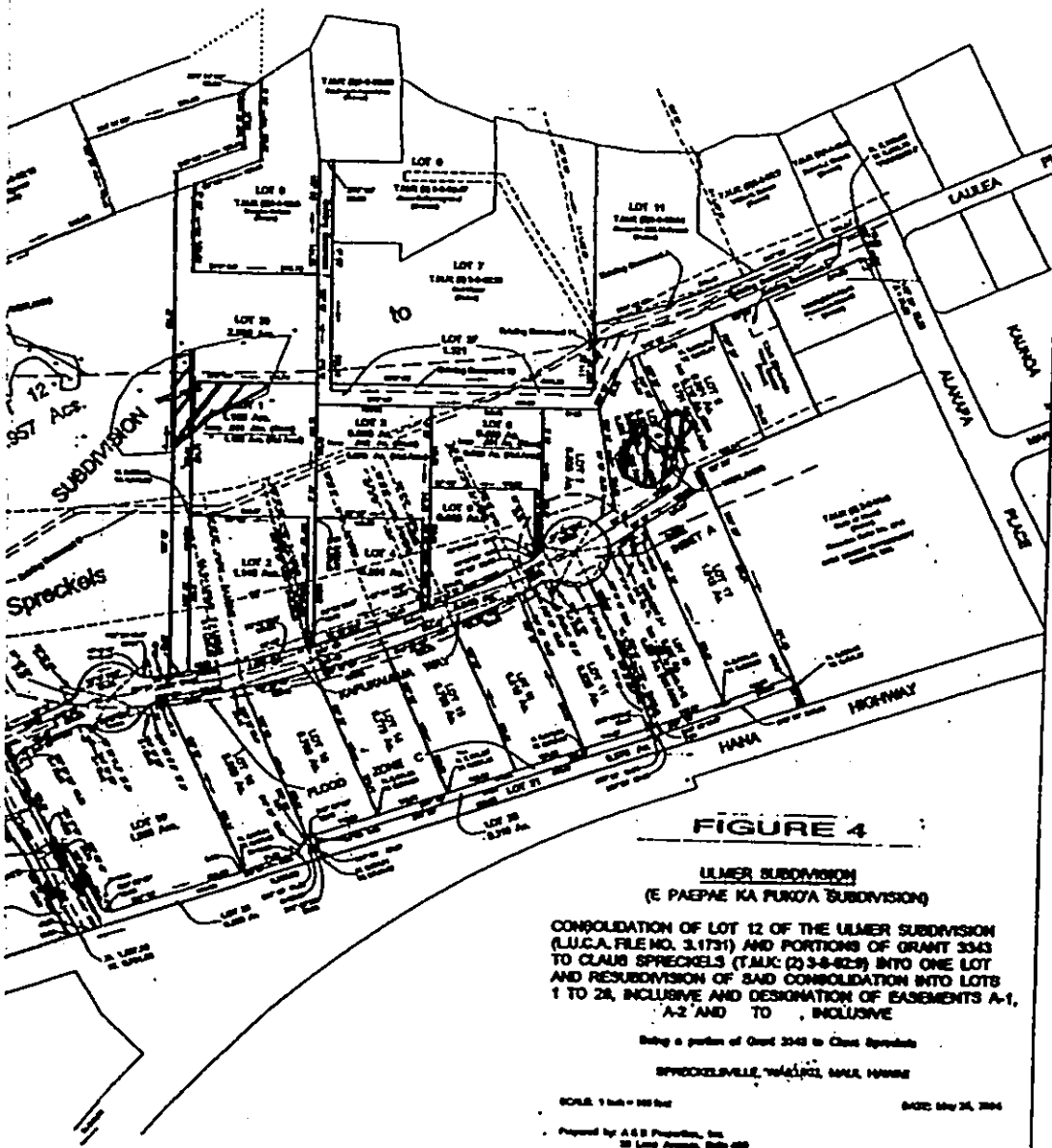
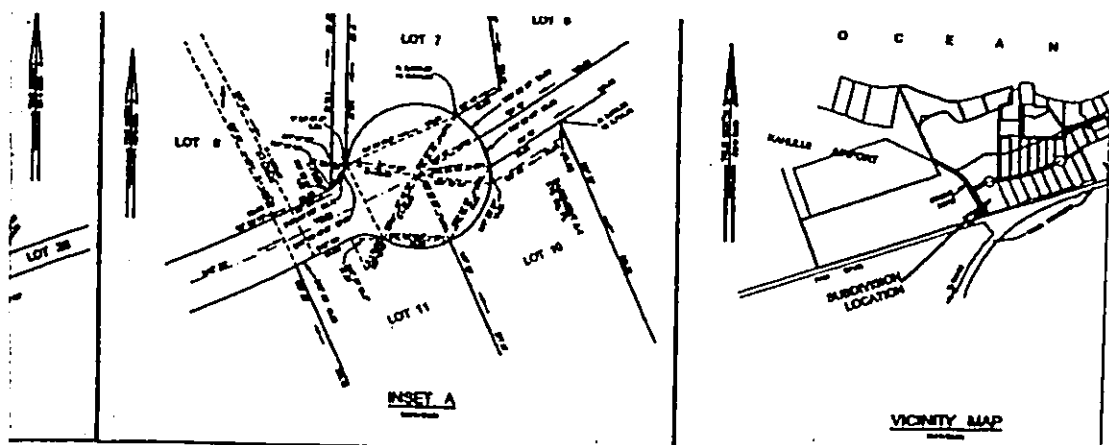


FIGURE 4

**ULMER SUBDIVISION
(E PAEPAE KA PUKOA SUBDIVISION)**

CONSOLIDATION OF LOT 12 OF THE ULMER SUBDIVISION (L.U.C.A. FILE NO. 3.1731) AND PORTIONS OF GRANT 3343 TO CLAIM SPRECKELS (T.A.K. (2) 3-8-82-3) INTO ONE LOT AND RESUBDIVISION OF SAID CONSOLIDATION INTO LOTS 1 TO 2A, INCLUSIVE AND DESIGNATION OF EASEMENTS A-1, A-2 AND TO , INCLUSIVE

Being a portion of Grant 3343 to Claim Spreckels

SPRECKELSVILLE, WAIALEA, MAKA, HAWAII

SCALE 1 inch = 100 feet

DATE: May 24, 2004

Prepared by A & B Properties, Inc.
30 Lono Avenue, Suite 200
Honolulu, Hawaii 96813

OWNER OF LOT 12 AND PARCELS B, Heavy Spitzer

WETLAND BOUNDARY



WETLAND LOGS (FILE NO.)

This work was prepared by the undersigned

KEVIN T. WELLS
Licensed Professional Land Surveyor
Certificate No. 15,700
Expiration Date 02/28/08

- 1. Lot 12 is to be the new State Road Right-of-Way, approximately 10 feet wide, as shown.
- 2. Lot 12 (Portion) shall be included in the County of Maui.
- 3. Lot 12 is a public roadway as to that of Lot 1, Grant 31 of the Ulmer Subdivision, Part of of T.A.K. (2) 3-8-82-3 and Part 9 and 7 of T.A.K. (2) 3-8-82-3.
- 4. Easement A-1 is for access and utility purposes to that of Lot 12.
- 5. Easement A-2 is for utility purposes to that of the County of Maui.
- 6. Easement A-3 is for utility purposes to that of the County of Maui.



SUBDIVISION FILE NO.

APPENDIX B

Site Photographs



PHOTO 1

Welland Area #1 showing ponding surface water and decaying prosopis pods (kawe) and other wooded debris in this area.

PHOTO 2

Welland Area #1 showing ponding surface water and decaying woody debris

PHOTO 3

Welland Area #1, sampling site (borehole) #3. Note the shallow groundwater level within the excavation pit. This sampling point is on the fringe of the welland.

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RECEIVED AS FOLLOWS

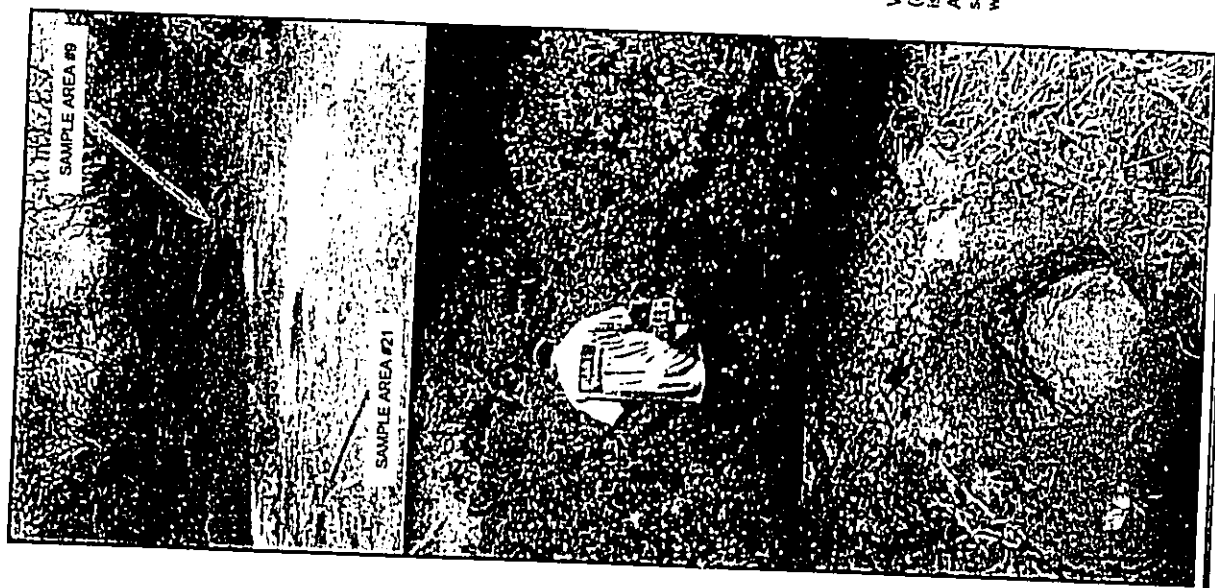


PHOTO 7
Wetland area #2. The western limit of the wetland was determined to lie between sample areas #9 and #21.

PHOTO 8
Wetland Area #2. Trail cutting was necessary in order to penetrate the very dense *pluchea indica* (indian fleabane) in order to access sampling points for the wetland delineation survey.

PHOTO 9
Wetland Area #2, sampling point (bore hole) #9. This sampling point is located within the western fringe of Area #2. Note the gley colored soils, shallow groundwater level and adjacent wetland vegetation.

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PHOTO 4
Wetland Area #1, sampling point (borehole) #3, showing the distance to the ponding water in this area (approximately 4 feet away).

PHOTO 5
Wetland Area #1. View along the upper limit of the wetland boundary.

PHOTO 6
Wetland Area #1. View along the wetland boundary. Note the boundary markers (orange-white tape) marking the upper limit of the wetland area.

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PHOTO 10

Wetland Area #2, sampling point (borehole) #10 with soil and hydrology wetland indicators evident. This sampling point was within a very dense thicket of *pluchea indica* (indian fleabane).



PHOTO 11

Wetland Area #2, sampling point (borehole) #11. This sampling point is located outside of the wetland area. Soil and hydrology indicators ended with the rise in elevation on an adjacent sand dune. The depth of this borehole is 31'.



PHOTO 12

Wetland Area #2, sampling point (borehole) #16. This sampling point is located within the wetland, however, note the rapid rise in elevation on an adjacent sand dune. Wetland soil, hydrological, and vegetation indicators end abruptly on these dunes.



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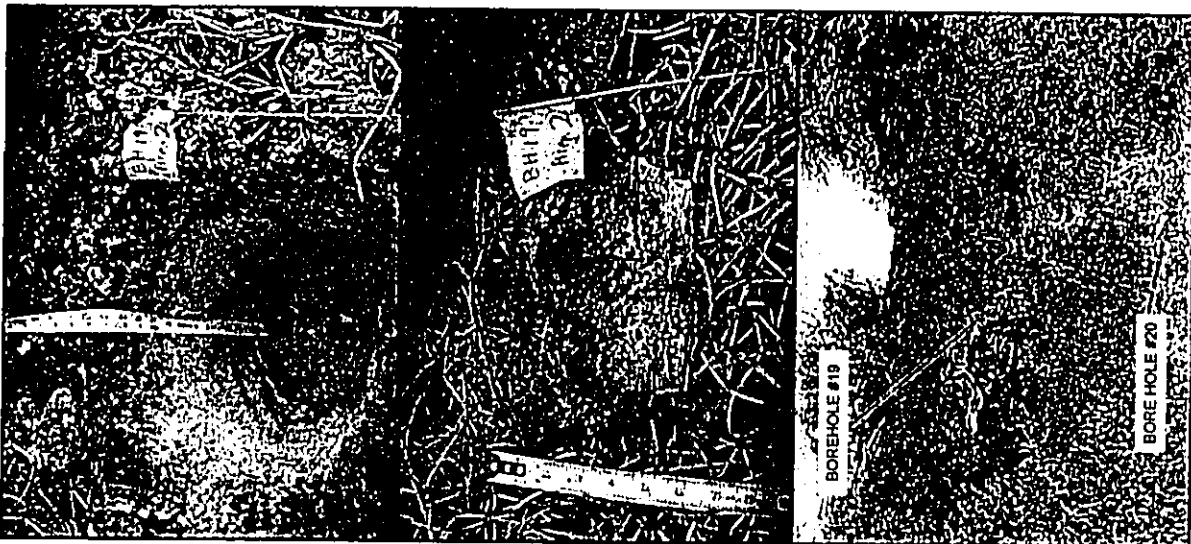


PHOTO 13

Wetland Area #2, sampling point (bore hole) #19, located near the eastern boundary of the wetland.

PHOTO 14

Wetland Area #2, sampling point (bore hole) #19. Note the gley-colored soils and black vertical streaking of organics within the soil column.

PHOTO 15

Westerly view from the eastern boundary of the wetland, Area #2.

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PHOTO 16

Welland Area #3, showing a more open productive welland area with both obligate and facultative welland vegetation and surface water ponding.



PHOTO 17

Welland Area #3, sampling point (bore hole) #24, indicating shallow ground water, hydric soils and adjacent obligate vegetation. (*Cyperus laevigatus* L. or "makaloa").



PHOTO 18

Welland Area #2. View of (borehole) sampling point #24 (same as above). Note the abundance of the obligate welland plant, *Cyperus laevigatus* L. or "makaloa".



PHOTO 19

Welland Area #3, sampling point (borehole) #23. This sampling point is located outside of the welland area. Note the very sandy soils and lack of groundwater in the excavation pit. This sampling point is located in very close proximity to the welland boundary, however, is situated at a slightly elevated position on an adjacent sand dune.

PHOTO 20

Welland Area #3, sampling point (borehole) #27. Note the very shallow groundwater level located in this area.

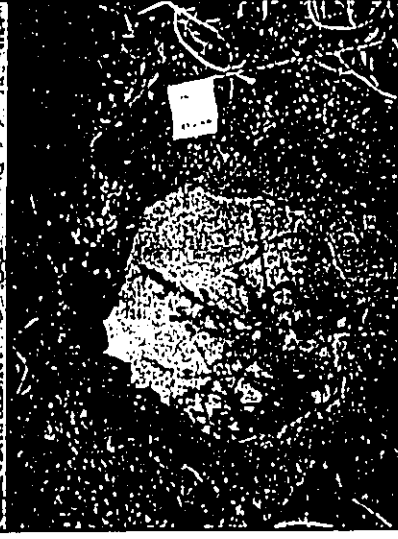


PHOTO 21

Welland Area #3. Southerly view towards the southern boundary of the welland. The welland area diminishes further to the south with the presence of the rodeo that had been active in the area for several decades denuding the area of vegetation by regular grading activities. Sampling point #30 is noted by the pink flag in the foreground.



APPENDIX C

DOE Wetland Determination Data Forms

[Thirty -two (32) Separate Survey Locations]

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project/Site: <u>SPRECKELSVILLE SUBDIVISION</u>	Date: <u>4/29/04</u>
Applicant/Owner: <u>H. SPENCER</u>	County: <u>MAUI</u>
Investigator: <u>J. KERMODE, J. VUJICH, H. OPPENHEIMER</u>	State: <u>HAWAII</u>
Do Normal Circumstances Exist on the site? Yes <input type="radio"/> No <input checked="" type="radio"/>	Community ID: _____
Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="radio"/> No <input type="radio"/>	ID: <u>AREA 1</u>
Is the area a potential Problem Area? (If needed, explain on reverse.) Yes <input type="radio"/> No <input checked="" type="radio"/>	Plot ID: <u>BH 1</u>

VEGETATION

Dominant Plant Species	Stratified	Indicator
1. <u>Alien grasses</u>	Herb	
2. <u>Prosopea pallida</u>	Tree	
3. <u>Thespesia populnea</u>	Tree	
4. <u>Phoenix sp.</u>	Tree	
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____		
Remarks: Just outside of ponding surface water area.		

HYDROLOGY

Wetland hydrology indicators: Primary indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits Secondary indicators (2 or more required): <input type="checkbox"/> Drainage Patterns in Wetlands <input type="checkbox"/> Orodced Root Channels in Upper 12" <input type="checkbox"/> Water-Stamped Leaves <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)	Wetland hydrology indicators: Primary indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits Secondary indicators (2 or more required): <input type="checkbox"/> Drainage Patterns in Wetlands <input type="checkbox"/> Orodced Root Channels in Upper 12" <input type="checkbox"/> Water-Stamped Leaves <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Recorded Data (Describe in Remarks): <input checked="" type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Field Observations: Depth of Surface Water: <u>NONE</u> (m.) Depth to Free Water in PFI: <u>22"</u> (m.) Depth to Saturated Soil: <u>10"</u> (m.)
Remarks:	

SOILS

Map Unit Name (Series and Phase): BH4 Drainage Class: Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Moisture	Texture, Concentrations, Boundaries, etc.
0" - 6"	A1	10YR 4/1	Brown			5% Sand, 20% SL, 25% Clay
6" - 13"	A2	7.5YR 4/1	Dark brown			70% Sand, 25% SL, 5% Clay
13" - 18"	B1	2.5Y 2/3	Very dark gray			40% Sand, 30% SL, 30% Clay
18" - 24"	B2	2.5Y 4/1	Grayish brown			30% Sand, 30% SL, 40% Clay

Hydrate Soil Indicators:

- Historic
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors

Concentrations

- High Organic Content in Surface Layer
- Organic Striking in Sandy Soils
- Limited on Local Hydric Soils List
- Limited on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

4" from ponding water, 6" above ponding water. Slight fedid odor at 13-18" only. Drift woody debris scattered on surface.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/> (Circle)	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="radio"/> No <input type="radio"/> (Circle)
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/> (Circle)	Fringe	
Hydric Soils Present?	Yes <input checked="" type="radio"/> No <input type="radio"/> (Circle)	Fringe	

Remarks:

This area is located on the wetland fringe.

Approved by HOUSAGE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: SPECKELSVILLE SUBDIVISION Date: 4/8/84

Applicant/Owner: H. SPENCER County: MAUI

Investigator: J. KERMODE, J. VUICH, H. OPPENHEIMER State: HAWAII

Community ID: _____ ID: AREA 1

Plot ID: BH.5

Do Normal Circumstances Exist on the site? Yes No

Is the site significantly disturbed (Atypical Situation)? Yes No

Is the area a potential Problem Area? Yes No

(If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Use	Stratum	Indicator
1. <u>Prosopis juliflora</u>	None	Tree	
2. <u>Thespesia populnea</u>	info	Tree	
3. <u>Alien grasses</u>		Herb	
4. <u>Asystasia gangetica</u>	chessa weed	Shrub	
5. <u>Sesuvium portulacastrum</u>	shrub	Herb	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50% FAC

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (n.)

Depth to Free Water in Pit: 8" (n.)

Depth to Saturated Soil: 8" (n.)

Wetland hydrology indicators:

Primary Indicators:

- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits

Secondary Indicators (2 or more required):

- Drainage Patterns in Wetlands
- Oxidized Root Channels in Upper 12"
- Water-Stained Leaves
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks:

4" from ponding water.
6" above ponding water

SOILS

Map Unit Name (Series and Phase): BH5 Drainage Class: Field Observations
 Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Munsell Color (Moist)	Munsell Color (Munsell Moist)	Moisture	Abundance/Contrast	Texture, Concretions, Structure, etc.
0" - 1/2"	O1	7.5YR - 4/1	Brown			30% Sand, 25% Clay, 45% Sil. Loam of organic roots.
1/2" - 5"	A1	7.5YR - 4/1	Dark brown			
5" - 14"	A2	10YR - 4/4	Dark yellowish brown			80% Sand, 5% Clay, 15% Sil. Filled with 30% Sand, 40% Sil, 30% Clay
14" - 18"	B1	2.5Y - 4/1	Light olive brown			Filled with sand 30%, Clay 40%, Sil 30%
18" - 24"	B2	GLEI - 1.5N	Gray			

Hydric Soil Indicators:

Histosol _____
 Mistic Epipedon _____
 Subdic Odor _____
 Aquic Moisture Regime _____
 Reducing Conditions _____
 Gleyed or Low-Chroma Colors _____

Concretions
 High Organic Content in Surface Layer _____
 Organic Strengthening in Sandy Soils _____
 Limited on Local Hydric Soils List _____
 Listed on National Hydric Soils List _____
 Other (Explain in Remarks) _____

Remarks:
 Fecid odor from 14"-24".

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (Yes)	No (No)	Is this Sampling Point Within a Wetland?	Yes (Yes)	No (No)
Wetland Hydrology Present?	Yes (Yes)	No (No)		Yes (Yes)	No (No)
Hydric Soils Present?	Yes (Yes)	No (No)		Yes (Yes)	No (No)

Remarks:
 Wetland vegetation is marginal. This point is at the wetland fringe.

Approved by HOUSE 3092

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: SPRECKELSVILLE SUBDIVISION Date: 4/20/04
 Applicant/Owner: H. SPENCER County: MAUI
 Investigator: J. KERMODE, J. VINC, H. OPPENHEIMER State: HAWAII
 Community ID: _____
 Plot ID: AREA 1
BH5

Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species

1. Theropis populifera	ratio	Stratum	Indicator
2. Prosopea pallida	None	Tree	
3. Alien grasses	None	Herb	
4. Phoenix sp.	None	Tree	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____
 Remarks:
 Located 2' below edge of drift line.

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other _____
 No Recorded Data Available

Field Observations:
 Depth of Surface Water: NONE (n.)
 Depth to Free Water in Pit: 12" (n.)
 Depth to Saturated Soil: 12" (n.)

Wetland Hydrology Indicators:
 Primary Indicators:
 Inundated
 Saturated in Upper 12 inches at 12"
 Water Marks
 Other Lines
 Secondary Indicators (2 or more required):
 Sediment Deposits
 Drainage Patterns in Wetlands
 Oxidized Root Channels in Upper 12"
 Water-Soaked Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Remarks:
 Located 4' from ponding water.
 Located <1' above ponding water.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project/Site: SPRECKELSVILLE SUBDIVISION Date: 4/20/04
 Applicant/Owner: H. SPENCER County: MAUI
 Investigator: J. KERMODE, J. MUICH, H. OPPENHEIMER State: HAWAII
 Community ID: _____ ID: AREA 1
 Plot ID: BH7 Plot ID: BH8

Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species

Dominant Plant Species	Stature	Indicator
1. Alien grasses	Herb	
2. Theopaste populus	Tree	
3. Phoenix sp.	Tree	
4. Pluche canaliculata	Woody Shrub	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): <50% FAC
 Remarks: _____

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other _____
 No Recorded Data Available

Field Observations:
 Depth of Surface Water: NONE (ft.)
 Depth to Free Water in Pit: 5.5' (ft.)
 Depth to Saturated Soil: 4" (in.)

Wetland hydrology indicators:
 Primary Indicators:
 Inundated
 Saturated in Upper 12 inches at 12"
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
 Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12"
 Water-Stained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Remarks:
 10' from standing water.
 <1' above standing water.

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SOILS

Map Unit Name (Series and Phase): BH7 Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Abundance/Contrast	Texture, Concretions, Structures, etc.
0" - 4"	A1	7.5YR 4/4	Strong brown		50% Sand, 30% Sil, 20% Clay
4" - 16"	A3	10YR 3/4	Dark yellowish brown		75% Sand, 20% Sil, 5% Clay
16" - 24"	B2	6.5Y 2.5/8	Dark bluish grey		60% Sand, 20% Clay, 20% Sil

Hydric Soil Indicators:
 Histosol
 Mistic Epipedon
 Subolic Odor
 Aquic Moisture Regime
 Reducing Conditions
 Gleyed or Low-Chroma Colors

Concretions:
 High Organic Content in Surface Layer
 Organic Striking in Sandy Soils
 Limited on Local Hydric Soils List
 Listed on National Hydric Soils List
 Other (Explain in Remarks)

Remarks:
 16 - 24" ferrid odor.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) (No) (Circle)
 Wetland Hydrology Present? (Yes) (No) (Circle)
 Hydric Soils Present? (Yes) (No) (Circle)

Is this Sampling Point Within a Wetland? (Yes) (No) (Circle)
 Fringe.

Remarks:
 Wetland vegetation marginal. Sampling point is at wetland fringe.

Approved by HOUSAGE 302

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SOILS

Map Unit Name: BH 8 Drainage Class: _____
 (Series and Phase): _____ Field Observations: _____
 Taxonomy (Subgroup): _____ Contour Mapped Type? Yes No

Profile Description:	Horizon	Mastic Color (Munsell Lab)	Mastic Color (Munsell Field)	Mastic Color (Munsell Lab)	Abundant/Context	Moisture, Concretions, Structures, etc.
0'-5'	A1	7.5YR; 3y	Dark brown			70% Sand, 15% SL, 15% Clay
5'-21'	A2	7.5YR; 4y	Strong brown			90% Sand, 10% SL

Hydric Soil Indicators:

Histosol _____
 Histic Epipedon _____
 Sulfidic Odor _____
 Aquic Moisture Regime _____
 Reducing Conditions _____
 Gleyed or Low-Chroma Colors _____

Concretions _____
 High Organic Content in Surface Layer _____
 Organic Striking in Sandy Soils _____
 Listed on Local Hydric Soils List _____
 Listed on National Hydric Soils List _____
 Other (Explain in Remarks) _____

Remarks: _____
 No fecid odor or gray zone.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes/No) (Circle)	Yes (X)	No
Wetland Hydrology Present? (Yes/No) (Circle)	Yes (X)	No
Hydric Soils Present? (Yes/No) (Circle)	Yes (X)	No

Is this Sampling Point Within a Wetland? Yes (X) No ()
 Fringe.

Remarks:
 • Very sandy soils.
 • No gray soils or fecid odor.
 • Wetland vegetation marginal. Sampling point is at wetland fringe.

Approved by HOUSE 392

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: SPECKELVILLE SUBDIVISION Date: 4/28/04
 Applicant/Owner: M. SPENCER County: MAUI
 Investigator: J. KERMODE, J. WUICH, H. OPPENHEIMER State: HAWAII
 Community ID: _____
 Plot ID: AREA 2
 Plot ID: BH 8

Do Normal Circumstances Exist on the site? Yes () No (X)
 Is the site significantly disturbed (Atypical Situation)? Yes (X) No ()
 Is the area a potential Problem Area? Yes (X) No ()
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Structure	Stemlet
1. <i>Sesuvium portulacastrum</i>	Herb	Indeterminate
2. <i>Sporobolus virginicus</i>	Herb	
3. <i>Panicum polifolium</i>	Herb	
4. <i>Prorachia indica</i>	Herb	
5. <i>Prorachia indica</i>	Herb	
6. <i>Prorachia indica</i>	Herb	
7. <i>Prorachia indica</i>	Herb	
8. <i>Prorachia indica</i>	Herb	
9. <i>Prorachia indica</i>	Herb	
10. <i>Prorachia indica</i>	Herb	
11. <i>Prorachia indica</i>	Herb	
12. <i>Prorachia indica</i>	Herb	
13. <i>Prorachia indica</i>	Herb	
14. <i>Prorachia indica</i>	Herb	
15. <i>Prorachia indica</i>	Herb	
16. <i>Prorachia indica</i>	Herb	
17. <i>Prorachia indica</i>	Herb	
18. <i>Prorachia indica</i>	Herb	
19. <i>Prorachia indica</i>	Herb	
20. <i>Prorachia indica</i>	Herb	
21. <i>Prorachia indica</i>	Herb	
22. <i>Prorachia indica</i>	Herb	
23. <i>Prorachia indica</i>	Herb	
24. <i>Prorachia indica</i>	Herb	
25. <i>Prorachia indica</i>	Herb	
26. <i>Prorachia indica</i>	Herb	
27. <i>Prorachia indica</i>	Herb	
28. <i>Prorachia indica</i>	Herb	
29. <i>Prorachia indica</i>	Herb	
30. <i>Prorachia indica</i>	Herb	
31. <i>Prorachia indica</i>	Herb	
32. <i>Prorachia indica</i>	Herb	
33. <i>Prorachia indica</i>	Herb	
34. <i>Prorachia indica</i>	Herb	
35. <i>Prorachia indica</i>	Herb	
36. <i>Prorachia indica</i>	Herb	
37. <i>Prorachia indica</i>	Herb	
38. <i>Prorachia indica</i>	Herb	
39. <i>Prorachia indica</i>	Herb	
40. <i>Prorachia indica</i>	Herb	
41. <i>Prorachia indica</i>	Herb	
42. <i>Prorachia indica</i>	Herb	
43. <i>Prorachia indica</i>	Herb	
44. <i>Prorachia indica</i>	Herb	
45. <i>Prorachia indica</i>	Herb	
46. <i>Prorachia indica</i>	Herb	
47. <i>Prorachia indica</i>	Herb	
48. <i>Prorachia indica</i>	Herb	
49. <i>Prorachia indica</i>	Herb	
50. <i>Prorachia indica</i>	Herb	
51. <i>Prorachia indica</i>	Herb	
52. <i>Prorachia indica</i>	Herb	
53. <i>Prorachia indica</i>	Herb	
54. <i>Prorachia indica</i>	Herb	
55. <i>Prorachia indica</i>	Herb	
56. <i>Prorachia indica</i>	Herb	
57. <i>Prorachia indica</i>	Herb	
58. <i>Prorachia indica</i>	Herb	
59. <i>Prorachia indica</i>	Herb	
60. <i>Prorachia indica</i>	Herb	
61. <i>Prorachia indica</i>	Herb	
62. <i>Prorachia indica</i>	Herb	
63. <i>Prorachia indica</i>	Herb	
64. <i>Prorachia indica</i>	Herb	
65. <i>Prorachia indica</i>	Herb	
66. <i>Prorachia indica</i>	Herb	
67. <i>Prorachia indica</i>	Herb	
68. <i>Prorachia indica</i>	Herb	
69. <i>Prorachia indica</i>	Herb	
70. <i>Prorachia indica</i>	Herb	
71. <i>Prorachia indica</i>	Herb	
72. <i>Prorachia indica</i>	Herb	
73. <i>Prorachia indica</i>	Herb	
74. <i>Prorachia indica</i>	Herb	
75. <i>Prorachia indica</i>	Herb	
76. <i>Prorachia indica</i>	Herb	
77. <i>Prorachia indica</i>	Herb	
78. <i>Prorachia indica</i>	Herb	
79. <i>Prorachia indica</i>	Herb	
80. <i>Prorachia indica</i>	Herb	
81. <i>Prorachia indica</i>	Herb	
82. <i>Prorachia indica</i>	Herb	
83. <i>Prorachia indica</i>	Herb	
84. <i>Prorachia indica</i>	Herb	
85. <i>Prorachia indica</i>	Herb	
86. <i>Prorachia indica</i>	Herb	
87. <i>Prorachia indica</i>	Herb	
88. <i>Prorachia indica</i>	Herb	
89. <i>Prorachia indica</i>	Herb	
90. <i>Prorachia indica</i>	Herb	
91. <i>Prorachia indica</i>	Herb	
92. <i>Prorachia indica</i>	Herb	
93. <i>Prorachia indica</i>	Herb	
94. <i>Prorachia indica</i>	Herb	
95. <i>Prorachia indica</i>	Herb	
96. <i>Prorachia indica</i>	Herb	
97. <i>Prorachia indica</i>	Herb	
98. <i>Prorachia indica</i>	Herb	
99. <i>Prorachia indica</i>	Herb	
100. <i>Prorachia indica</i>	Herb	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): >50% FAC

Remarks: _____
 Bare ground 10%

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge _____
 Aerial Photographs _____
 Other _____
 No Recorded Data Available _____

Field Observations:
 Depth of Surface Water: _____ NONE (n.)
 Depth to Free Water in Pit: _____ 12" (n.)
 Depth to Saturated Soil: _____ 11" (n.)

Wetland Hydrology Indicators:
 Primary Indicators:
 Inundated _____
 Saturated in Upper 12 Inches _____
 Water Marks _____
 Drift Lines _____
 Sediment Deposits _____
 Drainage Patterns in Wetlands _____
 Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12" _____
 Water-Stained Leaves _____
 FAC-Neutral Test _____
 Other (Explain in Remarks) _____

Remarks: _____

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project/Site: SPRECKELSVILLE SUBDIVISION Date: 4/29/04
 Applicant/Owner: H. SPENCER County: MAUI
 Investigator: J. KERMODE, J. VUICH, H. OPPENHEIMER State: HAWAII
 Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

Community ID: _____
 Plot ID: AREA 2
BH 10

VEGETATION

Dominant Plant Species

1. Pterocarpus indicus	Indian feebare	Stemless	Indicator
<input type="checkbox"/>	<input type="checkbox"/>	Woody shrub	
<input type="checkbox"/>	<input type="checkbox"/>	Tree	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): 100% FAC
 Remarks: _____

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other _____
 No Recorded Data Available

Field Observations:
 Depth of Surface Water: NONE (n)
 Depth to Free Water in Pit: 13" (n)
 Depth to Saturated Soil: 10" (n)

Wetland hydrology indicators:
 Primary Indicators:
 Inundated
 Saturated in Upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Secondary Indicators (2 or more required):
 Drainage Patterns in Wetlands
 Oxidized Root Channels in Upper 12"
 Water-Stained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Remarks: _____

HAWAII DOCUMENT/UG Kermode Project & Maui Wetland Work/Spreckelsville DELINEATION FILE/AREA 2 and 3 Delineation
 Photos/Vrs 2 Date Form/Vrs 2 BH 10.doc

SOILS

Map Unit Name: BH 9 Drainage Class: _____
 (Series and Phase): _____ Field Observations: _____
 Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (feet)	Horizon	Mottle Color (Mottled Moist)	Mottle Colors (Mottled Moist)	Mottle Abundance/Contrast	Texture, Concretions, Spiggury, etc.
0" - 1/2"	O1	2.5YR - 1/4	Reddish brown	Organic	
1/2" - 4"	A1	2.5YR - 1/4	Red		Silt sand
4" - 6"	B1	5GY - 1/4	Very dark greenish gray		Silt sand with some clay. Slight field odor.
6" - 14"	C	6.5Y(N) - 1/4	Greenish gray		Sandy, limbed ill

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Aquic Moisture Regime
 Reducing Conditions
 Clayed or Low-Chroma Colors

Concretions:
 High Organic Content in Surface Layer
 Organic Straining in Sandy Soils
 Listed on Local Hydric Soils List
 Listed on National Hydric Soils List
 Other (Explain in Remarks)

Remarks: _____
 Light sulfidic odor.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) (No) (Circle)
 Wetland Hydrology Present? (Yes) (No)
 Hydric Soils Present? (Yes) (No)

Is this Sampling Point Within a Wetland? (Yes) (No)
 Fringe.

Remarks: _____
 Wetland fringe.

Approved by HOUSAGE 392

HAWAII DOCUMENT/UG Kermode Project & Maui Wetland Work/Spreckelsville DELINEATION FILE/AREA 2 and 3 Delineation
 Photos/Vrs 2 Date Form/Vrs 2 BH 9.doc

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: SPRECKELVILLE SUBDIVISION Date: 4/28/04
 Applicant/Owner: H. SPENCER County: MAUI
 Investigator: J. KERMODE, J. VAUGH, H. OPPENHEIMER State: HAWAII
 Community ID: _____
 ID: AREA 2
 Plot ID: BH 11

Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Puccia indica	Indian Isabone	Woody Shrub
2. Puccia carolinensis	scrubshrub	Woody Shrub
3. Puccia x. f. b. b. p.	marsh Isabone	Woody Shrub
4. Puccia x. f. b. b. p.	Kawe	Tree
5. Ayrctia patylica		Herb Weed
6. Salvia Vesetaria		Herb

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____ FAC > than 50%
 Remarks: _____

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other _____
 No Recorded Data Available

Field Observations:
 Depth of Surface Water: _____ NONE (m.)
 Depth to Free Water in Pit: _____ 30" (m.)
 Depth to Saturated Soil: _____ 27" (m.)

Wetland Hydrology Indicators:
 Primary Indicators:
 Inundated
 Saturated in Upper 12 Inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
 Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12"
 Water-Stamped Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Remarks: _____

SOILS

Map Unit Name (Series and Phase): BH 10 Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0 - 1"	A1	7.5YR - 4/1	brown		slightly sized
1 - 5"	A2	7.5YR - 3/1	dark brown		slightly sand with clay
5 - 10"	B1	7.5YR - 4/1	light brown		sandy
10 - 18"	B3	2.5YR - 4/1	light reddish brown		very sandy
18 - 21"	C	10B - 1/1	light bluish grey		Sandy with cemented nodules

Hydric Soil Indicators:
 Histosol
 Mastic Epipedon
 Sulfide Odor
 Aquic Moisture Regime
 Reducing Conditions
 Gleyed or Low-Chroma Colors

Concretions:
 High Organic Content in Surface Layer
 Organic Strengthening in Sandy Soils
 Listed on Local Hydric Soils List
 Listed on National Hydric Soils List
 Other (Explain in Remarks)

Remarks: _____
 Light sulfidic odor.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
 Wetland Hydrology Present? Yes No (Circle)
 Hydric Soils Present? Yes No (Circle)

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:
 Sampling point is at wetland fringe.

Approved by HOUSACE 3092

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: SPRECKELSVILLE SUBDIVISION Date: 4/29/04
 Applicant/Owner: H. SPENCER County: MAUI
 Investigator: J. KERMODE, J. VUICH, H. OPPENHEIMER State: HAWAII
 Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)
 Community ID: AREA 2
 Plot ID: BH13A

VEGETATION

Dominant Plant Species

1. Pteris indica	Indian Isabane	Woody shrub	Stratum	Indicator
2. Prosopis juliflora	None	Tree		
3. Sesuvium portulacastrum	Scrub	Herb		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): FAC 80%
 Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other
 No Recorded Data Available

Wetland Hydrology Indicators:
 Primary Indicators:
 Inundated
 Saturated in Upper 12 Inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
 Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12"
 Water-Soaked Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Field Observations:
 Depth of Surface Water: NONE (m.)
 Depth to Free Water in Pit: 3" (m.)
 Depth to Saturated Soil: 0" (m.)

Remarks:

SOILS

Map Unit Name (Series and Phase): BH12 Drainage Class: Field Observations Contain Mapped Type? Yes No
 Taxonomy (Subgroup):
 Profile Description:

Depth (Inches)	Horizon	Munsell Moist	Munsell Moist	Munsell Moist	Munsell Moist	Texture, Concretions, Structure, etc.
0" - 1/2"	O1	2.5YR - 4/3	pale red			Visible organic
1/2" - 4"	A2	5YR - 4/3	dark reddish brown			Sandy silt, minor clay
4" - 11"	B3	5YR - 4/3	light reddish brown			Sand
11" -	B3	5YR - 4/3	pinkish gray			Sand with coral fragments

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Aquic Moisture Regime
 Reducing Conditions
 Gleyed or Low-Chroma Colors

Concretions:
 High Organic Content in Surface Layer
 Organic Streating in Sandy Soils
 Listed on Local Hydric Soils List
 Listed on National Hydric Soils List
 Other (Explain in Remarks)

Remarks:
 NO ODOR

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/> (Circle)	Is this Sampling Point Within a Wetland? (Circle)	Yes <input checked="" type="radio"/> No <input type="radio"/>
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/> (Circle)		
Hydric Soils Present?	Yes <input checked="" type="radio"/> No <input type="radio"/> (Circle)		

Remarks:
 Fringe of Area 2 located south of sand dune.

Approved by HOUSE 392

SOILS

Map Unit Name (Series and Phase): BH 13A Drainage Class: Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Munsell Color (Moist)	Munsell Color (Dry)	Abundance/Content	Texture, Consistency, Structure, etc.
0 - 1"	O1	2.5YR - 1/1	dark reddish grey		organic with sand
0 - 1"	A1	2.5YR - 1/1	reddish brown		sandy clay
1 - 3"	B2	2.5YR - 1/1	reddish black		sandy clay with organics
4 - 12"	C	2.5YR - 1/1	reddish grey		beach sand and corals/bival fragments

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors

Concentrations

- High Organic Content in Surface Layer
- Organic Straining in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)

Wetland Hydrology Present? Yes No

Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:

Approved by ROUSAGE 392

If UG7: Document UG7 Form Project & Plot Wetland Wetland Wetland WETLAND DETERMINATION FILES AREA 3 and 3 Data
Photos Area 3 Data Form Area 3 BH 13A.doc

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: SERRECKELVILLE SUBDIVISION Date: 4/28/04

Applicant/Owner: H. SPENCER County: MAUI

Investigator: J. KERMODE, J. VUICH, H. OPPENHEIMER State: HAWAII

Do Normal Circumstances Exist on the site? Yes No

Is the site significantly disturbed (Atypical Situation)? Yes No

Is the area a potential Problem Area? Yes No

(If needed, explain on reverse.)

Community ID: _____
ID: AREA 2
Plot ID: BH 13B

VEGETATION

Dominant Plant Species:

1. Ploche Index	Indian Name	Woody shrub	Stratum
2. Ploche Index	marsh leucaena	Woody shrub	
3. Ploche Index	Flora	Tree	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): FAC > 80%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
Stream, Lake, or Tide Gauge
Aerial Photographs
Other
No Recorded Data Available

Field Observations:
Depth of Surface Water: NONE (m.)
Depth to Free Water in Pit: 18" (m.)
Depth to Saturated Soil: 14" (m.)

Wetland Hydrology Indicators:
Primary Indicators:
 Inundated
 Saturated in Upper 12 Inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12"
 Water-Stained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Remarks:

If UG7: Document UG7 Form Project & Plot Wetland Wetland WETLAND DETERMINATION FILES AREA 3 and 3 Data
Photos Area 3 Data Form Area 3 BH 13A.doc

SOILS

Map Unit Name (Series and Phase): BH1JB Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Depth (Feet)	Horizon	Munsell Moist. Color (Munsell Moist.)	Munsell Dry. Color (Munsell Dry.)	Texture, Concretions, Structures, etc.
0 - 1'	O1	2.5YR - 5/4	pal. red	organic
0 - 4'	A1	2.5YR - 5/4	red	slly sand with dry
4 - 8'	A2	2.5YR - 5/4	light reddish brown	slly sand with less clay
8 - 18'	B3	5YR - 1/1	light gray	
18 - 24'	C	GLEYS 10Y - 1/1	light greenish gray	sand with nodules

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Aquic Moisture Regime
 Reducing Conditions
 Clayed or Low-Chroma Colors

Concretions
 High Organic Content in Surface Layer
 Organic Straining in Sandy Soils
 Listed on Local Hydric Soils List
 Listed on National Hydric Soils List
 Other (Explain in Remarks)

Remarks:
 No hard pan or fadid odor.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
 Wetland Hydrology Present? Yes No (Circle)
 Hydric Soils Present? Yes No (Circle)

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:
 Just outside wetland boundary.

Approved by HOUSAGE 392

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Determination Manual)

Project/Site: SPECKELSVILLE SUBDIVISION Date: 4/28/04
 Applicant/Owner: H. SPENCER County: MAUI
 Investigator: J. KERMODE, J. YUICH, H. OPPENHEIMER State: HAWAII
 Community ID: _____
 ID: AREA 2
 Plot ID: BH 14

Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species

1. Patches/Islands	Indian Islet/Island	Woody shrub	Stratum	Indicator
2. Patches/Islands	Kiawe	Tree		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): 100% FAC

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other
 No Recorded Data Available

Wetland Hydrology Indicators:
 Primary Indicators:
 Inundated
 Submerged in Upper 12 Inches
 Water Marks
 Dirt Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
 Secondary Indicators (2 or more required):
 Odorized Root Channels in Upper 12"
 Water-Stained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Field Observations:
 Depth of Surface Water: NOISE (ft.)
 Depth to Free Water in Pit: 12 (ft.)
 Depth to Saturated Soil: 10 (ft.)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: SPECKELSVILLE SUBDIVISION Date: 4/29/04
 Applicant/Owner: H. SPENGLER County: MAUI
 Investigator: J. KERMODE, J. NUICH, H. OPPELHEIMER State: HAWAII
 Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)
 Community ID: _____
 Plot ID: BH 14

VEGETATION

Dominant Plant Species

Indicator	Indicator	Indicator
1. <u>Panicum fasciatum</u>	<u>Indum leucostachya</u>	<u>Styrium</u>
2. <u>Panicum fasciatum</u>	<u>maritima leucostachya</u>	<u>Woody shrub</u>
3. <u>Procytis pallida</u>	<u>Rubus</u>	<u>Woody shrub</u>
		<u>Tree</u>

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): FAC 100%
 Remarks: _____

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other _____
 No Recorded Data Available

Wetland Hydrology Indicators:
 Primary Indicators:
 Inundated
 Saturated in Upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
 Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12"
 Water Stained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Field Observations:
 Depth of Surface Water: NONE (n.)
 Depth to Free Water in Pit: 23" (n.)
 Depth to Saturated Soil: 22" (n.)

Remarks: _____

H.U.G.'s Documents/Kermode Projects & Field Wetland Work/Spectra/Field Delineation Files/AREA 2 and 3 Delineation Plans/Unit 2 Data Form/Unit 2 BH 14.doc

SOILS

Map Unit Name (Series and Phase): BH 14 Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Main Color (Munsell Moist)	Moisture Color (Munsell Moist)	Abundance/Control	Texture, Concretions, Structure, etc.
0 - 1/2"	O1	2.5YR - 1/2	pale red		
1/2 - 2"	A1	2.5YR - 1/2	reddish brown		slightly sand with clay
2 - 3 1/2"	B2	2.5YR - 1/2	rusty red		sandy clay with silty & reddish odor.
3 1/2 - 12"	C	10R - 1/2	light gray		silty sand

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Aquic Moisture Regime
 Reducing Conditions
 Gleyed or Low-Chroma Colors

Remarks: _____
 Strong sulfidic odor at 2-3 1/2 inch zone.
 Hard at 12" with large cemented nodules (cemented sand with calcium).

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)

Wetland Hydrology Present? Yes No

Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks: _____

Approved by: H0USAGE 392

H.U.G.'s Documents/Kermode Projects & Field Wetland Work/Spectra/Field Delineation Files/AREA 2 and 3 Delineation Plans/Unit 2 Data Form/Unit 2 BH 14.doc

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project/Site: SPECKELSVILLE SUBDIVISION Date: 4/28/04
 Applicant/Owner: H. SPENGLER County: MAUI
 Investigator: J. KERMODE, J. VUICH, H. OPPENHEIMER State: HAWAII
 Community ID: _____
 Plot ID: BH17

Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species: _____ Stratum: _____ Indicator: _____
 1. Purua indica Indian leafbine Woody shrub
 2. Phorrea foeboides marsh leafbine Woody shrub
 Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): FAC 100% FAC
 Remarks: _____

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauging
 Aerial Photographs
 Other _____
 No Recorded Data Available

Wetland hydrology indicators:
 Primary Indicators:
 Saturated in Upper 12 Inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
 Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12"
 Water-Stamped Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Field Observations:
 Depth of Surface Water: NONE (ft.)
 Depth to Free Water in Pit: 7 (ft.)
 Depth to Saturated Soil: 5 (ft.)

Remarks: _____

SOILS

Map Unit Name (Series and Phase): BH18 Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Profile Description:	Horizon	Munsell Color (Moist)	Munsell Color (Munsell Moist)	Mottle	Abundance/Contrast	Texture, Concretions, Structure, etc.
0' - 1/2'	O1					
1/2' - 1'	A1	7.5YR-4	Brown			sand with clay
1' - 4'	B2	5YR-4	Dark reddish brown			clay with sand and sil. sulfidic odor
4' - 17'	C	6.5Y1-N 5.1	Gray			coarse sand, sulfidic odor

Hydric Soil Indicators:
 Histosol
 Ixic Epipedon
 Sulfidic Odor
 Aquic Moisture Regime
 Reducing Conditions
 Gleyed or Low-Chroma Colors

Concretions:
 High Organic Content in Surface Layer
 Organic Strengthening in Sandy Soils
 Listed on Local Hydric Soils List
 Listed on National Hydric Soils List
 Other (Explain in Remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No
 Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:
 Located 10' south (mauka) of a rapidly rising sand dune (wooded covered). The dune is out of the wetland.

Approved by HOUSAGE 3/93

SOILS

Map Unit Name (Series and Phase): BH 17 Drainage Class: Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Mastic Color (Munsell Moist)	Mastic Color (Munsell Moist)	Mastic Abundance/Consist.	Mastic Texture, Concretions, Structure, etc.
0-1/2"	O1		dark reddish brown		loose silty clay
1/2-3"	A1	2.5YR-4/6	brown		loose silty clay
3-5"	B2	2.5YR-4/6	light red		loose silty sand
5-17"	C	2.5Y-4/6	grey		loose

Hydric Soil Indicators:

- Histotol
- Mistic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

Concretions at 12".

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)

Wetland Hydrology Present? Yes No (Circle)

Hydric Soils Present? Yes No (Circle)

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:

Wetland Fringe.

Approved by HOUSAGE 302

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Definition Manual)

Project/Site: SPRECKELSVILLE SUBDIVISION Date: 4/29/04

Applicant/Owner: H. SPENCER County: MAUI

Investigator: J. KERMODE, J. VUICH, H. OPPENHEIMER State: HAWAII

Community ID: _____

ID: AREA 2

Plot ID: BH 18

Do Normal Circumstances Exist on the site? Yes No

Is the site significantly disturbed (Atypical Situation)? Yes No

Is the area a potential Problem Area? Yes No

(If needed, explain on reverse.)

VEGETATION

Dominant Plant Species:

Species	Stratum	Indicator
1. Pluchea carolinensis	sourbush	
2. Pluchea indica	Indian leafbane	woody shrub
3. Pluchea zosterifolia	marsh leafbane	woody shrub
4. Prosopis juliflora	Wawa	tree
5. Azyriasis garipica	chinese veld	shrub

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): FAC < 50%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other
 No Recorded Data Available

Wetland Hydrology Indicators:
 Primary Indicators:
 Inundated
 Saturated in Upper 12 inches
 Water Marks
 Drift Lines
 Secondary Indicators (2 or more required):
 Sediment Deposits
 Drainage Patterns in Wetlands
 Oxidized Root Channels in Upper 12"
 Water-Stained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Field Observations:
 Depth of Surface Water: NONE (ft.)
 Depth to Free Water in Pit: NE (ft.)
 Depth to Saturated Soil: NE (ft.)

Remarks:
 NE = not encountered (getting slightly moist at >24").

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Definition Manual)

Project/Site: SPECKELVILLE SUBDIVISION Date: 4/28/04
 Applicant/Owner: H. SEENCER County: MAUI
 Investigator: J. KERMODE, J. VURCH, H. OPPENHEIMER State: HAWAII
 Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

Community ID: _____
 ID: AREA 2
 Plot ID: BH18

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. <u>Scaevola portulacastrum</u>	<u>herb</u>	<u>herb</u>
2. <u>Panicum polycosmum</u>	<u>woody shrub</u>	<u>woody shrub</u>
3. <u>Pluchea indica</u>	<u>marsh herb</u>	<u>marsh herb</u>
4. <u>Pluchea indica</u>	<u>tree</u>	<u>tree</u>
Percent of Dominant Species that are ORU, FACW or FAC (excluding FAC): <u>FAC 100%</u>		
Remarks: _____		

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other
 No Recorded Data Available

Wetland hydrology indicators:
 Primary indicators:
 Inundated in Upper 12 inches
 Water Marks
 Dike Lines
 Sediment Deposits
 Secondary indicators (2 or more required):
 Drainage Patterns in Wetlands
 Oxidized Root Channels in Upper 12"
 Water-Stained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Field Observations:
 Depth of Surface Water: NONE (n)
 Depth to Free Water in Pit: 13 (n)
 Depth to Saturated Soil: 9 (n)

Remarks: _____

SOILS

Map Unit Name (Series and Phase): BH18 Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Control	Texture, Concretions, Stratification, etc.
0-2	A2	2.5YR-4/1	reddish brown	...	sand with ss
2-7	A3	2.5YR-4/1	dark red	...	ss/pt (dry)
7-15	B3	2.5YR-4/4	light red	...	shy sand with fine clay
15-24	C	5YR-7/4	pink	...	

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Aquic Moisture Regime
 Reducing Conditions
 Gleyed or Low-Chroma Colors

Concretions
 High Organic Content in Surface Layer
 Organic Stratification in Sandy Soils
 Listed on Local Hydric Soils List
 Listed on National Hydric Soils List
 Other (Explain in Remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
 Wetland Hydrology Present? Yes No (Circle)
 Hydric Soils Present? Yes No (Circle)

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:
 Test point located on edge of rising sand dune.
 Change in vegetation.

Approved by HOUSACE 393

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: SPRECKELVILLE SUBDIVISION Date: 4/21/04
 Applicant/Owner: H. SPENCER County: MAUI
 Investigator: J. KERMODE, J. VUJICH, H. OPPENHEIMER State: HAWAII
 Community ID: _____
 ID: AREA 2
 Plot ID: BH 20

Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Indian Isabane	woody shrub	Indicator
1. <i>Pluchea indica</i>	Indian Isabane	woody shrub	
2. <i>Pluchea indica</i>	march Isabane	woody shrub	
3. <i>Sesuvium portulacastrum</i>	'akuaul	herb	
4. <i>Prosopis juliflora</i>	tiave	tree	
5. <i>Thespesia populnea</i>	milo	tree	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): FAC > 80%
 Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other _____
 No Recorded Data Available

Wetland Hydrology Indicators:
 Primary Indicators:
 Inundated in Upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
 Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12"
 Water-Stamped Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Field Observations:
 Depth of Surface Water: NONE (n.)
 Depth to Free Water in Pit: 21 (n.)
 Depth to Saturated Soil: 19 (n.)

Remarks:

SOILS

Map Unit Name (Series and Phase): BH 19 Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Mastic Color (Munsell Notation)	Mottle Colors	Mottle Abundances/Conspic	Texture, Consistency, Structure, etc.
0-4"	A1	7.5YR-4/1	Strong brown		Sand / sil / clay
4-6"	B1	5YR-4/1	Yellowish red		Sand / sil / less clay
6-16"	B3	5YR-7/1	Reddish gray		Same as above except color change
16-24"	C	7.5YR-7/1	Light gray		Sand with sil

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Subdic Odor
 Acid Moisture Regime
 Reducing Conditions
 Gleyed or Low-Chroma Colors

Concretions
 High Organic Content in Surface Layer
 Organic Straining in Sandy Soils
 Listed on Local Hydric Soils List
 Listed on National Hydric Soils List
 Other (Explain in Remarks)

Remarks:
 Subdic odor at 4".

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)

Wetland Hydrology Present? Yes No (Circle)

Hydric Soils Present? Yes No (Circle)

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:
 East boundary of wetland between Bore holes 19 & 20.

Approved by: HOUSAGE 397

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project/Site: <u>SPRECKELSVILLE SUBDIVISION</u>	Date: <u>4/20/04</u>
Applicant/Owner: <u>H. SPENCER</u>	County: <u>MAUI</u>
Investigator: <u>J. KERMODE, J. VUICH, H. OPPENHEIMER</u>	State: <u>HAWAII</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No	Community ID: <u>AREA 3</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes <input type="radio"/> No	Plot ID: <u>BH Z2</u>
Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. <u>Securidum paniculatum</u>	Herb	
2. <u>Pilea indica</u>	Woody Shrub	
3. <u>Phorbea carolinensis</u>	Woody Shrub	
4. <u>Cyperus brevifolius</u>	Herb	
5. <u>Prosopepla peltata</u>	Tree	
6. <u>Heliotropium curassavicum</u>	Herb	
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): <u>80% FAC, 19% OBL</u>		
Remarks:		

HYDROLOGY

Recorded Data (Describe in Remarks): <input checked="" type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photograph <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland hydrology indicators: Primary indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits Secondary indicators (2 or more required): <input type="checkbox"/> Drainage Patterns in Wetlands <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>NONE</u> (ft.) Depth to Free Water in Pit: <u>8"</u> (ft.) Depth to Saturated Soil: <u>7"</u> (ft.)	Remarks:

SOILS

Map Unit Name (Series and Phase): <u>BH Z1</u>	Drainage Class: <u>Field Observations</u>	
Taxonomy (Subgroup):	Confirm Mapped Type? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Profile Description:	Texture, Concretions, Structures, etc.	
Depth (feet):	Moist Color (Munsell Hue), Moist Chroma, Moist Value	
0'-2'	<u>2.5YR-2/3</u> <u>dark reddish brown</u>	beach sand with minor silt
2'-8'	<u>2.5YR-2/3</u> <u>light reddish brown</u>	beach sand unconsolidated
8'-11'	<u>2.5YR-1/1</u> <u>light reddish brown</u>	beach sand cemented with lime
Hydric Soil Indicators:		
<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions	
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer	
<input type="checkbox"/> Suboxic Odor	<input type="checkbox"/> Organic Swelling in Sandy Soils	
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List	
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List	
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)	
Remarks:		
No odor. No organic surface layer or subsurface organic hard pan.		

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> (Circle)	Is this Sampling Point Within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> (Circle)
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Hydric Soils Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: Just outside (west of) Area 2. Road area very disturbed for several decades. >20' from ground cover. >25' from woody shrubs.	Approved by HOUSE 392

SOILS

Map Unit Name: BH22 Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Moist Color (Munsell Moist)	Moist Color (Munsell Moist)	Moist Color (Munsell Moist)	Moist Color (Munsell Moist)	Texture, Concretion, Structure, etc.
0-2"	A1	5YR-5	Dark reddish grey			Silty sand with organics
2-2 1/2"	B2	5YR-4 1/2	Black			Sandy clay with organics
2 1/2-6"	C	5YR-5 1/2	Grey			Silty sand
6-14"	C	5YR-7 1/2	Light Gray			Silty sand

Hydric Soil Indicators:
 Histosol _____
 Histic Epipedon _____
 Sulphidic Odor
 Aquic Moisture Regime _____
 Reducing Conditions _____
 Gleyed or Low-Chroma Colors _____

Remarks:
 B2 = possible organic hard pan. Photo of hard pan (thin layer) at 2" depth.
 Shell fragments @ 12"

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Circle)
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:
 Located 5' north of malai of the significantly altered rodeo area.
 Sandy soil indicators - organics
 Fringe. Sampling point located on wetland fringe.

Approved by HOUSAGE 397

H. U.S. Department of the Interior, Bureau of Reclamation, Wetlands Determination Form (WDF) 1, 1987 Edition

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: SPRECKELSVILLE SUBDIVISION
 Applicant/Owner: H. SPENGLER
 Investigator: J. KERMOOD, J. VUICH, H. OPPENHEIMER
 Date: 4/30/04
 County: HAWAII
 State: HAWAII
 Community ID: _____
 ID: AREA 3
 Plot ID: BH 23

Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Puaheia indica	Indican leucobane	Woody Shrub
2. Puaheia eschbergii	march leucobane	Woody Shrub
3. Puaheia eschbergii	scrub	Woody Shrub
4. Scaevola portulacastrum	akaloa	Herb
5. Portulacastrum	liana	Tire

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): FAC 80%
 Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other _____
 No Recorded Data Available

Field Observations:
 Depth of Surface Water: NONE (n.)
 Depth to Free Water in Pit: NE (n.)
 Depth to Saturated Soil: NE (n.)

Wetland hydrology indicators:
 Primary Indicators:
 Inundated
 Submerged in Upper 12 inches
 Water Marks
 Dirt Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
 Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12"
 Water-Soaked Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Remarks:
 NE = not encountered.

H. U.S. Department of the Interior, Bureau of Reclamation, Wetlands Determination Form (WDF) 1, 1987 Edition

SOILS

Map Unit Name: BH 24 Drainage Class: _____
 (Series and Phase): _____ Field Observations: _____
 Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No
 Profile Description: _____

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Moisture Color (Munsell Moist)	Abundance/Coverage	Texture, Concretions, Structures, etc.
0 - 1"	A1				Clay to silty clay loam and sand
1 1/2 - 2"	A1	5YR 5/1	Very dark gray		Sand with clay, silts & organics Fine to coarse black sand
2 - 10"	C	GLEYS 6A1	Gray		Slight mold color.

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Aquic Moisture Regime
 Reducing Conditions
 Gleyed or Low-Chroma Colors
 Concretions
 High Organic Content in Surface Layer
 Organic Stratification in Sandy Soils
 Limited on Local Hydric Soils List
 Limited on National Hydric Soils List
 Other (Explain in Remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle) _____
 Wetland Hydrology Present? (Yes) No (Circle) _____
 Hydric Soils Present? (Yes) No (Circle) _____

Is this Sampling Point Within a Wetland? (Yes) No (Circle) _____

Remarks: _____

Approved by HOUSSAGE 3/82

HUGO's Documenting Wetland Projects & Field Wetland Work-Sprinkles in the DELINEATION FILES AREA 1 and 3 Delineation Phase Area 3 Data Form Area 3 BH 24.0e

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: SPRECKELSVILLE SUBDIVISION Date: 4/20/04
 Applicant/Owner: H. SPENCER County: MAUI
 Investigator: J. KERMOOD, J. VAUGH, H. OPPENHEIMER State: HAWAII
 Do Normal Circumstances Exist on the site? Yes No
 Community ID: _____
 Is the area a potentially disturbed (Atypical Situation)? Yes No
 ID: AREA.3
 Is the area a potential Problem Area? Yes No
 Plot ID: BH 25
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. <i>Spartina maritima</i> (L.) subsp. <i>subsp. sp.</i>	Herb	40%
2. <i>Scaevola portulacastrum</i> "subsp. <i>subsp.</i>	Herb	25%
3. <i>Pluchea indica</i> Indian Sesuvium	Woody Shrub	10%
4. <i>Pluchea condensis</i> southern	Woody Shrub	5%
5. <i>Pluchea zosterifolia</i> marsh Sesuvium	Woody Shrub	5%
6. <i>Prosopepla paludosa</i>	Tree	
7. <i>Halimolobos curassavicum</i> L.	Herb Trace	
8. <i>Oryzopsis latifolia</i> L.	Herb Trace	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FACs): FAC <50%, OBL Trace
 Remarks: 10% bare ground.

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other _____
 No Recorded Data Available

Wetland hydrology indicators:
 Inundated
 Saturated in Upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
 Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12"
 Water-Stained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Field Observations:
 Depth of Surface Water: NONE (n.)
 Depth to Free Water in Pit: 10" (n.)
 Depth to Saturated Soil: 8" (n.)

Remarks: Drift line. After 50 year rainfall record.

HUGO's Documenting Wetland Projects & Field Wetland Work-Sprinkles in the DELINEATION FILES AREA 1 and 3 Delineation Phase Area 3 Data Form Area 3 BH 24.0e

SOILS

Map Unit Name (Series and Phase): BH28 Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Depth (Inches)	Horizon	Moist Color (Munsell Moist)	Moist Color (Munsell Moist)	Moist Color (Munsell Moist)	Abundance/Contrast	Moisture, Consistency, Structure, etc. (if not already indicated and to 1' with all minor clay, silt, or organic)
0-2"	A1	5YR 4/	Reddish brown			
2-7"	A2	5YR 4/	Reddish brown			
87-110"	C	5YR 7/1	PRX			Sand coarse to fine Coarse beach sand & shell fragments

Hydric Soil Indicators:
 Histosol _____
 Histic Epipedon _____
 Sulfidic Odor _____
 Aquic Moisture Regime _____
 Reducing Conditions _____
 Gleyed or Low-Chroma Colors _____

Concentrations
 High Organic Content in Surface Layer _____
 Organic Streaking in Sandy Soils _____
 Limited on Local Hydric Soils List _____
 Listed on National Hydric Soils List _____
 Other (Explain in Remarks) _____

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No Major
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:
 High area of hard pan within wetland area.

Approved by HQUSACE 372

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Determination Manual)

Project/Site: SPIECKELSVILLE SUBMISSION Date: 4/30/04
 Applicant/Owner: H. SPENCER County: HAWAII
 Investigator: J. KERMODE, J. UJIFJI, H. OPPENHEIMER State: HAWAII
 Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Abundance	Stratum	Indicator
1. <i>Sesuvium portulacastrum</i>	scrub	Herb	80%
2. <i>Pluchea carolinensis</i>	scrub	Woody Shrub	<10%
3. <i>Pluchea toibenbergii</i>	marsh forb	Woody Shrub	<10%
4. <i>Prostrepia</i>	grass	Tree	10%

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): FAC 80%
 Remarks: _____

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge _____
 Aerial Photographs _____
 Other _____
 No Recorded Data Available _____

Wetland hydrology Indicators:
 Primary Indicators:
 Inundated
 Saturated in Upper 12 Inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Secondary Indicators (2 or more required):
 Drainage Patterns in Wetlands
 Oxidized Root Channels in Upper 12"
 Water-Stained Leaves
 FAC-Natural Test
 Other (Explain in Remarks) _____

Field Observations:
 Depth of Surface Water: NONE (n.)
 Depth to Free Water in Pit: 1" (n.)
 Depth to Saturated Soil: 1/2" (n.)

Remarks: _____

SOILS

Map Unit Name (Series and Phase): BH28 Drainage Class: Field Observations

Taxonomy (Subgroup): _____ Contour Mapped Type? Yes No

Depth (Feet)	Horizon	Mastic Color (Munsell Notation)	Mastic Color (Munsell Notation)	Mastic Color (Munsell Notation)	Texture, Consistency, Structure, etc.
0-4"	A1	2.5YR 7/1	Reddish brown	Medium to fine sand, minor silt & clay	
4-15"	A2	2.5YR 7/1	Red	Medium to fine sand, minor silt & clay	
15-20"	C	2.5YR 7/1	Light reddish brown	Coarse to fine beach sand	
20-24"	C	2.5YR 7/1	Light reddish brown	Coarse to fine beach sand	

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Clayed or Low-Chroma Colors

Concretions

- High Organic Content in Surface Layer
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

Roots in A1. Slight odor below 22".

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)

Wetland Hydrology Present? Yes No (Circle)

Hydric Soils Present? Yes No (Circle)

is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:

Sample point located on beginning of raised sand dune (human altered).

Approved by HOUSACE 392

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: SPRECKELSVILLE SUBDIVISION Date: 4/20/04

Applicant/Owner: H. SPENCER County: MAUI

Investigator: J. KERMODE, J. VUICH, H. OPPENHEIMER State: HAWAII

Community ID: _____

Plot ID: BH 28

Do Normal Circumstances Exist on the site? Yes No

Is the site significantly disturbed (Atypical Situation)? Yes No

Is the area a potential Problem Area? Yes No

(If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. <i>Scaevola taccada</i>	Herb	
2. <i>Pluchea carolinensis</i>	Woody Shrub	
3. <i>Pluchea x bushyifolia</i>	Woody Shrub	
4. <i>Spergularia maritima</i>	Herb	
5. <i>Eragrostis prostrata</i>	Herb	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): FAC > 50%

Remarks:

Bareground at sample point. Ground cover begins 2' away.

HYDROLOGY

Recorded Data (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

Wetland Hydrology Indicators:

Primary Indicators:

- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits

Secondary Indicators (2 or more required):

- Drainage Patterns in Wetlands
- Oxidized Root Channels in Upper 12"
- Water-Strained Leaves
- FAC-Neutral Test
- Other (Explain in Remarks)

Field Observations:

Depth of Surface Water: NONE (ft.)

Depth to Free Water in Pit: 11" (ft.)

Depth to Saturated Soil: 0" (ft.)

Remarks:

SOILS

Map Unit Name (Series and Phase): BH 20 Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Depth (Profile)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.	Organic Matter from recent profile
0 - 1/4'	O1					
1/4' - 1/2'	A1	2.5YR 4/1	Red			Sand with silt
1/2' - 1 1/4'	A1	2.5YR 4/1	Weak Red			Sand with silt, no organics
1 1/4' - 5'	A2	2.5YR 4/1	Light Reddish Brown			
5' - 14'	C	2.5YR 4/1	Reddish Gray			Sand with minor silt

Hydric Soil Indicators:
 Histosol _____
 Histic Epipedon _____
 Sulfidic Odor _____
 Aquic Moisture Regime _____
 Reducing Conditions _____
 Gleyed or Low-Chroma Colors _____

Hydric Soil Indicators:
 High Organic Content in Surface Layer _____
 Organic Stranding in Sandy Soils _____
 Listed on Local Hydric Soils List _____
 Listed on National Hydric Soils List _____
 Other (Explain in Remarks) _____

Remarks:
 A1 2/4 - 1/2. Suspect recent reducing environment from recent heavy 50yr rains. No ferric odor. Non-organic hard pan at 14' - cemented beach sand.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:
 Wetland fringe.

Approved by HOUSAGE 392

U.S.G.P.'s Department of the Interior, Bureau of Land Management, Wetlands Inventory and Assessment Manual, Version 3.0, 1990

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: SPRECKELSVILLE SUBDIVISION Date: 4/9/04
 Applicant/Owner: H. SPENCER County: MAUI
 Investigator: J. KERMODE, J. YUJICH, H. OPPENHEIMER State: HAWAII
 Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. <i>Scaevola taccada</i>	Herb	
2. <i>Pluchea confertiflora</i>	Woody Shrub	
3. <i>Pluchea zosterifolia</i>	Woody Shrub	
4. <i>Pluchea indica</i>	Woody Shrub	
5. <i>Echinochloa polystachya</i>	Herb	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): FAC 100%
 Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge _____
 Aerial Photographs _____
 Other _____
 No Recorded Data Available _____

Field Observations:
 Depth of Surface Water: NO (n.)
 Depth to Free Water in Pit: 7 (n.)
 Depth to Saturated Soil: 6 (n.)

Wetland hydrology indicators:
 Primary Indicators:
 Saturated in Upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns in Wetlands
 Secondary Indicators (2 or more required):
 Oxidized Root Channels in Upper 12"
 Water-Strained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Remarks:

U.S.G.P.'s Department of the Interior, Bureau of Land Management, Wetlands Inventory and Assessment Manual, Version 3.0, 1990

SOILS

Map Unit Name: BH 30 Drainage Class: _____
 (Series and Phase): _____ Field Observations: _____
 Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Depth (Inches)	Horizon	Mocha Color (Munsell 1959)	Mocha Colors (Typical Moist)	Mocha Abundance/Consist	Texture, Concretions, Structures, etc.
0 - 1/2	A1	5YR 1/2	Reddish brown		Sandy clay with organics & roots.
1/2 - 2	A1	5YR 1/2	Reddish brown		Sandy clay with less organics.
2 - 3 1/2	A3	5YR 1/2	Reddish brown		Silty sand with horizontal streaks, some organics.
3 1/2 - 8	C	5YR 1/2	Pink		Sand
8 - 12	C	5YR 1/2	Pink gray		Sand (indurated)

Hydric Soil Indicators:
 Histosol _____
 Histic Epipedon _____
 Sulfidic Odor (minor) _____
 Aquic Moisture Regime _____
 Reducing Conditions _____
 Clayed or Low-Chroma Colors _____

Concretions _____
 High Organic Content in Surface Layer _____
 Organic Streaking in Sandy Soils _____
 Listed on Local Hydric Soils List _____
 Listed on National Hydric Soils List _____
 Other (Explain in Remarks) _____

Remarks:
 Cementitious fragment at 10-12", minor streaking.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (Circle)	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (Circle)
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (Circle)		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (Circle)		

Remarks:
 Wetland fringe (south end).
 40' of former rodeo area.
 20' of rodeo area is wetland boundary.

Approved by HOUSAGE 392

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: SPECKELSVILLE SUBDIVISION Date: 4/20/04
 Applicant/Owner: H. SPENCER County: MAUI
 Investigator: J. KERMODE, J. VUICH, H. OPPENHEIMER State: HAWAII
 Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)

Community ID: _____
 ID: AREA 3
 Plot ID: BH 31

VEGETATION

Dominant Plant Species	Status	Indicator
1. <i>Scaevola portulacastrum</i>	Herb	85%
2. <i>Pipturus forbesii</i>	Woody Shrub	
3. <i>Pipturus carolinensis</i>	Woody Shrub	
4. <i>Procytis paludis</i>	Tree	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____
 Remarks: _____

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other _____
 No Recorded Data Available

Field Observations:
 Depth of Surface Water: NONE (n.)
 Depth to Free Water in Pit: 11" (n.)
 Depth to Saturated Soil: 8" (n.)

Wetland Hydrology Indicators:
 Primary Indicators:
 Inundated
 Saturated in Upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Secondary Indicators (2 or more required):
 Drainage Patterns in Wetlands
 Odorized Root Channels in Upper 12"
 Water-Stained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks)

Remarks: _____

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: SPRECKELSVILLE SUBDIVISION Date: 4/10/04
 Applicant/Owner: H. SEENGER County: MAUI
 Investigator: J. SEBASTIAN, J. VUICH, K. OPPENHEIMER State: HAWAII
 Do Normal Circumstances Exist on the site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 (If needed, explain on reverse.)
 Community ID: _____
 ID: AREA 3
 Plot ID: BH.32

VEGETATION

Dominant Plant Species

1.	2.	3.	4.	5.	6.	7.	8.	Stratum	Indicator
<i>Sesuvium portulacastrum</i>	<i>Panicum fasciculatum</i>	<i>Panicum carolinense</i>	<i>Panicum polyanthum</i>	<i>Eragrostis prostrata</i>	<i>Heliotropium curassavicum</i> L.	<i>Portulaca oleracea</i>	<i>Cyperus rotundus</i>	Herb	
								Woody Shrub	
								Woody Shrub	
								Herb	
								Herb	
								Tree	
								Tree	

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): FAC up to 50%
 Remarks: _____
 The area immediately surrounding the sample point is bare ground. *Sesuvium portulacastrum* is the closest ground cover.

HYDROLOGY

Recorded Data (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other _____
 No Recorded Data Available

Wetland hydrology indicators:
 Primary Indicators:
 Inundated
 Saturated in Upper 12 inches
 Water Marks
 Drift Lines
 Secondary Indicators (2 or more required):
 Sediment Deposits
 Drainage Patterns in Wetlands
 Odorous Root Channels in Upper 12"
 Water-Stained Leaves
 FAC-Neutral Test
 Other (Explain in Remarks) _____

Field Observations:
 Depth of Surface Water: NONE (in.)
 Depth to Free Water in Pit: 10" (in.)
 Depth to Saturated Soil: 8" (in.)

Remarks: _____

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 PlotArea 3 Data Form\Area 3 BH.32.doc

SOILS

Map Unit Name (Series and Phase): BH.31 Drainage Class: _____
 Taxonomy (Subgroup): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Mauve Color (Munsell Moist)	Mauve Color (Munsell Dry)	Mauve Color (Munsell Moist)	Mauve Color (Munsell Dry)	Texture, Concretions, Structures, etc.
0-1 1/4"	A1	2.5YR 4/4	Red	Red	Red	Sand with bit iron clay & gravel
1 1/4-6"	A2	2.5YR 4/4	Red	Red	Red	Sand with bit
6-8"	C	2.5YR 4/4	Light red	Light red	Light red	Sand
8-20"	C	2.5YR 4/4	Reddish gray	Reddish gray	Reddish gray	Sand

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor (minor)
 Aquic Moisture Regime
 Reducing Conditions
 Gleyed or Low-Chroma Colors

Concretions:
 High Organic Content in Surface Layer
 Organic Streaking in Sandy Soils
 Listed on Local Hydric Soils List
 Listed on National Hydric Soils List
 Other (Explain in Remarks) _____

Remarks: _____
 No significant organic layer at surface or lower at the water table. No organic pan. Minor streaking of black organics at 10-12".

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
 Wetland Hydrology Present? Yes No (Circle)
 Hydric Soils Present? Yes No (Circle)

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:
 Soil are marginal. Southern fringe area of most northern portion of Area 3.

Approved by HCU SAGE 3932

H:\UGF Documents\UGF Kermode Project & Map\Wetland\WetSpec\wld\WLD\DELIN\WETLAND\AREA 2 and J Database
 PlotArea 3 Data Form\Area 3 BH.31.doc

SOILS

Map Unit Name (Series and Phase): <u>BH32</u>		Drainage Class: Field Observations			
Taxonomy (Subgroup): _____		Confirm Mapped Type? Yes No			
Profile Description:					
Depth (Inches)	Horizon	Mastic Color (Munsell Moist)	Mastic Color (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
0 - 1/2"	A1	5YR 4/3	Dark reddish gray		Clay with silty organics
1/2" - 2 1/2"	A1	5YR 4/3	Dark reddish brown		Silty clay & trace organics
2 1/2" - 4"	B3	5YR 4/1	Very dark gray		Sand with clay, minor black organic staining
4" - 12"	C	GLEYS 10Y 4/1	Dark greenish gray		Sand with possible organic chips. Strong odor.
12" - 16"	C	GLEYS 10Y 4/1	Very dark greenish gray		Coarser sand, cleaner. No odor.
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol <input checked="" type="checkbox"/> Histic Epipedon (minor) <input checked="" type="checkbox"/> Subdrainage Regime <input checked="" type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors <input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer <input checked="" type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)					
Remarks: B3 - partially indurated. Organics visible with minor streaking. Odor strongest at 8".					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Wetland Hydrology Present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Hydric Soils Present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Remarks: 8" south or mauka of beach access road. VEC used the beach road as the northern boundary.			

Approved by HOUFACE 3/92



JOHN S. VUICH
President & CEO

STATEMENT OF QUALIFICATIONS:

*M. S. Geological Engineering, University of Arizona
B. S. Geological Engineering, University of Arizona
Registered Geologist (California)
Registered Environmental Assessor (California)
Certified Environmental Manager (Nevada)*

APPENDIX D

Statement of Qualifications of Environmental Professionals

AREAS OF EXPERTISE

- ENVIRONMENTAL**
 - ▶ Site Assessments, Phase I, II, III Investigations
 - ▶ Underground Storage Tank Closure
 - ▶ Asbestos Inspection and Monitoring, Management Planning, and Abatement Project Design and Removal
 - ▶ Lead-Containing Paint Surveys and Inspections, and Disturbance Design and Removal
 - ▶ Site Characterization for Remedial Investigations
 - ▶ Facility Operation Compliance Audits-ISO 14000 Audits
 - ▶ Soils/Groundwater Remediation
 - ▶ Hazardous Waste Management
 - ▶ Risk Assessment Investigations
 - ▶ RCRA Compliance and Closure Projects
 - ▶ Expert Witness/Litigation Support
 - ▶ Industrial Hygiene Qualified/Competent Person
 - ▶ Mold/Fungi Sampling, Remediation and Abatement Design and Removal
- GEOLOGICAL**
 - ▶ Hydrogeology
 - ▶ Geologic Hazards Analysis
 - ▶ Landuse Planning
 - ▶ Subsurface Excavations and Drilling Investigations and Sampling
- MANAGEMENT**
 - ▶ Program Director - Project Management
 - ▶ Client - Agency Liaison
 - ▶ Field Supervision - Administrative Supervisor

REV. 6/03

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Chulu Office: Hanalei Industrial Complex, 91-110 Hanalei Street, Unit 317, Kapolei, Oahu, Hawaii 96707
(808) 682-1611 Phone • (808) 682-1616 Fax • info@vuich.com • www.vuichenvironmental.com

VEC Project # 0403-749

Confidential & Privileged

RELEVANT EXPERIENCE

Owner-President • Vutch Environmental Consultants, Inc.
Waikuku, Maui, and Honolulu, Oahu • (March, 1994 - Present)
Consulting services and project management for Abatement / Remediation Projects property transfers, sampling and site characterization plans, hazardous and toxic waste management, underground storage tanks, regulatory compliance, landfill sites, site remediation and closure plans, permit applications, litigation support, feasibility planning and contingency and emergency response plans.

Director • CEO Haztech Enviro-Systems
Tucson, AZ • July 1988 - February 1994
Founder of professional environmental engineering and geological consulting firm. Services included site assessments, site contamination characterizations, facility audits, RCRA closure investigations and hazardous/regulate waste management, remediation projects, and asbestos surveys. Prepared regulatory documentation and permitting for Federal, State and local regulatory agencies on all projects. Supervised professional, technical, sales and administrative/clerical staff.

Project Engineer • Hazchem Environmental Services
Tucson, AZ • March 1987 - June 1988
Performed and supervised RCRA remedial projects and waste management projects.

Independent Consultant Geologist
Laguna Hills, CA and Tucson, AZ • 1982 - 1987
Conducted geological investigations in western United States and Mexico. Performed geochemical sampling and geologic mapping. Prepared technical reports for clients and regulatory agencies.

Environmental/Geotechnical Section Supervisor • TRW: Systems Engineering
Redondo Beach, CA • 1978 - 1981
Directed environmental project management for Department of Defense and Department of Energy related projects in Western U.S. Project, including site selection, planning and environmental impact statements. Supervised staff consisting of geologists and environmental scientists.

Assistant Geologist • Arizona Geological Survey
Tucson, AZ • 1972-1978
Participated in environmental impact studies, geologic hazards analysis, landuse planning. Author of several landuse planning technical publications.

Project Geologist and Staff Geologist • Various Geological Consulting & Mining Companies
Southwestern United States • 1968-1972
Performed geochemical sampling, subsurface investigations including drilling, mineral property valuation and geologic mapping. Prepared geologic reports and maps.

REV. 6/03

Maui (Main) Office: 1498 Lower Main Street, Suite C, Waikuku, Maui, Hawaii 96793 • (808) 249-2777 Phone (808) 249-2778 Fax
Oahu Office: Harcus Industrial Complex, 91-110 Harcus Street, Unit 317, Kapolei, Oahu, Hawaii 96707
(808) 682-1611 Phone • (808) 682-1616 Fax • <http://www.hazchemenvironmental.com>

OTHER CERTIFICATIONS, TRAINING AND SECURITY CLEARANCES

- ▶ Asbestos & Demolition Contractor (C-19, C-24) HILIC #21112
- ▶ Certified Hazardous Materials First Responder, FEMA and Arizona Division of Emergency Services.
- ▶ OSHA Hazmat Worker and Supervisor
- ▶ Accredited Asbestos Building Inspector, Asbestos Contractor/Supervisor, Project Monitor, and Asbestos Abatement Project Designer.
- ▶ Accredited Lead Inspector and Lead Contracty Supervisor
- ▶ Continuing Education in Hazardous Materials Management, Environmental Studies and Environmental Regulations: 628 Classroom Hours since 1987 - Arizona State University, Tempe, AZ, Pima Community College, Tucson, AZ, & The Environmental Training Center Tucson, AZ.
- ▶ Security Clearance: Department of Defense, TOP SECRET (1980)
- ▶ Licensed Private Pilot - 1400 Hours, Single Engine, Land

REV. 6/03

Maui (Main) Office: 1498 Lower Main Street, Suite C, Waikuku, Maui, Hawaii 96793 • (808) 249-2777 Phone (808) 249-2778 Fax
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(808) 682-1611 Phone • (808) 682-1616 Fax • <http://www.hazchemenvironmental.com>



Vuich Environmental Consultants, Inc.

STATEMENT OF QUALIFICATIONS

for

Jeffrey E. Kermode, B.A., B. Tech.

Company Position Vice President / Environmental Projects Manager

Responsibilities and Duties:

- Phase I & II Environmental Site Assessments/Investigations
- Phase III Remediation Projects
- Underground Storage Tank (UST) Closures
- Asbestos Inspections, Air Monitoring and Supervision of Removal
- Lead-Based Paint Inspections, Risk Assessments and Supervision of Removal
- Indoor Air Quality Investigations and Mold Remediation Project Management
- Erosion Control Plan (BMP) Development
- Site Safety Officer for Sampling/Remediation Projects

Experience:

- Soil and Groundwater Investigations/Remediation
- UST Removal and Closure
- Hazardous Materials Management
- Asbestos and Lead-Based Paint Projects (Inspections, Monitoring, Removal)
- Air Quality Sampling for Particulate and Microbiological Contaminants
- Wetland Delineation
- Erosion Control and Pollution Prevention Planning and Implementation for Large Scale Construction Projects
- Underground Injection Control (UIC) Permitting
- Environmental Report Writing and Compilation
- Conducted On-Site Oil Spill Response Training Courses, Assessed Clients' Response Preparedness, and Assisted in the Development of Oil Spill Contingency Plans
- Oil Spill Clean-Up Operations
- Pelagic and Coastal Fisheries Research as a Scientific Observer

Training & Education

- Bachelor of Technology, Environmental Engineering, B.C.I.T. Burnaby, B.C., 1999
- Bachelor of Arts, Geography, University of B.C., Vancouver, Canada, 1989
- AHERA (Asbestos Hazard Emergency Response Act) Inspector for Asbestos, US EPA Certified
- AHERA Asbestos Contractor Supervisor, US EPA Certified
- AHERA Project Monitor for Asbestos, US EPA Certified
- OSHA HAZWOPER Certification (40 Hr)
- On-Scene Incident Commander Certification (24 Hr), US EPA Certified
- Lead-Based Paint Inspector, US EPA Certified
- Lead-Based Paint Risk Assessor, US EPA Certified
- Lead-Based Paint Contractor Supervisor, US EPA Certified

Rev. 6-03

Head Office: 1498 Lower Main Street, Suite C, West Vancouver, BC V8V 1K2, Canada
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STATEMENT OF QUALIFICATIONS

for

Hank Oppenheimer, Vegetation Specialist

Hank Oppenheimer is currently employed full-time by Maui Pineapple Co. as a Watershed Field Technician. He has held this position since 1993. In this capacity Hank is responsible for surveying, identifying, and maintaining a complete inventory of the plants that occur in the Company's Pu'u Kukui Preserve. At 8,661 acres, it is the largest privately owned nature reserve in the State of Hawai'i. He also conducts surveys and maintains a database of flowering plants, both native and alien, on all Company lands. He has documented over 200 new distributional records for plants on all the main Hawaiian Islands, publishing his findings annually, and has recently been co-author describing two new species in the endemic Hawaiian genus *Cyanea*.

Hank sits on the Board of Directors of the Native Hawaiian Plant Society, a local non-profit, all volunteer organization dedicated to the preservation of Hawaiian plants and the habitats in which they occur. He is the Project Leader for the NHPS *Ma'o hau hele* (*Hibiscus brackenridgei*) enclosure, protecting one of the last remaining wild populations of our critically endangered State Flower.

Hank occasionally leads hikes for The Nature Conservancy of Hawai'i and other entities, explaining the local flora to a broad audience.

Appendix B

Wetland Enhancement and Mitigation Plan



Consultants, Inc.

WETLAND ENHANCEMENT & MITIGATION PLAN
SPRECKELSVILLE SUBDIVISION



3-8-001:003 (Portion)
Stable Road, Hana Highway,
Spreckelsville, Maui, Hawaii

June 2004

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WETLAND ENHANCEMENT & MITIGATION PLAN
Spreckelsville Subdivision

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WETLAND ENHANCEMENT & MITIGATION PLAN Spreckelsville Subdivision

The proposed Spreckelsville Subdivision development covers an area of approximately 21.0 acres. It has been determined that this development would impact wetland areas located on the project site. These impacts consist of the following: (See attached Figures 1, 2, 3 & 4, Appendix B).

- > Area 1 - this wetland area covers approximately 9,960 square feet and will be fully impacted (filled in) by the proposed development.
- > Area 2 - this wetland area covers approximately 35,075 square feet and will be partially impacted (filled in) by the proposed development. The area to be filled in would be approximately 10,923 square feet.

Therefore, the proposed development will impact approximately 20,883 square feet in total, of wetland habitat. (See Figure 3, Appendix B for the areas to be impacted by the proposed development). Areas 1 and 2 consist of wetland habitats that have been significantly altered by historic human activities (grading activities and limited dumping). Additionally, these areas do not appear to be very productive as habitat for endangered Hawaiian waterbirds due to both excessive amounts of decaying woody debris and a dense overhead tree canopy (Area 1), and virtually impenetrable thickets of *Pluchea indica* (Area 2). No obligate wetland species are located in these areas.

The third wetland area located on the subject property, Area 3, is located closest to the coastline. This area is situated at a significant distance from the proposed development and would not be directly impacted by the proposed project activities.

As designed, the proposed subdivision would result in the filling in of Area #1 (9,960 ft²) and a portion of Area #2 (10,923 ft²). In order to offset these losses, the property owner proposes to implement both a mitigation and enhancement plan for Area #3. Area #3 is the best of the three areas to conduct such work for two reasons: 1.) it has the only obligate wetland plant species and most closely resembles a productive natural wetland and 2.) there is a significant amount of adjacent, low-lying land that could be mitigated to increase the size of Area 3. See Figure 2 & 3, Appendix B, for the planned areas of mitigation and enhancement.

The following plan represents wetland enhancement and mitigation activities sufficient to compensate for the permanent wetland losses at the proposed Spreckelsville Subdivision. This will be achieved by increasing the extent of low-lying areas; lowering the grade to enhance the potential for wetland conditions to develop; removing old animal pen structures, debris and trash; closing off vehicle trails; removing woody vegetation and invasive alien plant species; and constructing a fence sufficient to inhibit the entry of predators and unauthorized persons onto the mitigation site.

WETLAND ENHANCEMENT & MITIGATION PLAN Spreckelsville Subdivision

Area 3 consists of a small low-lying wetland area generally surrounded by adjacent dunes or areas that have been subjected to human activities (roads and rodeo arena). The actual wetland area, however, supports both obligate (*Cyperus laevigatus* or "makaloa") and facultative (*Sarivium portulacastrum* or "akulikuli" and others) wetland vegetation species. (See Photo #4, Appendix A). Stands of kiawe (*Prosopis pallida*) are also in abundance. According to survey data provided to the property owner, the frequently wetted areas are at an elevation of approximately three to four feet above sea level (a.s.l.). VEC recommends grading of areas located possibly within and immediately adjacent to Area 3 in order to expand the flood-prone areas within the three to four-foot elevation contour. This action will increase the flood storage capacity of Area 3. Additionally, the increased area of potential surface water ponding will provide favorable conditions for use by waterbirds, including the Hawaiian Stilt. Grading activities can be conducted within and adjacent to the delineated wetland perimeter, including a portion of the former rodeo arena. It is possible that runoff from the proposed subdivision area could also be directed toward Area 3. A retention basin is planned slightly upgradient of Area #3. This basin could be moved into the former rodeo arena area where grade-lowering is planned. If the retention basin remains at its designed location, its overflow could be directed to the wetland area. These options must be more thoroughly analyzed prior to commitment. See Figure 3, Appendix B for the planned areas of mitigation and enhancement, including grading activities.

Additionally, a livestock corral just outside of Area 3 (located adjacent to the former rodeo arena) has a significant manure concentration in the surface soils. Runoff from this area may negatively impact the water quality of Area 3. VEC proposes to excavate this area of highly concentrated organics and spread it over a surface area away from any potential drainage into Area 3. See Photo #6, Appendix A.

Enhancement

All woody, decaying debris will be manually cleared from Area 3. See Photo 5, Appendix A. Any significant amounts of aggressive alien vegetative species will be manually removed by laborers under the supervision of a vegetation specialist. Woody vegetation, including the stands of *P. indica*, other woody shrubs and small trees that are located on the adjacent elevated sand dunes will be thinned to appropriate levels. Certain kiawe trees may be removed to encourage groundwater levels to rise. Excess vegetation will be removed and disposed of off-site or chipped for on-site landscape use. To the best extent possible, the obligate wetland plant (*Cyperus laevigatus* or "makaloa") will not be disturbed by grading activities in or adjacent to Area 3.

Mitigation

The area of land to be mitigated that lies adjacent to Area #3 will be low-lying in nature and will support herbaceous vegetation. The plants that will be encouraged in this area will be the

RECEIVED AS FOLLOWS

PHOTO 1

Welland Area #3, located on the subject property. This welland has the potential for a significant amount of ponding surface water and open overhead canopy which is attractive for native Hawaiian water birds. This area also has the obligate welland vegetation species, *Cyperus laevigatus* L. or 'makaloa'.



PHOTO 2

Welland Area #3 shown during drier weather conditions. Very little, if any, ponding water remains at this site during dry conditions.



PHOTO 3

Welland Area #3 during dry conditions. Limited ponding water was noted during these times. Certain areas within the welland and immediately adjacent to the welland could be graded to lower elevations in order to sustain more ponding water conditions.



PHOTO 4

Both obligate, *Cyperus laevigatus* L. ('makaloa') and facultative species, *Sesuvium portulacastrum* ('akulikuli'), are located in significant quantities within Area #3. This type of vegetation will be encouraged at other locations within welland Area #3 and within the newly mitigated (expanded) Area #3.



PHOTO 5

Excessive decaying woody debris will be manually removed from Area #3 in order to enhance welland conditions.

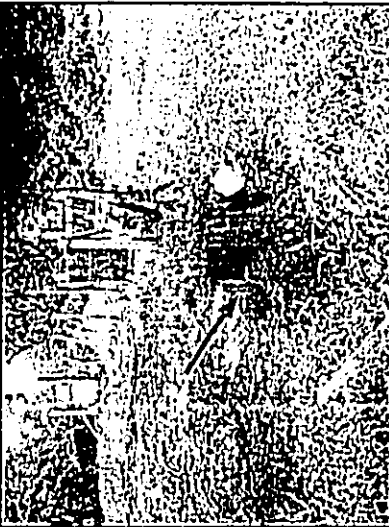


PHOTO 6

An area of highly concentrated livestock manure located in the former rodeo arena has resulted in a leachate that is likely impacting the water quality of Area #3. This manure will be excavated and spread throughout other areas of the property. This action should improve the water quality of Area #3.

PHOTO 7

Refuse material will be manually removed from Area #3 to improve wetland conditions and aesthetic appeal.

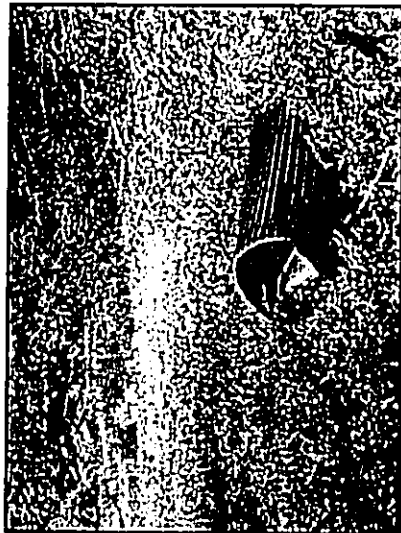


PHOTO 8

Former rodeo arena fencing structures will be dismantled during the mitigation (expansion) of wetland Area #3.

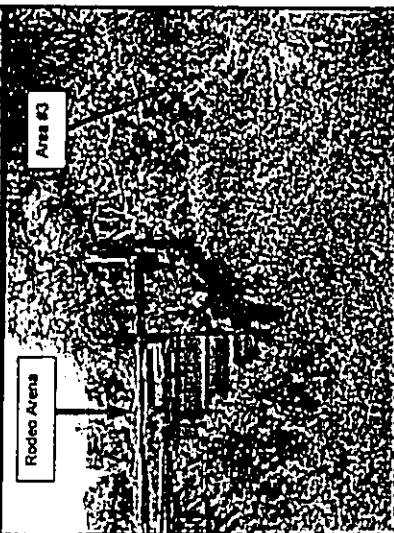


PHOTO 9

Beach access road located along the northern boundary of wetland Area #3 (right side of road). An improved fence design will be installed around Area #3's perimeter to reduce both human and animal disturbances.



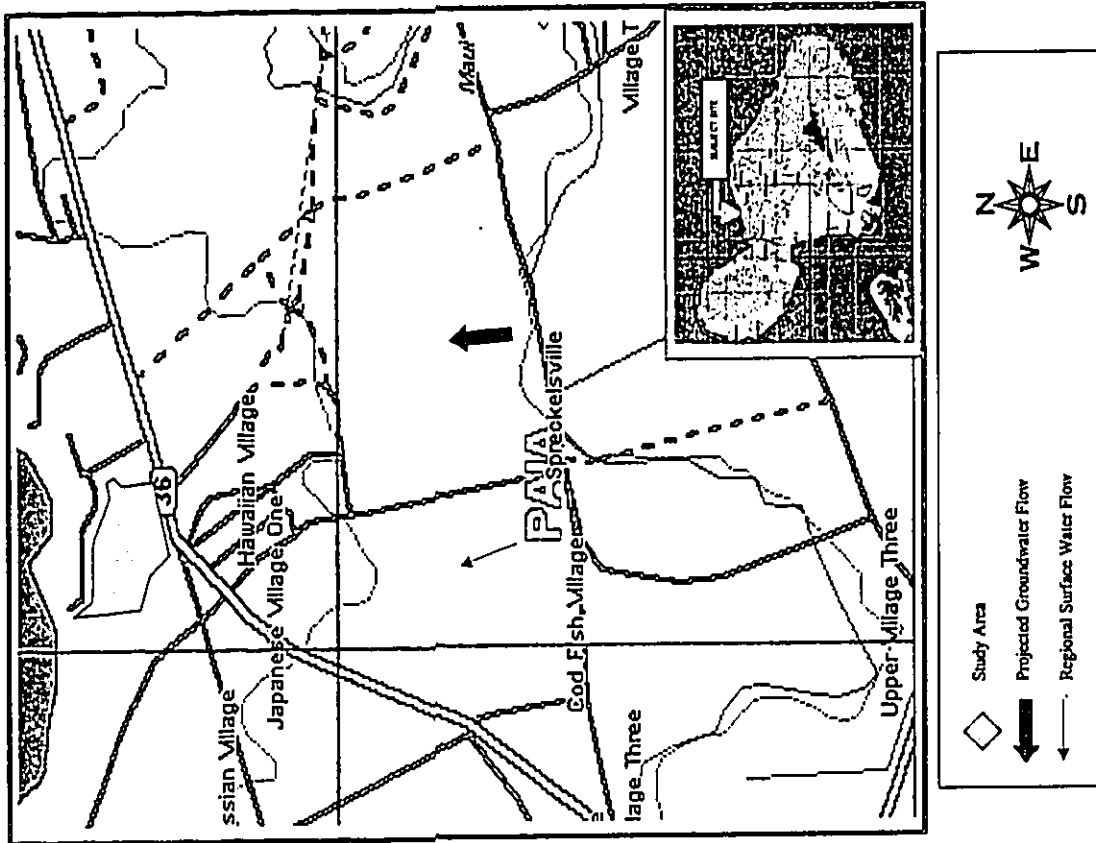
APPENDIX B

Figure 1 - Regional Setting Map

Figure 2 - Site Plan Aerial Photo

Figure 3 - Survey Plan Showing Areas of
Wetland Losses and Planned
Enhancement and Mitigation
Efforts

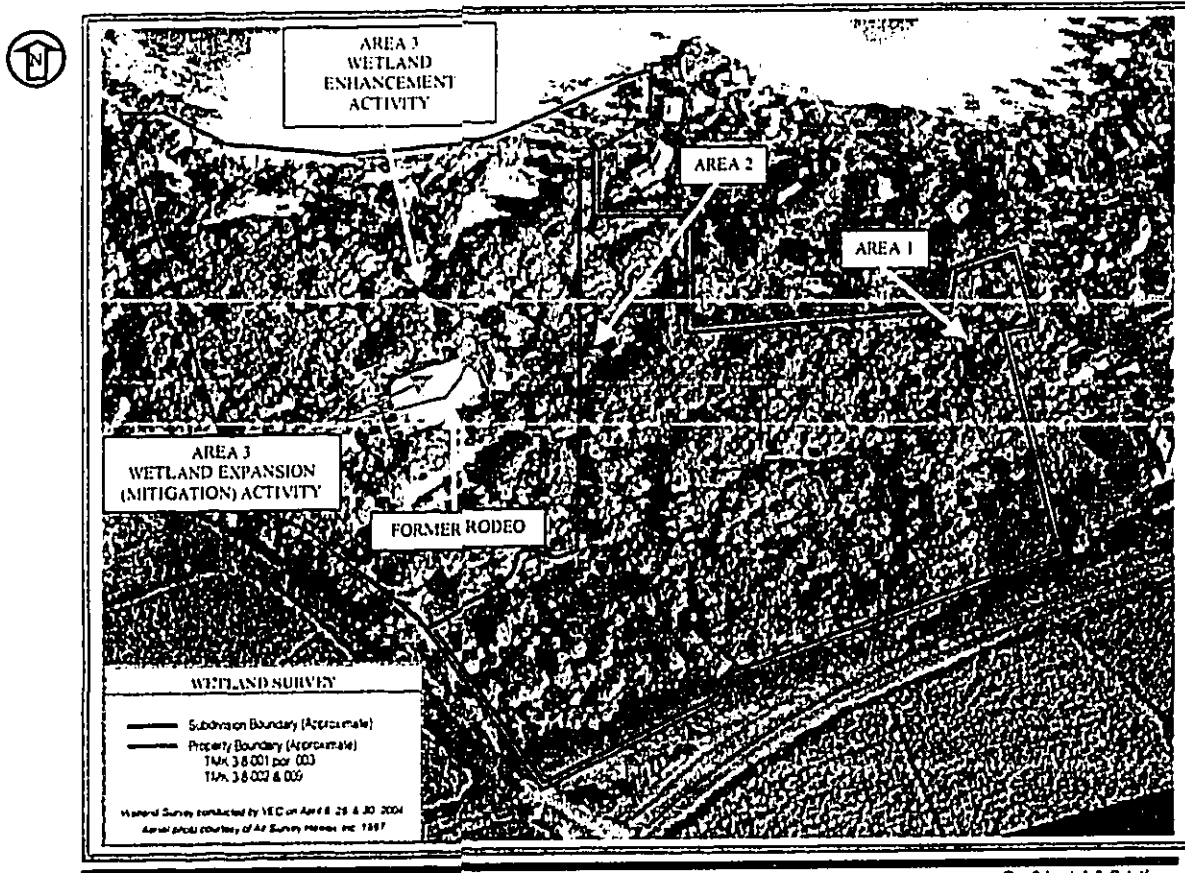
FIGURE 1: REGIONAL SETTING MAP



VEC Project # 0403-749

Confidential and Privileged

FIGURE 2: AERIAL MAP SHOWING WETLAND AREAS



VEC Project 0403-749

Confidential & Privileged

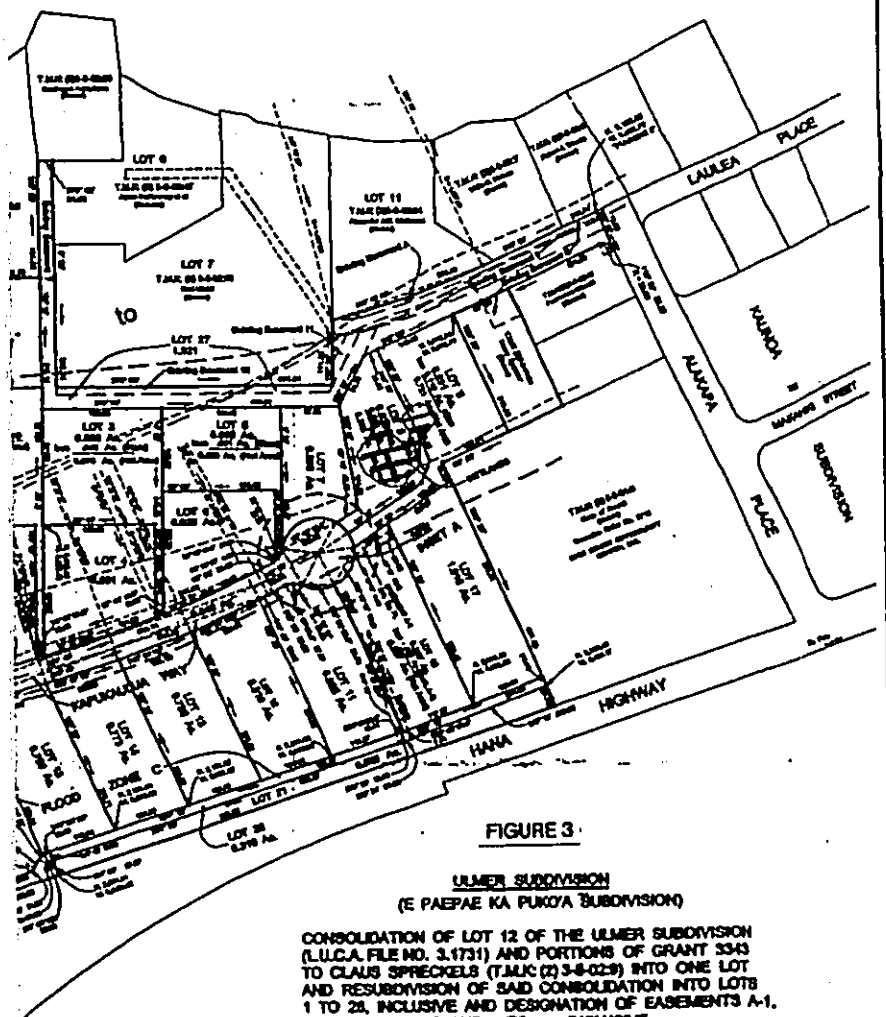
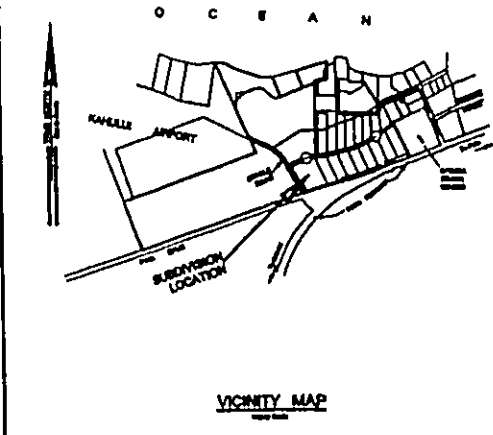
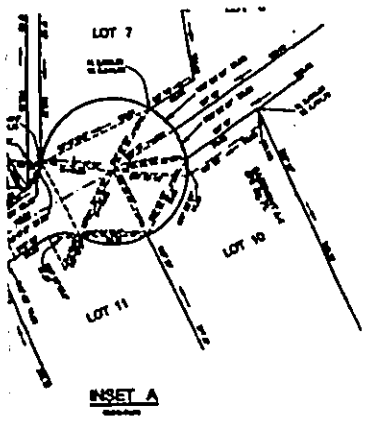


FIGURE 3

**ULMER SUBDIVISION
(E PAEPAE KA PUKOA SUBDIVISION)**

CONSOLIDATION OF LOT 12 OF THE ULMER SUBDIVISION (L.L.C.A. FILE NO. 3,1731) AND PORTIONS OF GRANT 3343 TO CLAUD SPRECKELS (T.M.C. (2) 3-8-023) INTO ONE LOT AND RESUBDIVISION OF SAID CONSOLIDATION INTO LOTS 1 TO 28, INCLUSIVE AND DESIGNATION OF EASEMENTS A-1, A-2 AND TO , INCLUSIVE

Being a portion of Grant 3343 to Claud Spreckels
SPRECKELSVILLE, WAIKUKI, MALE, HAWAII

SCALE: 1 inch = 100 feet DATE: May 28, 2004
Prepared by: A & S Properties, Inc.
30 Lane Avenue, Suite 202
Honolulu, Hawaii 96813

- OWNER OF LOT 12 AND PARCEL B: Harry Spenser
- WETLAND BOUNDARY
 - WETLAND LOSS FILL IN
 - WETLAND BRANCHMENT
 - WETLAND DETENTION (APPROXIMATE)

This work was prepared by me or under my supervision.

Ken T. ...
Licensed Professional Land Surveyor
Certificate No. 13-700
Expiration Date 03/31/05

Official boundary to land of adjoining parties
Boundary of State
Boundary of the United States
Boundary of the City of Honolulu
Boundary of the County of Honolulu
Boundary of the State of Hawaii
Boundary of the County of Maui
Boundary of the County of Kauai
Boundary of the County of Niihau
Boundary of the County of Molokai
Boundary of the County of Hawaii

SUBDIVISION FILE NO.

Appendix C

***Flora and
Fauna Study***

FLORA RESOURCES SURVEY (Vascular Plant Inventory)
for the
SPENCER SPRECKELSVILLE SUBDIVISION
STABLE CAMP, SPRECKELSVILLE, MAUI

by

Hank Oppenheimer
September 29, 2003 and March 30 2004

Prepared for: Vutch Environmental Consultants Inc.

Sprecklesville vascular plant inventory

compiled by Hank Oppenheimer
Surveys conducted September 29, 2003 & March 30, 2004

- * Alien species: naturalized
- + Alien species: cultivated
- ^ Alien species: Polynesian introduction
- # Native species: indigenous

Cine Magnoliopsida

- Acanthaceae
* *Asystasia gangetica* (L.) T. Anderson Chinese violet

Aizoaceae

- * *Sesuvium portulacastrum* (L.) L. 'akulikuli
* *Terragonia terragonioides* (Pall.) Kuntze New Zealand spinach

Amaranthaceae

- * *Alternanthera pungens* Kunth khaki weed
* *Amaranthus spinosus* L. spiny amaranth

Anacardiaceae

- * *Schinus molle* (L.) Raddi Brazilian pepper tree; Christmasberry

Apiaceae

- * *Ciclospermum leptophyllum* (Pers.) Sprague fir-leaved celery

Araliaceae

- * *Schefflera actinophylla* (Endl.) Harms octopus tree

Asclepiadaceae

- * *Aclepias physocarpa* (E. Mey.) Schlechter balloon plant

Asteraceae

- * *Ageratum conyzoides* L. maile honohono
* *Bidens pilosa* L. Spanish needle; beggars tick
* *Calypocarpus vialis* Less.
* *Conyza bonariensis* (L.) Cronq. hairy horseweed
* *Gnaphalium chinera* (L.) H. Rob. little ironweed
* *Ecliptera prostrata* (L.) L. false daisy
* *Lactuca sativa* L. wild lettuce
* *Pluchea carolinensis* (Jacq.) G. Don soursbush
* *Pluchea x fosbergii* Cooperr. & Galang marsh fleabane
* *Pluchea indica* (L.) Less Indian fleabane
* *Sonchus oleraceus* L. sow thistle

- *Synedrella nodiflora* (L.) Gaertn. nodeweed
 - *Tridax procumbens* L. coat buttons
 - *Verbesina encelioides* (Cav.) Benth. & Hook. yellow crown beard
 - *Xanthium strumarium* L. cocklebur
 - *Youngia japonica* (L.) DC. Oriental hawkweed
- Bignoniaceae**
- *Spaihoëa campanulata* P. Beauv. African tulip tree
- Boraginaceae**
- *Heliotropium curassavicum* L. kipukai; seaside heliotrope
- Brassicaceae**
- *Coronopus didymus* (L.) Sm. swinecress
- Cappariaceae**
- *Cleome gynandra* L. wild spider flower
- Caryophyllaceae**
- *Spergularia marina* (L.) Griseb. saltmarsh sand spurry
- Chenopodiaceae**
- *Atriplex semibaccata* R. Br. Australian salt bush
 - *Atriplex suberecta* Verd. salibush
 - *Chenopodium murale* L. 'sheeha
- Convolvulaceae**
- *Hipomoea per-caprae* (L.) R. Br. subsp. *bravillensis* (L.) Ooststr. pohuchue
- Cucurbitaceae**
- *Momordica charantia* L. balsam pear
- Euphorbiaceae**
- *Chamaecybe hirta* (L.) Millsp. hairy spurge
 - *Euphorbia heterophylla* L. kaliko
 - *Ricinus communis* L. castor bean
- Fabaceae**
- *Derrnanthus perambucanus* (L.) Thellug. slender mimosa
 - *Leucaena leucocephala* (Lam.) de Wit. koa haole
 - *Macropitium lathyroides* (L.) Urb. cow pea
 - *Prosopis pallida* (Humb. & Bonpl. ex Willd.) Kunth. kiawe
 - + *Samananea saman* (Jacq.) Merr. monkeypod
- Lamiaceae**
- *Leonotis nepetifolia* (L.) R. Br. lion's ear
- Malvaceae**
- *Malva parviflora* L. cheeseweed
 - *Maustrum coramandelianum* L. false mallow
 - *Theopelta populnea* (L.) Sol. ex Corré. miolo; Portia tree
- Moraceae**
- *Ficus microcarpa* L. fil. Chinese banyan
- Muticaceae**
- *Syngium cumini* (L.) Skeels. Java plum
- Nyctaginaceae**
- *Mirabilis jalapa* L. four o'clock
- Solanaceae**
- *Solanum lycopersicon* L. var. *cerasiforme* (Dunal) Spooner, Anderson & Jansen wild tomato
 - *Nicotiana physaloides* (L.) Gaertn. apple of Peru
- Verbenaceae**
- *Stachytarfa jamaicensis* (L.) Vahl. Jamaica vervain
 - *Verbena littoralis* Kunth. owi
 - + *Vitex trifolia* L.
- Class Liliopsida**
- Asteraceae**
- + *Sansevieria trifasciata* Prain. mother-in-law's tongue
- Alceaceae**
- + *Aloe vera* (L.) Burm. f. Aloe
- Arecaceae**
- *Phoenix* sp. date palm
- Commelinaceae**
- *Commelina diffusa* N.L. Burm. honohono
- Cyperaceae**
- *Cyperus flabelliformis* (Roth.) Kükenth. 'ahu'awa haole
 - *Cyperus laevigatus* L. makaloa
- Poaceae**
- *Brachiaria subquadrifera* (Trin.) Hitchc.
 - *Cenchrus ciliaris* L. buffelgrass
 - *Chloris barbata* (L.) Sw. swollen fingergrass
 - *Cynodon dactylon* (L.) Pers. Bermuda grass; manienie
 - *Digitaria insularis* (L.) Mez ex Ekman. sour grass

rec'd 5/15/04
MHT

- **Eleusine indica* (L.) Gaertn. wiregrass
- **Panicum maximum* Jacq. Guinea grass
- **Paspalum conjugatum* Bergius Hilo grass
- **Setaria verticillata* (L.) P. Beauv. bristly foxtail
- **Sorghum bicolor* (L.) Moench

Some taxa, (*Samanasa*, *Saxsevera*, *Aloe*) are here listed as cultivated, although they are known to be sparingly naturalized on Maui and other islands. The plants in the survey area are believed to be deliberate plantings (*Samanasa*), or a result of discarded yard trimmings.

In summary, no plants at the site are listed as Threatened or Endangered by the U.S. Fish & Wildlife Service. None are considered rare, and no species observed during the survey is currently considered a Candidate for listing by USF&WS, nor ranked as a Species of Concern. The native taxa all have a widespread distribution in the Hawaiian Islands, and elsewhere in the tropical Pacific.

FAUNA RESOURCES SURVEY
for the
SPENCER SPRECKELSVILLE SUBDIVISION
STABLE CAMP, SPRECKELSVILLE, MAUI

by

ROBERT W. HOBDY
ENVIRONMENTAL CONSULTANT
Kokomo, Maui
March, 2004

Prepared for: Vuich Environmental Consultants Inc.

FAUNA RESOURCES SURVEY

SPENCER SPRECKELSVILLE SUBDIVISION

STABLE CAMP, SPRECKELSVILLE, MAUI

INTRODUCTION

The Spencer Spreckelsville Subdivision lies on approximately 21 acres of presently undeveloped land below Hana Highway in Spreckelsville between Stable Road and the Kaunoa Senior Center. It's lower boundary abuts a strip of coastal homes that separate the project from the ocean. The site was formerly a stable and pasture for plantation horses and mules and then it was a private stable until early 2004.

SITE DESCRIPTION

The project area is a low lying coastal plain. Soils are all derived from sand and may be low unconsolidated dunes, slightly profiled foamy sand or saline flats with water table close to the surface (Foote et al, 1972). Elevations range from sea level to 16 feet and rainfall averages 20-30 inches per year (Armstrong, 1983). Most of the area is a forest composed of kiawe (*Prosopis pallida*) trees with openings densely filled with shrubs and tall grasses. Small saline areas are the only open ground and are occupied by low halophytic plants. These saline areas are dry most of the year, but may flood for brief periods following substantial winter rains.

BIOLOGICAL HISTORY

Early accounts of this area from the 1800's describe it as being nearly devoid of vegetation with active sand dunes shaped by strong coastal winds such that horseback travelers had to shield their faces from its stinging effect. Vegetation would have consisted of low growing coastal species that could tolerate this harsh environment. During early plantation days the project area was used as a dumping area for excess boulders from adjacent cane fields which still lie in low piles in the center of the parcel. The area was developed into a stable and pasture for plantation horses and mules that were extensively used as beasts of burden. This use over about five decades has resulted in the colloquial name for this area. Under this intensive grazing use the sparse native vegetation was decimated and replaced by hardy non-native species, most notably by kiawe which was valued for live stock for its edible beans and shade. Since the use of the area as a stable and pasture has diminished over the past twenty (20) years, it has become thickly forested with kiawe with a few small openings. Originally native wildlife use would likely have consisted of some nesting by seabirds and seasonal foraging by native and migratory shoreline and water birds during brief periods of winter flooding.

SURVEY OBJECTIVES

This report summarizes the findings of a fauna survey of the proposed Spencer Spreckelsville Subdivision project area which was conducted in March 2004.

The objectives of the survey were to:

1. Document what bird or mammal species occur on the property or may likely occur in the existing habitat.
2. Document the status and abundance of each species.
3. Determine the presence or likely occurrence of any native fauna, particularly any that are Federally listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential to these species.
4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the fauna in this part of the island.
5. Note which aspects of the proposed development pose significant concerns for wildlife and recommend measures that would mitigate or avoid these problems.

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through survey method was conducted following a predetermined route to ensure that all parts of the project area were covered. Twenty five stations were established along this route (see attached map). Field observations were made at each station with the aid of binoculars and by listening to vocalizations. Notes were made on species abundance, activities and location as well as observations of trails, tracks scat and signs of feeding. In addition an early morning visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus smohus*) in the area. The survey was conducted closely following a major late-winter rainfall event. The vegetation was green and dense with an abundance of flowering and seeding. Insect life was abundant.

RESULTS

MAMMALS

Only one species of feral mammal was observed in the project area during three site visits. Taxonomy and nomenclature follow Tomich (1986).

Domestic cat (*Felis domestica*) – One feral cat was observed in kiawe forest. These animals, descendants of domestic pets gone wild, are major predators of ground nesting birds and rodents.

Deep dense grass cover prevented good visibility of other ground dwelling animals, but a significant population of mongoose, rats and mice would be expected. Mongoose feed on rats and mice as well as ground nesting birds. Mice and rats were not seen but their presence is virtually guaranteed by the abundant food supply in the form of grass seed and herbaceous vegetation.

A special effort was made to look for the native Hawaiian hoary bat by making an early morning survey of the area. When present in an area these bats can be easily identified as they forage for insects, their distinctive flight patterns clearly visible in the glow of twilight. No evidence of such activity was observed though visibility was excellent and plenty of flying insects were seen. There is no record of bat activity in this part of Maui.

BIRDS

There was a high level of birdlife abundance and diversity in this normally dry area. An ample supply of grass and herbaceous plant seeds were available following a good winter wet season. Adult insects and caterpillars were also seen especially on the kiawe trees. Ten species of non-native, three species of indigenous and one endemic bird species were seen taking advantage of this seasonal food supply or feeding in the shallow temporary ponds created by the recent heavy rains. Taxonomy and nomenclature follow American Ornithologist's Union (1988), Berger (1981), Pratt et al. (1987) and Hawaii Audubon Society (1989).

Barred dove (*Geopelia striata*) – Many barred doves were seen and heard in the kiawe trees or feeding in forest openings. Their smaller size, striated body and white flashing tail feathers when taking flight distinguish this species from the spotted dove. This was the most abundant bird species encountered.

Spotted dove (*Streptopelia chinensis*) – This large dove was seen frequently throughout the area and transiting overhead. Their smooth flight and evenly modulated cooing are distinctive.

Gray francolin (*Francolinus pondicerianus*) – A few gray francolins were seen in ground openings and in kiawe trees, but their loud and distinctive calls were heard frequently throughout the area indicating a larger population than seen.

American cardinal (*Cardinalis cardinalis*) – Both sexes of this species were seen individually or in pairs throughout the area. Their bright color and distinctive calls are unmistakable.

Japanese white-eye (*Zosterops japonica*) – Many white-eyes were seen feeding in the kiawe and their high pitched calls were frequently heard.

House finch (*Carpodacus mexicanus*) – A few pairs of these moderately-sized, light brown finches were seen in the kiawe trees, but their high-pitched, twittering calls were commonly heard, especially in the early morning.

Common mynah (*Acridotheres tristis*) – Mynahs were seen throughout the area, feeding in the kiawe trees or transiting the area high above the trees. They are confident and assertive birds.

Golden plover (*Ploveria dominica fulva*) – Several of these migratory birds congregated at the temporary pond created by recent rains to exploit numerous insects stranded on branch tips by the rising water.

House sparrow (*Passer domesticus*) – A few groups were seen throughout the area feeding in the kiawe trees. Their persistent chirping and twittering are distinctive.

Cattle egret (*Subulcus ibis*) – About eight of these large white birds, like the plovers, had congregated to take advantage of the bumper crop of insects.

Spotted munia (*Lonchura punctulata*) – One flock of these small brown birds was seen resting in a kiawe tree.

Hawaiian skink (*Himantopus mexicanus knudseni*) – Two of these long-legged, endemic water birds were seen in the temporary pond in the saline clearing. This saline clearing is located well outside of the proposed subdivision area. These opportunistic birds are quick to spot new ponds following heavy rains and to take advantage of the temporary bounty of insects.

Ruddy turnstone (*Arenaria interpres*) – Two of these migratory birds stopped by briefly at the temporary pond to check out the opportunities.

Wandering tattler (*Heteroscelus incanus*) – One of these migratory birds spent considerable time foraging for insects in the temporary pond.

INSECTS

While insects in general were not tallied, they were abundant throughout the area and fueled the elevated bird activity observed. One native Sphingid moth, Blackburn's sphinx moth (*Manduca blackburni*) has been put on the Federal Endangered species list and this designation requires special focus (USFWS 2002). Blackburn's sphinx moth occurs on Maui in an area less than two miles from this site, but has not been seen in this area. It's native host plants are species of 'Aiea (*Nothocestrum*) and two non-native alternative host plants, tree tobacco (*Nicotiana glauca*) and tobacco (*Nicotiana tabacum*). There are no 'aiea on or near the project area and no tree tobacco or tobacco plants were seen. No Blackburn's sphinx moth or their larvae were observed.

CONCLUSIONS

Fauna surveys are seldom comprehensive due to the short window of observation, the seasonal nature of animal activities and the unpredictable nature of their daily movements. This survey however should be considered fairly representative due to the abundance of food resources present throughout the area and the resulting level of animal use. The ten non-native bird species are widespread and quite common in diverse lowland sites throughout Hawaii. The three migratory and one endemic species found here require closer scrutiny.

The migratory golden plover is indigenous to many island groups in the Pacific as well as to continents in the Arctic where it breeds during summer months. It is perhaps our most common migrant species. They can be found in extremely diverse habitats where they exhibit uncommon adaptability. The temporary ponds on this site represent no more than a short term food source among the many they exploit and cannot be considered essential habitat for them.

The migratory ruddy turnstone is a somewhat less common species but a regular winter visitor to Hawaii. The birds travel in flocks and can be seen on shorelines, mud flats and open uplands and pastures. Their adaptability to a diversity of habitats indicates that this small temporary pond is not essential habitat for them.

The migratory wandering tattler is a regular winter visitor to Hawaii. They are usually solitary but sometimes in small groups. They utilize shorelines and mudflats but are also frequently seen along mountain streams. The diversity of habitats they use indicates that the small temporary pond in this project area is not essential habitat for them.

The Hawaiian stilt on the other hand is both an endemic Hawaiian subspecies as well as an endangered species under Federal law (U.S. Fish & Wildlife Service, 1999). Its total numbers have been increasing in recent years with effective habitat management but probably do not exceed 2,000 statewide or 600 on Maui. These birds are obligate water birds that require permanent shallow water ponds for core habitat feeding and breeding. They do not use streams, shorelines or dry open fields. On Maui both Kealia Pond and Kanaha Pond are large well managed wetlands that are ideal habitat which support the majority of Maui's stilts. Plantation reservoirs provide a second-tier of habitat with their near-permanent water supply and wide distribution. Temporary ponds, such as the one on this project site, provide a third-tier of habitat. Their main value lies in their providing an alternate foraging area that allows core habitat recovery. Stilts quickly disperse following major rain events to locate and utilize temporary ponds, even flying between islands in their quest. Thus, while not a major component of stilt habitat, the importance of this small, temporary pond cannot be ignored as being a bit of essential habitat for these birds. The temporary pond where the stilts were observed is located outside of the proposed subdivision area.

ANIMAL SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within two groups, Mammals and Birds. For each species the following information is provided.

1. Common name / Hawaiian name
2. Scientific name
3. Bio-geographical status. The following symbols are used:
 endemic = native only to Hawaii; not naturally occurring anywhere else in the world.
 indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).
 non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.
 migratory = spending a portion of the year in Hawaii and a portion elsewhere. In Hawaii the migratory birds are usually engaged in the overwintering / non-breeding portion of their life cycle.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>	<u>Observed Abundance On-site</u>
<u>MAMMALS</u>			
Domestic cat	Felis domesticus	non-native	rare
<u>BIRDS</u>			
Barred dove	Geopelia striata	non-native	common
Spotted dove	Streptopelia chinensis	non-native	common
Gray francolin	Francolinus pondicerianus	non-native	common
American cardinal	Cardinalis cardinalis	non-native	common
Japanese white-eye	Zosterops japonica	non-native	common
House finch	Carpodacus mexicanus	non-native	common
Common mynah	Acridotheres tristis	non-native	uncommon
Golden plover / Kolea	Pluvialis dominica fulva	indigenous/migratory	uncommon
House sparrow	Passer domesticus	non-native	uncommon
Cattle egret	Bubulcus ibis	non-native	uncommon
Spotted munia	Lonchura punctulata	non-native	uncommon
Hawaiian stilt / Ae'o	Himantopus mexicanus knudseni	endemic/endangered	rare
Ruddy turnstone / 'Akekeke	Arenaria interpres	indigenous/migratory	rare
Wandering tattler / 'Ulihi	Heteroscelus incanus	indigenous/migratory	rare

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FIGURE 1: SPRECKELSVILLE SUBDIVISION FAUNA SURVEY



Confidential & Debatable

Appendix D

***Archaeological
Inventory
Survey***

MAR 30 2004

ASHB95

ARCHAEOLOGICAL INVENTORY SURVEY
OF A 30-ACRE PARCEL OF LAND
SPRECKELSVILLE, WAILUKU DISTRICT MAUI ISLAND
TMK 3-8-001:por. 003

by
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for
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March 2004

Archaeological Services Hawaii, LLC
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ABSTRACT

Archaeological Services Hawaii, LLC, of Wailuku, conducted an archaeological inventory survey of an approximate 30-acre residentially zoned portion of a 71-acre parcel of land in Spreckelsville, Wailuku ahupua'a, Wailuku District, Maui Island. The purpose of this investigation was to determine the presence/absence, extent, and significance of cultural resources in the project area. Fieldwork for this parcel was originally conducted in February of 2003, as a due diligence task requiring only a post-field summary letter. The previously completed fieldwork was adequate, and no further fieldwork was necessitated during the current procedure.

No extant surface cultural remains or areas of exposed deposits were identified during the surface survey. Due to extensive previous disturbances from the horse stable and staging area, subsurface sampling through backhoe trenching was implemented. Eighteen trenches ranging in length from 5.6 to 8.7 meters were excavated until either sterile subsoil or water was reached. No significant cultural remains were encountered during trenching. Representative stratigraphic profiles were recorded from each trench.

Based on the negative results of fieldwork, no further work is recommended prior to commencing construction activities. However, due to the presence of numerous archaeological sites in Spreckelsville, archaeological monitoring during all construction related activities (access roads, base yards, dust fences, grading, and utility installation) is recommended. Prior to commencing any construction related activities, an archaeological monitoring plan that includes provisions for conducting data recovery in the event portions of Site 1777 or any other subsurface cultural features are encountered shall be prepared for approval by the State Historic Preservation Division of the Department of Land and Natural Resources (SHPD-DLNR). In the event human burials are encountered, all work in the immediate vicinity shall be halted, and SHPD-DLNR shall be notified.

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INTRODUCTION

At the request of the landowner, Mr. Henry Spencer, Archaeological Services Hawaii, LLC (ASH) conducted an archaeological inventory survey of an approximate 30-acre residentially zoned portion of a 71-acre parcel land in Spreckelsville, Wailuku ahupua'a, Wailuku District, Maui Island. The purpose of this investigation was to determine the presence/absence, extent, and significance of cultural resources in the project area. The survey was conducted on February 4 and 5, 2003, by Mr. Jeffrey Pantaleo, M.A. and Mr. Ian Bassford, B.A.

PROJECT AREA

The project area is located along the northern coast of Maui Island at the base of the northeastern slopes of Haleakala on the isthmus between East and West Maui in Wailuku ahupua'a, Wailuku District, Maui Island (Fig. 1). It is located along the shoreline of Spreckelsville and bounded by Hana Highway to the south, Stable Road to the west, the Kaunoa Senior Wellness Center to the east, and Laitea Place and the Pacific Ocean to the north (Fig. 2). Of the 71 acres (TMK 3-8-01-3, 3-8-02-9 and 10), only approximately 21 acres (TM 3-8-001:3) located behind the V73 (tsunami) flood designation line and existing development are proposed for residential development (Fig. 3). The 23 acres along the coast will have either a conservation easement placed upon it, or it may be donated to the Maui Coastal Land Trust. The remaining 27 acres is leased to H C & S for agricultural cultivation.

ENVIRONMENT

The terrain of the project area is level and consists of open areas and secondary vegetation including *kaawe* (*Prosopis pallida*), *milo* (*Thespesia populneoa*), *withillii* (*Erythrina sandwicensis*), and various grasses. Elevation ranges from sea level to 14 feet above mean sea level. Rainfall averages below 10 inches per year, predominantly occurring during the winter months between November and February (Armstrong 1973). An abandoned horse stable with associated structures (Fig. 3) and a staging area (Fig. 4) are located along the western portion of the project area, and modern refuse is scattered throughout the project area.

Soils in the project area include Molokai silty clay loam, 0-3% slopes; Jaucas sand, 0-15% slopes; saline, 0-12% slopes; Dune land, and Beaches. Molokai silty clay loam, 0-3% slopes, consists of well-drained soils on upland areas formed in material weathered from basic igneous rock, and used for sugarcane. Permeability is moderate, runoff is slow, and erosion hazard is slight.

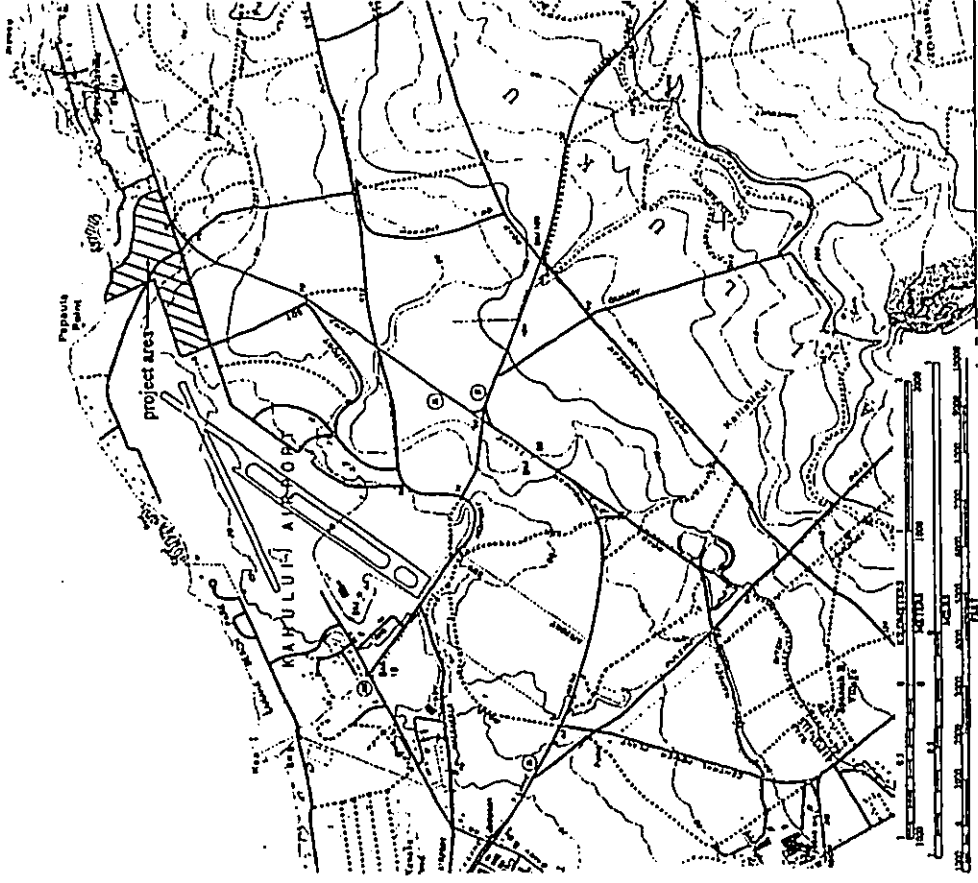


Figure 1. Location of Project Area on U.S.G.S. Paia Quadrangle

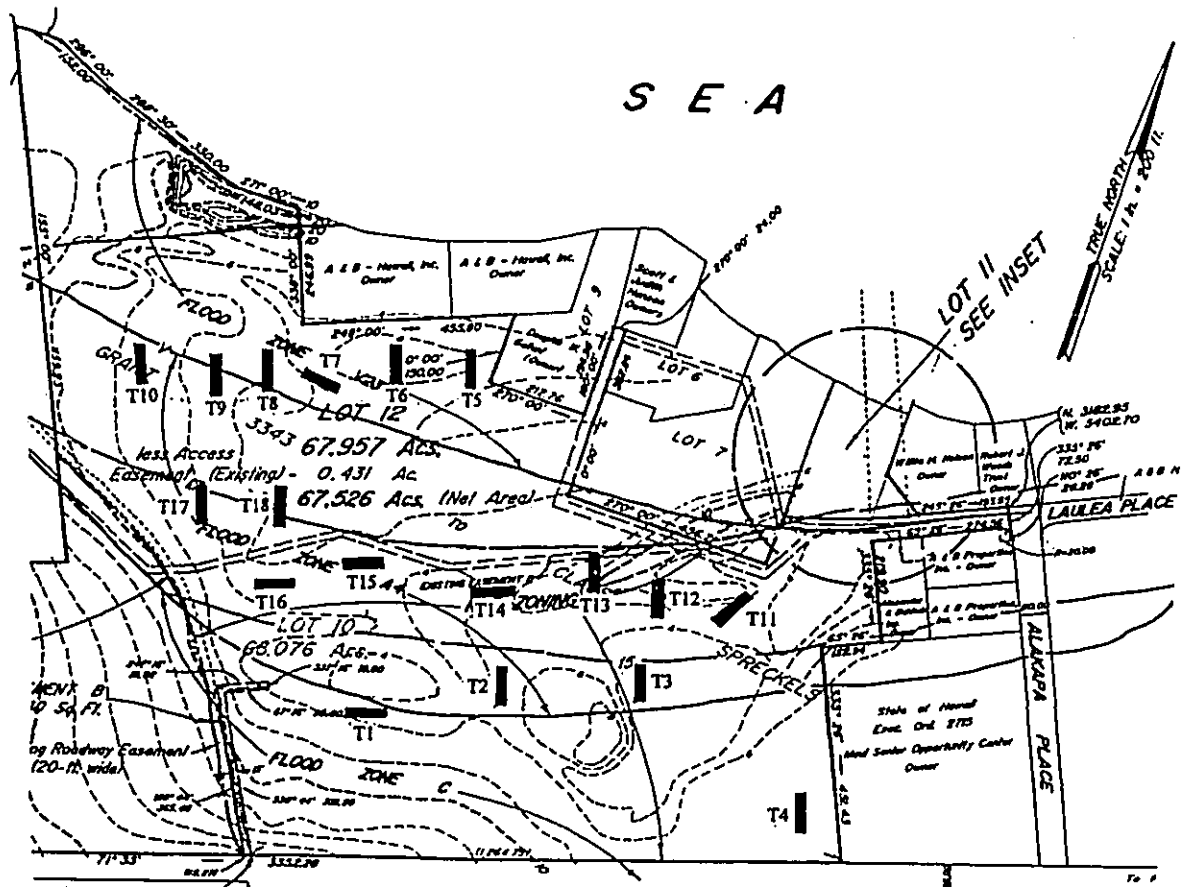


Figure 2. Project Area Showing Location of Backhoe Trenches 1-18

Figure 3: Proposed Land Use Designations
 (Refer to Environmental Assessment, Chapter 1, Figure 3)



Figure 4. Abandoned Horse Stable, View to Southeast

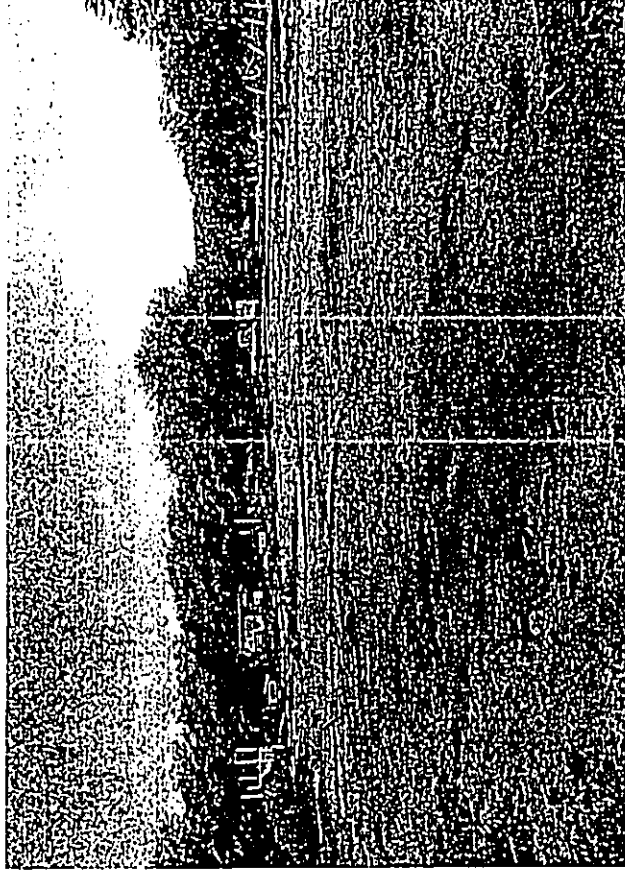


Figure 5. Overview of Staging Area, View to Northwest

Jaucas Sand consists of excessively drained, calcareous soils that occur as narrow strips on coastal plains, adjacent to the ocean, and developed in wind and water deposited sand from coral and seashells. Jaucas Sand, 0-15% slopes, occurs on slopes ranging from 0-15%, but in most places the slope does not exceed 7%. Permeability is rapid, runoff is very slow to slow, and hazard of water erosion is slight, but wind erosion is severe where vegetation has been removed. This soil is used for pasture, sugarcane, truck crops, and urban development. Jaucas Sand, saline, 0-12% slopes, occurs near the ocean in areas where the water table is near the surface and salts have accumulated. This soil is poorly drained in depressions, but excessively drained on knolls, and used for pasture, wildlife habitat, and urban development.

Dune Land consists of hills and ridges of sand-size particles drifted and piled by wind. These hills and ridges are actively shifting. The sand is dominantly from coral and seashells, and used for wildlife habitat and recreation. Vegetation is sparse, but may include ironwood, *koa hooie*, tropical almond, *hiwa*, and various grasses. Beaches occur as sandy, gravelly, or cobbly areas along the coast. Beaches consist of light-colored sands derived from coral and seashells, and used for recreation and resort development.

HISTORY

Historical background data regarding Waiuku *ahupua'a* and the Waiuku District has been summarized in Clark et al. (1987), Kolb (1991), and McGarry et al. (2003). The reader is referred to these studies for detailed information.

Initial settlement on Maui Island is postulated to have occurred between A.D. 300-600 along the windward regions (Kirch 1985, Cordy and Athens 1988), including Waiuku on the windward isthmus between East and West Maui, and Hana on the windward coast of East Maui (Klieger 1995). These areas provided abundant rainfall and fertile soil to support intensive agriculture. Population expansion into the drier, leeward areas likely took place by A.D. 1000-1200 when population growth and polity expansion forced agricultural expansion into marginally productive areas (Kolb 1991).

According to oral traditions, Halo was one of the first chiefs of Maui who ruled the Waiuku District. By A.D. 1500 East Maui was ruled by a line of independent *alii nui*. Other lines of chiefly hierarchies emerged at this time, resulting in a rise in conflicts and competition. By A.D. 1600 Maui was unified by the Waiuku chief Pi'ilani (Fornander 1969:87). During the eighteenth

century, the *mo'i* Kekaulike undertook raids against Hawaii Island. Following the annexation of Hana and Kipahulu districts to Kamehameha, Kahakii II first recaptured Hana and Kipahulu from Kamehameha and then conquered O'ahu and Molokai. Kauai was also annexed through marriage. At the time of European Contact in A.D. 1778, Maui was unified under a single political polity under the rule of the *mo'i* Kahakii. By A.D. 1795, Kahakii ruled all of the islands except Hawaii Island. Kamehameha, *mo'i* of Hawaii Island, invaded Maui, Molokai, and O'ahu islands. Keli'imālika'i, brother of Kamehameha I of Hawaii Island, unsuccessfully attempted to retake Hana and Kipahulu. In 1790, Kamehameha defeated Kalanikūpule's forces at the battle of 'Iao Valley on Maui. Kalanikūpule's eventual defeat of the Battle of Nu'uano on O'ahu established Kamehameha as absolute ruler of the islands, with the exception of Kauai. Ke'eumoku, brother of Kamehameha's wives Kaheheimalie and Ka'ahumanu of Maui, governed Maui Island until his death in 1824. Ke'eumoku was succeeded by Wahinepi'o, sister of Chief Boki. Hoopili succeeded Wahinepi'o and ruled Maui between 1826-1840, and was succeeded by Keoni Ana (John Young II). Lahaia in West Maui was the center of power of the kingdom, where Kamehameha III resided between 1837-1845.

The current project area is located in Waiuku *ahupua'a*, in the district of Waiuku. The literal meaning of Waiuku is "water of killing" (Pukui et al. 1974:179). Waiuku was the center of political and military power on Maui during the seventeenth and eighteenth centuries. Legendary battles were fought in Waiuku, including battles involving Kihapi'ilani, son of Pi'ilani, and Kalani'opu'u. Kihapi'ilani fought against his brother, Lono-e-Pi'ilani, for political control of Maui. This battle ended with Kihapi'ilani barely escaping with his life. Kihapi'ilani, with the assistance of Hawaii Island forces, defeated his opposition and eventually became ruler of Maui. Another battle was fought in Waiuku during the 1700s when Kalani'opu'u was defeated by O'ahu and Maui warriors.

During the Mahele of 1848, lands that had formerly been under the guardianship of chiefs were available for private ownership, changing the traditional land tenure to a system of private ownership based on Western law. The Board of Commissioners to Quiet Land Titles received applications for land, and decided these claims. When a land claim was validated, a Land Commission Award (L.C.A.) was awarded. Following payment, a Royal Patent (R.P.) was issued.

Land conveyance recorded show that the entire *ahupua'a* of Wailuku was awarded as Crown Land (L.C.A. 7713:23) to Kaukeawili (Kamehameha III). Princess Ruth Ke'elikolani, the great-granddaughter of Kamehameha I and Kamamalu, inherited this land following the death of her brother, Kamehameha V. Victoria Kamamalu received 390 acres in Wailuku (L.C.A. 7713:13). No L.C.A.'s were awarded in the current project area.

The earliest commercial sugar production on Maui Island began in Wailuku in 1823 when Hungai Sugar Works was founded by Chinese merchants (Morrow n.d.:51-52). Wailuku Sugar Company was started in November of 1862 by James Robinson and Company, Thomas Curaming, J. Fuller, and C. Brewer and Company. In 1865, C. Brewer and Company acquired controlling interest, with Robinson and Company and Cumming as the minority stockholders.

In 1876, when the Reciprocal Trade Treaty was signed in Washington D.C., Alexander and Baldwin purchased land east of Kahului for sugar cane production. In 1878, they acquired the Paia Plantation and incorporated the Hāiuku Plantation the following year (Best 1978:13). The majority of central and eastern Maui was cultivated in sugarcane. In 1882, Claus Spreckels awarded the eastern portion of Wailuku *ahupua'a* as Grant 3343, totaling 24,000 acres, and established the Hawaiian Commercial and Sugar Company (Alder 1966). In 1926, Alexander and Baldwin bought Spreckel's Hawaiian Commercial and Sugar Company, which resulted in the intensification of the sugar industry in Wailuku.

The growth of the sugar industry resulted in an influx of foreign laborers to work in the fields. Immigrant groups, including Russian, Spanish, Hawaiian, Chinese, Portuguese, and Japanese, established camps along railroad spur lines throughout the cane areas and towns appeared at Pu'unene and Spreckelsville. The railroads, established by the sugar companies, were built to facilitate the transportation of sugar by horsepower. The first common carrier and steam-powered railroad in the Hawaiian Islands was the 3-mile long Kahului and Wailuku railroad built in 1879 to connect sugar mills and canneries (Best 1978:13). The track later extended to the north shore of Maui, a total of 24 miles including sidings. By 1947, the railroad was replaced by a system of roadways.

Modern activities, including a horse stable and staging area, and installation of a sewer line, have extensively altered the current project area.

PREVIOUS ARCHAEOLOGY

Winslow Walker (1931) provided the first archaeological survey of prominent *heiau* sites on Maui Island. Previous archaeological work conducted within the current project area included Clark and Toenjes (1987), and pertinent projects conducted in the vicinity included Folk et al. (1993, 2000), McGerty et al. (2003), Toenjes et al. (1991), and Welch (1991) (Fig. 5).

Bishop Museum (Clark and Toenjes 1987) conducted archaeological monitoring of sewer line construction from Spreckelsville to Ku'au. State Sites 50-50-05-1063, 1064, 1253, 1171, 1777, 1782 (Bishop Museum 50-Ma-B25-2, B26-1, 2, 9-12, C9-3, 37, 38) were recorded. All these sites consisted of subsurface cultural layers and features such as pits, hearths, human burials, and charcoal concentrations. Radiocarbon and volcanic age determinations placed these sites between the 13th and 18th centuries. It appears Site 1777 may be located outside the development portion of the project area. This site, located on a sandy coastal flat approximately 275 meters west of the Spreckelsville Pump Station, consisted of a cultural deposit (Layer II) and a hearth. Layer II contained abundant cultural material including volcanic glass, basalt and coral artifacts, charcoal, and midden. A charcoal sample and four volcanic glass flakes from Layer II returned a date range between A.D. 1420-1810. The hearth, measuring approximately 1.0 by 0.5 m, was oval shaped and consisted of charcoal-stained loamy sand with burnt fragments of coral and basalt and charcoal. A charcoal sample and five volcanic glass flakes from the hearth returned a date range between AD 1340-1685.

Cultural Surveys Hawaii (Toenjes et al. 1991) conducted subsurface testing at Site 50-50-04-2849, a cultural deposit, for the proposed approach "clear zone", north end of runway 2-20 at Kahului Airport. Radiocarbon dating of this site yielded an age range between A.D. 1230-1765. A radiocarbon sample from a cultural deposit from the shoreline yielded a date range between A.D. 410-615, one of the oldest dates recovered from an archaeological site in Hawaii, if deemed reliable.

International Archaeological Research Institute, Inc. (Welch 1991) conducted subsurface testing for Kanaha Beach Park addition and Kanaha airport transient apron, Kahului Airport. A total of 82 backhoe trenches were excavated throughout the project area, and no subsurface cultural remains or deposits were encountered.

Cultural Surveys Hawaii (Folk et al. 1993) conducted testing for subsurface deposits in the Federal Aviation Administration Vortec Site, Kahului Airport. A total of twelve backhoe trenches were excavated throughout the project area, and no subsurface cultural remains or deposits were exposed.

Cultural Survey Hawaii (Folk et al. 2000) conducted an inventory survey of sugarcane lands proposed for development at Spreckelsville. Subsurface testing was deemed unwarranted in the sugarcane fields. No sites were identified in the 200-acre project area.

Scientific Consultant Services, Inc. (McGery et al. 2003) conducted an inventory survey for Phase II of the Spreckelsville-Baldwin Park bikeway. No surface structures or areas of exposed deposits or scatters were identified during the survey. Since Phase II of the bikeway corridor extends along previously developed areas, subsurface testing was deemed unwarranted.

SETTLEMENT PATTERN AND SITE EXPECTABILITY

A settlement pattern for Waiuku *ahupua'a* can be inferred from information obtained from previous historical and archaeological studies. Initial prehistoric settlement is postulated to have occurred between A.D. 300-600 along the windward areas, and by A.D. 1000, populations expanded into the dry leeward areas. Permanent settlement in the windward areas occurred along the coastal side of sand dunes near freshwater resources. These coastal settlements probably clustered around marine resources, fishponds, protected bays, and religious structures. Inland settlement probably occurred in 'Iao Valley and other areas where irrigated pondfields have been recorded.

The current project area is situated along the northern coast of Maui Island. Sites recorded in this area indicate permanent and temporary habitation, marine exploitation, and religious activities. Clark et al. (1987) established pre-Contact cultural deposits dating to the 13th Century, and Toetjes et al. (1991) dated a cultural deposit to possibly the 5th Century.

Based on previous archaeological work in the area, types of prehistoric sites expected in the current project area include buried cultural deposits, pits, hearths, and human burials. Site 1777, a cultural deposit and hearth, was recorded by Clark et al. (1987) within and/or adjacent to the current project area. This site contained abundant cultural materials, and dated between A.D. 1340 and 1685. Portions of this site may be encountered during the current investigation.

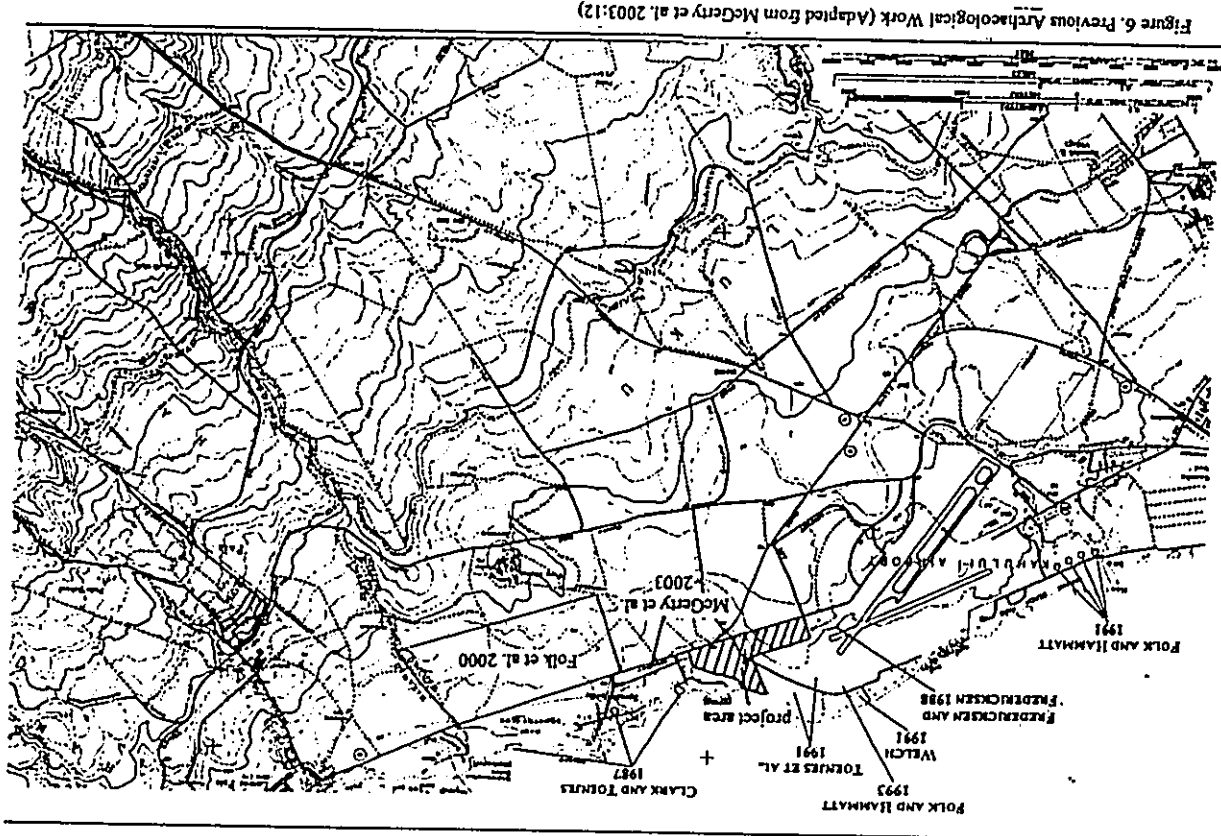


Figure 6. Previous Archaeological Work (Adapted from McGery et al. 2003:12)

Remains from the sugarcane period may also be encountered. Several workers' camps were established in Spreckelsville, and a railroad extended through the area. Historic activities during the 20th Century included a horse stable and staging area. Structural remains from these activities are expected in the project area.

METHODS

A brief literature search of previous archaeological studies was conducted at the State Historic Preservation Division of the Department of Land and Natural Resources (SHPD-DLNR) in Kapolei. One previously recorded site (State Site 1777) may be located in or near the current project area. This site, a traditional Hawaiian cultural deposit consisting of artifacts, middens, and hearths, was found during archaeological monitoring during construction of the sewer line extending from Spreckelsville to Ku'au (Clark and Toejes 1987). Based on available maps, this site may be located outside or along the northwestern boundary of the 21-acre project area.

The survey was conducted by walking systematic transects at 5-10 meter intervals throughout the project area. Any potential feature was cleared of vegetation and inspected. Feature recording entailed plan and locational mapping, narrative descriptions, and photography. Current and standard archaeological techniques and practices were followed for all recording and other data gathering procedures.

Due to the nature and extent of previous disturbances in the area, subsurface examination of the project area was conducted by backhoe to determine presence/absence and extent of buried cultural remains or deposits. A CAT machinery backhoe with a 2-ft. wide bucket was used to excavate the trenches. Trench locations were selected based on minimal prior disturbance and areas considered to hold most potential for intact deposition. The trenches were plotted on a project area map, and since no cultural remains were encountered, representative stratigraphic columns were recorded for each trench. Soil descriptions using Munsell color designations were completed for each trench, and color photographs were taken.

During the initial inventory survey, approximately 10-acres of land along the coast was intended to have a conservation easement placed upon it or be donated to the Maui Coast Land Trust. According to Dr. Melissa Kirkendall, Maui Island archaeologist for SHPD-DLNR, since this approximate 10 acres of land will be placed in conservancy, archaeological testing in this area was deemed unwarranted. Currently the 10-acres has been increased to approximately 23-acres.

RESULTS OF SURVEY

No surface cultural remains were identified during the surface survey of the project area. Due to the absence of surface features and extensive previous surface disturbances, backhoe trenching was conducted to determine presence/absence and extent of subsurface cultural remains. A total of 18 backhoe trenches (T1 through T18) were excavated in selected areas throughout the parcel that exhibited minimal previous disturbances and potential for intact subsurface deposits. Several of these trenches (T11 through T13) were excavated in the vicinity of Site 1777 to determine if this subsurface cultural deposit was present in the current project area. Table 1 presents dimensions and stratigraphic information for each trench. Representative stratigraphic columns are depicted on Figure 6. Figures 7-24 show photographic overviews and wall profiles of selected trenches.

No cultural remains or deposits were encountered in any of the trenches. Generally, two to four stratigraphic layers and lenses were observed in the trenches. The water table was exposed in all the trenches, except Trenches 10 and 12. The stratigraphic component in all trenches were:

Layer I: dark brown (7.5YR 3/3; 10YR 3/3) to very dark brown (7.5YR 2.5/3) to strong brown (7.5YR 4/6, 5/6; 10YR 4/6) to pale brown (10YR 6/3) to light gray (10YR 7/2), fine to medium-grain, loose, non-sticky, non-plastic, silty sand with abundant roots/rootlets and modern refuse.

Layer II: strong brown (7.5YR 4/6) to yellowish-brown (10YR 7/6) to very pale brown (10YR 7/4) to reddish-yellow (7.5YR 6/6) to black (10YR 2/1), fine to medium-grain, loose, moist, non-sticky, non-plastic, non-cultural, homogeneous beach sand with moderate amounts of roots/rootlets. This layer was absent in T3, T14, T15, and T18.

A lens consisting of very pale brown (10YR 7/4) to yellowish-red (5YR 4/6), coarse sand with abundant organic material was encountered in T6 and T2.

Layer III: strong brown (7.5YR 4/6) to pale brown (10YR 7/2, 8/2, 8/2) to very pale brown (10YR 7/4, 8/4) to light gray (10YR 7/1), compact, medium to coarse-grain, non-sticky, non-plastic, non-cultural, homogeneous, consolidated dune sand.

Layer III in T9 and T10 was a dark red (2.5YR 3/6), compact, fine-grain, sticky, slightly plastic, non-cultural, homogeneous, silty clay.

Layer IV in T1, 3, and 8 was a light gray (10YR 7/2) to very pale brown (10YR 8/2), compact, fine to medium-grain, coarse, moist, non-sticky, non-plastic, non-cultural, sand.

Table 1. Dimensions and Stratigraphic Information for T1 through T18

TR	Length	Width	Depth	Orient.	Layer I	Layer II	Layer III	Layer IV	Cultural
1	6.5m	0.7m	1.3m	60/240	sandy silt	silty sand	sandy silt	cons. sand	None
2	6.5m	0.7m	1.2m	0/180	sandy silt	sand	cons. sand	cons. sand	None
3	7.3m	0.7m	1.0m	167/347	sandy silt	silty clay	sandy clay	sand	None
4	6.5m	0.7m	1.0m	143/323	sandy silt	silt	cons. sand		None
5	7.0m	0.7m	0.95m	135/315	sand	cons. sand			None
6	6.6m	0.7m	0.95m	107/190	silty sand	sand	cons. sand		None
7	7.0m	0.7m	1.05m	103/283	sand	sand	cons. sand		None
8	5.6m	0.7m	1.5m	171/351	silty sand	sand	sand	cons. sand	None
9	6.4m	0.7m	2.0m	127/207	silty sand	sand	silty clay		None
10	7.1m	0.7m	1.6m	18/198	silty sand	silty clay	sand	silty clay	None
11	7.0m	0.7m	1.0m	90/270	sandy silt	sand	sand		None
12	7.5m	0.7m	1.6m	50/230	sandy silt	sand	sand		None
13	7.5m	0.7m	1.3m	175/355	sandy silt	silty sand	sand		None
14	8.7m	0.7m	0.8m	63/243	sandy silt	sand			None
15	6.3m	0.7m	0.7m	75/255	sandy silt	sand			None
16	6.8m	0.7m	1.6m	63/243	sand	clay			None
17	6.7m	0.7m	1.5m	7/187	sand	clay			None
18	6.7m	0.7m	1.65m	42/222	sand	sand			None

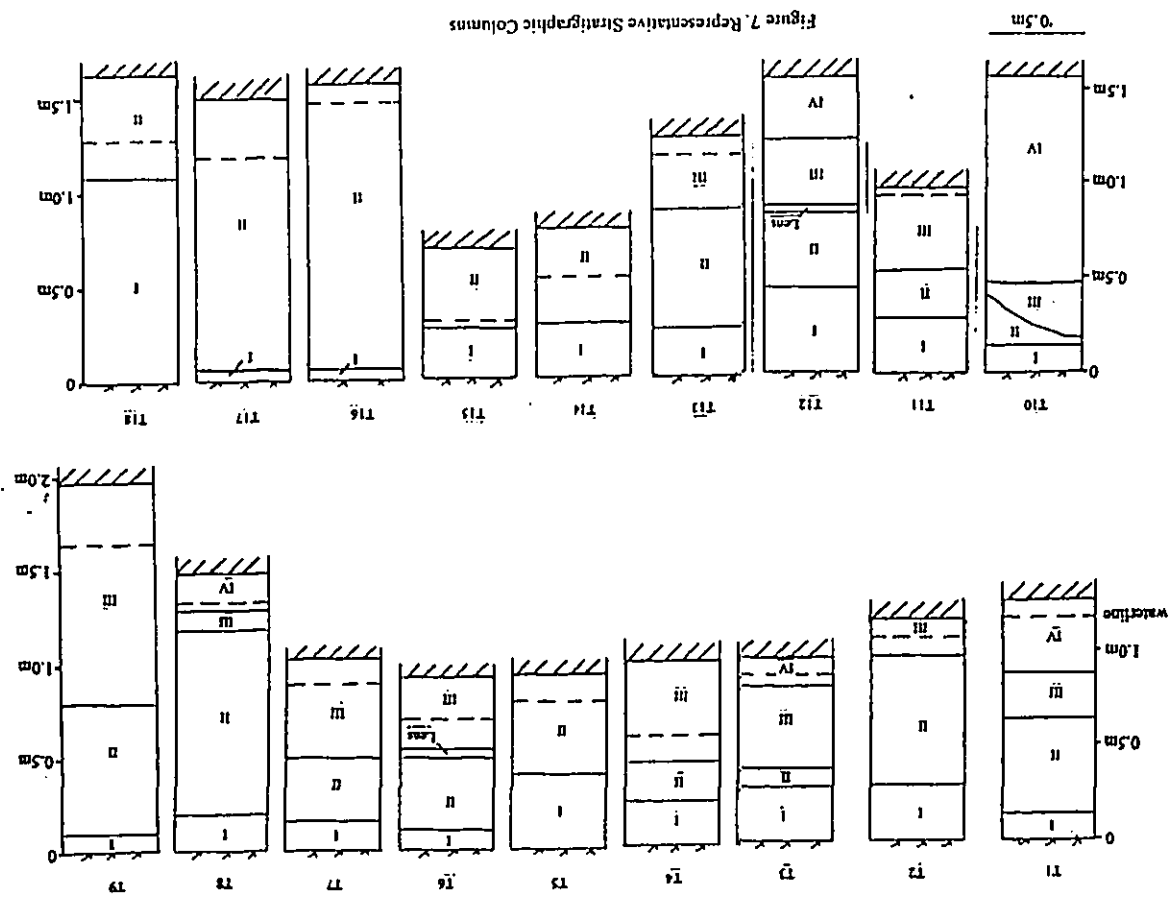


Figure 7. Representative Stratigraphic Columns

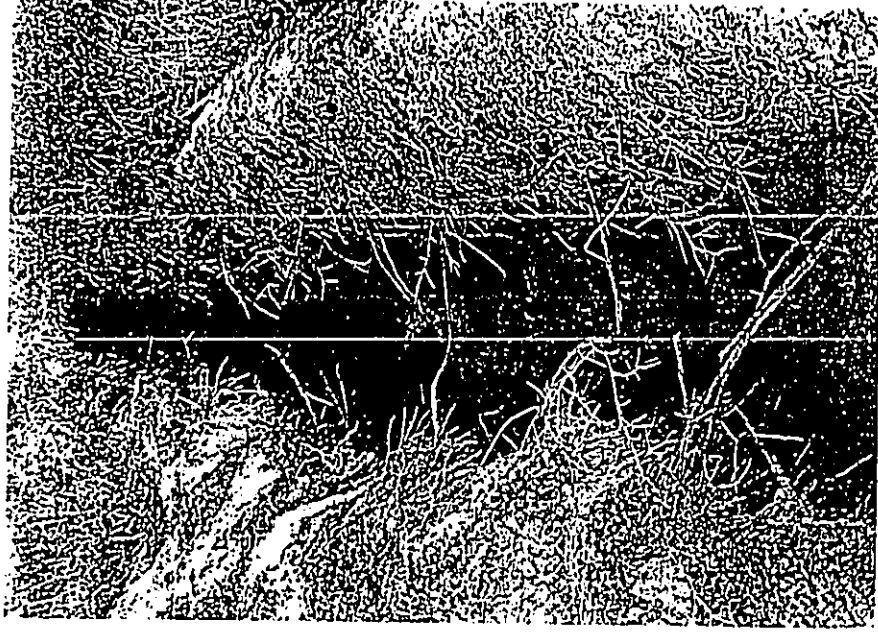


Figure 9. Overview of T2, View to South

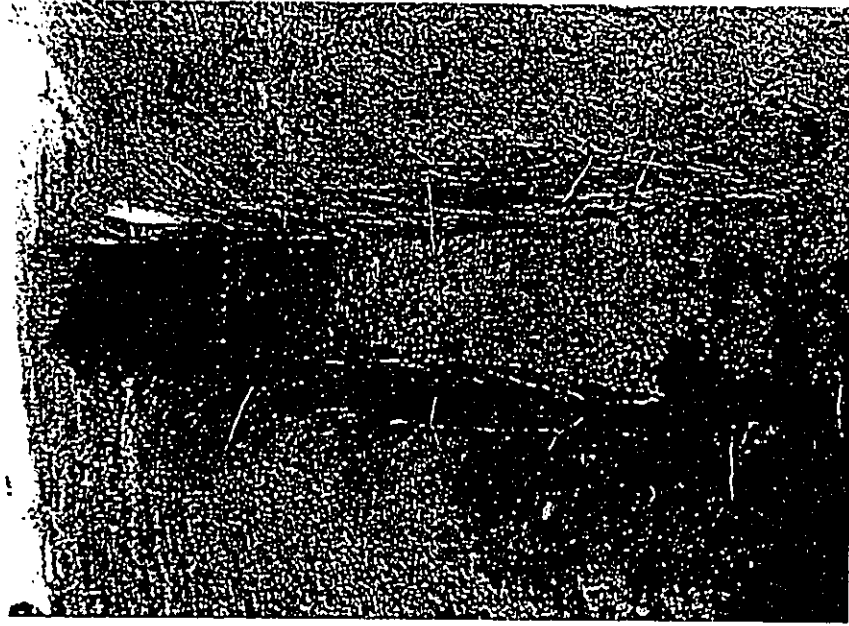


Figure 8. Overview of T1, View to West



Figure 10. Overview of T3, View to North

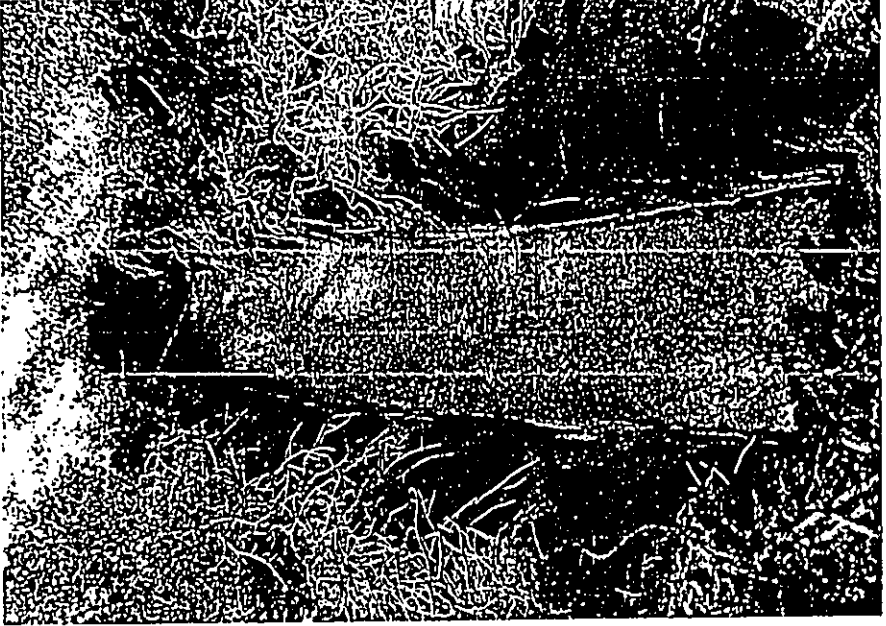


Figure 11. Overview of T4, View to North

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Figure 13. Overview of T6, View to South

22



Figure 12. T5, West Wall Profile

21

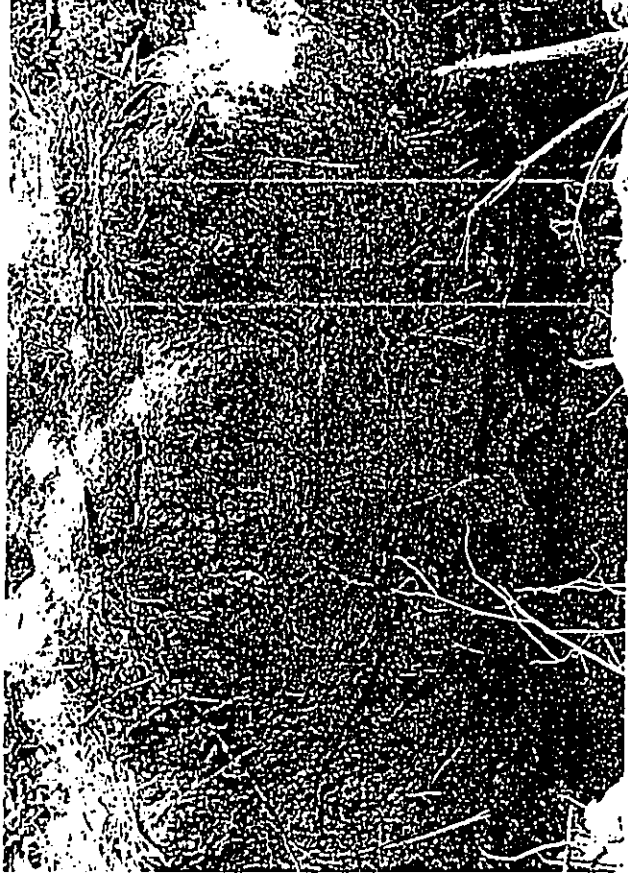


Figure 15. T8, East Wall Profile



Figure 14. Overview of T7, View to Northwest

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Figure 17. T10, East Wall Profile

26



Figure 16. Overview of T9, View to North

25

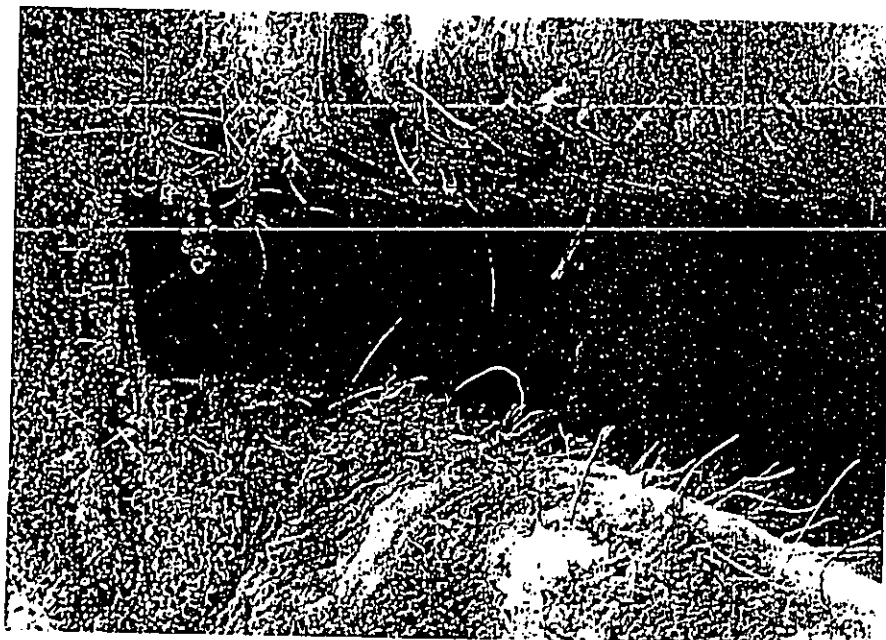


Figure 19. Overview of T12, View to West



Figure 18. Overview of T11, View to East

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Figure 21. Overview of T14, View to East

30

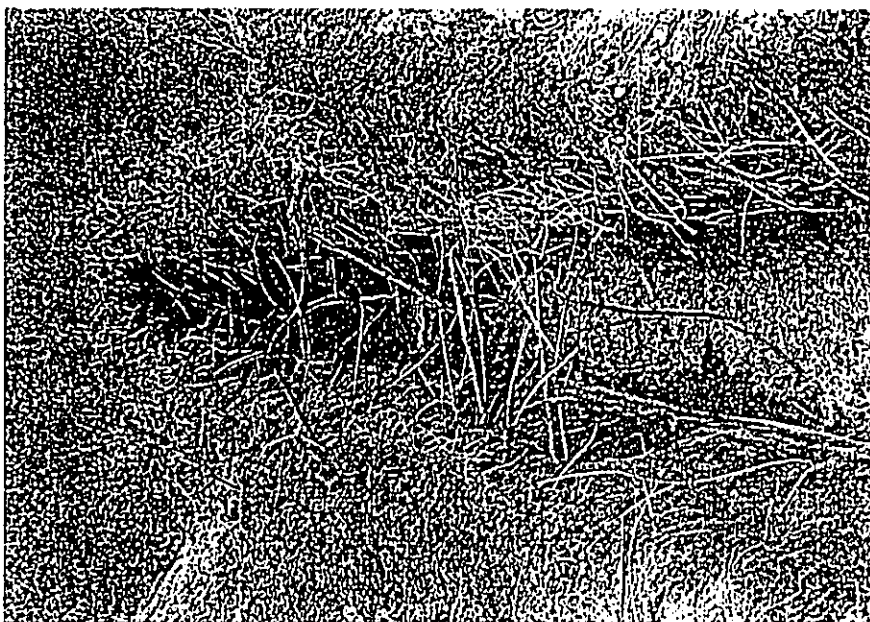


Figure 20. Overview of T13, View to North

29

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Figure 23. Overview of T16, View to East

32

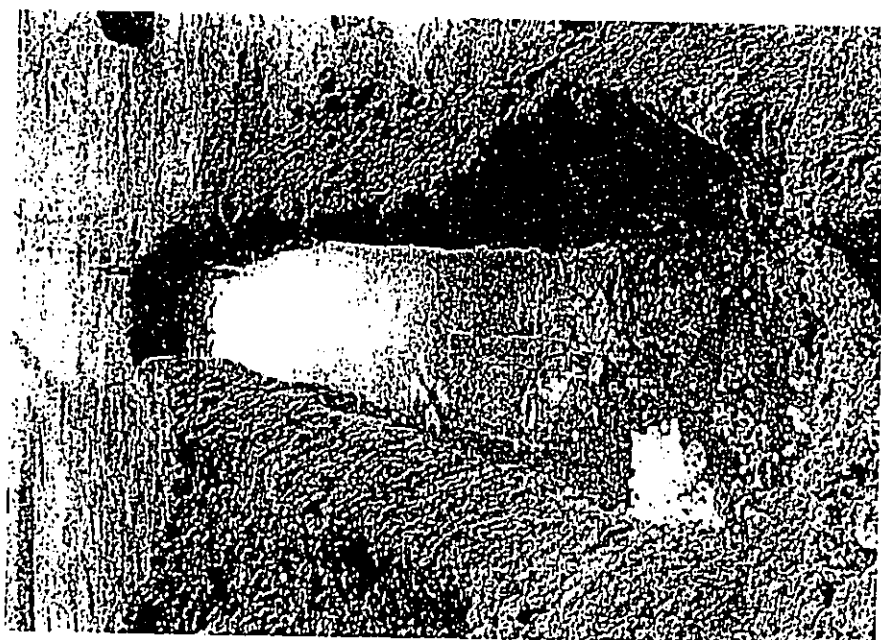


Figure 22. Overview of T15, View to East

31

RECEIVED AS FOLLOWS



Figure 25. Overview of T18, View to Northeast

34

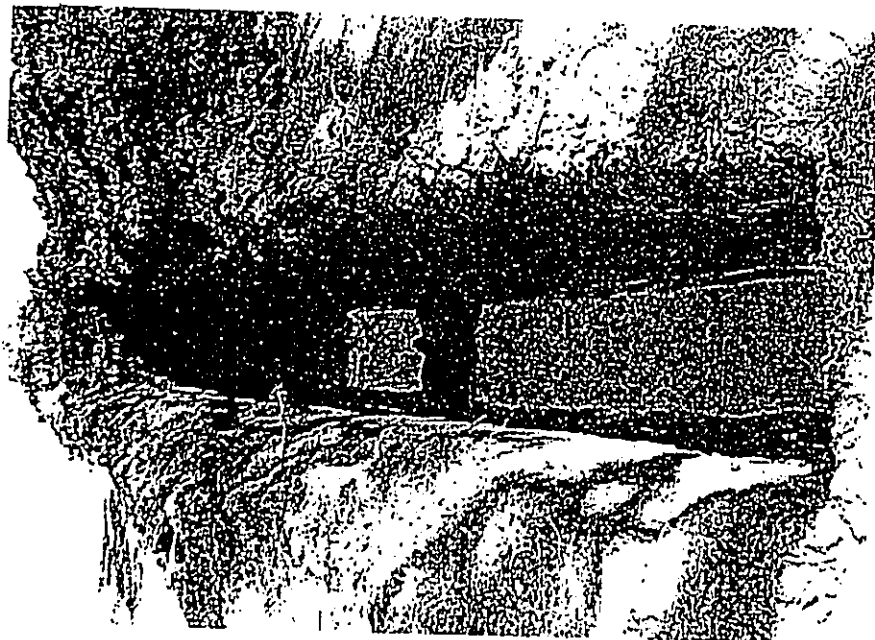


Figure 24. Overview of T17, View to North

33

DISCUSSION

Results of archaeological testing in the 30-acre portion of the project area proposed for residential development produced no evidence for sedentary cultural activities during the prehistoric period in the subject project area. No prehistoric surface cultural remains were present, and backhoe testing showed that subsurface cultural remains were also absent. Historic period occupation, including a horse stable and associated structures and a staging area, occurred in the project area since the early 20th century. The stable is currently abandoned.

Backhoe testing showed that subsurface cultural remains were absent in all exposed stratigraphic layers. Two to four stratigraphic layers were revealed, consisting of various layers of sand and silty sand. Dark reddish-brown silty clay underlying sand was exposed in the northeastern portion of the project area, and water was encountered in the majority of the trenches at relatively shallow depths. Several trenches were excavated in the area where Site 1777 may be located; however, no evidence of this site was found.

RECOMMENDATIONS

Archaeological monitoring is recommended during all ground disturbing activities to ensure that any unanticipated subsurface remains or deposits are properly documented. In the event portions of Site 50-50-05-1777 or any other significant subsurface cultural remains or deposits are encountered during construction activities, all work in the immediate vicinity shall be halted, and a data recovery plan shall be formulated and submitted to SHPD-DLNR for approval. If human skeletal remains are encountered during monitoring, all work in the immediate vicinity shall be halted, and SHPD shall be notified.

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Appendix E

***Cultural Assessment
Report***

MAR 30 2004

E Paepae Ka Pūko 'a
(Laying the foundation)

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E Paepae Ka Pūko 'a
(Laying the foundation)

TITLE PAGE

SPRECKELSVILLE PROJECT
Kapukaulua, Maui

TMK 3-8-01:3 - Approximately 21 acres proposed for residential development.
TMK 3-8-02:9 & 10 - Approximately 23 acres (including beachfront) in public trust,
and approximately 27 acres to remain in agriculture.
Spreckelsville, Maui, Hawai'i.

MITIGATING MEASURES
Full-time archeological monitoring

FINAL REPORT

February 2004

Prepared for:
Mr. Henry A. Spencer
P.O. Box 290829
Pa'ia, Hawai'i 96779

Prepared by:
CKM Resources, 157 Aiea Place, Pukalani, Maui, Hawai'i 96768

E Paepae Ka Pūko'a
(Laying the foundation)

ABSTRACT

This study is in accordance with the Office of Environmental Quality Control, which describes resources having Hawaiian Cultural Value. It will describe potential impacts from further development, along with measures that could possibly be employed to mitigate those impacts. The study will evaluate the cultural significance of historic and prehistoric resources identified during an archeological survey, and assist in the development of a general preservation plan for those resources. It will also address the requirements of the Office of Hawaiian Affairs, in regards to cultural impacts. Specifically, the document will address potential effects on the Hawaiian Cultural and Traditional Customary Rights, as described in the legislation known as Act 50, Sections Laws of Hawaii, 2002, and meet the requirements of the HRS Chapter 343, which also requires an environmental assessment of cultural resources, in determining the significance of a proposed project. Also, Articles IX and XII of the State Constitution, other state laws, and the courts of the state, require government agencies to promote and preserve cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups.

A Hawaiian cultural resource evaluation revealed that the project site is located on Hana Highway, toward the Kahului side of the Kaunoa Senior Citizens Center in Spreckelsville. This area was once called Kapukaulua¹, which began on Hana Highway and ended makai² at the ocean. The area in question encompasses a total of approximately 71 acres. Approximately 21 acres will be designated for residential development, approximately 23 acres (including the sand dunes and beach) are to be donated to a land trust, and the approximately 27 acres remaining shall continue to be used for agriculture by Alexander & Baldwin, who currently holds the lease and grows sugar cane on this parcel. The residential development will be located makai of the Hana Highway, starting at the intersection of Stable Road. The area on the Pā'ia side of Stable Road will be a "common area", with native plants and existing trees that are currently growing on this site. The development will continue in the Pā'ia direction and adjoin the Kaunoa Senior Center. However, 1 acre on the Kahului side of the Kaunoa Senior Center will be donated for their future expansion. The development will abut Laurie'a Street, which runs on the makai side of this development. On this makai side, another "common

¹ Kaunoa - The literal meaning is place without Kapa, free of restrictions. Another interpretation is that when the school was named, it was mispronounced Kaunua'oa - a native dodder (*Cuscuta sandwicensis*), belonging to the morning glory family, a leafless vine, which grows densely on other plants. It is found growing on the sand dunes of Kapukaulua.
² Kapukaulua is a small land district or 'ili on the northern shores of Maui, the area that is now called Spreckelsville. Its shoreline is also named Kapukaulua, meaning the *ulu* (certain species of jack or crevalle fish) pit. It was named this because of the abundance of *ulu* during the certain fishing season.
³ makai - ocean side; toward the sea.

area" is designated. The access to the house lots will be from Stable Road, with a road running down the center of the development, ending in a cul-de-sac on the Pā'ia end of the subdivision. This road has been named (by the author of this report) "Kapukaulua", which is the original name for this particular area. In Section 1 of this report, the meaning and translation is furnished. The residential housing will have parcels that range in size from 1/4 acre to 1.2 acres. (Please refer to the subdivision plan and overhead photo of this project and the surrounding area.)

Claus Spreckels arrived in Hawaii'i on August 24, 1876. In a matter of years he acquired vast areas of land with the intention of planting sugar cane. Knowing that the central area of Maui was dry, he realized that he had to acquire water. He established a close relationship with King Kaiakaua, and he was given the right to bring water from the Ko'olau range (located above Nahiku and Ke ana'e) to Maui's central valley area. By obtaining water for his sugar fields, the sugar yields of his crop greatly increased, and soon he had the largest plantation on Maui.

In 1881, Spreckels had built the largest sugar mill on Maui, which was called the Spreckelsville Mill⁴. It was located across Hana Highway, in the Kula direction from this project. He installed the first electrical generator in Hawaii'i, and it produced enough electricity to light the entire mill. This use of electricity preceded the lighting of Iolani Palace on Oahu by 5 years. Claus Spreckels was also responsible for the use of railroads in large scale cane hauling, which replaced the need for mules and oxen. Another first was the use of steam plows in Hawaii'i to cultivate the vast fields.

The archeological studies done on this project (refer to Archeological Report) revealed no cultural or archeological findings. Because of the similarity to the surrounding area sand matrix, which is pu'uone (sand dunes), it is strongly suggested that full-time monitoring occur during construction.

Note: As much as possible, throughout this report, the spelling of Hawaiian vocabulary and place names has been standardized to present orthography.

⁴ From the book "Claus Spreckels the Sugar King in Hawaii'i" written by Jacob Adar, University Of Hawaii'i Press, 1966, page 74, paragraph 2.

E Paepae Ka Pūko'a (Laying the Foundation)

OUTLINE

Kapukaulua (Spreckelsville), Maui, Hawai'i
History of Kapukaulua/Wawa'u - Pā'ia, Maui

SECTIONS

- I. The District (Ahupua'a)
 - a. Surrounding 'ili (land sections)
 - b. The topographic change
 - c. Topographic details
- II. Hawaiian Fauna (Lā'au Hawai'i)
 - a. Various/native fauna
 - b. Sugar cane
- III. The Lifestyle (Ke Ola Nei)
 - a. Paradigm of living
 - b. Today's generation
- IV. Interviews and Interview Consent Forms
- V. Conclusion (Ua Pau)

Section I. The District (Ahupua'a)

Kapukaulua is a small land district (or 'ili) on the northern shore of Maui. It's shoreline is also named Kapukaulua, meaning the *uluu* (certain species of jack or crevalle fish) pit. It was named this because of the abundance of *uluu* during the certain fishing season.

The Kapukaulua 'ili resides in the ahupua'a of Wailuku and is bordered by Hāmākuā Loa. Since Kapukaulua consists mainly of shoreline property, not much has been written about Kapukaulua. However, as this report will later explicate, some history of Kapukaulua can be found in written memoirs. Another area near Kapukaulua was a place named Wawa'u. Due to the lack of in depth recorded historical facts of Kapukaulua or Wawa'u, the majority of information will come from recorded information of the adjacent 'ili, Pā'ia.

In this particular ahupua'a there are many 'ili. The main east end border for this ahupua'a is Kū'au. Neuring the oceanfront, Kū'au sets one line for the ahupua'a. Another point in the border system is Hāli'imaile. From here, the border extends to Pukalani (trad. Pu'ukalani) on the slopes of Maui's eastern mountain, Haleakalā. From Pukalani the border extends back down to the sea to where the Kahului airport currently resides. In the traditional ahupua'a system, this *wahi* (area) is known as Pā'ia.

These are the different 'ili contained within the Kapukaulua, Wawa'u and Pā'ia areas:

Ho'okipa, Kū'au, Kāheka, Kaiua, Hāli'imaile, Pukalani (trad. Pu'ukalani),
Keahua, Spreckelsville, Wawa'u and Kapukaulua - shoreline.

In lieu of the U.S. Census, the change of land zoning for these tracts of lands may appear differently as compared to the traditional ahupua'a system. The topography of Kapukaulua and Pā'ia were changed when the areas were rezoned due to reapportionment. Therefore, this report has combined both traditional land uses of this area (i.e. traditional names) and the current topography that this area is currently zoned as.

The land in this area is dry, yet fertile. One *'olelo no'ea* (Hawaiian proverb) says, "Ka makani hāpala lepo o Pā'ia." This literally means, "Dust smearing wind of Pā'ia." The land is also at a bit of an incline, as mentioned earlier. This incline, the slightly arid temperatures, and the dry plains made the area perfect for growing *'uala* (Ipomea batatas - sweet potato).

Many individuals profusely commented on Kapukaulua's wealth of sea life during certain seasons. In the "Ka Nūpepa Kū'oko'a" (Hawaiian Language Newspaper - 1884) a resident by the name of "Polena" commented on the abundance of marine life in the Kapukaulua area. "Polena" also commented on the disparities that may have happened at times:

¹ The term itself, Wawa'u, is perhaps a Proto-Polynesian linguistic mutation of other places in the Pacific. It may well be a Proto-Polynesian or Proto-Nuclear Polynesian term. Wawa'u could be a replicated name in Vaieaha, Tahiti. Pā'ia is in the Society Islands or Vava'u, a Tongan island in the Pacific.
² Polena, Kapukaulua, "Ka Nūpepa Kū'oko'a," Pā'ia, Maui: 1884.

Hō ka nui nā lehuēhu a Kanaloa I ke kai ākea ma Kapukaulua. Ua hele 'ia mai ko'u 'Ohana ma laila. A ua ho'ohina'i ka hīna'i ma ke ehu kai, a ua ho'oki'i mai ka moana, nunui ka ano o nā i'a like 'ole mai pae a kahī pae. I ke kahī manawa, ano pā ākiki e hele ana ma Kapukaulua, no ka mea, lo'a nā kānaka 'ōhāna e noho ai ma laila. Akā nā'e, inā e kāmau e nīnau aku ai, hiki ke hele ma Kapukaulua.

Oh my, the abundance of Kanaloa's creations are at the vast ocean near Kapukaulua. I traveled with my family to Kapukaulua. We threw fishes into the sea foam, and when we fetched it from the ocean, oh the varieties of fish, it seemed as if it was from the beginning of the island chain to the end. On some occasions, it is quite difficult to access Kapukaulua, because of the businessmen who live and work in that area. However, if we are persistent in asking, we are allowed to go to Kapukaulua.

While it is difficult to ignore "Polena's" comments about the tension that had occurred in the area, regarding access to Kapukaulua, on that same token it is equally difficult to ignore the comments rendered about the various fish. "Polena" never went as far as to name the specific fish, yet the words describe it all, "oh the varieties of fish, it seemed as if it was from the beginning of the island chain to the end."

² Kanaloa: A major Hawaiian god, responsible for all of the life in the ocean.

Section II. Hawaiian Fauna (Lā'au Hawai'i)

These lands rarely made perfect *lō'i kalo* (taro patches) because of the dry conditions. Therefore, sweet potato may have been a large source of carbohydrate sufficiency because of the lack of water in the area. Although the fact is recognized that Hawaiians would traditionally trade, swap, and share various foods, kalo (taro - *Colocasia esculenta*) was not commonly available, due to the fact that *lō'i kalo* was not always present in the immediate vicinity.

Another plant that may have grown in this area, to supplement the need of kalo, is 'ulu (*Artocarpus altilis* - breadfruit).

According to a book titled, "Native Planters In Old Hawai'i: Their life, lore, and environment", written by E.S. Handy et al., he explicates, "...early voyagers noted extensive planting of breadfruit along the southern and leeward coast..." Although this statement singles out the Southern and leeward coasts, which are generally the dryer areas on the island, Pā'ia still made a perfect place for 'ulu to grow because of its dry dusty plains. 'Ulu also grew in many of the bordering districts that were near the Pā'ia and Wawa'u areas.

Hala (*Pandanus odoratissimus*) or *Pandanus* may have also been plants that were used to construct comfortable homes in Pā'ia, more specifically the land area of Wawa'u near Kapukaulua. *Hala* has been very successful in its ability to grow near the ocean. This is still evident in the abundance of *hala* near the shorelines throughout Hawai'i. *Hala* was known to grow vibrantly in the bordering ahupua'a mentioned earlier. This would have been useful to construct needed objects in the home, farm, and family settings.

Pili (*Heteropogon contortus*) grass was also quite common in these areas because of the climate conditions. *Pili* liked to grow in arid and dusty conditions. This grass was useful to Hawaiians in that the dried grass would be made into bunches and used to thatch the roofs of their homes.

One of the ground covers used to keep some of the dirt from blowing in the wind was *pā'ū o Hi'iaka* (*Jacquemontia sandwicensis*). This was a ground-covering vine with abundant tubular flowers that ranged in color from light blue/purple to white. This plant did not need much water, which in turn would make Pā'ia a perfect area of growth for the pā'ū o Hi'iaka.

While Hawaiians of the past used *pā'ū o Hi'iaka* for curing keiki (children) of ea (thrush - a mouth disease), this plant is better known for the mo'olelo (story) that explains its name. Long ago, Pele, the volcano goddess, took her youngest sister, Hi'iaka, to the ocean. As Pele was out amongst the waves fishing, or some say surfing, the sun climbed higher and hotter in the sky. Meanwhile, Hi'iaka waited patiently on the shoreline for her sister. A plant near Hi'iaka, seeing that the keiki's tender young skin was being burned by the sun's merciless rays, took pity upon Hi'iaka and extended its vines to shield her. When Pele returned from the ocean, she discovered Hi'iaka covered and protected by the plant. In gratitude, Pele gave the plant its name, pā'ū (skirt) o Hi'iaka (of Hi'iaka).

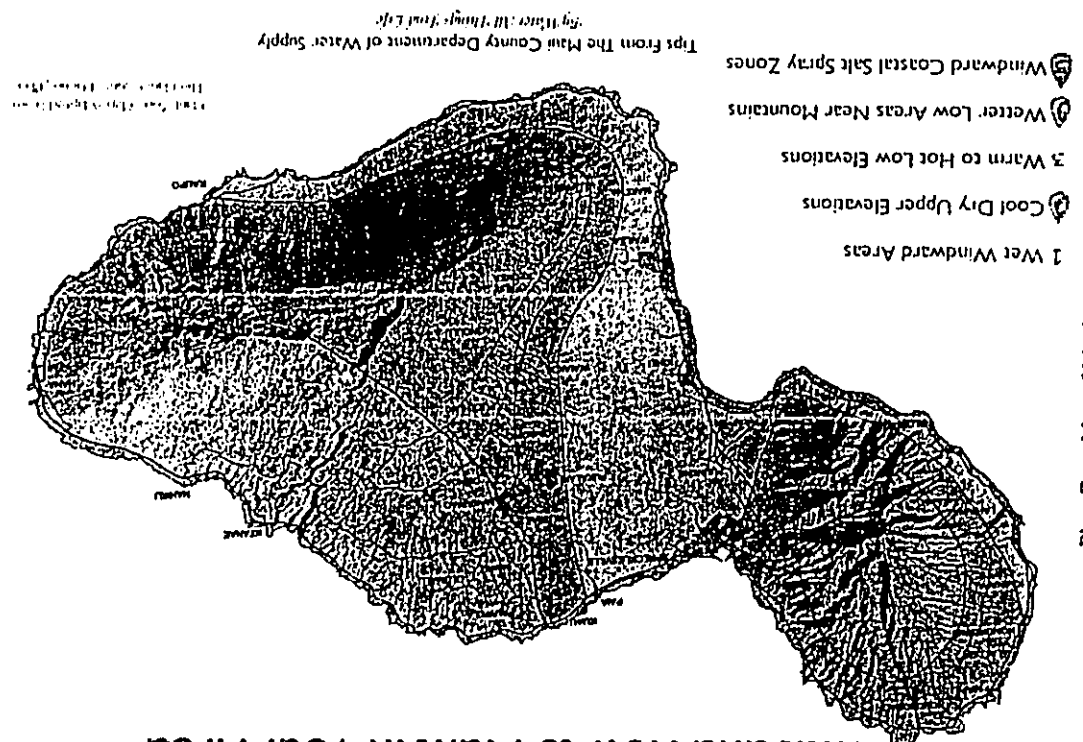
¹ Handy, E.S., Craighill, et al. *Native Planters In Old Hawai'i: Their Life, Lore, and Environment*. Honolulu, Hawai'i: 1991.

Saving Water in The Yard

What and How to Plant in Your Area

Another blossoming plant that has resided in this area is the 'a'ali'i (*Dodonaea*) bush. This hardwood native shrub is indigenous to the islands. This plant also grows well in dryer climates. Ranging in heights of one to thirty feet, this shrub/tree is found growing at elevations up to 8,000 feet, and in wind-swept open country. In today's day and age, 'a'ali'i is being used to reforest the island of Kaho'olawe. This island's water plate is cracked in half due to missile testing by the U.S. government in the late 1960's and '70's. Kaho'olawe is not able to retain water because of the cracked water plate, yet the 'a'ali'i is doing well in growing and flourishing on the island.

One plant that has proven itself is *kō* (*Saccharum officinarum* - sugar cane). *Kō* is an extremely low maintenance plant that is easy to maintain when water is not readily available. Alexander and Baldwin found this to be true and later built an empire with this cultural knowledge. The sugar cane, up until the late 1980's, put Hawai'i at the forefront of the sugar cane industry. Today, that industry struggles to survive among top competitors. However, this industry has left many dichotomous marks in the history of Hawai'i and the lives of many families, both native and non-native.



Plant Zone Map of Maui
6

ZONES

The Maui County Planting Plan has compiled a system of 5 zones of plant growth for Maui County. The descriptions of zones and maps for these zones are as follows:

- Zone 1:** Wet areas on the windward side of the island. More than 40 inches of rain per year. Higher than 3,000 feet.
- Zone 2:** Cool, dry areas in higher elevations (above 1,000 feet). 20 to 40 inches of rain per year.
- Zone 3:** Low, drier areas, warm to hot. Less than 20 inches of rain per year. Sea level to 1,000 feet.
- Zone 4:** Lower elevations which are wetter due to proximity of mountains. 1,000 to 3,000 feet.
- Zone 5:** Salt spray zones in coastal areas on the windward side.

These zones are to be used as a general guide to planting for Maui County. In addition to looking at the maps, read the descriptions of the zones and decide which zone best fits your area. Plants can be listed in more than one zone and can be planted in a variety of conditions. For best results, take notes on the rainfall, wind, sun and salt conditions of your site. Use the zones as a general guide for selection and read about the plants to decide which best fits your needs as far as care and or function.

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
F	<i>Psidium nudum</i>	moa, moa kula	1'	1'	sea to 3,000'	Dry to Wet
G	<i>Colubra asiatica</i>	hapanapa	3'	10'	sea to 1,000'	Dry to Wet
G	<i>Eragrostis monicola</i>	kalamo	1'	2'	sea to 3,000'	Dry to Medium
G	<i>Eragrostis variabilis</i>	emo-ka	1'	2'	sea to 3,000'	Dry to Medium
G	<i>Friessia cymosa</i> ssp. <i>spathulata</i>	mau ualaia koroiki	0.5'	1'	sea to 1,000'	Dry to Medium
G	<i>Boerhaavia repens</i>	ama	0.5'	2'	sea to 1,000'	Dry to Medium
G	<i>Chamaesyce celestroides</i> var. <i>lechneris</i>	akiko	2'	3'	sea to 1,000'	Dry to Medium
G	<i>Cressa frutescens</i>	grass	0.5'	1'	sea to 1,000'	Dry to Medium
G	<i>Hibiscus anomalous</i> var. <i>argenteus</i>	hahana iu kahaia	1'	2'	sea to 1,000'	Dry to Medium
G	<i>Ipomoea tuberosa</i>	Hawaiian moon flower, lala	1'	10'	sea to 3,000'	Dry to Medium
G	<i>Jacquemontia ovalata</i> ssp. <i>sandwichensis</i>	pa u haka	0.5'	6'	sea to 1,000'	Dry to Medium
G	<i>Lipochia integrifolia</i>	mo	1'	5'	sea to 1,000'	Dry to Medium
G	<i>Piperoma leptolachya</i>	ala-wa-nui	1'	1'	sea to 3,000'	Dry to Medium
G	<i>Pithecolobium zeylanicum</i>	mo	1'	1'	sea to 3,000'	Dry to Medium
G	<i>Sesuvium portulacastrum</i>	kaikiki, sea-purlane	0.5'	2'	sea to 1,000'	Dry to Wet
G	<i>Sida fallax</i>	ama	0.5'	3'	sea to 1,000'	Dry to Medium
G	<i>Tephrosia purpurea</i> var. <i>purpurea</i>	uhaku	2'	2'	sea to 1,000'	Dry to Medium
G	<i>Hibiscus calyphylla</i>	mo hau holo, haka a haka	3'	2'	sea to 3,000'	Dry to Medium
G	<i>Lipochia rockii</i>	mo	2'	2'	sea to 3,000'	Dry to Medium
G	<i>Lipochia succulenta</i>	mo	2'	5'	sea to 1,000'	Dry to Wet
G	<i>Lycium sandwichense</i>	oho-ka, ae ae	2'	2'	sea to 1,000'	Dry to Medium
G	<i>Locos nuchera</i>	coconut, nu	30'	100'	sea to 1,000'	Dry to Wet
P	<i>Philodendron hillebrandii</i>	to ulu, fan palm	25'	15'	sea to 1,000'	Dry to Wet
S	<i>Marsilea javanica</i>	marsh cypress, ahua	0.5'	0.5'	sea to 1,000'	Dry to Medium

Recommended Plants for Zone 3 (1)

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Sh	<i>Argemone glauca</i> var. <i>decipiens</i>	puu kaia	3'	2'	sea to 3,000'	Dry to Medium
Sh	<i>Bidens menziesii</i> ssp. <i>montana</i>	ko-ko-ko	1'	3'	sea to 1,000'	Dry to Medium
Sh	<i>Bidens micrantha</i> ssp. <i>micrantha</i>	ko-ko-ko	1'	3'		
Sh	<i>Chenopodium ashiense</i>	hahaka, wewewo	6'	6'	sea to higher	Dry to Medium
Sh	<i>Dianella sandwichensis</i>	uki	2'	2'	1,000' to higher	Dry to Medium
Sh	<i>Cassipouira kanihonensis</i>	mao, Hawaiian cotton	5'	8'	sea to 1,000'	Dry to Medium
Sh	<i>Hedyotis</i> spp.	au, pua	3'	2'	1,000' to 3,000'	Dry to Wet
Sh	<i>Lipochia laevium</i>	mo	3'	3'	sea to 3,000'	Dry to Medium
Sh	<i>Urtica angustifolia</i>	uka, waike	4'	6'	sea to 3,000'	Dry to Medium
Sh	<i>Scarcia asiatica</i>	hapanapa, hapanapa-kahaka	6'	8'	sea to 1,000'	Dry to Medium
Sh	<i>Senna gaudichaudii</i>	hapanapa	5'	5'	sea to 3,000'	Dry to Medium
Sh	<i>Solanum nigrum</i>	aki, beach solanum	3'	3'	sea to 1,000'	Dry to Medium
Sh	<i>Styphelia lanceolata</i>	puhawa	6'	6'	1,000' to higher	Dry to Medium
Sh	<i>Viburnum rotundifolium</i>	hapanapa	3'	4'	sea to 1,000'	Dry to Medium
Sh	<i>Valeriana lutea</i> var. <i>kanuensis</i>	aka, haka-kahaia	8'	8'	sea to 1,000'	Dry to Medium
Sh	<i>Myoporum sandwicense</i>	haka, paper mulberry	10'	10'	sea to higher	Dry to Medium
Sh	<i>Poliochiton sandwicense</i>	haka	8'	8'	sea to 3,000'	Dry to Medium
Sh	<i>Dodonaea viscosa</i>	haka	6'	8'	sea to higher	Dry to Medium
Sh	<i>Alouina mollis</i>	hapanapa	50'	50'	sea to 3,000'	Medium to Wet
Tr	<i>Carophyllum nophyllum</i>	hapanapa, hapanapa-lala	40'	50'	sea to 3,000'	Medium to Wet
Tr	<i>Carthamus odoratum</i>	hapanapa, hapanapa-lala	12'	8'	sea to 3,000'	Dry to Medium
Tr	<i>Cordia subcordata</i>	haka	30'	25'	sea to 1,000'	Dry to Wet
Tr	<i>Diospyros sandwicense</i>	haka	12'	15'	sea to 3,000'	Dry to Medium
Tr	<i>Erythraea sandwicense</i>	haka	20'	20'	sea to 1,000'	Dry
Tr	<i>Melastomum polynesianum</i> var. <i>macrophyllum</i>	haka	25'	25'	sea to 1,000'	Dry to Wet

Recommended Plants for Zone 3 (2)

Zone-specific Native and Polynesian plants for Maui County

Zone 3

Zone-specific Native and Polynesian plants for Maui County

Zone 3

TYPE: F Fern G Grass Gt Ground Cover Sh Shrub P Palm S Sedge Tr Tree V Vine

Zone-specific Native and Polynesian plants for Maui County

Zone 3

TYPE: F Fern G Grass Gr Ground Cover Sh Shrub P Palm S Sedge Tr Tree V Vine

Recommended Plants for Zone 3 (1)

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
F	<i>Psidium nudum</i>	moa, moa kula	1'	1'	sea to 3,000'	Dry to Wet
G	<i>Colubrina asiatica</i>	anapanapa	3'	10'	sea to 1,000'	Dry to Wet
G	<i>Eragrostis monicola</i>	kalamalo	1'	2'	sea to 3,000'	Dry to Medium
G	<i>Eragrostis variabilis</i>	emo-ia	1'	2'	sea to 3,000'	Dry to Medium
G	<i>Fimbristylis cymosa</i> ssp. <i>spathacea</i>	mau'aki'aki fimbriatylis	0.5'	1'	sea to 1,000'	Dry to Medium
Gr	<i>Boerhavia repens</i>	alena	0.5'	4'	sea to 1,000'	Dry to Medium
Gr	<i>Chamaesyce celastroides</i> var. <i>laehensis</i>	akoko	2'	3'	sea to 1,000'	Dry to Medium
Gr	<i>Cressa truxillensis</i>	cressa	0.5'	1'	sea to 1,000'	Dry to Medium
Gr	<i>Heliotropium anomalum</i> var. <i>argenteum</i>	hinahina ku kahakai	1'	2'	sea to 1,000'	Dry to Medium
Gr	<i>Ipomoea loboides</i>	Hawaiian moon flower, 'uala	1'	10'	sea to 3,000'	Dry to Medium
Gr	<i>Jacquemontia ovalifolia</i> ssp. <i>sandwicensis</i>	pa'u o hi'aka	0.5'	5'	sea to 1,000'	Dry to Medium
Gr	<i>Lipochaeta integrifolia</i>	nehe	1'	5'	sea to 1,000'	Dry to Medium
Gr	<i>Peperomia leptostachya</i>	'ala'ala-wai-nui	1'	1'	sea to 3,000'	Dry to Medium
Gr	<i>Plumbago zeylanica</i>	'we'e	1'			
Gr	<i>Sesuvium portulacastrum</i>	'akukuk, sea-purslane	0.5'	2'	sea to 1,000'	Dry to Wet
Gr	<i>Sida fallax</i>	'ama	0.5'	3'	sea to 1,000'	Dry to Medium
Gr	<i>Tephrosia purpurea</i> var. <i>purpurea</i>	'uhuhu	2'	2'	sea to 1,000'	Dry to Medium
Gr - Sh	<i>Hibiscus calyphyllus</i>	ma'o hau holo, Rock's hibiscus	3'	2'	sea to 3,000'	Dry to Medium
Gr - Sh	<i>Lipochaeta rockii</i>	nehe	2'	2'	sea to 3,000'	Dry to Medium
Gr - Sh	<i>Lipochaeta succulenta</i>	nehe	2'	5'	sea to 1,000'	Dry to Wet
Gr - Sh	<i>Lycium sandwicense</i>	'ohelo-kai, 'eo'eo	2'	2'	sea to 1,000'	Dry to Medium
P	<i>Cocos nucifera</i>	coconut, niu	100'	30'	sea to 1,000'	Dry to Wet
P	<i>Prithordia holobrandii</i>	'o'ulu, fan palm	25'	15'	sea to 1,000'	Dry to Wet
S	<i>Marsicus javanicus</i>	marsh cypress, 'ahu'awa	0.5'	0.5'	sea to 1,000'	Dry to Medium

Zone-specific Native and Polynesian plants for Maui County

Zone 3

Recommended Plants for Zone 3 (2)

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Sh	<i>Argemone glauca</i> var. <i>decipiens</i>	pua kula	3'	2'	sea to 3,000'	Dry to Medium
Sh	<i>Bidens mauiensis</i>	ko'oko'olau	1'	3'	sea to 1,000'	Dry to Medium
Sh	<i>Bidens menziesii</i> ssp. <i>menziesii</i>	ko'oko'olau	1'	3'		
Sh	<i>Bidens micrantha</i> ssp. <i>micrantha</i>	ko'oko'olau	1'	3'		
Sh	<i>Chenopodium oahuense</i>	'ahaehea, 'awae'awae	5'		sea to higher	Dry to Medium
Sh	<i>Dianella sandwicensis</i>	'ulu	2'	2'	1,000' to higher	Dry to Medium
Sh	<i>Gossypium tomentosum</i>	mao, Hawaiian cotton	5'	8'	sea to 1,000'	Dry to Medium
Sh	<i>Hedyotis</i> spp.	'au, 'alo	3'	2'	1,000' to 3,000'	Dry to Wet
Sh	<i>Lipochaeta laevium</i>	nehe	3'	3'	sea to 3,000'	Dry to Medium
Sh	<i>Osteomeles anthyllifolia</i>	'uie, 'ekuehe	4'	5'	sea to 3,000'	Dry to Medium
Sh	<i>Scaevola sericea</i>	naupaka, neupaka-kahakai	5'	8'	sea to 1,000'	Dry to Medium
Sh	<i>Senna gaudichaudii</i>	kolomana	5'	5'	sea to 3,000'	Dry to Medium
Sh	<i>Solanum nelsonii</i>	'akua, beach solanum	3'	3'	sea to 1,000'	Dry to Medium
Sh	<i>Styphelia lanceolata</i>	puka'awa	5'	5'	1,000' to higher	Dry to Medium
Sh	<i>Vilox rotundifolia</i>	pohinahina	3'	4'	sea to 1,000'	Dry to Medium
Sh	<i>Wakstroemia uva-ursi kauaiensis kauaiensis</i>	'akia, Molokai osmanthus				
Sh - Tr	<i>Broussonetia papyrifera</i>	wauke, paper mulberry	8'	5'	sea to 1,000'	Dry to Medium
Sh - Tr	<i>Myoporum sandwicense</i>	nao, false sandalwood	10'	10'	sea to higher	Dry to Medium
Sh - Tr	<i>Polidichum sandwicense</i>	kulu	8'	8'	sea to 3,000'	Dry to Medium
Sh - Tr	<i>Odonoea viscosa</i>	'a'aki	5'	8'	sea to higher	Dry to Medium
Tr	<i>Aleurites moluccana</i>	candlenut, kuku	50'	50'	sea to 3,000'	Medium to Wet
Tr	<i>Calophyllum inophyllum</i>	kamani, alexandrian laurel	50'	40'	sea to 3,000'	Medium to Wet
Tr	<i>Cantium odoratum</i>	'Alahe o, 'oha e, walahe e	12'	8'	sea to 3,000'	Dry to Medium
Tr	<i>Cordia subcordata</i>	kou	30'	25'	sea to 1,000'	Dry to Wet
Tr	<i>Ocospyrus sandwicensis</i>	'ama	12'	15'	sea to 3,000'	Dry to Medium
Tr	<i>Erythrina sandwicensis</i>	wilwila	20'	20'	sea to 1,000'	Dry
Tr	<i>Metrosideros polymorpha</i> var. <i>macrophylla</i>	'ohi'a lehua	25'	25'	sea to 1,000'	Dry to Wet

Zone-specific Native and Polynesian plants for Maui County

Zone 3

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Tr	<i>Morinda citrifolia</i>	Indian mulberry, noni	20'	15'	sea to 1,000'	Dry to Wet
Tr	<i>Nesokuma polynesianum</i>	kaahi	15'	15'	sea to 3,000'	Dry
Tr	<i>Neslegia sandwicensis</i>	olopua	15'	15'	1,000' to 3,000'	Dry to Medium
Tr	<i>Pandanus lectonius</i>	hala, puhala (HALEUST)	35'	25'	sea to 1,000'	Dry to Wet
Tr	<i>Pleomelo auwahiensis</i>	halapepe	20'			
Tr	<i>Rauvolfia sandwicensis</i>	hao	20'	15'	sea to 3,000'	Dry to Medium
Tr	<i>Reynoldsia sandwicensis</i>	ohe makai	20'	20'	1,000' to 3,000'	Dry
Tr	<i>Santalum ellipticum</i>	coastal sandalwood, 'i-ahi	8'	8'	sea to 3,000'	Dry to Medium
Tr	<i>Thespesia populnea</i>	milo	30'	30'	sea to 3,000'	Dry to Wet

Recommended Plants for Zone 3 (3)
10

PLACES TO BUY NATIVES ON:

Maui:

1. Hoolawa Farms
P O Box 731
Haiku HI 96708
The largest and best collection of natives
in the state. They will deliver, but it's
worth the drive to go and see!
Will propagate upon request
2. Kula True Value Nursery
Many natives in stock
Get most of their plants from Hoolawa Farms
They take special requests
3. Kihui Garden and Landscape
4. Kihana Nursery, Kihui
5. The Hawaiian Collection
Specialize in Sandalwood propagation
Will propagate special requests

Section III. The Lifestyle (Ke Ola Nei)

As "Polena's" letter explicated, there seemed to be tension between the kama'āina and those who had business interests in the area of Kapukaulua/Pā'ia.

Upon the introduction of the sugar cane industry, there was a shift in the treatment of the land and other resources contained in these areas. Land divisions were plowed, unearched, and made into fields to plant the profitable crop of sugar cane. No doubt, this industry employed generations of people. In a matter of years, the planting and cropping system of plants in the area of Pā'ia went from culturally based farms to crops of mass production. This is predominantly evident in a glimpse of life by "Polena."

Land titles were lost to quid pro quo deals and nepotistic actions taken by officials who were friends with sugar cane tycoons. At the behest of all of this, was the traditional lifestyle of native Hawaiians, the native wildlife, and the native and indigenous fauna. A lifestyle of its own accelerated the lives of the natives of the area to quickly assimilate to a system unfamiliar to their own.

Stories like "Polena's" were not uncommon to the major newspapers throughout the kingdom at that time. The concept of private land still had not been realized and digested enough to be understood by native Hawaiians. Thus continued the decrease of subsistence living in rural communities such as Pā'ia and Kapukaulua.

In the wake of this paradigm, native Hawaiians fared poorly if they chose to live a cultural lifestyle in this ahupua'a of Pā'ia.

As more continental Americans migrated to the islands in search of employment, either as military personnel or to fill vacancies in other industries, they brought with them ideals and a way of life that made imprints on the island populace. Like the missionaries before them, their ideologies assisted in the Americanization of Hawai'i. However, while other ethnicities seemed to prosper in the wake of the paradigm, the native Hawaiians did not. (Kahumoku, 219)¹

As Dr. Walter Kahumoku explicates in his doctoral dissertation, it was difficult if one kept to their cultural ways. The native Hawaiians had not assimilated fast enough, which caused the paradigm shift and the change of the landscape, from cultural farms to mass producing crops.

¹ Kahumoku III, Ph.D., Walter, Doctoral Dissertation: University of Hawai'i, 2000.

Section IV. Interviews and Interview Consent Forms

STATEMENT OF:
Clarence Masashi Matsumoto
Retired Fireman - Maui County Fire Department
222 Hana Highway, Lower Pā'ia, Maui

Interviewed on 02/10/04 at 10:15 a.m., Senior Citizens Meeting, Pā'ia Community Center:

He related that he was born on July 26, 1920 in Upper Pā'ia and raised there. Before retirement he was a fireman at the Pā'ia Fire Station. He remembered the Spreckelsville area and knew many people that lived in the camps that were there, in an area across from this project. He recalled that there was a photo studio, a Catholic Church, Korean Church, baseball field, and a movie theater. Below the road, next to the proposed project area, there was a stable belonging to H.C. & S Company. He also stated that across this project site, on the road opposite of Stable Road, there was a boxing arena and an abandoned home which everyone used to call an "obake" (haunted) house.

STATEMENT OF:
Mrs. Flora Melendez
Housewife
200 Hina Ave., E-6, Kahului, Maui

Interviewed on 02/10/04 at 10:30 a.m., Senior Citizens Meeting, Pā'ia Community Center:

She was born in Kōhala on January 16, 1926. Her family moved to Maui around 1940 and settled in Spreckelsville Village. They lived in what was called "Cod Fish Row", which was located on the road that went to the airport. She started to work at the Dairy in Kahului on Dairy Road. She later worked in the cane fields around Pu'unēhē and the Spreckelsville area. She also worked on the Navel Base located in NASKA, which is the area where the Kahului airport is currently located. She does not remember going onto the subject property but remembers the Kaunoa School. She had nothing further to add.

STATEMENT OF:
Rose Feliciano
Housewife

Interviewed on 02/10/04 at 10:40 a.m., Senior Citizens Meeting, Pā'ia Community Center:

She related that she was born at Peahi, Maui on October 17, 1930. Her family moved to Spreckelsville when she was 12 years old, where she attended Spreckelsville School. The school was located on "Cod Fish Row" and their home was in the general area. Spreckelsville was a large community with the majority of residents working for the plantation. She worked in NASKA as a babysitter for the military families. Her father used to go fishing at the beach by walking on Stable Road, passing by this project site. She does not remember going onto the project site, as she had no reason to go onto the property. She remembers a lot of the residents using the ocean fronting this property. She also recalls the Russian Camp being on the Kahului side of Stable Road, and many other camps in the Spreckelsville area.

STATEMENT OF:
Ms. Lisa Ronumo-Hazuka
Archeologist - Archeological Services Hawaii, LLC
16 South Market Street, Suite G
Wailuku, Hawaii 96793

Interviewed on 02/13/04 at 2:40 p.m., Wells Park, Wailuku:

She related that her associate, Mr. Jeffrey Pantaleo, had previously done archeological studies on the subject property. Jeffrey had dug numerous trenches on the property and had not come up with any cultural or archeological sites. The location of State site 50-50-05-17771 was discovered to be adjacent to a residential bypass/access road constructed during sewer line construction on Laule'a Place. This site is located on an area that will be kept in open space and will not be impacted by any development. As far as the sand dunes which are in the area mauka of Laule'a Street, test trenches were conducted for the secondary dune and nothing was found.

The reason she recommends full-time monitoring is because this area is in the same general location as the Maui Country Club, Baldwin Park, and Kaulahau in Kū'au, which is where burials were found. Also, this area contains pu'uone (sand dunes) which was favored for burials by the ancient Hawaiian people.

STATEMENT OF:

John Han
Union Representative - J.B.E.W.
272 Hi'olani St., Pukalani, Maui 96768

Interviewed on 02/14/04 at 10:20 a.m., at his home:

John was born in Pi'i'a in 1927. He grew up by the Makawao Union Church, which was located on Baldwin Ave. above the present Pi'i'a School. He stated that he attended Kaunoa School and had many friends in Spreckelsville. He spent a lot of time with his friends who attended Spreckelsville Elementary School, which was located on the road mauka of Stable Road, in what was known as "codfish row". There was also a boxing ring, and all the children used to "hang out there". The people of Spreckelsville were known to be very competitive in Maui sports. He recalls an incident where one of his playmates was killed when he went to "pull cane" from a passing train car. It was common for the children to chase the cane cars, as the train passed to "pull cane". They did this because they liked to eat the burnt cane by chewing on the insides, which was referred to as "Hawaiian candy". He has been to the beach makai of the subject property and remembers a lot of the people from the surrounding camps going to the beach for fishing and swimming.

Almost all of the residents lived on the mauka side of Spreckelsville (where the subject property is located); with the exception of 2 camps that were located on the Kahului side of Stable Road. He recalls that the road intersecting Stable Road led to the back of the present airport. Also, he related that the old Spreckelsville Sugar Mill was located at the intersection of Hana Highway and the road that led to the upper Spreckelsville Village, on the Pu'unānē corner (mauka) of Hana Highway.

He does not remember going onto the property and can only remember going to the Cameron's home, which was located just before the driveway to the Kaunoa Senior Citizens Center. He also stated that he started to go to public schools in the late 30's and 40's, and the mode of transportation was by foot. He later bought a bicycle which allowed him to travel all over Maui.



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Creating the Legacy for Maui's Future

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(including those of Hawaii O.L.P.C. members),
Siteplans, Grading, Letters
and Interpretation

INTERVIEW SUMMARY AND CONSENT

JOB NAME: Spreckelsville Project
PERSON INTERVIEWED: Clarence M. Matsumoto
DATE OF INTERVIEW: 02/10/04
INTERVIEWER: CKM Cultural Resources: C.K. Maxwell Sr.
PURPOSE OF INTERVIEW: Cultural Impact Assessment

I hereby give permission to CKM Cultural Resources to use the information from this interview in preparing a cultural impact assessment report for the subject project. I understand that appropriate credit will be provided in the cultural assessment report. I further understand that I will be able to review the summary of the interview report prior to publication.

By: Clarence M. Matsumoto
Print Name

Signature: Clarence M. Matsumoto

Date: 02/10/04

Maui County Public Health Department
1100 Ala Moana, Suite 300, Honolulu, HI 96813
Phone: (808) 535-2016, Fax: (808) 535-2017, Email: maui@maui.gov

Clarence M. Matsumoto Interview Consent Form



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During our hours of operation in person

INTERVIEW SUMMARY AND CONSENT

JOB NAME: Spreckelsville Project
PERSON INTERVIEWED: Flora Melendez
DATE OF INTERVIEW: 2/10/04 Pali Comm Center
INTERVIEWER: C.K. Maxwell Sr.
PURPOSE OF INTERVIEW: Cultural Impact Assessment

I hereby give permission to CKM Cultural Resources to use the information from this interview in preparing a cultural impact assessment report for the subject project. I understand that appropriate credit will be provided in the cultural assessment report. I further understand that I will be able to review the summary of the interview report prior to publication.

By: Flora Melendez
Print Name
Signature: Flora Melendez
Date: Feb 10 2004

Kala Oahu Cultural Services, LLC
117 Ala Moana, P.O. Box 11180
Honolulu, HI 96818
Phone: (808) 571-8038 Fax: (808) 571-0007 Cell: 870-3115
Email: kcm@ckmresources.com Website: www.ckmresources.com

Flora Melendez Interview Consent Form



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and lit opportunities

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INTERVIEW SUMMARY AND CONSENT

JOB NAME: Spreckelsville Project
PERSON INTERVIEWED: Rose Feliciano
DATE OF INTERVIEW: Feb. 10, 2004 Pali Comm Center
INTERVIEWER: C.K. Maxwell Sr.
PURPOSE OF INTERVIEW: Cultural Impact Assessment

I hereby give permission to CKM Cultural Resources to use the information from this interview in preparing a cultural impact assessment report for the subject project. I understand that appropriate credit will be provided in the cultural assessment report. I further understand that I will be able to review the summary of the interview report prior to publication.

By: Rose Felicia
Print Name
Signature: Rose Feliciano
Date: Feb 10 2004

Kala Oahu Cultural Services, LLC
117 Ala Moana, P.O. Box 11180
Honolulu, HI 96818
Phone: (808) 571-8038 Fax: (808) 571-0007 Cell: 870-3115
Email: kcm@ckmresources.com Website: www.ckmresources.com

Rose Feliciano Interview Consent Form



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and Site Assessments

NOV 13 2004 1:00 PM
Certified as accurate in part as printed

INTERVIEW SUMMARY AND CONSENT

JOB NAME: Spreckelsville Project
PERSON INTERVIEWED: Lisa Rotunno-Hazuka
DATE OF INTERVIEW: 2/13/04
INTERVIEWER: CKM Cultural Resources: C.K. Maxwell Sr.
PURPOSE OF INTERVIEW: Cultural Impact Assessment

I hereby give permission to CKM Cultural Resources to use the information from this interview in preparing a cultural impact assessment report for the subject project. I understand that appropriate credit will be provided in the cultural assessment report. I further understand that I will be able to review the summary of the interview report prior to publication.

By: Lisa Rotunno-Hazuka
Print Name
Signature: [Signature]
Date: 13 Feb 04

Lisa Curtis Linderich Maxwell Sr.
17 Ala Place - Palisades, Maui HI 96766
Phone: (808) 577-0818; Fax: (808) 577-0821; Cell: 878-1114
Email: lisa@cmkresources.com; Website: www.cmkresources.com

Lisa Rotunno-Hazuka Interview Consent Form



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Meetings, Workshops, Lectures
and Site Assessments

NOV 13 2004 1:00 PM
Certified as accurate in part as printed

INTERVIEW SUMMARY AND CONSENT

JOB NAME: Spreckelsville Project
PERSON INTERVIEWED: John Han
DATE OF INTERVIEW: 2-14-04
INTERVIEWER: CKM Cultural Resources: C.K. Maxwell Sr.
PURPOSE OF INTERVIEW: Cultural Impact Assessment

I hereby give permission to CKM Cultural Resources to use the information from this interview in preparing a cultural impact assessment report for the subject project. I understand that appropriate credit will be provided in the cultural assessment report. I further understand that I will be able to review the summary of the interview report prior to publication.

By: John Han
Print Name
Signature: [Signature]
Date: 2/14/04

Lisa Curtis Linderich Maxwell Sr.
17 Ala Place - Palisades, Maui HI 96766
Phone: (808) 577-0818; Fax: (808) 577-0821; Cell: 878-1114
Email: lisa@cmkresources.com; Website: www.cmkresources.com

John Han Interview Consent Form

Section V. Conclusion (Ua Pau)

Pā'ia, Kapukaula, and Wawa'u were full of life with different plants and people to *mālama* (care for) the 'āina (land). Today, many generations of families have resided near these areas and have found solace and joy in the surrounding shoreline. The extensive shoreline in this area provided for many generations of people who lived on this northern coastline. Kapukaula and Wawa'u consisted of many living areas, and as made poignant by "Polena," provided great catches of fish.

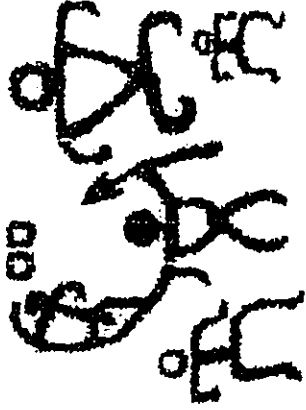
Various species of native fauna inhabited the area, and quite possibly, some plants that grew there no longer exist in Hawai'i. It is important to stress the sanctity of these areas - Pā'ia, Kapukaula and Wawa'u, respectively. Pā'ia is an extremely diverse *āhupua'a*, reaching from Ko'au to Pukalani, and back down to Sprecklesville. Thus, the *āhupua'a* covered vast lands and different landscapes.

Today, the majority of Pā'ia's land is now covered by sugar cane crops. Kapukaula, which was once home to traditional farmers and fishermen, is now home to generations of plantation workers.



State Historic Preservation Division

PROTECTING NATIVE HAWAIIAN BURIALS



HELEHELE HELEHELE HELEHELE

For at least two thousand years, native Hawaiians have placed the earthly remains and spirits of their "kupuna," or ancestors, within the landscapes of Hawai'i.

When a departing kupuna was laid to rest there was never a doubt that their remains would empower their descendants until they themselves were reduced to earth. Some kupuna were covered by stacked stones while others were buried with no surface markers at all, frequently in sand dunes.

Remains of high chiefs or those kupuna of high honor often were interred at night to conceal their location from jealous rivals who might steal and degrade or otherwise use the spiritual power of the remains for personal gain.

Because of these cultural practices, ancestral bones can be found almost anywhere in Hawai'i today. Burial sites are often accidentally disturbed either by nature (high surf or erosion) or by human activity through projects that involve excavation.

If you discover a burial site: stop activity in the immediate area; leave remains in place; contact the State Department of Land and Natural Resources, Historic Preservation Division and your County Police Department. Reporting a burial site disturbance is required by law (Hawaii Revised Statutes, Chapter 65) and severe penalties could result when SHPD is not notified of such disturbance.

Let us all continue to give these ancestors the dignity and respect they deserve. Become a partner in preserving and protecting Hawaiian burial sites.

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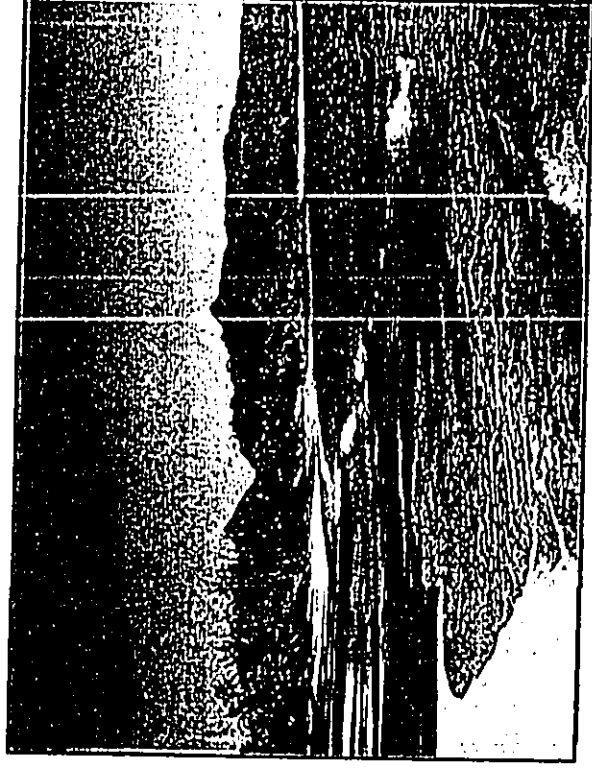
View from beachfront facing the Pā'ia direction



View from Laule'a Street, looking in the Pā'ia direction



View from Laule'a Street, with project property on left.
Area of property shown may be a possible sand dune.



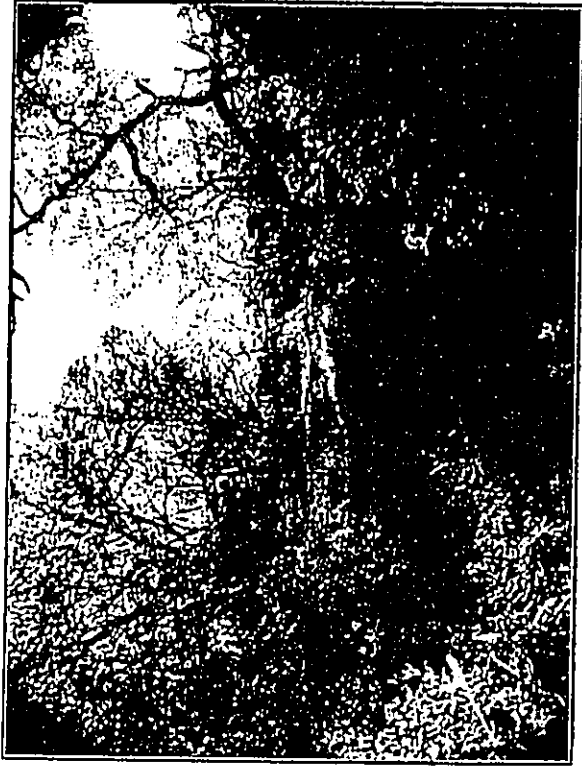
View from the beach of property looking towards the West Maui Mountains



*Opala (rubbish) from former residents.



Abandoned buildings from former stable



Center of project area, with native Hawaiian plants growing



Old buildings from former stable and rodeo grounds

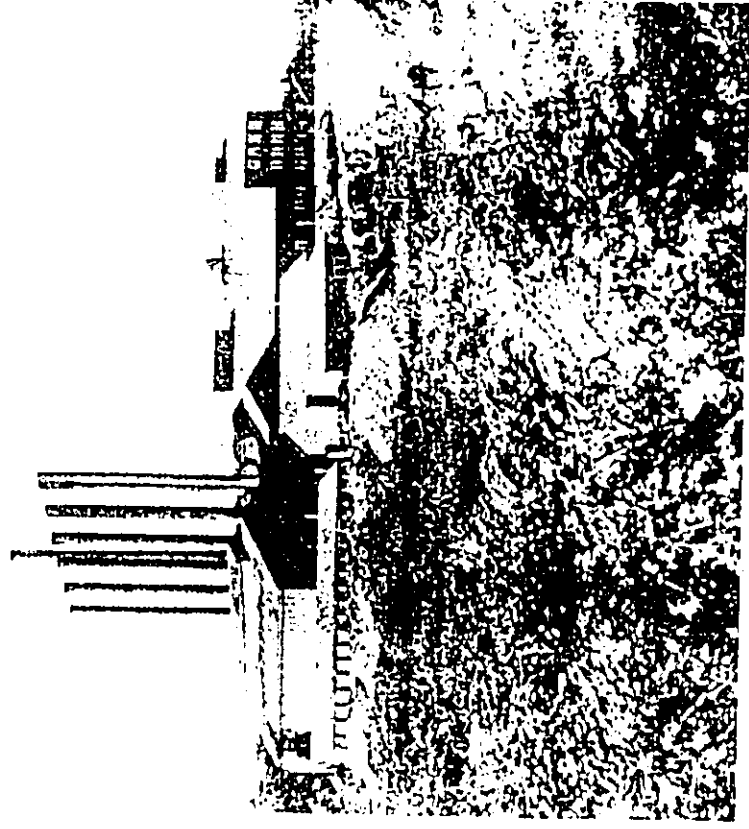


Old road at the center of the property



Photograph of Henry Spencer (owner of project), with the author of this report

Spreckelsville mills about 1885. The mills set an example for the Hawaiian sugar industry.



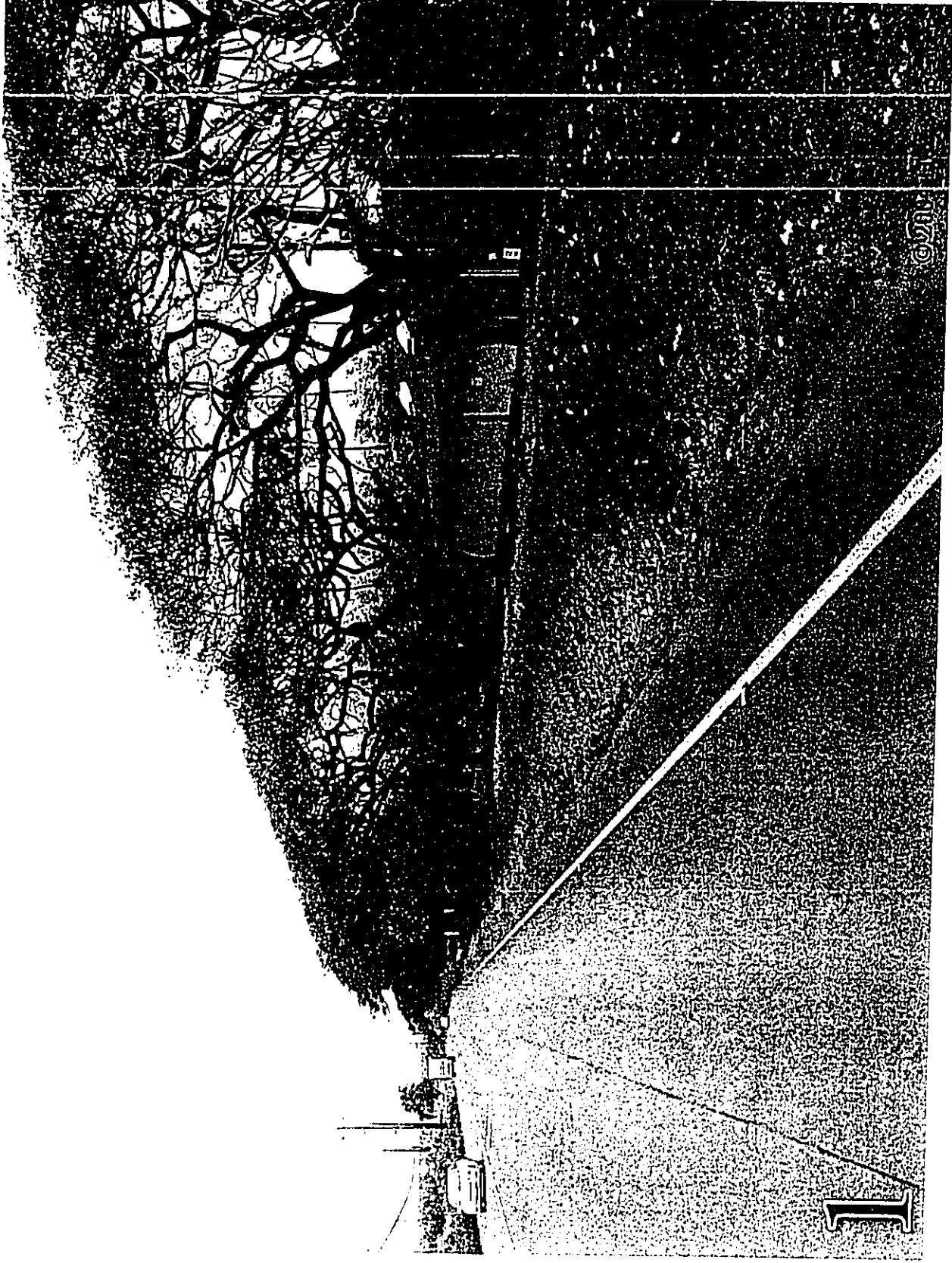
Picture of Spreckelsville Mill



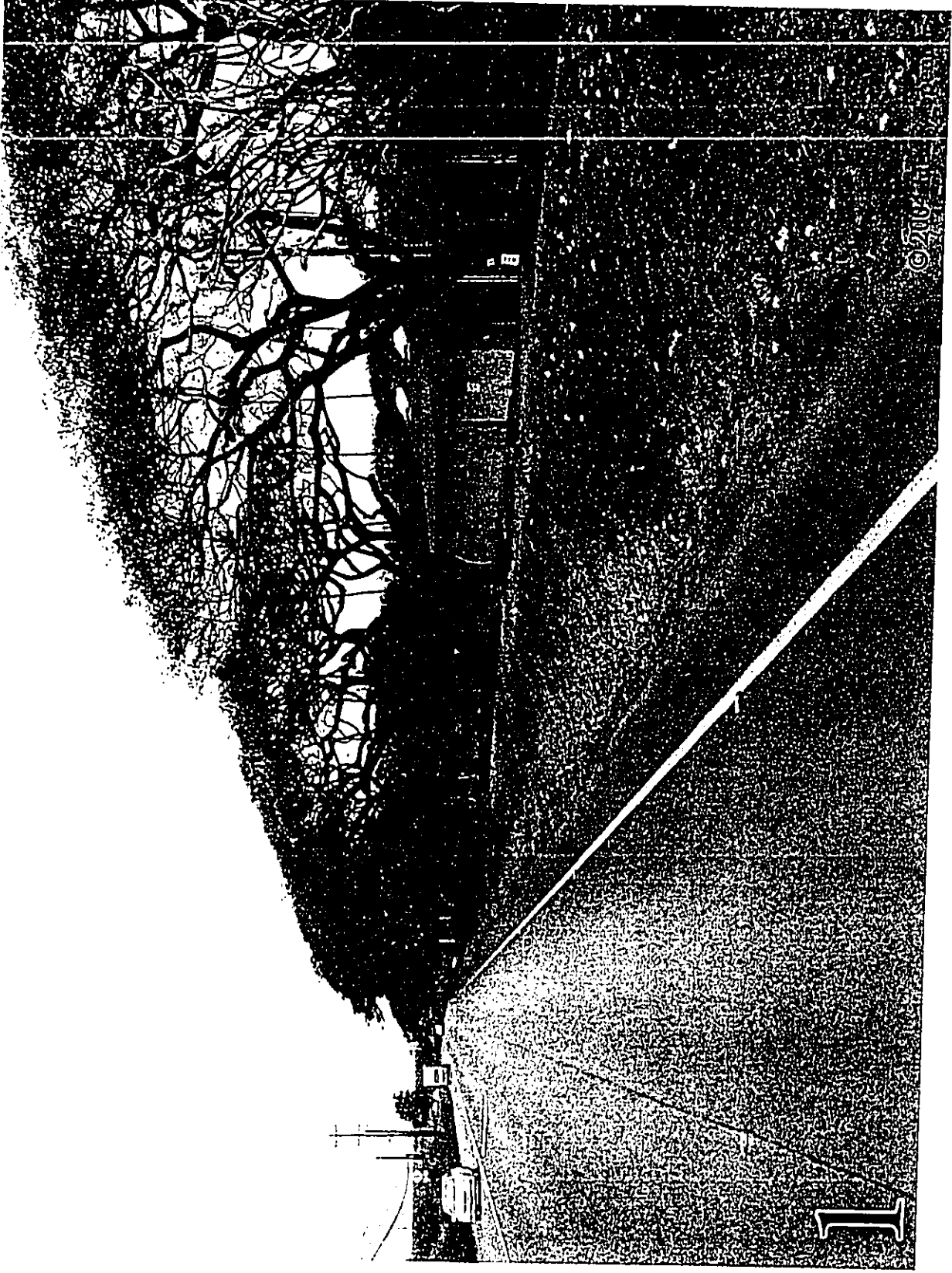
Aerial Photograph of Project Location

Appendix F

Scenic Opportunities



Proposed View
Looking West along Hana Highway at project (fronting Kaunoa Senior Center)



Existing View

11



Proposed View
Looking West along Hana Highway (fronting project site)



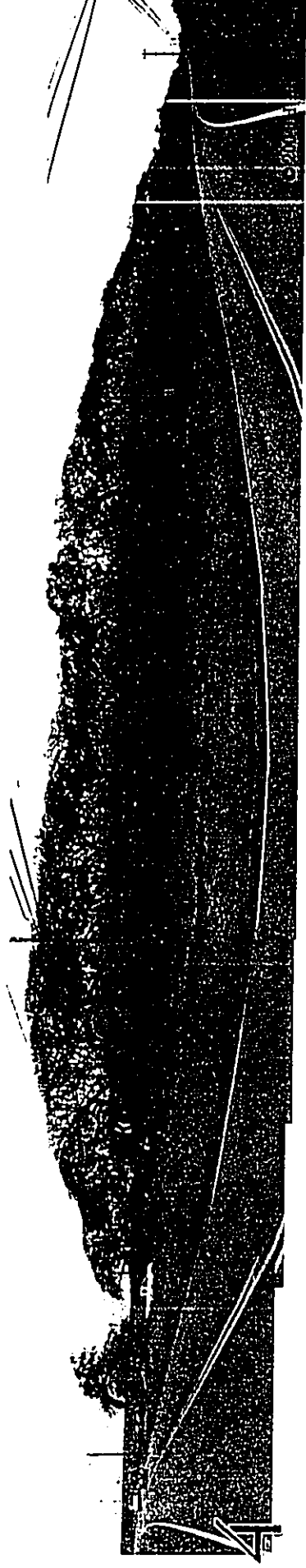
Existing View



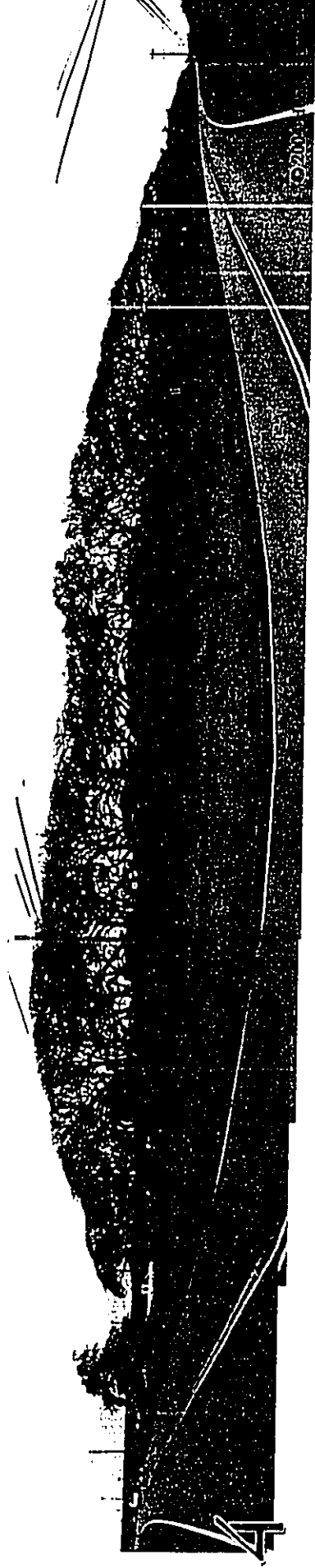
Proposed View
Looking West along Hana Highway (fronting project site)



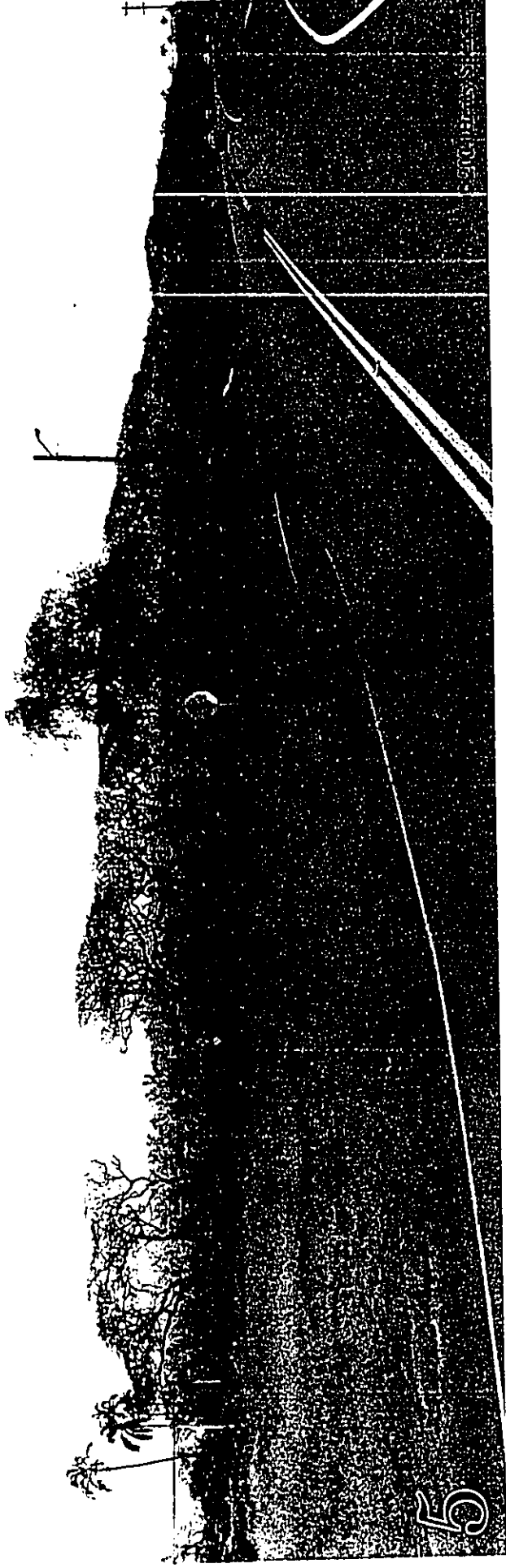
Existing View



Proposed View
Looking North across Hana Highway to project site



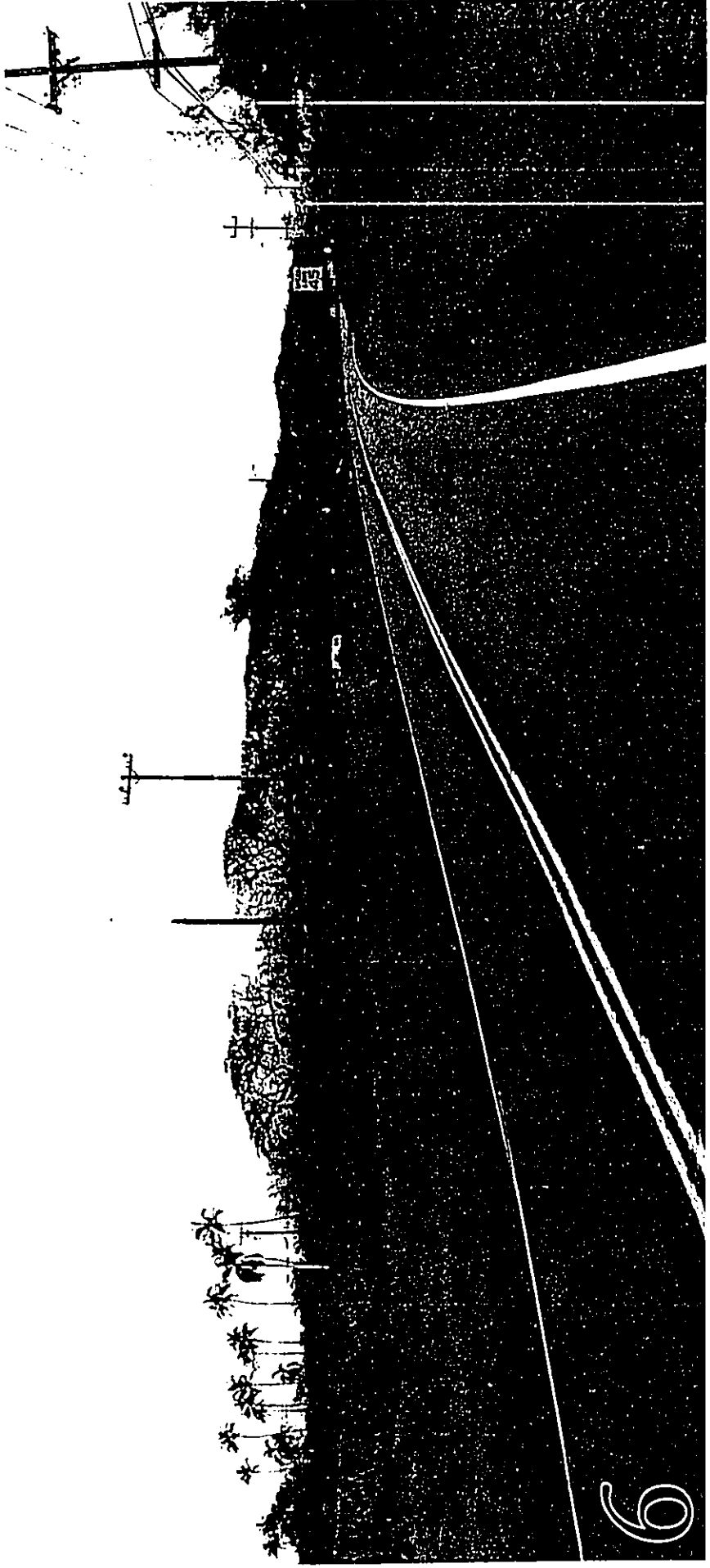
Existing View



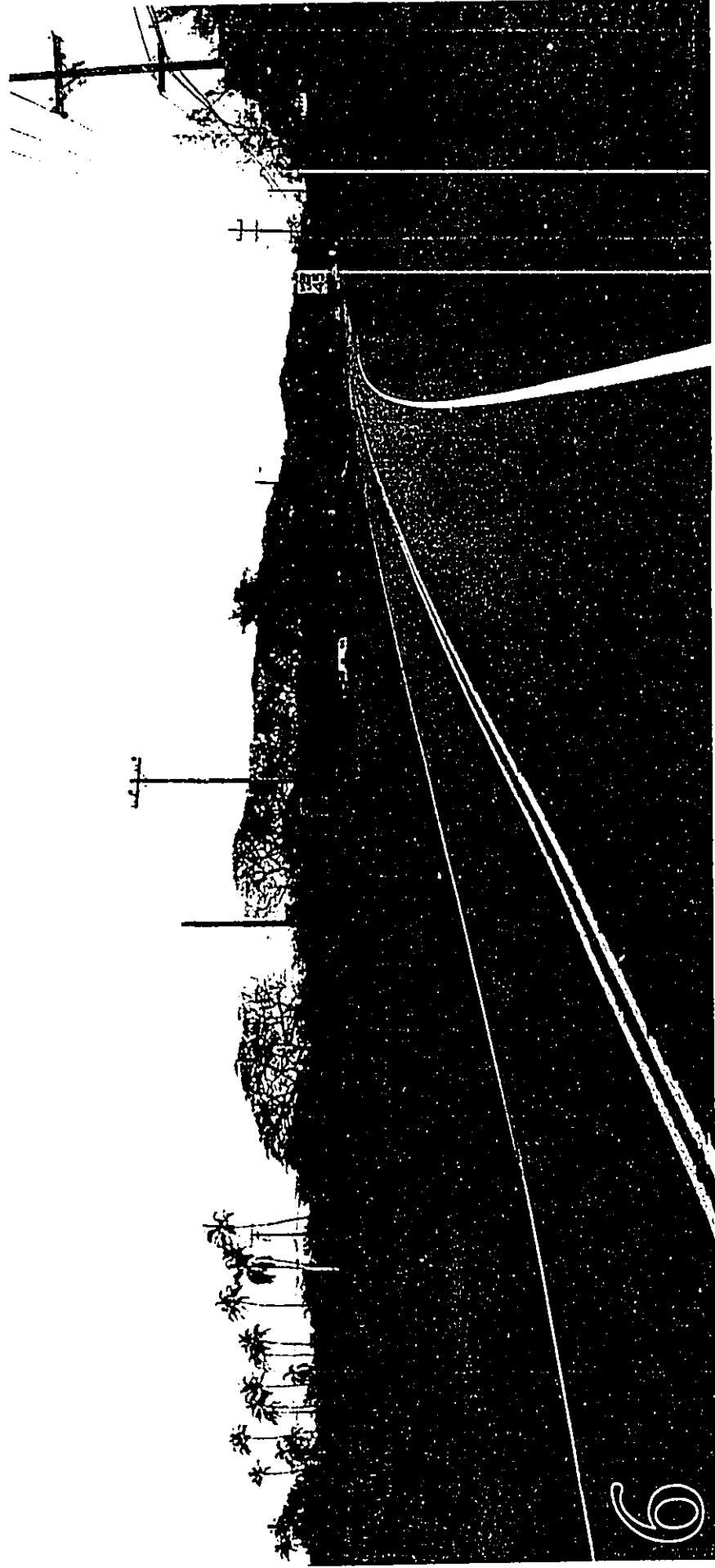
Proposed View
Looking North East at Hana Highway/Stable Road intersection towards project site



Existing View



Proposed View
Looking North East along Hana Highway towards project site



Existing View

Appendix G

***Dune Restoration
Plan***

Spreckelsville Dune Restoration

General Guidelines: Not to scale

Details to be finalized prior to commencement of work

- = low ground cover (ie. pohuehue, akuliku)
- = medium shrubs (ie. naupaka, hau, milo, e)
- = access/rigging area
- = low post-and-rail fencing

Possible steps to be taken:

1. Irrigation lines will need to be placed over the entire restoration area.
2. Ironwood trees *may* need to be removed if they prohibit growth of ground cover.
3. Educational signs will need to be installed: possibly one bigger sign by turn off of stable road, with smaller signs around project area.
4. Low post-and-rail fences should be placed around high-traffic areas to confine traffic to designated places.
5. Maintenance of irrigation, vegetation, fences, signs will be required indefinitely; however, after plants are established, irrigation requirements will be reduced.
6. Replenishment of the dunes and/or beach with sand fill if necessary

Restoration Plan Not to scale

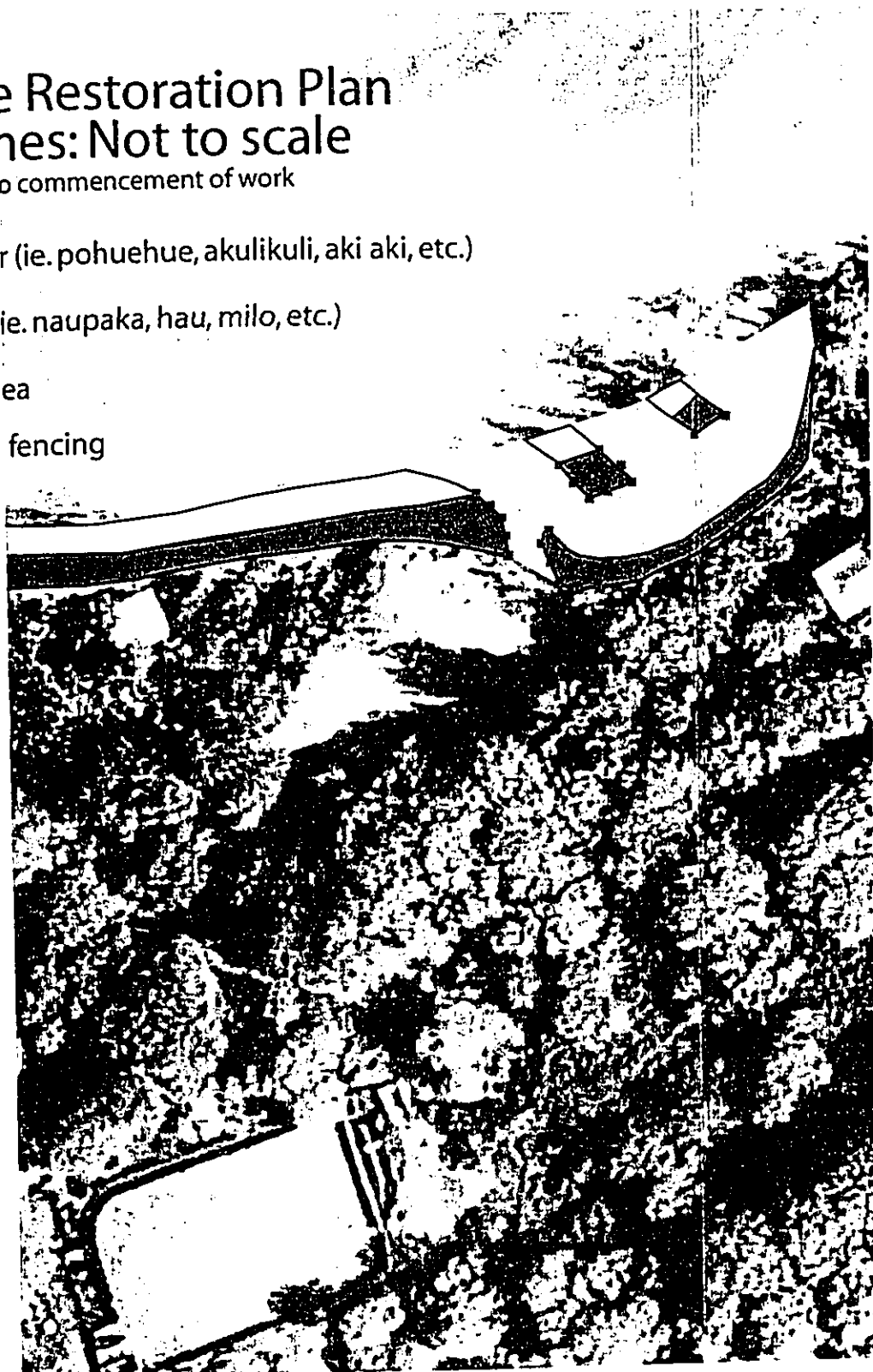
at commencement of work

area (ie. pohuehue, akulikuli, aki aki, etc.)

area (ie. naupaka, hau, milo, etc.)

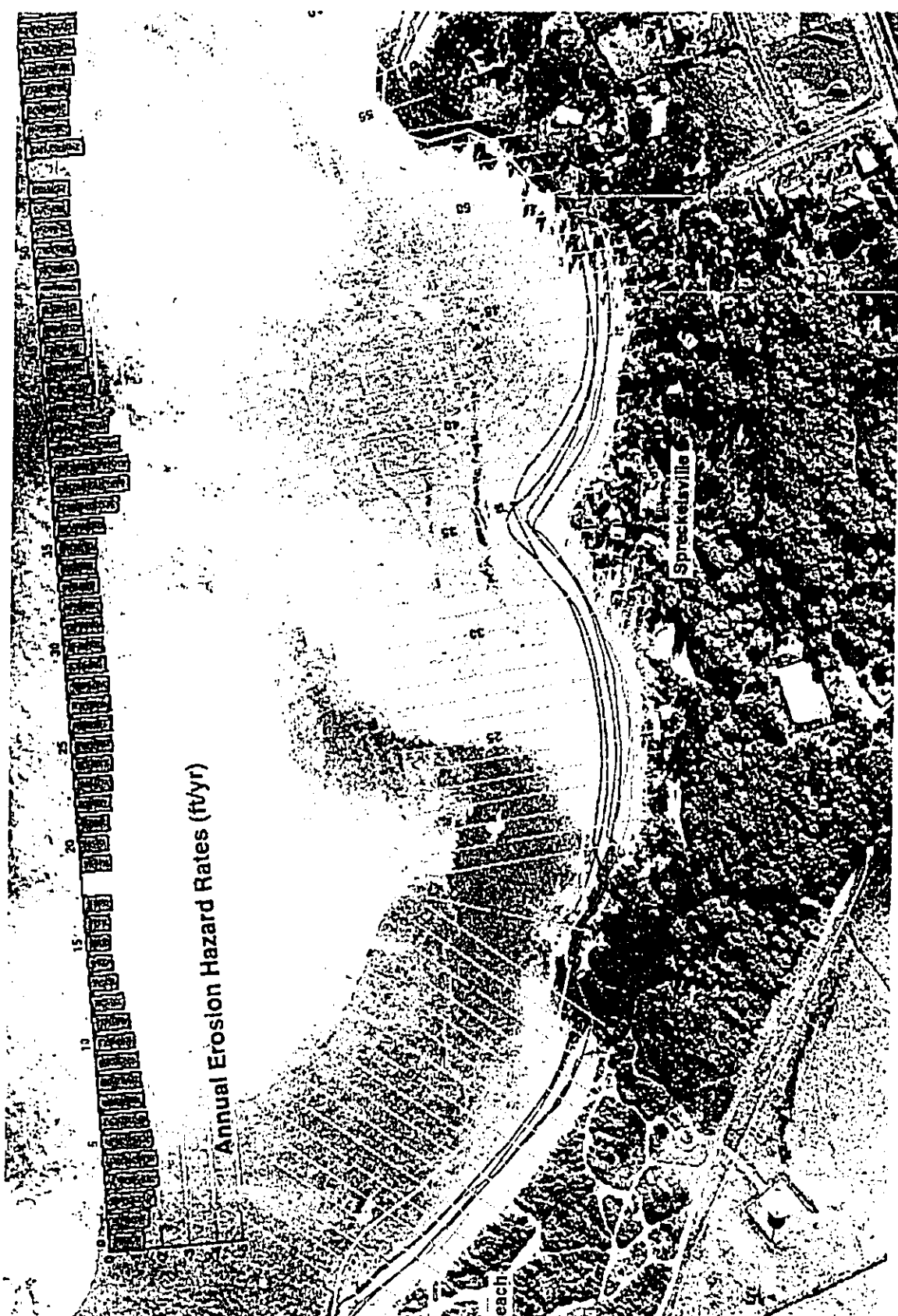
area

fencing



Appendix H

***Annual Erosion
Hazard Rates***



Annual Erosion Hazard Rates (ft/yr)

Appendix I

***Phase I Environmental
Site Assessment
Executive Summary***

MAR 30 2004



Environmental Site Assessment: Phase 1 Investigation



Subject Site:
STABLE ROAD, SPRECKELSVILLE
Maui, Hawaii 96732
T.M.K. (2) 3-8-1:3 (Portion)

Prepared for:
MR. HENRY SPENCER
P.O. Box 790829
Paia, Hawaii 96799

AND

CENTRAL PACIFIC BANK
P.O. Box 3590
Honolulu, Hawaii 96811
Attn: Mr. Clifford Fujiwara

Conducted and Compiled by:
Vuich Environmental Consultants, Inc.
VEC Project Number #0302-670
February 26, 2004

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1498 Lower Main Street, Suite C • Walluku, Hawaii 96793 • 808.249.2777 Phone • 808.249.2778 Fax

Executive Summary

Introduction

This Phase 1 Environmental Site Assessment (ESA) has been prepared for Mr. Henry Spencer and was conducted pursuant to Vuich Environmental Consultants, Inc.'s (VEC's) written proposal and contract accepted by Mr. Spencer on February 5, 2003. This investigation and report format follows the guidelines of the American Society of Testing and Materials (ASTM) Publication E1527-00.

Site Description

The subject site is located on the northwest shore of East Maui at the intersection of Hana Highway and Stable Road. The property is within the community of Spreckelsville and is situated approximately 3.0 miles northeast of the town of Kahului. The subject site is further described on the Tax Maps of the State of Hawaii as Division 2, Zone 3, Section 8, Plat 01, Parcel 3.

The subject site consists of one parcel of land, irregular in shape, and measures approximately 68 acres in total area. However, for this Phase I ESA, only a portion of Parcel 13 (39 acres) is included in the investigation. The remainder of the parcel (not to be investigated) may be donated to interested parties. Currently, the subject property consists of unoccupied stable grounds/farmland and heavily vegetated undeveloped land. The main access onto the property is from Stable Road.

The subject site is bordered by agricultural land (sugarcane) to the south and west, undeveloped airport land to the northwest, undeveloped beach coastline and residential land to the north, and residential and commercial land use to the east. Hana Highway bounds the subject site to the south and Stable Road borders a portion of the subject site to the west.

Records Review

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

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

Site Reconnaissance

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

On February 3, 12, 13 & 17 2003, VEC personnel, Mr. Jeffrey Kermode, conducted an overall site inspection of the subject site. Accessible areas of the property were visually and physically inspected. Over 40% percent of the subject site's total surface soils were not observable due to extremely dense vegetation (high grass and shrubs), the subject site's building structures and refuse and soil stockpiles. There were several shed structures and two (2) residential structures located on the subject site at the time of the site visit.

The following are significant observations of field conditions:

- Significant quantities of refuse dumping (household waste, construction debris) has taken place at different locations within the property boundaries;
- Two (2) non-operational, storage tanks were identified during the site visit;

VEC Project # 0302-670

Page 1

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- Regulated items such as limited quantities of household-sized petroleum-based liquids and pesticides, derelict vehicles, automobile tires and batteries, and white goods (refrigerators) remain on-site from former site operations;
- Two (2) containers with unidentifiable liquids were noted; and
- A moderate portion of the property's surface soils (10 to 15%) may be impacted at times (saturated) by the diversion of HC&S's south adjacent property's agricultural irrigation "backflush" water onto the subject site. In addition, a limited area along the northern property boundary appears to have wetland characteristics.

Conclusions

Recognized environmental conditions, as defined by ASTM Standard E1527-00, are the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. *Recognized environmental conditions* are described with regard to (1) the nature and extent of the environmental condition, (2) potential or actual environmental threat, (3) potential for transport (migration) of any environmental conditions, and (4) consideration for further investigation. This term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

VEC has performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of the ASTM Practice E 1527-00 for the subject property located at the intersection of Hana Highway and Stable Road, Spreckelsville, Maui, HI, 96779 (TMK Map No. (2)-3-8-001: 03), the property. This assessment has revealed no evidence of recognized environmental conditions in connection with the property, except for the following:

- **Database Listings**
The Spreckelsville Sewer Pump Station (SPS) (Facility ID# 9-501344) is listed with the State of Hawaii, Department of Health as a UST site with a confirmed release. This site is located adjacent to the subject site's northern boundary, however, the site is listed as "Site Cleanup Completed" as per State regulations and is unlikely a concern to the subject site.
- **Historic Use of Hazardous and Regulated Substances**
There is no evidence of any historic misuse, bulk storage, or significant spills of hazardous or regulated substances on the subject property. One (1) area of limited surface soil staining (4' x 5' surface area) was noted by VEC in the vicinity of the northerly-situated residential dwelling. Additionally, according to the archaeological consultant for the subject site, Jeffrey Panalao, a "grease-like" substance was encountered while trenching in the upper surface soils on the southeastern edge of the former rodeo area. VEC field checked this area and determined that it was likely related to an area of heavy organic dumping (manure) located along the east side of the former rodeo area. No petroleum-like odor was associated with the substance.
The historical waste disposal methods for regulated items on the subject site are unknown. A limited soil sampling survey may be performed in suspect locations (cesspools) to determine the residual levels, if any, of chemicals of potential concern. There is, however, no regulatory requirement to conduct this sampling. The limited petroleum-stained area noted above should be excavated and properly managed.
There remains a limited amount of regulated items such as oil, gas, resin, pesticides, and unidentified substances on the subject site. Due to the vacant nature of the property, these items should be managed properly to avoid any future releases onto the surface soils. At the time of the site visit, all liquid substances were in secure containers and no leaking was noted onto the surface soils.

Storage Tanks

- Two (2) possible former fuel storage tanks were located on-site, however, neither was operational at the time of inspection. It is unlikely that these tanks were used at three current locations. No odors or staining were associated with these tanks. The former farm manager confirmed that these tanks were not used for fuel storage for at least the last twenty-nine years. It is unlikely that soil contamination exists at the UST locations, however, a limited soil sampling survey may be performed if client concerns remain. There is, however, no regulatory requirement to conduct this sampling.

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

Waste Management

- A significant amount of historical dumping activity (refuse and construction debris) is evident on the subject property. Some of the materials identified were regulated items (derelict automobiles and parts; white good appliances; intact automobile batteries and tires) that require proper management and disposal procedures. Any waste disposal should be in a permitted solid waste landfill or recycled in a manner that complies with all local, state, and federal regulations as applicable to the specific waste type.

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

Surface Waters and Area Aquifer Protection

- Currently, the subject property is vacant, however, if the future land use includes developing the land for residential use, the future developer and property owner should be aware of the potential for contaminants to run off-site and into nearby watercourses. Products of concern relating to any future development project would be earthen material (silt), paints, oils, antifreezes and other fluids from automobile or on-site machinery, or leaks from on-site stocked items.

In order to minimize the regulatory profiling of the subject site as a potential responsible party for any newly discovered groundwater or surface water contamination, future developers should consider implementing conservative, proactive environmental policies during the development planning phase.

The developer for any proposed residential development will likely require both a National Pollution Discharge Elimination System (NPDES) General Permit (State of Hawaii, Department of Health) and a County of Maui grading/grubbing permit due to the size of the proposed project.

Special Management Area

- According to the Maui County Planning Department as of February 14, 2003, the subject site is located within the Special Management Area (SMA). These areas are subject to additional regulations, special permitting and county scrutiny during development. This Phase I Investigation will contain some of the elements of a SMA permit.

Asbestos-Containing Materials (ACM)

- The building structures remaining are greater than 30 years old and there may be the presence of asbestos-containing building materials. Limited amounts of suspect materials were identified during the site reconnaissance.

Suspect materials should be presumed ACM until further sampling and laboratory analysis is conducted. An asbestos sampling survey should be conducted prior to any demolition activities. State and federal rules have established standards for the use and control of ACM.

- **Lead-Based Paint**

Most of the structures remaining contain no painted surfaces, however, a few of the building structures likely contain painted surfaces with measurable lead levels. Lead paint becomes a concern for the building owner/operator if renovation or demolition work is undertaken that will disturb any painted surfaces. Lead paint concerns (worker safety and waste management) should be addressed prior to any future demolition activities.

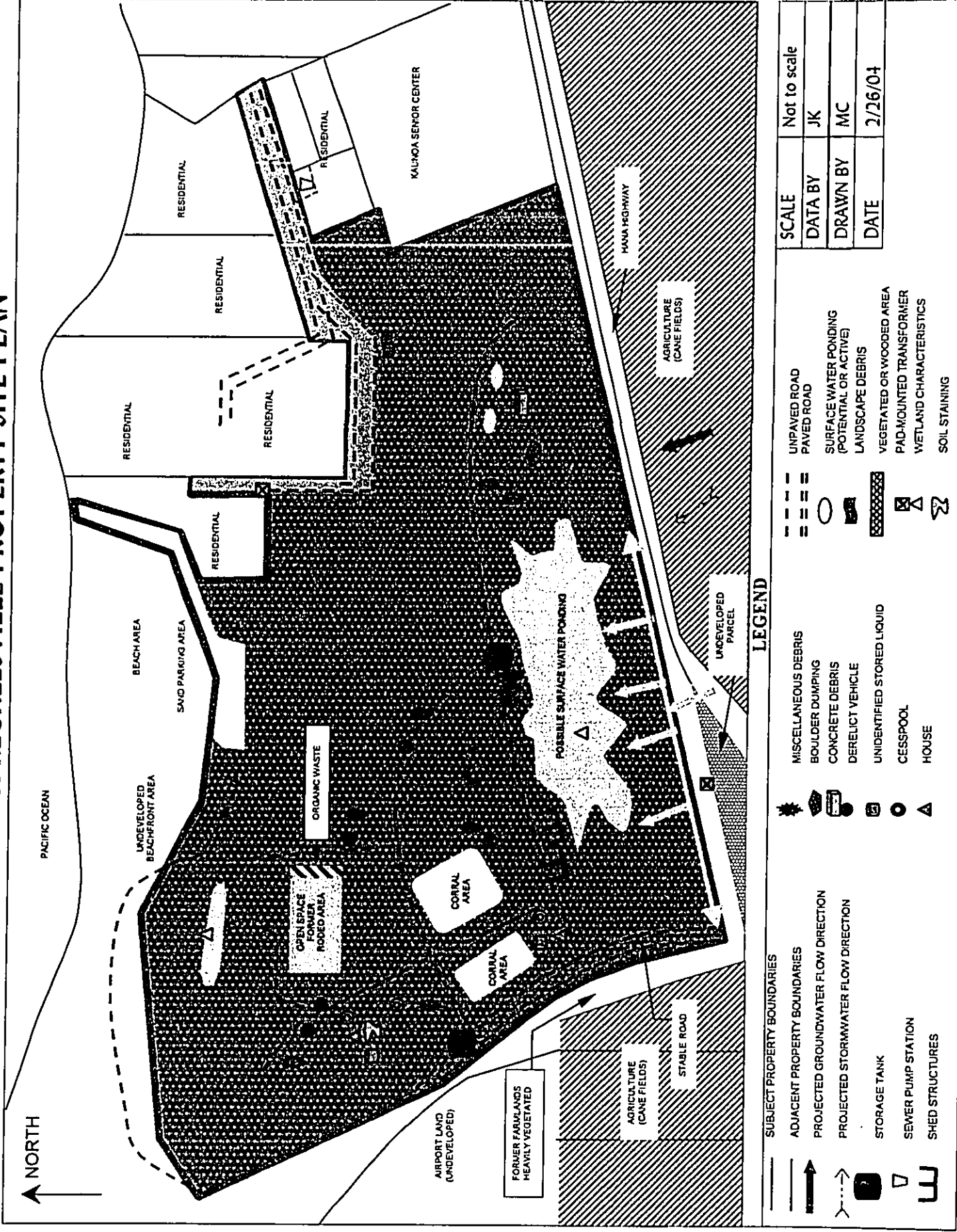
- **Wetland Determination**

Limited areas on the subject property appear to have wetland characteristics. A relatively small possible wetland site located along the northern property boundary appears to be naturally derived under the hydrological conditions in this area. However, the wetland-like area located in the southern portion of the property is most likely the result of HC&S diverting significant amounts of irrigation water into this area over the last several decades. This additional surface water may have resulted in the southern portion of the subject property to take on wetland characteristics. This excess water source is to be terminated in the near future by HC&S and will no longer impact the subject property. This will likely remove any wetland-like characteristics from this area. The Army Corp. of Engineers does not take jurisdiction over man-made wetland sites and the property owner has the right to remove any unnatural water source. However, if the subject property does contain wetland characteristics (wetland vegetation, soil & hydrology) it is necessary to determine if any of the wetland characteristics are derived from natural on-site hydrological conditions. VEC recommends this be determined and documented prior to development activities. This will likely be a requirement in the SMA permit process with the County of Maui.

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

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

FIGURE 2: SPRECKLESVILLE PROPERTY SITE PLAN



VEC Project # 0302-570

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Phillip Rowell and Associates

47-773 O'Fallon Street Honolulu, Hawaii 96744 Phone: (808) 234-4200 Fax: (808) 234-1172 Email: pr@rowell.com

FINAL REPORT

June 1, 2004

Mr. Henry A. Spencer
P.O. Box 790829
Paia, Maui, HI 96779

Re: Traffic Impact Assessment Report
Proposed Single-Family Subdivision
Spracklesville, Maui, Hawaii

Dear Mr. Spencer:

Phillip Rowell and Associates have prepared the following Traffic Impact Assessment Report for your proposed subdivision in Spracklesville. The purpose of this traffic assessment is to identify and assess the traffic impacts of the proposed project.

Project Location and Description

The proposed project is located along Old Stable Road north of Hana Highway in the Spracklesville area of Maui. The project is a subdivision for 16 single-family detached housing units. There will be no chain units. All access to and egress from the subdivision will be via the intersection of Old Stable Road at Hana Highway.

Purpose and Objective of Study

1. Estimate the amount of traffic that the proposed project will generate during the peak hours.
2. Determine if a Traffic Impact Analysis Report for the proposed project is warranted.
3. Identify potential deficiencies that will impact traffic operations in the vicinity of the proposed project.

Methodology

1. Analyze Existing Traffic Conditions

Existing traffic volumes at the intersection were obtained from manual traffic counts performed on Friday, May 30, 2003 and Monday, July 14, 2003. The intersection configuration and right-of-way controls were determined at the time of the surveys. Existing traffic operating conditions of the study intersection were determined using the methodology for unsignalized intersections described in the 2000 Highway Capacity Manual (HCM)¹. Following review of the initial results, it was determined that an intersection delay survey should be performed to determine a more realistic afternoon level-of-service.

2. Estimate Design Year Background Traffic Projections

The year 2008 was used as the design year. This does not necessarily represent the project completion date. It represents a date for which future background traffic projections are estimated. Background traffic conditions are defined as future traffic conditions without the proposed project. Background traffic volumes are estimated by superimposing background traffic growth and traffic generated by related projects in the vicinity onto existing traffic volumes.

¹ Highway Capacity Manual, Institute of Transportation Engineers, Washington, D.C., 2000

Henry A. Spencer

June 1, 2004

Page 2

3. Estimate Project-Related Traffic Characteristics

The next step was to estimate the peak-hour traffic that the proposed project will generate. This was done using standard trip generation procedures outlined in the Trip Generation Handbook². These trips were then distributed and assigned based on the observed approach and departure routes.

4. Analyze Project-Related Traffic Conditions

The project-related traffic was then superimposed on 2008 background traffic volumes at the study intersections. The HCM methodology was used again to conduct a LOS analysis for background plus project conditions. The purpose of this analysis was to identify potential operational deficiencies in the vicinity of the proposed project.

Description of Existing Streets and Intersection Controls

Access to and egress from the project will be via Old Stable Road and Hana Highway. All traffic will use the intersection of Old Stable Road at Hana Highway. Hana Highway is a two-lane, two-way State Highway. The posted speed limit is 45 miles per hour for westbound traffic and 45 miles per hour for eastbound traffic.

The intersection of Old Stable Road that is contiguous to the project is a two-lane, two-way Private Road. The intersection of Old Stable Road at Hana Highway is a STOP sign controlled intersection and there are no separate left turn lanes along Hana Highway in the vicinity of the study intersection.

Existing Peak Hour Traffic Volumes

The hours for the traffic surveys were determined from Hawaii Department of Transportation (HDOT) 24-hour traffic count data for the intersection of Hana Highway at Haleakala Highway. This is the nearest HDOT survey station to the study intersection. The data provided a 24-hour profile of traffic along Hana Highway adjacent to the proposed project since there are no major intersections between Haleakala Highway and Old Stable Road. The traffic characteristics of this section of Hana Highway is summarized in Table 1.

Roadway		Hana Highway	
Location	Direction	Eastbound	Westbound
AM Peak Hour		470	866
AM Peak Hour Volume	7:00 AM to 8:00 AM		
PM Peak Hour		784	564
PM Peak Hour Volume	4:15 PM to 5:15 PM		
Total Weekday Traffic Volume		1254	1430

Based on the data presented in Table 1, it was determined that the traffic counts should be performed from 6:30 AM to 8:30 AM and from 3:00 PM to 6:00 PM. Traffic counts performed during these periods would include the respective peak hourly volumes. The traffic count summary worksheets are presented as Attachment A. Existing and afternoon peak hour traffic volumes at the study intersection are summarized in Attachment B. The traffic volumes include large trucks, buses and motorcycles.

² Trip Generation Handbook, Institute of Transportation Engineers, Washington, D.C., 1998

Level-of-Service Concept

"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 2. 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.

Table 2 Level-of-Service Definitions for Unsignalized Intersections⁽¹⁾

Level-of-Service	Expected Delay to Major Street Traffic	Delay (Seconds)
A	Little or no delay	<10
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	See note (2) below	>50.1

Notes:
(1) Source: Highway Capacity Manual, 2000.
(2) When demand volume exceeds the capacity of the lane, excessive delays will be encountered with causing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually occurs immediately after the intersection.

Existing Levels-of-Service

The existing levels-of-service were estimated using the methodology for unsignalized intersections described in the Highway Capacity Manual. The calculated results were consistent with the observed conditions for the morning peak hour and for left turns from Hana Highway onto Old Stable Road during the afternoon peak hour. However, the calculated delays of traffic along Old Stable Road were much longer than the observed delays for the afternoon period. Therefore, a delay study was performed for traffic along Old Stable Road to determine the actual delay and therefore the actual level-of-service.

The delay study was performed using the procedures described in the Manual of Transportation Engineering Studies. The survey was performed from 3:30 PM to 4:30 PM, which is the peak hour as determined from the traffic counts performed at the intersection.

The results of the level-of-service analysis of existing conditions are summarized in Table 3. Traffic along Hana Highway operates at Level-of-Service A during the morning and afternoon peak hours. This indicates minimal delays to traffic along the major highway during the peak hours.

Traffic along the northbound approach of Old Stable Road operates at Level-of-Service B during the afternoon peak hour. No Level-of-Service was calculated for the morning peak hour because no traffic was counted during the survey.

Traffic along the southbound approach of Old Stable Road operates at Level-of-Service C during the morning and afternoon peak hours.

Table 3 Existing Levels-of-Service

Intersection and Movement Hana Highway at Old Stable Road	AM Peak Hour		PM Peak Hour	
	Delay ¹	LOS ²	Delay ¹	LOS ²
Eastbound Left, Thru & Right	9.8	A	9.1	A
Westbound Left, Thru & Right	8.3	A	9.4	A
Northbound Left, Thru & Right	No Traffic Observed During Peak		14.2	B
Southbound Left, Thru & Right	20.3	C	15.6	C

NOTE:
(1) Delay is measured per vehicle.
(2) LOS is based on the Highway Capacity Manual. Level-of-Service is based on delay.

Background Traffic Growth

Data provided in the Maui Long Range Transportation Plan was used to estimate background traffic growth. This study estimated that traffic along the major roadways on Maui would increase an average of 1.6% per year between 1990 and 2020. This growth rate was used to estimate the background growth between 2003, the year that the traffic counts were performed, and 2008, the design year for this project. The growth factor was calculated to be 1.0826 using the following formula:

$$F = (1 + i)^n$$

where F = Growth Factor
i = Average annual growth rate, or 0.016
n = Growth period, or 5 years

This growth factor was applied to through traffic along Hana Highway.

2008 Background Traffic Projections

2008 background traffic projections are defined as future background traffic conditions without the proposed project and are calculated by superimposing background traffic growth onto existing traffic volumes. The 2008 background traffic projections are shown in Attachment B.

Project Trip Generation

Future traffic volumes generated by the project were estimated using the procedures described in the Trip Generation Handbook. This method uses trip generation rates to estimate the number of trips that a proposed project will generate during the peak hours of the project and along the adjacent street.

² Institute of Transportation Engineers, Trip Generation Handbook, Washington, D.C., 1996, p. 7-12

The Institute of Transportation Engineers references contain trip generation data for single-family detached housing. These rates were applied to the proposed number of dwelling units. The results of the trip generation calculations are shown on Table 4. The estimated number of peak hour trips shown in the table are the peak hour trips of the generator. It is generally accepted that the peak hour of residential development coincides with the peak hour of the adjacent roadway network.

Time Period	Direction or Percent	Single-Family Detached Housing	
		Units	Peak Hour Trips
AM Peak Hour	Total	16	12
	% Inbound	25%	3
	% Outbound	75%	9
PM Peak Hour	Total	16	16
	% Inbound	64%	10
	% Outbound	36%	6

NOTES:
(1) Institute of Transportation Engineers, Trip Generation, Sixth Edition, 1997.

As shown the proposed project will generate 3 inbound and 9 outbound trips during the morning peak hour. During the afternoon peak hour, the project will generate 10 inbound and 6 outbound trips. The traffic using the study intersection will increase by 12 vehicles per hour, or 0.81%, during the morning peak hour and 16 vehicles per hour, or 0.94%, during the afternoon peak hour.

The Institute of Transportation Engineers recommends that a traffic impact study should be performed if, in lieu of another locally preferred criterion, development generates an additional 100 vehicle trips in the peak direction (inbound or outbound) during the site's peak hour.⁴ Based on the criterion, a traffic impact study is not warranted since the project will generate only 16 vehicles per hour during the afternoon peak hour.

2008 Background Plus Project Projections

Background plus project traffic conditions are defined as 2008 background traffic conditions plus project generated traffic. The project generated traffic was distributed and assigned based on the existing approach and departure pattern of traffic at the intersection of Old Stable Road at Hana Highway. The project trip assignments are shown in Attachment B.

2008 background plus project traffic volumes with the project were estimated by superimposing the peak hourly traffic generated by the proposed project on the 2008 background (without project) peak hour traffic projections. This assumes that the peak hour of trips generated by the project coincides with the peak hour of the adjacent street. This represents a worst-case condition. The resulting 2008 background plus project peak hour traffic volumes are also shown in Attachment B.

⁴ Institute of Transportation, Traffic Access and Impact Studies for Site Development, A Recommended Practice, 1997, page 5.

Level-of-Service Analysis of 2008 Conditions

Based on criteria recommended by the Institute of Transportation Engineers, a traffic impact study is not warranted. However, a level-of-service was performed to identify potential traffic operational deficiencies adjacent to the project for 2008 background plus project conditions.

The Level-of-Service analysis was performed using the following assumptions:

1. The existing lane configurations at the study intersections and driveways are unchanged.
2. The peak hour of the project generated traffic coincides with the peak hour of traffic along Hana Highway.

The results of the Level-of-Service analysis for 2008 conditions are summarized in Table 5. Shown in the table are average vehicle delays of the controlled movements and the levels-of-service.

Intersection and Movement	AM Peak Hour				PM Peak Hour				
	Without Project		With Project Existing Lanes		Without Project		With Project Existing Lanes		
	Delay ¹	LOS ²	Delay	LOS	Delay	LOS	Delay	LOS	
Hana Highway at Old Stable Road									
Eastbound Lk, Thru & Right	10.1	B	10.2	B	9.3	A	9.4	A	
Westbound Lk, Thru & Right	8.4	A	8.4	A	9.7	A	9.7	A	
Northbound Lk, Thru & Right	See Note 3		See Note 3		15.1	C	15.6	C	
Southbound Lk, Thru & Right	22.6	C	22.6	C	16.9	C	18.0	C	

NOTES:
(1) Delay is in seconds per vehicle.
(2) LOS is based on the following method developed by Highway Capacity Manual. Level-of-service is based on delay.
(3) Traffic volume indicated here will be the morning peak hour traffic using 2008 approach.

The Level-of-Service along Hana Highway will be B or better during the morning and afternoon peak hours. The addition of project generated traffic did not change the level-of-service for traffic along Hana Highway. The change in delay to traffic along Hana Highway is less than one second per vehicle. This implies that the project has minimal impacts on traffic conditions along Hana Highway.

During the morning peak hour, southbound traffic approaching along Old Stable Road is expected to operate at Level-of-Service C, which is an acceptable Level-of-Service, without and with the project. The delay increases only 4.3 seconds, which implies that the impact of project generated traffic is minimal.

During the afternoon peak hour, southbound traffic along Old Stable Road is expected to operate at Level-of-Service C. The average vehicle delay increases 1.1 seconds.

All the final levels-of-service are C, or better, which implies good operating conditions. The conclusion is that there are no operational deficiencies at the study intersection.

Henry A. Spencer
June 1, 2004
Page 7

Summary and Conclusions

The conclusions of the traffic impact analysis for 2008 cumulative plus project conditions are:

1. The proposed project will generate 3 inbound and 9 outbound trips during the morning peak hour. During the afternoon peak hour, the project will generate 10 inbound and 6 outbound trips.
2. The traffic using the study intersection will increase by 12 vehicles per hour, or 0.81%, during the morning peak hour and 16 vehicles per hour, or 0.94%, during the afternoon peak hour.
3. The Institute of Transportation Engineers recommends that a traffic impact study should be performed if, in lieu of another locally preferred criterion, development generates an additional 100 vehicle trips in the peak direction (inbound or outbound) during the site's peak hour. Based on the criterion, a traffic impact study is not warranted.
4. Based on the findings of the level-of-service analysis for 2008 background plus project conditions, traffic generated by the project has an insignificant impact on traffic operation at the intersection of Old Stable Road at Hens Highway. All traffic movements are expected to operate at Level-of-Service C or better for existing roadway conditions. Traffic generated by the project did not result in a change in delay or level-of-service and therefore has no impact.

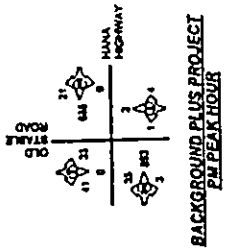
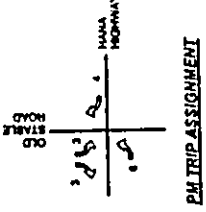
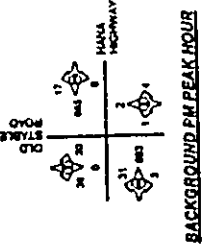
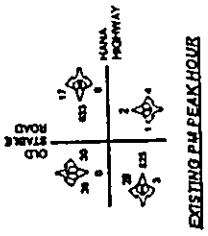
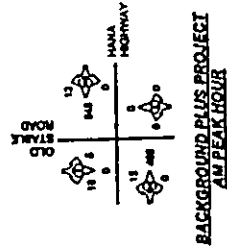
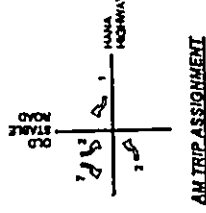
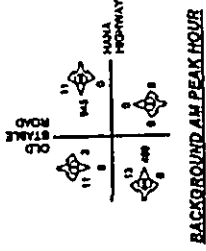
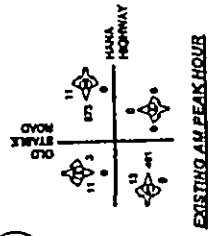
Respectfully submitted,
PHILLIP ROWELL AND ASSOCIATES

Phillip J. Rowell
Phillip J. Rowell, P.E.
Principal

Attachment A
TRAFFIC COUNT WORKSHEETS

**Attachment B
PROJECT TRIP ASSIGNMENTS AND PEAK HOUR TRAFFIC
PROJECTIONS**

**Attachment B
PEAK HOUR TRAFFIC VOLUMES
AND TRAFFIC ASSIGNMENTS**



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

LEVEL-OF-SERVICE ANALYSIS CASE LIST

- Case 1 Existing Conditions
- Case 2 2008 Background Without Project
- Case 3 2008 Background Plus Project, Existing Roadway Conditions
- Case 4 2008 Background Plus Project With Proposed Improvements

**Attachment C
LEVEL-OF-SERVICE WORKSHEETS**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

TWO-WAY STOP CONTROL SUMMARY												
General Information				Site Information								
Analyst	PJR	Intersection	Case: 1.1m									
Agency/Co.	PRA	Jurisdiction	Existing									
Date Performed	7/21/2003	Analysis Year										
Analysis Time Period	AM Peak Hour											
Project Description	Henry Spencer TIAR											
East/West Street	Hena Highway	North/South Street	Old Stable Road									
Intersection Orientation	East-West	Study Period (hrs)	0.25									
Vehicle Volumes and Adjustments												
Major Street	Eastbound			Westbound								
Movement	1	2	3	4	5	6						
	L	T	R	L	T	R						
Volume	13	461	0	0	873	17						
Peak-Hour Factor, PHF	0.83	0.98	1.00	1.00	1.00	0.65						
Hourly Flow Rate, HFR	20	469	0	0	873	16						
Percent Heavy Vehicles	0	--	--	0	--	--						
Median Type	Unchorded											
RT Channelized	0	1	0	0	1	0						
Lanes	LTR	LTR	LTR	LTR	LTR	LTR						
Upstream Signal	0											
Minor Street	Northbound			Southbound								
Movement	7	8	9	10	11	12						
	L	T	R	L	T	R						
Volume	0	0	0	3	0	11						
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	0.85						
Hourly Flow Rate, HFR	0	0	0	3	0	12						
Percent Heavy Vehicles	0	0	0	0	0	0						
Percent Grade (%)	0											
Flared Approach	N											
Storage	0											
RT Channelized	0											
Lanes	0	1	0	0	1	0						
Configuration	LTR	LTR	LTR	LTR	LTR	LTR						
Delay, Queue Length, and Level of Service												
Approach	EB	WB	Northbound			Southbound						
Movement	1	4	7	8	9	10	11	12				
Lane Configuration	LTR	LTR	LTR	LTR	LTR	LTR	LTR	LTR				
v (vph)	20	0	0	0	0	15	0	0				
C (m) (vph)	771	1103				251						
v/c	0.03	0.00				0.06						
95% queue length	0.08	0.00				0.19						
Control Delay	9.8	8.3				20.3						
LOS	A	A				C						
Approach Delay	--	--				20.3						
Approach LOS	--	--				C						

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TWO-WAY STOP CONTROL SUMMARY												
General Information				Site Information								
Analyst	PJR	Intersection	Case: 1.1pm									
Agency/Co.	PRA	Jurisdiction	Existing									
Date Performed	7/21/2003	Analysis Year										
Analysis Time Period	PM Peak Hour											
Project Description	Henry Spencer TIAR											
East/West Street	Hena Highway	North/South Street	Old Stable Road									
Intersection Orientation	East-West	Study Period (hrs)	0.25									
Vehicle Volumes and Adjustments												
Major Street	Eastbound			Westbound								
Movement	1	2	3	4	5	6						
	L	T	R	L	T	R						
Volume	29	825	3	0	633	17						
Peak-Hour Factor, PHF	0.43	1.00	0.38	1.00	0.98	0.88						
Hourly Flow Rate, HFR	67	825	8	0	643	19						
Percent Heavy Vehicles	0	--	--	0	--	--						
Median Type	Unchorded											
RT Channelized	0	1	0	0	1	0						
Lanes	LTR	LTR	LTR	LTR	LTR	LTR						
Upstream Signal	0											
Minor Street	Northbound			Southbound								
Movement	7	8	9	10	11	12						
	L	T	R	L	T	R						
Volume	1	2	4	30	0	38						
Peak-Hour Factor, PHF	0.25	0.50	0.50	0.63	1.00	0.57						
Hourly Flow Rate, HFR	4	4	8	47	0	66						
Percent Heavy Vehicles	0	0	0	0	0	0						
Percent Grade (%)	0											
Flared Approach	N											
Storage	0											
RT Channelized	0											
Lanes	0	1	0	0	1	0						
Configuration	LTR	LTR	LTR	LTR	LTR	LTR						
Delay, Queue Length, and Level of Service												
Approach	EB	WB	Northbound			Southbound						
Movement	1	4	7	8	9	10	11	12				
Lane Configuration	LTR	LTR	LTR	LTR	LTR	LTR	LTR	LTR				
v (vph)	67	0	16	16	113	0	0	0				
C (m) (vph)	936	809	406	406	451							
v/c	0.07	0.00	0.04	0.04	0.25							
95% queue length	0.23	0.00	0.12	0.12	0.98							
Control Delay	9.1	9.4	14.2	14.2	15.6							
LOS	A	A	B	B	C							
Approach Delay	--	--	14.2	14.2	15.6							
Approach LOS	--	--	B	B	C							

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TWO-WAY STOP CONTROL SUMMARY											
General Information				Site Information							
Analyst	PJR	Intersection	Case2.1pm								
Agency/Co.	PRA	Jurisdiction	Background								
Date Performed	7/21/2003	Analysis Year									
Analysis Time Period	AM Peak Hour										
Project Description	Henry Spencer TIAR										
East/West Street	Hana Highway	North/South Street	Old Stable Road								
Intersection Orientation	East-West	Study Period (hrs)	0.25								
Vehicle Volumes and Adjustments											
Major Street	Eastbound			Westbound							
Movement	1	2	3	4	5	6					
	L	T	R	L	T	R					
Volume	29	893	3	0	685	17					
Peak-Hour Factor, PHF	0.43	1.00	0.38	1.00	0.98	0.88					
Hourly Flow Rate, HFR	67	893	8	0	695	19					
Percent Heavy Vehicles	0										
Median Type	Unchanneled										
RT Channelized	0	1	0	0	1	0					
Lanes	LTR			LTR							
Configuration											
Upstream Signal	0										
Minor Street	Northbound			Southbound							
Movement	7	8	9	10	11	12					
	L	T	R	L	T	R					
Volume	1	2	4	30	0	38					
Peak-Hour Factor, PHF	0.25	0.50	0.50	0.63	1.00	0.57					
Hourly Flow Rate, HFR	4	4	8	47	0	66					
Percent Heavy Vehicles	0	0	0	0	0	0					
Percent Grade (%)	0										
Flared Approach	N										
Storage	0										
RT Channelized	0	1	0	0	1	0					
Lanes	0	LTR			LTR						
Configuration											
Delay, Queue Length, and Level of Service											
Approach	EB	WB	Northbound			Southbound					
Movement	1	4	7	8	9	10	11	12			
	LTR	LTR	LTR	LTR	LTR	LTR	LTR	LTR			
Lane Configuration	67	0	16	373	416	219	15	15			
v (vph)	895	763	0.04	0.27	0.27	0.07	0.22	22.6			
C (m) (vph)	0.07	0.00	0.13	15.1	16.9	0.07	0.22	22.6			
v/c	0.24	0.00	0.13	15.1	16.9	0.07	0.22	22.6			
95% queue length	9.3	9.7	15.1	16.9	16.9	0.07	0.22	22.6			
Control Delay	A	A	C	C	C	C	C	C			
LOS											
Approach Delay			15.1	16.9	16.9	0.07	0.22	22.6			
Approach LOS			C	C	C	C	C	C			

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TWO-WAY STOP CONTROL SUMMARY											
General Information				Site Information							
Analyst	PJR	Intersection	Case2.1pm								
Agency/Co.	PRA	Jurisdiction	Background								
Date Performed	7/21/2003	Analysis Year									
Analysis Time Period	AM Peak Hour										
Project Description	Henry Spencer TIAR										
East/West Street	Hana Highway	North/South Street	Old Stable Road								
Intersection Orientation	East-West	Study Period (hrs)	0.25								
Vehicle Volumes and Adjustments											
Major Street	Eastbound			Westbound							
Movement	1	2	3	4	5	6					
	L	T	R	L	T	R					
Volume	13	499	0	0	945	11					
Peak-Hour Factor, PHF	0.63	0.88	1.00	1.00	1.00	0.65					
Hourly Flow Rate, HFR	20	507	0	0	945	16					
Percent Heavy Vehicles	0										
Median Type	Unchanneled										
RT Channelized	0	1	0	0	1	0					
Lanes	LTR			LTR							
Configuration											
Upstream Signal	0										
Minor Street	Northbound			Southbound							
Movement	7	8	9	10	11	12					
	L	T	R	L	T	R					
Volume	0	0	0	3	0	11					
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	0.85					
Hourly Flow Rate, HFR	0	0	0	3	0	12					
Percent Heavy Vehicles	0	0	0	0	0	0					
Percent Grade (%)	0										
Flared Approach	N										
Storage	0										
RT Channelized	0	1	0	0	1	0					
Lanes	0	LTR			LTR						
Configuration											
Delay, Queue Length, and Level of Service											
Approach	EB	WB	Northbound			Southbound					
Movement	1	4	7	8	9	10	11	12			
	LTR	LTR	LTR	LTR	LTR	LTR	LTR	LTR			
Lane Configuration	20	0	0	0	219	15	15	15			
v (vph)	724	1068	0.07	0.27	0.27	0.07	0.22	22.6			
C (m) (vph)	0.03	0.00	0.13	15.1	16.9	0.07	0.22	22.6			
v/c	0.09	0.00	0.13	15.1	16.9	0.07	0.22	22.6			
95% queue length	10.1	8.4	15.1	16.9	16.9	0.07	0.22	22.6			
Control Delay	B	A	C	C	C	C	C	C			
LOS											
Approach Delay			15.1	16.9	16.9	0.07	0.22	22.6			
Approach LOS			C	C	C	C	C	C			

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TWO-WAY STOP CONTROL SUMMARY														
General Information				Site Information										
Analyst	PJR	PRR	Case3.1am	Intersection										Case3.1am
Agency/Co.	PRA	PRA	Background Plus Project	Jurisdiction										Background Plus Project
Date Performed	7/21/2003	AM Peak Hour		Analysis Year										
Analysis Time Period	AM Peak Hour													
Project Description	Henry Spencer TIAR													
East/West Street	Hana Highway													
North/South Street	Old Stable Road													
Intersection Orientation	East-West													
Study Period (hrs)	0.25													
Vehicle Volumes and Adjustments														
Major Street	Eastbound			Westbound			Eastbound			Westbound				
Movement	L	T	R	L	T	R	L	T	R	L	T	R		
Volume	15	499	0	0	945	13	0	685	21	0	685	21		
Peak-Hour Factor, PHF	0.83	0.98	1.00	1.00	1.00	0.65	0	1.00	0.88	0	1.00	0.88		
Hourly Flow Rate, HFR	24	507	0	0	945	20	0	695	24	0	695	24		
Percent Heavy Vehicles	0	--	--	0	--	--	0	--	--	0	--	--		
Median Type	Unshaded													
RT Channelized	0													
Lanes	0	1	0	0	0	1	0	1	0	0	1	0		
Configuration	LTR													
Upstream Signal	0													
Minor Street	Northbound			Southbound			Northbound			Southbound				
Movement	L	T	R	L	T	R	L	T	R	L	T	R		
Volume	0	0	0	0	5	17	0	0	0	0	0	41		
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	0.85	0	0	0	0	0	0.57		
Hourly Flow Rate, HFR	0	0	0	5	0	19	0	0	0	0	0	72		
Percent Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0		
Percent Grade (%)	0													
Flared Approach	N													
Storage	0													
RT Channelized	0													
Lanes	0	1	0	0	0	1	0	1	0	0	1	0		
Configuration	LTR													
Delay, Queue Length, and Level of Service														
Approach	EB			WB			Northbound			Southbound				
Movement	L	T	R	L	T	R	L	T	R	L	T	R		
Lane Configuration	LTR	LTR	0	LTR	LTR	0	LTR	LTR	0	LTR	LTR	0		
v (vph)	24	0	0	0	0	24	0	0	0	0	0	124		
C (m) (vph)	722	1068	0	0	214	0	0	0	0	0	0	399		
v/c	0.03	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.31		
85% queue length	0.10	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.00	1.30		
Control Delay	10.2	8.4	0	0	23.9	0	0	0	0	0	0	18.0		
LOS	B	A	C	C	C	C	C	C	C	C	C	C		
Approach Delay	--													
Approach LOS	--													

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TWO-WAY STOP CONTROL SUMMARY														
General Information				Site Information										
Analyst	PJR	PRR	Case3.1pm	Intersection										Case3.1pm
Agency/Co.	PRA	PRA	Background Plus Project	Jurisdiction										Background Plus Project
Date Performed	7/21/2003	PM Peak Hour		Analysis Year										
Analysis Time Period	PM Peak Hour													
Project Description	Henry Spencer TIAR													
East/West Street	Hana Highway													
North/South Street	Old Stable Road													
Intersection Orientation	East-West													
Study Period (hrs)	0.25													
Vehicle Volumes and Adjustments														
Major Street	Eastbound			Westbound			Eastbound			Westbound				
Movement	L	T	R	L	T	R	L	T	R	L	T	R		
Volume	35	893	0	0	685	21	0	685	21	0	685	21		
Peak-Hour Factor, PHF	0.43	1.00	1.00	1.00	1.00	0.88	0	1.00	0.88	0	1.00	0.88		
Hourly Flow Rate, HFR	61	893	0	0	695	24	0	695	24	0	695	24		
Percent Heavy Vehicles	0	--	--	0	--	--	0	--	--	0	--	--		
Median Type	Unshaded													
RT Channelized	0													
Lanes	0	1	0	0	0	1	0	1	0	0	1	0		
Configuration	LTR													
Upstream Signal	0													
Minor Street	Northbound			Southbound			Northbound			Southbound				
Movement	L	T	R	L	T	R	L	T	R	L	T	R		
Volume	7	0	0	0	10	11	0	0	0	0	0	12		
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.57		
Hourly Flow Rate, HFR	0	0	0	0	5	0	0	0	0	0	0	72		
Percent Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0		
Percent Grade (%)	0													
Flared Approach	N													
Storage	0													
RT Channelized	0													
Lanes	0	1	0	0	0	1	0	1	0	0	1	0		
Configuration	LTR													
Delay, Queue Length, and Level of Service														
Approach	EB			WB			Northbound			Southbound				
Movement	L	T	R	L	T	R	L	T	R	L	T	R		
Lane Configuration	LTR	LTR	0	LTR	LTR	0	LTR	LTR	0	LTR	LTR	0		
v (vph)	24	0	0	0	0	24	0	0	0	0	0	124		
C (m) (vph)	722	1068	0	0	214	0	0	0	0	0	0	399		
v/c	0.03	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.31		
85% queue length	0.10	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.00	1.30		
Control Delay	10.2	8.4	0	0	23.9	0	0	0	0	0	0	18.0		
LOS	B	A	C	C	C	C	C	C	C	C	C	C		
Approach Delay	--													
Approach LOS	--													

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TWO-WAY STOP CONTROL SUMMARY									
General Information			Site Information						
Analyst	PJR		Intersection	Case4.1am					
Agency/Co.	PRA		Jurisdiction	Background Plus Project					
Date Performed	7/21/2003		Analysis Year						
Analysis Time Period	AM Peak Hour								
Project Description	Henry Spencer TIAR								
East/West Street	Hana Highway		North/South Street	Old Stable Road					
Intersection Orientation	East-West		Study Period (hrs)	0.25					
Vehicle Volumes and Adjustments									
Major Street	Eastbound			Westbound					
Movement	1	2	3	4	5	6			
	L	T	R	L	T	R			
Volume	15	499	0	0	945	13			
Peak-Hour Factor, PHF	0.83	0.98	0.38	1.00	1.00	0.65			
Hourly Flow Rate, HFR	24	507	0	0	945	20			
Percent Heavy Vehicles	0	--	--	0	--	--			
Median Type	Two Way Left Turn Lane								
RT Channelized	0								
Lanes	1	1	0	0	1	0			
Configuration	L	LTR							
Upstream Signal	0								
Minor Street	Northbound			Southbound					
Movement	7	8	9	10	11	12			
	L	T	R	L	T	R			
Volume	0	0	0	5	0	17			
Peak-Hour Factor, PHF	0.25	0.50	0.50	1.00	1.00	0.85			
Hourly Flow Rate, HFR	0	0	0	5	0	19			
Percent Heavy Vehicles	0	0	0	0	0	0			
Percent Grade (%)	0								
Flared Approach	N								
Storage	0								
RT Channelized	0								
Lanes	0	1	0	1	0	1			
Configuration	LTR								
Delay, Queue Length, and Level of Service									
Approach	EB	WB	Northbound			Southbound			
Movement	1	4	7	8	9	10	11	12	
Lane Configuration	L	LTR	LTR	LTR	L	L	L	R	
v (vph)	24	0	0	0	5	19	19		
C (m) (vph)	722	1068			217	316			
v/c	0.03	0.00			0.02	0.06			
95% queue length	0.10	0.00			0.07	0.19			
Control Delay	10.2	8.4			22.0	17.1			
LOS	B	A			C	C			
Approach Delay	--	--				18.1			
Approach LOS	--	--				C			

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TWO-WAY STOP CONTROL SUMMARY									
General Information			Site Information						
Analyst	PJR		Intersection	Case4.1pm					
Agency/Co.	PRA		Jurisdiction	Background Plus Project					
Date Performed	7/21/2003		Analysis Year						
Analysis Time Period	PM Peak Hour								
Project Description	Henry Spencer TIAR								
East/West Street	Hana Highway		North/South Street	Old Stable Road					
Intersection Orientation	East-West		Study Period (hrs)	0.25					
Vehicle Volumes and Adjustments									
Major Street	Eastbound			Westbound					
Movement	1	2	3	4	5	6			
	L	T	R	L	T	R			
Volume	35	893	0	0	685	21			
Peak-Hour Factor, PHF	0.43	1.00	0.38	1.00	0.98	0.88			
Hourly Flow Rate, HFR	81	893	0	0	895	24			
Percent Heavy Vehicles	0	--	--	0	--	--			
Median Type	Two Way Left Turn Lane								
RT Channelized	0								
Lanes	1	1	0	0	1	0			
Configuration	L	LTR							
Upstream Signal	0								
Minor Street	Northbound			Southbound					
Movement	7	8	9	10	11	12			
	L	T	R	L	T	R			
Volume	1	2	4	33	0	41			
Peak-Hour Factor, PHF	0.25	0.50	0.50	0.63	1.00	0.57			
Hourly Flow Rate, HFR	4	4	8	52	0	72			
Percent Heavy Vehicles	0	0	0	0	0	0			
Percent Grade (%)	0								
Flared Approach	N								
Storage	0								
RT Channelized	0								
Lanes	0	1	0	1	0	1			
Configuration	LTR								
Delay, Queue Length, and Level of Service									
Approach	EB	WB	Northbound			Southbound			
Movement	1	4	7	8	9	10	11	12	
Lane Configuration	L	LTR	LTR	LTR	L	L	L	R	
v (vph)	81	0	16	16	52	72	72		
C (m) (vph)	892	763			435	703			
v/c	0.09	0.00			0.03	0.10			
95% queue length	0.30	0.00			0.40	0.34			
Control Delay	9.4	9.7			14.4	10.7			
LOS	A	A			B	B			
Approach Delay	--	--			12.4	12.3			
Approach LOS	--	--			B	B			

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Version 4.1.1

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Appendix K

***Preliminary
Engineering Report***

PRELIMINARY ENGINEERING REPORT

FOR

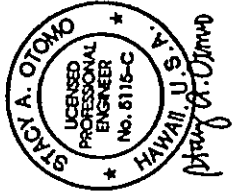
E PAEPAE KA PUKO'A

Pala, Maui, Hawaii

T.M.K.: (2) 3-8-001: 003 and (2) 3-8-002: 009 & 010

Prepared For:

Henry Spencer
P.O. Box 790829
Pala, Maui, Hawaii 96779



Prepared By:



CONSULTING CIVIL ENGINEERS
303 SOUTH HANALEI STREET, SUITE 103
HAWAII, MAUI, HAWAII 96779
PHONE: (808) 222-0013
FAX: (808) 222-9777

March 2004

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- 1.0 INTRODUCTION
- 2.0 EXISTING INFRASTRUCTURE
 - 2.1 ROADWAYS
 - 2.2 DRAINAGE
 - 2.3 SEWER
 - 2.4 WATER
 - 2.5 ELECTRIC, TELEPHONE AND CABLE TV
- 3.0 ANTICIPATED INFRASTRUCTURE IMPROVEMENTS
 - 3.1 ROADWAYS
 - 3.2 DRAINAGE
 - 3.3 SEWER
 - 3.4 WATER
 - 3.5 ELECTRIC, TELEPHONE AND CABLE TV

**PRELIMINARY ENGINEERING REPORT
FOR
E PAEPAE KA PUKO'A**

1.0 INTRODUCTION

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

The subject parcels are identified as T.M.K.: 3-8-001: 003, 3-8-002: 009 & 010 and encompasses an area of approximately 71 acres of which approximately 21 acres will be part of the proposed development. The project is bordered by the ocean to the north, Hana Highway to the south, Stable Road to the west, and the Kaunoa Senior Center and Alakapa Place to the east.

The proposed project consists of subdividing the proposed parcel into 17 lots for single family homes averaging in size of approximately one acre each. A one acre lot will be subdivided for the Kaunoa Senior Center along the eastern boundary of the parcel. A portion of the parcel along the Stable Road will be used as the onsite retention basin. Associated improvements include asphalt paved roadways with concrete curb, gutter, and sidewalk, as well as drainage, water, sewer, and electrical distribution systems and landscaping.

2.0 EXISTING INFRASTRUCTURE

2.1 ROADWAYS

The major roadway into the area is Hana Highway. Access to the project site will be provided by the existing Stable Road.

2.2 DRAINAGE

Runoff from the subject parcel sheet flows across the parcel in the southerly to northerly direction towards the ocean. It is estimated that the existing 50-year storm runoff from the project site is 17.8 cfs. An existing 24" culvert crosses Hana Highway approximately 350 feet west of the property line between the project site and the Kaunoa Senior Center. The existing culvert conveys approximately 24 cfs of surface runoff from the existing sugar cane fields mauka of the highway to the makai side on to the project site. Approximately 20' into

the property is a bikeway constructed by the County of Maui. Two 18" culverts have been constructed under the bikeway to allow the runoff from the existing 24" culvert to continue downstream in the same direction. This offsite runoff also sheet flows across the parcel to the ocean.

According to Panel Number 150003 0190 D of the Flood Insurance Rate Map, March 16, 1995, prepared by the United States Federal Emergency Management Agency, the project site is situated in Flood Zone C, Zone A4, and Zone V23. Flood Zone C represents areas of minimal flooding. Flood Zone A4 represents areas of 100-year flood with base flood elevations and flood hazard factors determined. Flood Zone V23 represents areas of 100-year coastal flood with velocity. Base flood elevations and flood hazard factors have been determined for this zone.

2.3 SEWER

The area is served by an existing gravity flow system which transports wastewater to the existing Sprecklesville Pump Station, adjacent to the eastern boundary of the project site. An existing 12-inch force main, which traverses through the project site then along Stable Road, transports wastewater to the Kahului Wastewater Treatment Plant.

2.4 WATER

Domestic water and fire flow for the proposed project will be provided by the County's water system. Potable water for the project will be serviced by an existing 12-inch waterline within Hana Highway.

2.5 ELECTRIC, TELEPHONE AND CABLE TV

The existing electrical distribution system in Sprecklesville is overhead. Existing overhead utility lines are located along Hana Highway fronting the project site.

3.0 ANTICIPATED INFRASTRUCTURE IMPROVEMENTS

3.1 ROADWAYS

The subject subdivision consists of a single cul-de-sac which connects to Stable Road and extends towards the east. The street within the subdivision

will have a 48 foot right-of-way with a curb to curb width of 32 feet with 8 foot shoulders on each side. The cul-de-sac will have an edge of pavement radius of 40 feet. The larger traffic lanes and cul-de-sac pavement radius is to accommodate the larger fire trucks in this district.

The subdivision roadway will have concrete curb and gutters with a four foot wide sidewalk along one side of the street. In addition, concrete wheel chair ramps will be constructed at appropriate locations to comply with ADA standards. Appropriate striping and signage will be installed in accordance with the Department of Public Works and Environmental Management standards.

3.2 DRAINAGE

After the development of the proposed project, it is estimated that the 50-year storm runoff will be approximately 26.6 cfs, a net increase of 8.8 cfs.

Surface runoff from the project will be allowed to sheet flow towards the proposed drain inlets where the runoff will be captured and conveyed to the proposed retention basin. The retention basin has been sized to accommodate all the additional onsite surface runoff generated by the proposed development. A proposed drainline will be connected to the existing drainage culverts beneath the existing County bikeway. The drainline will outlet into the proposed retention basin. Overflow from the retention basin and berm will be allowed to continue downstream along the pattern of the existing surface runoff. This plan meets the drainage criteria set forth in Chapter 4 - Rules for the Design of Storm Drainage Facilities in the County of Maui.

The drainage design criteria shall be to minimize any alterations to the natural pattern of the existing onsite surface runoff.

3.3 SEWER

The proposed 17-lot subdivision will generate approximately 5,950 gallons per day of wastewater when all homes are constructed. The onsite sewerage collection system will be designed to accommodate this flow. The existing collection and transmission systems, pumping facilities and treatment plant have the capacity to handle the anticipated wastewater generated by the subdivision.

An 8-inch sewerline will be installed to collect the wastewater generated from this project. It will connect to an existing sewer manhole at the end of Laulea Place which transports the wastewater to the Spreckelsville Pump Station along

the eastern boundary of the project site. An existing 12-inch force main, which traverses through the project site then along Stable Road, transports wastewater to the Kahului Wastewater Treatment Plant.

According to the Wastewater Reclamation Division, County of Maui, the County is assessing sewer fees of \$1,599.50 per single family unit.

3.4 WATER

In accordance with the Department of Water Supply's Domestic Consumption Guidelines for single family residential development, the average daily demand for the 17-lot subdivision is approximately 51,000 gallons per day.

Fire flow demand for single family residential development is 1,000 gallons per minute for a 2 hour duration. Fire hydrants will be installed with a maximum spacing of 350 feet.

Domestic water and fire flow for the proposed project will be provided by the County's water system. Potable water for the project will be serviced by an existing 12-inch waterline within Hana Highway. A new 12-inch waterline will be installed along Stable Road and into the proposed project to service each lot of the subdivision.

As part of the building permit process, domestic water and fire flow calculations will be provided to determine the adequacy of the existing water system, in accordance with the rules of the Department of Water Supply.

3.5 ELECTRIC, TELEPHONE AND CABLE TV

The proposed electrical, telephone and cable TV distribution systems in the subject subdivision will be installed underground. Street lights will be installed along the subdivision streets at intervals to be determined by the electrical engineer.

Existing overhead utility lines are located along Hana Highway fronting the project site. The installation of electrical, telephone and cable TV systems for the project will be coordinated with Maui Electric Company, Verizon Hawaii, and Hawaiian Cablevision.

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Appendix L

***Preliminary
Drainage Report***

PRELIMINARY DRAINAGE REPORT

FOR

E PAEPAE KA PUKO'A
Pala, Maui, Hawaii

T.M.K.: (2) 3-8-001: 003 and
(2) 3-8-002: 009 & 010

Prepared For:

Henry Spencer
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Prepared By:



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March 2004

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- I. INTRODUCTION
- II. SITE LOCATION AND PROJECT DESCRIPTION
- III. EXISTING TOPOGRAPHY AND SOIL CONDITIONS
- IV. EXISTING DRAINAGE CONDITIONS
- V. FLOOD AND TSUNAMI ZONE
- VI. PROPOSED DRAINAGE PLAN
- VII. HYDROLOGIC CALCULATIONS
- VIII. CONCLUSION
- IX. REFERENCES

EXHIBITS

- 1 Location Map
- 2 Vicinity Map
- 3 Soil Survey Map
- 4 Flood Insurance Rate Map

APPENDIX

- A Hydrologic Calculations

**PRELIMINARY DRAINAGE REPORT
FOR
E PAEPAE KA PUKO'A
Paie, Maui, Hawaii**

I. INTRODUCTION

The purpose of this report is to examine both the existing and proposed drainage conditions for the proposed project.

II. SITE LOCATION AND PROJECT DESCRIPTION

The subject parcel is identified as T.M.K.: 3-8-001: 003, 3-8-002: 009 & 010 and encompasses an area of approximately 71 acres of which approximately 21 acres will be part of the proposed development. The project is bordered by the ocean to the north, Hana Highway to the south, Stable Road to the west, and the Kaunoa Senior Center and Alakapa Place to the east.

The proposed project consists of subdividing the proposed parcel into 17 lots for single family homes averaging in size of approximately one acre each. A one acre lot will be subdivided for the Kaunoa Senior Center along the eastern boundary of the parcel. A portion of the parcel along the Stable Road will be used as the onsite retention basin. Associated improvements include asphalt paved roadways with concrete curb, gutter, and sidewalk, as well as drainage, water, sewer, and electrical distribution systems and landscaping.

III. EXISTING TOPOGRAPHY AND SOIL CONDITIONS

The project site currently undeveloped and is covered with various grasses and weeds. The project site generally slopes in the southerly to northerly direction with an average slope of 2%.

According to the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August, 1972)," prepared by the United States Department of Agriculture Soil Conservation Service, the soils within the project site are classified as Jaucas sand (JaC) and Jaucas sand, saline (JcC). Molokai silt clay loam (MuB), and Dune land (DL). The Jaucas series is characterized as having slow to very slow runoff, rapid permeability, slight erosion hazard with severe wind erosion hazard where vegetation has been removed. The Molokai silt clay loam is characterized as having slow to medium runoff with a slight to moderate erosion hazard. The Dune land consists of hills and ridges of sand-size particles that were drifted and piled by wind.

IV. EXISTING DRAINAGE CONDITIONS

Runoff from the subject parcel sheet flows across the parcel in the southerly to northerly direction towards the ocean. It is estimated that the existing 50-year storm runoff from the project site is 17.8 cfs.

An existing 24" culvert crosses Hana Highway approximately 350 feet west of the property line between the project site and the Kaunoa Senior Center. The

existing culvert conveys approximately 24 cfs of surface runoff from the existing sugar cane fields mauka of the highway to the makai side on to the project site. This offsite runoff also sheet flows across the parcel to the ocean. Approximately 20" into the property is a bikeway constructed by the County of Maui. Two 18" culverts have been constructed under the bikeway to allow the runoff from the existing 24" culvert to continue downstream in the same direction.

V. FLOOD AND TSUNAMI ZONE

According to Panel Number 150003 0190 D of the Flood Insurance Rate Map, March 16, 1995, prepared by the United States Federal Emergency Management Agency, the project site is situated in Flood Zone C, Zone A4, and Zone V23. Flood Zone C represents areas of minimal flooding. Flood Zone A4 represents areas of 100-year flood with base flood elevations and flood hazard factors determined. Flood Zone V23 represents areas of 100-year coastal flood with velocity. Base flood elevations and flood hazard factors have been determined for this zone.

VI. PROPOSED DRAINAGE PLAN

After the development of the proposed project, it is estimated that the 50-year storm runoff will be approximately 26.6 cfs, a net increase of 8.8 cfs.

Surface runoff from the project will be allowed to sheet flow towards the proposed roadways where the runoff will be captured and conveyed by the underground drainage system to the proposed retention basin. The retention basin has been sized to accommodate all the additional onsite surface runoff generated by the proposed development. A proposed drainline will be connected to the existing drainage culverts beneath the existing County bikeway. The drainline will outlet into the proposed retention basin. The surface runoff generated mauka of the proposed improvements will be allowed to continue downstream towards the ocean.

VII. HYDROLOGIC CALCULATIONS

The hydrologic calculations are based on the "Rules for the Design of Storm Drainage Facilities in the County of Maui," and the "Rainfall Frequency Atlas of the Hawaiian Islands," Technical Paper No. 43, U.S. Department of Commerce, Weather Bureau.

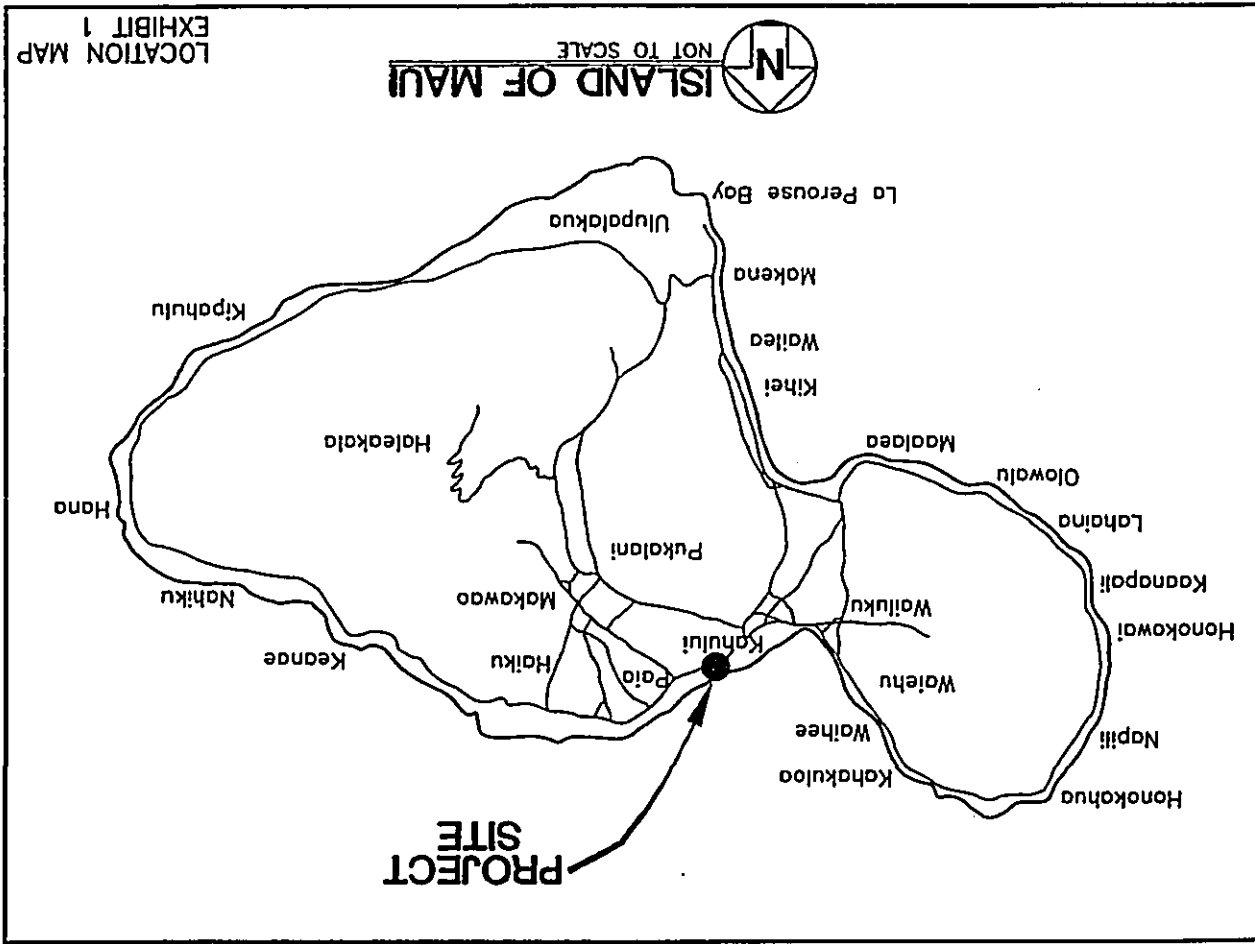
Rational Formula Used: $Q = CIA$

Where Q = rate of flow (cfs)

C = rainfall coefficient

I = rainfall intensity for a duration equal to the time of concentration (inches/hour)

A = drainage area (Acres)



See Appendix A for Hydrologic Calculations

VIII.

CONCLUSION

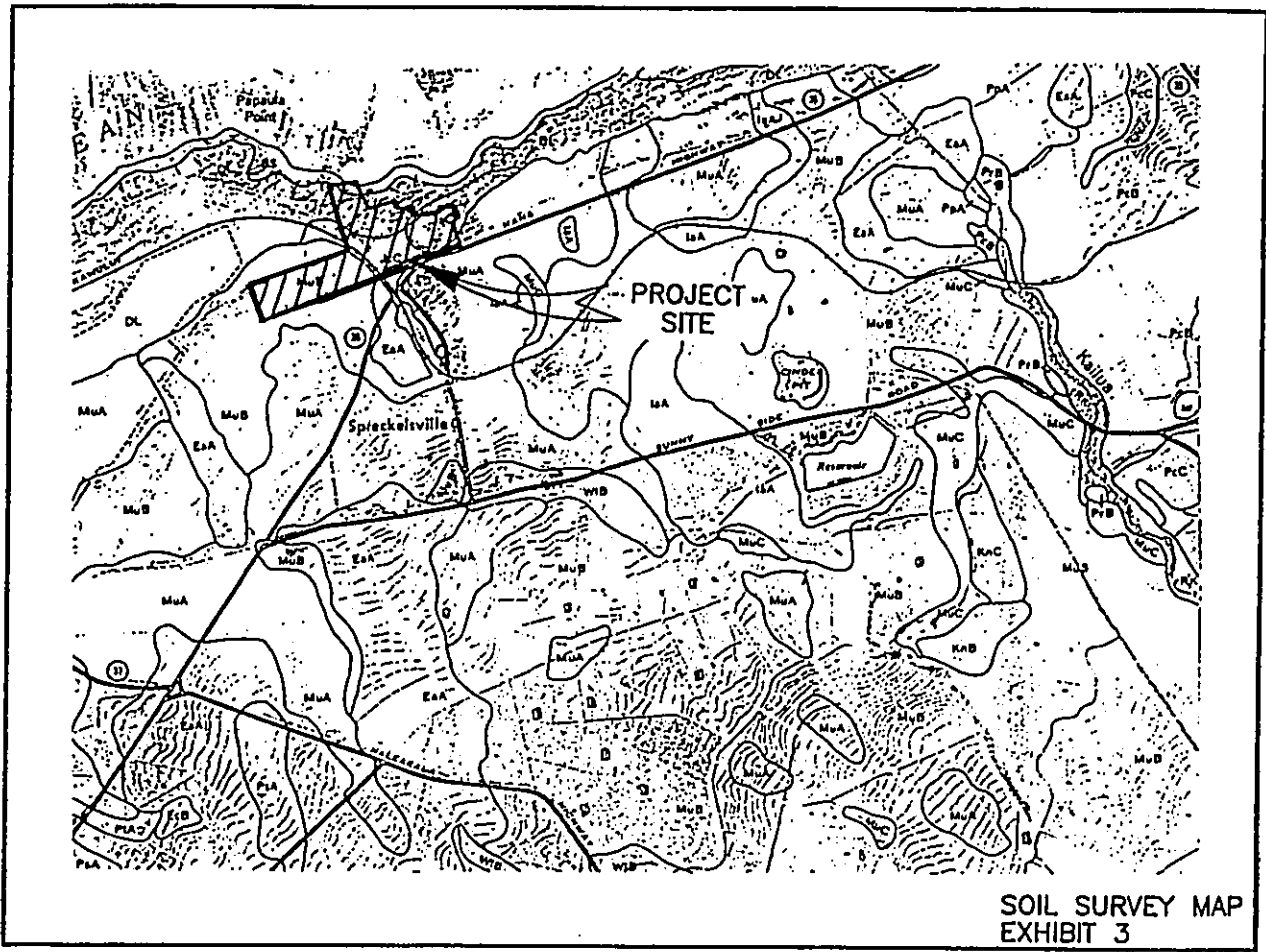
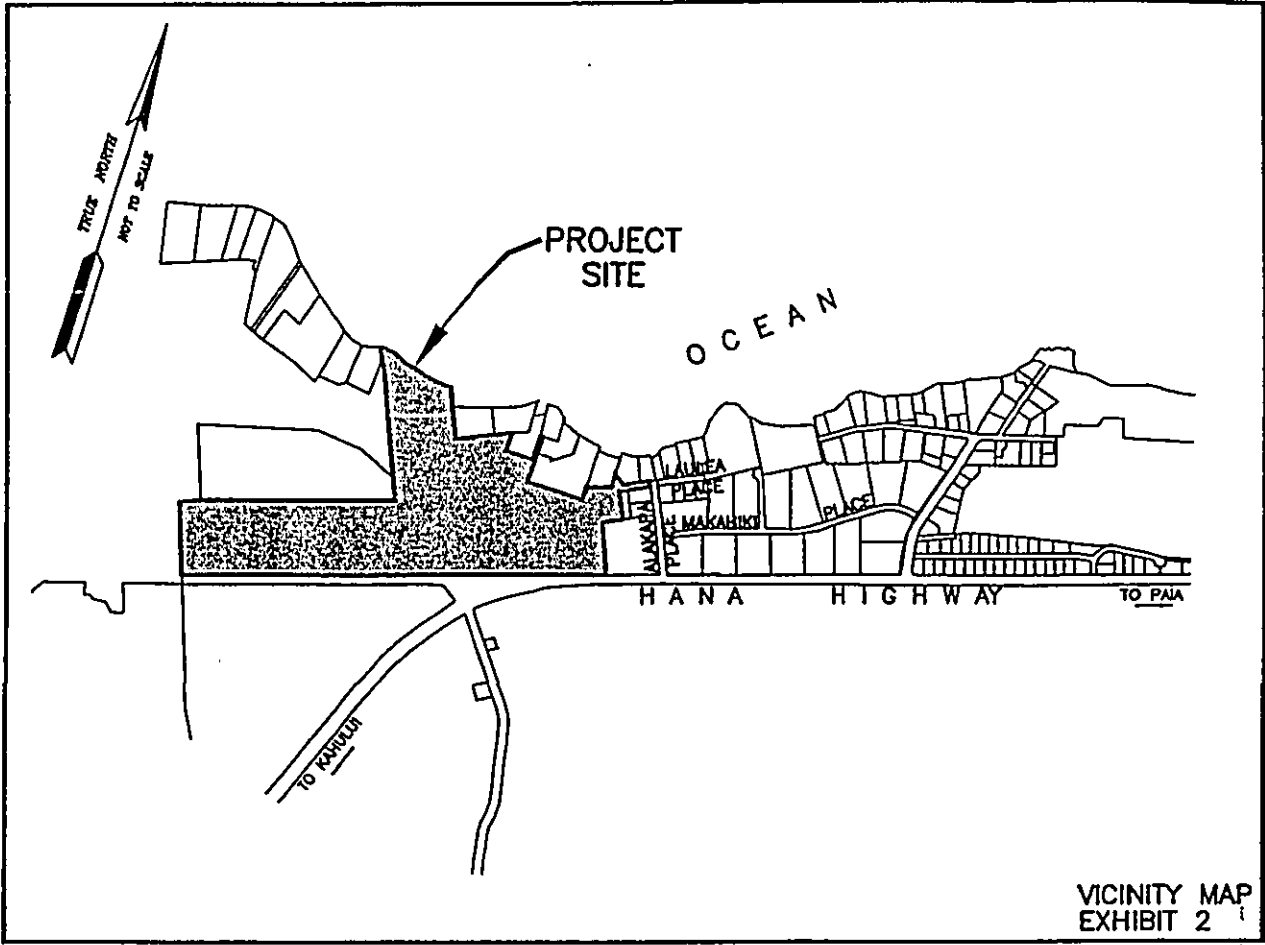
The proposed development is expected to generate a 50-year storm runoff of approximately 26.6 cfs, producing an increase of 8.8 cfs from the existing conditions. The proposed project will include an underground drainage system which will capture and convey the onsite surface runoff to the proposed retention basin. The proposed basin will be sized to accommodate the increase in runoff generated by the proposed project, therefore not increasing the volume of runoff continuing downstream.

Therefore, it is our professional opinion that the proposed development will not have an adverse effect on the adjoining properties downstream.

IX.

REFERENCES

- A. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, prepared by U.S. Department of Agriculture, Soil Conservation Service, August, 1972.
- B. Erosion and Sediment Control Guide for Hawaii, prepared by U.S. Department of Agriculture, Soil Conservation Service, March, 1981.
- C. Rainfall-Frequency Atlas of the Hawaiian Islands, Technical Paper No. 43, U.S. Department of Commerce, Weather Bureau, 1962.
- D. Flood Insurance Rate Maps of the County of Maui, June, 1981.
- E. Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui, prepared by the Department of Public Works and Waste Management, County of Maui, 1995.



Hydrologic Calculations

Purpose: Determine the increase in surface runoff from the development of the proposed project based on a 50-year storm.

A. Determine the Runoff Coefficient (C):

EXISTING CONDITIONS:
Infiltration (Medium) = 0.07
Relief (Flat) = 0.00
Vegetal Cover (Good) = 0.03
Development Type (Open) = 0.15
C = 0.25

APPENDIX A HYDROLOGIC CALCULATIONS

DEVELOPED CONDITIONS:
PAVEMENT AREAS:
Infiltration (Negligible) = 0.20
Relief (Flat) = 0.00
Vegetal Cover (None) = 0.07
Development Type (Pavement) = 0.55
C = 0.82

ROOF AREAS:
Infiltration (Negligible) = 0.20
Relief (Steep) = 0.08
Vegetal Cover (None) = 0.07
Development Type (Roof) = 0.55
C = 0.90

LANDSCAPED AREAS:
Infiltration (Medium) = 0.07
Relief (Flat) = 0.00
Vegetal Cover (Good) = 0.03
Development Type (Landscape) = 0.15
C = 0.25

Pavement Areas = 0.8 Acres
Roof Areas = 1.8 Acres
Landscape Areas = 18.4 Acres
WEIGHTED C = 0.34

31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

6. The 50-year 1-hour rainfall is 2.5 inches. The time of concentration is 32 minutes. The existing condition is 3.40 inches per hour. The developed condition is 3.73 inches per hour. The drainage area is 21 acres. The 50-year storm runoff volume is 17.8 cfs. The increase in runoff due to the proposed development is 26.6 - 17.8 = 8.8 cfs.

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

$$I_{50} = 2.5 \text{ inches}$$

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

Existing Condition:

$$T_c = 32 \text{ minutes}$$

$$I = 3.40 \text{ inches/hour}$$

Developed Condition:

$$T_c = 26 \text{ minutes}$$

$$I = 3.73 \text{ inches/hour}$$

C. Drainage Area (A) = 21 Acres

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

$$Q = CIA$$

Existing Conditions:

$$Q = (0.25)(3.40)(21) = 17.8 \text{ cfs}$$

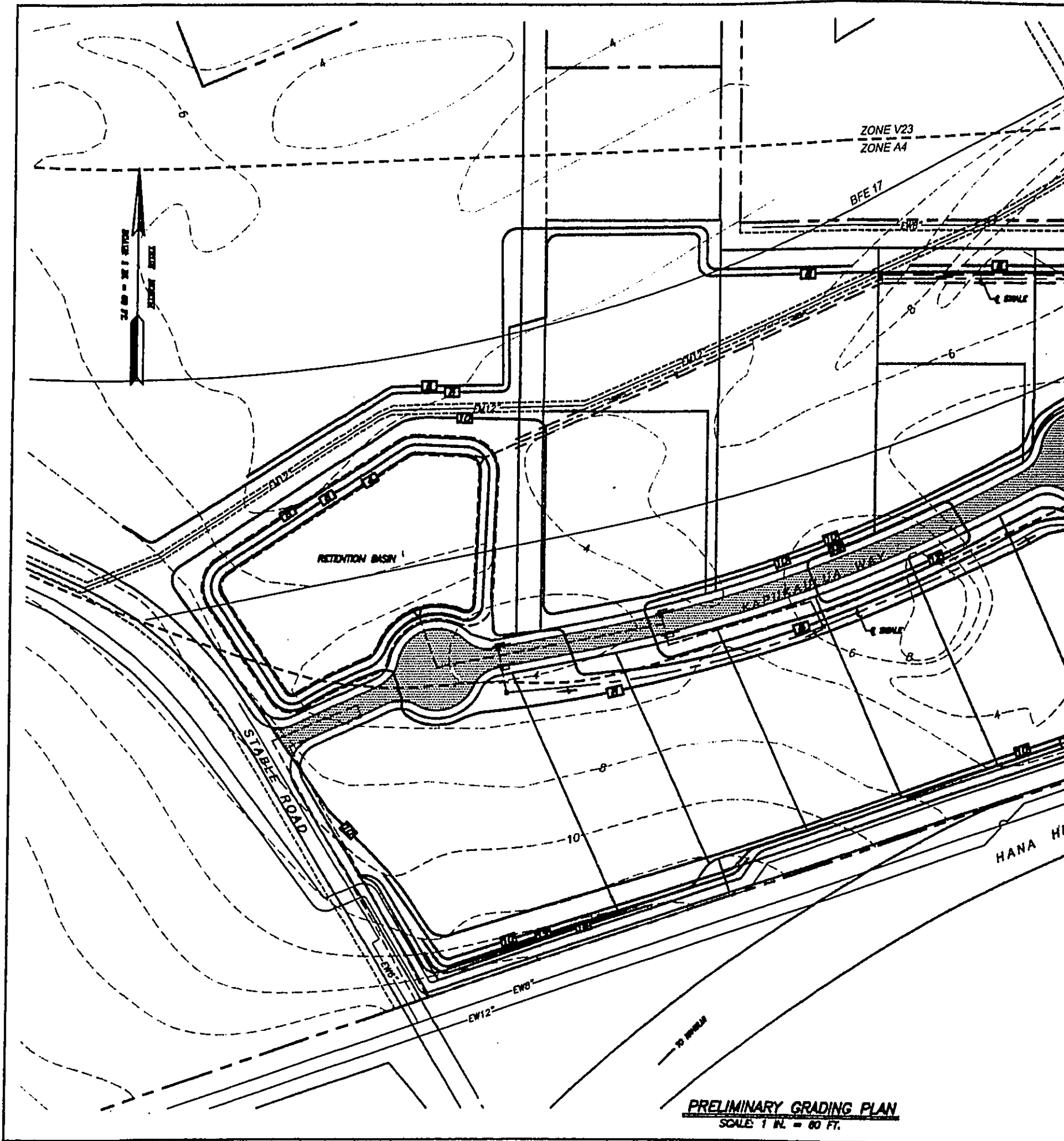
Developed Conditions:

$$Q = (0.34)(3.73)(21) = 26.6 \text{ cfs}$$

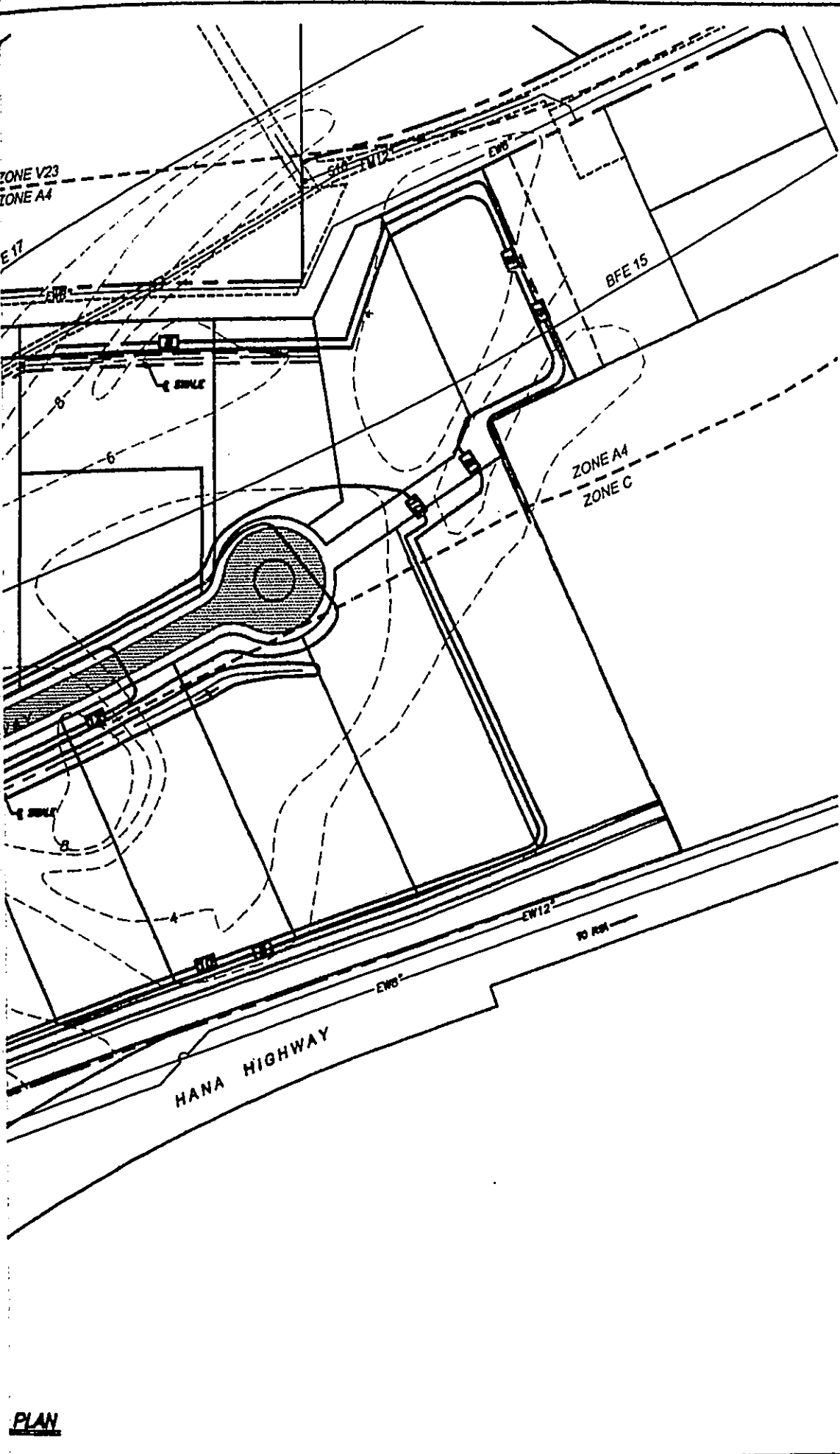
The increase in runoff due to the proposed development is $26.6 - 17.8 = 8.8 \text{ cfs}$.

Appendix M

***Preliminary
Grading Plan***



PRELIMINARY GRADING PLAN
SCALE: 1 IN. = 60 FT.



REVISION DATE
1. 11/11/11
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3. 11/11/11
4. 11/11/11

E PAEPAE KA PUKO'A
 TMK: 219-6-001 003 & 219-6-002 009 & 010
 PAA, MAUI, HAWAII
 GRADING PLAN

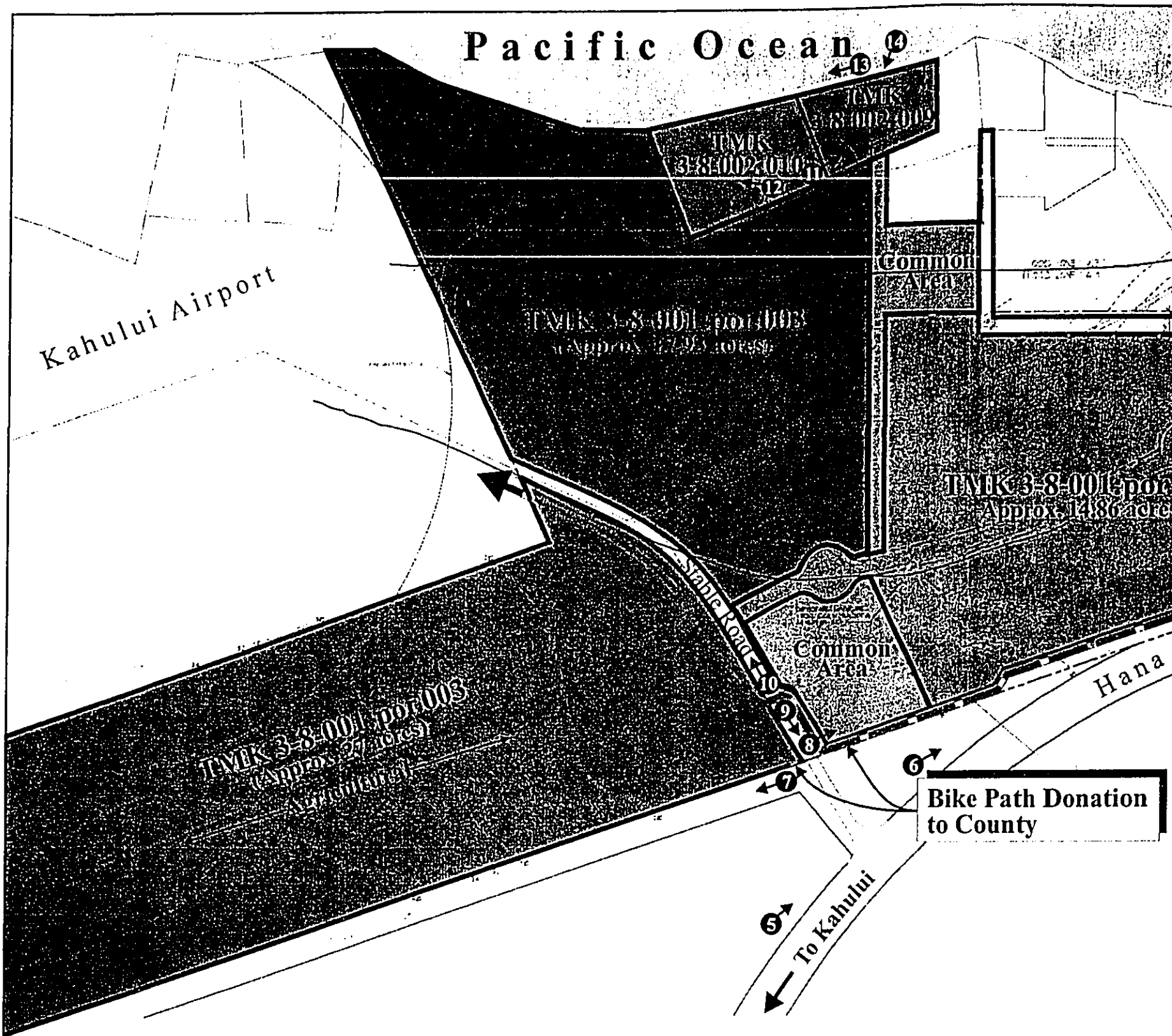
REVISION	DATE	NOTE
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▲		
▲		

DESIGNED BY: M.M.M.
 CHECKED BY: S.A.D.
 PROJECT NO.: 2013-18
 DRAWING NAME: GRAD-1
 DATE: 7-9-14

SHEET NO.
1
 OF SHEETS

Appendix N

Site Photographs

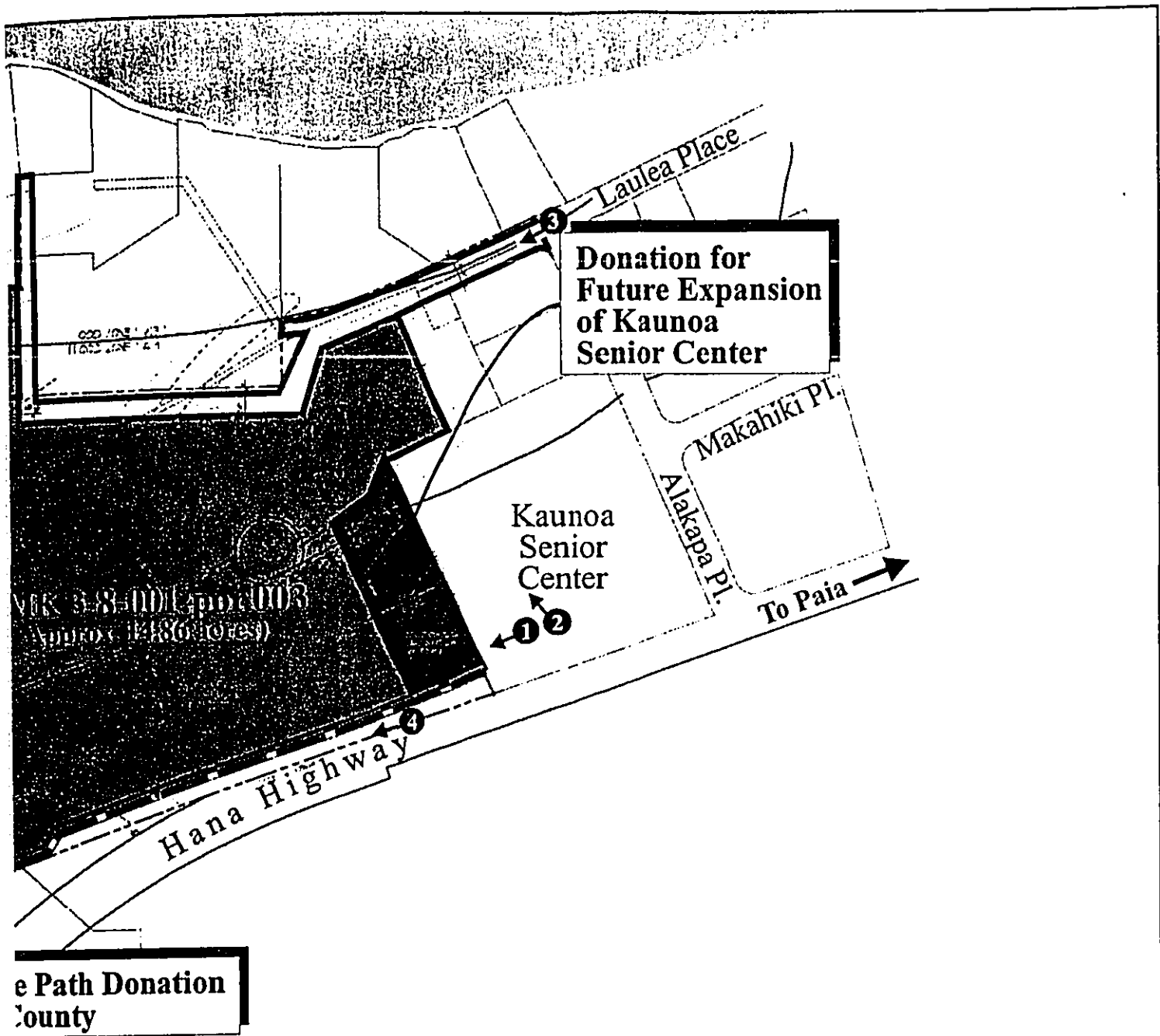


Source: Lundahl & Associates

E Paepae Ka Pūko`a
Photographic Reference Map



Prepared for: Henry A. Spencer

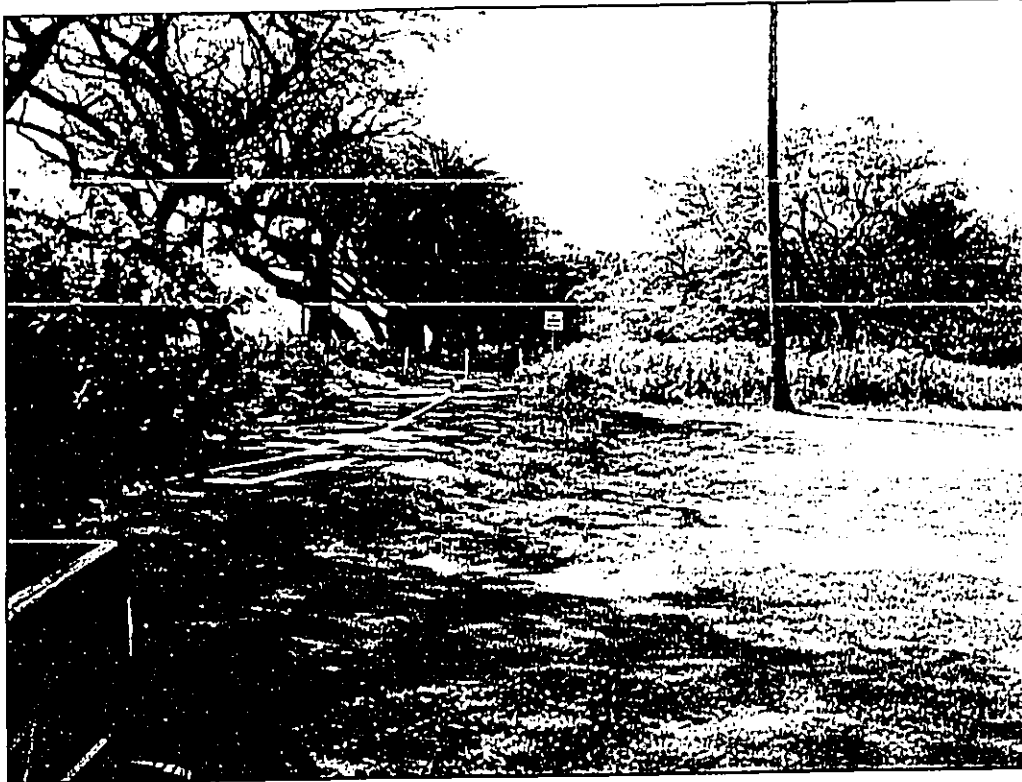


Ka Pūko`a
Reference Map

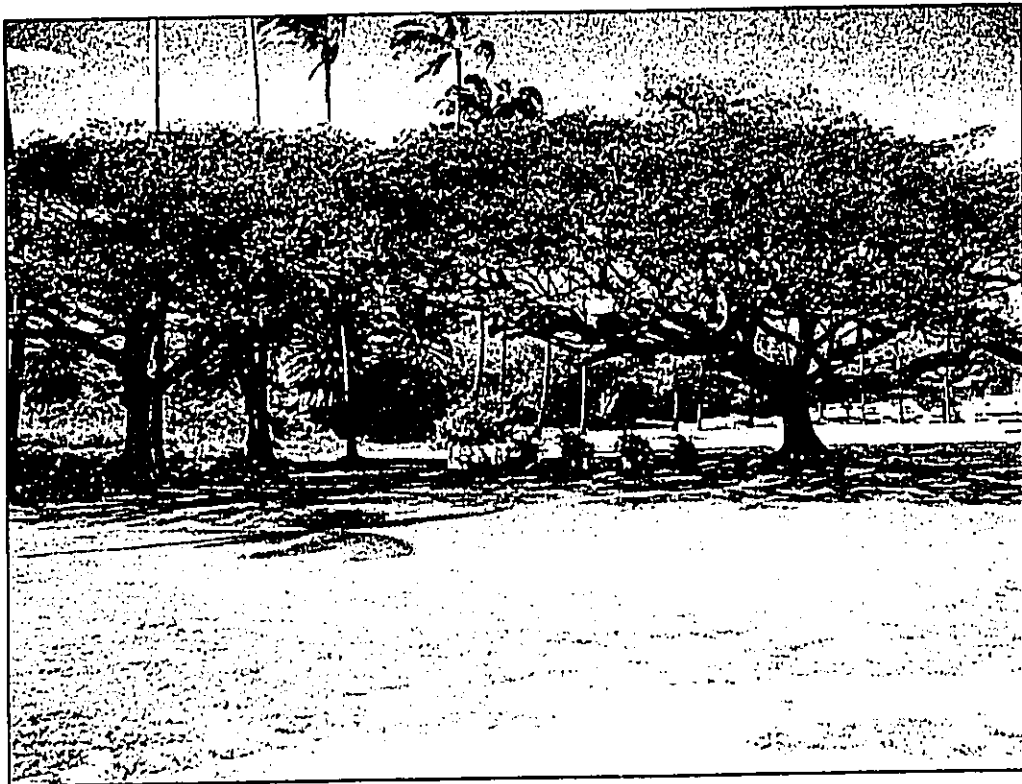
NOT TO SCALE

MUNEKIYO & HIRAGA, INC.

RECEIVED AS FOLLOWS

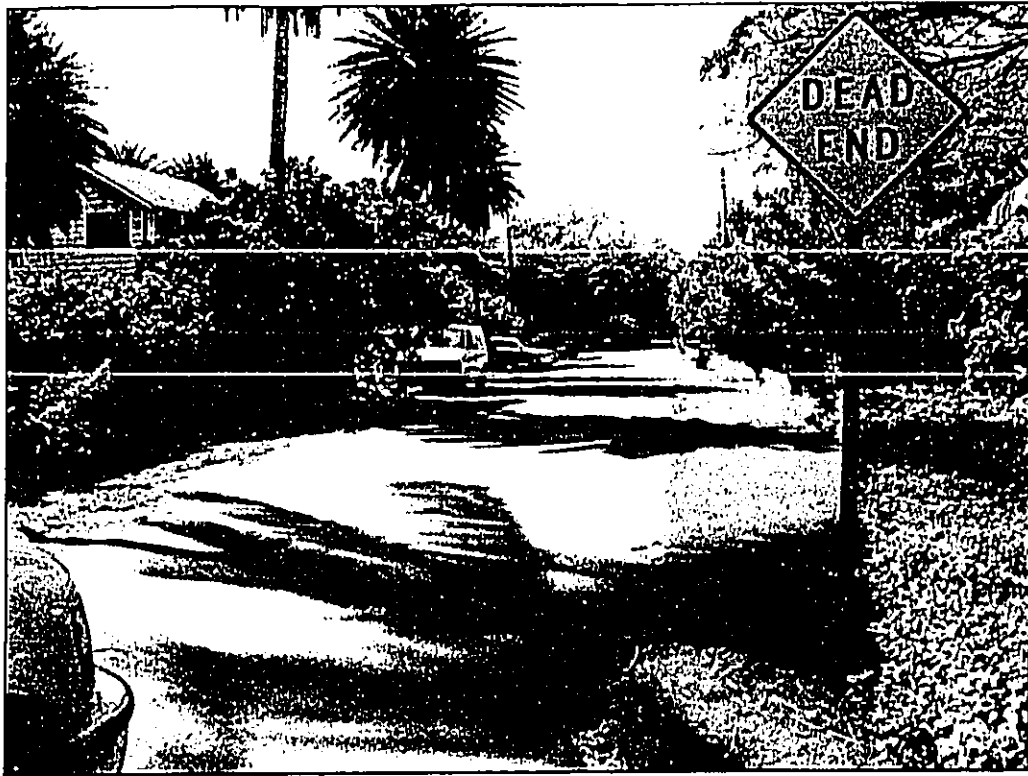


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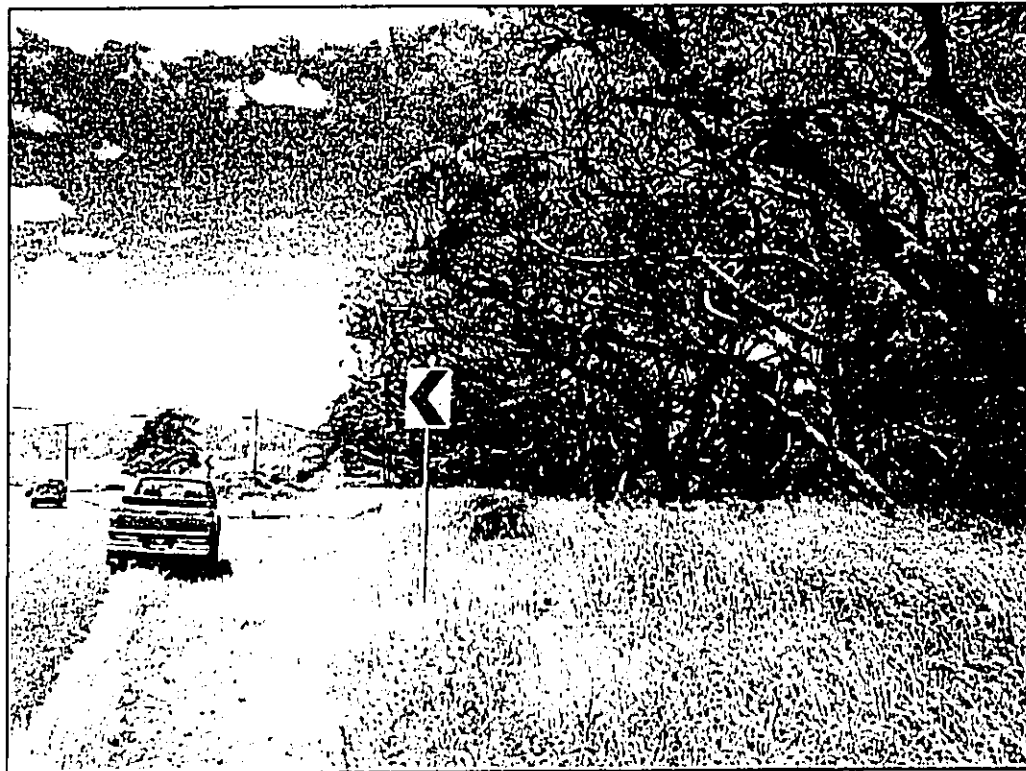


Photograph No. 2

RECEIVED AS FOLLOWS

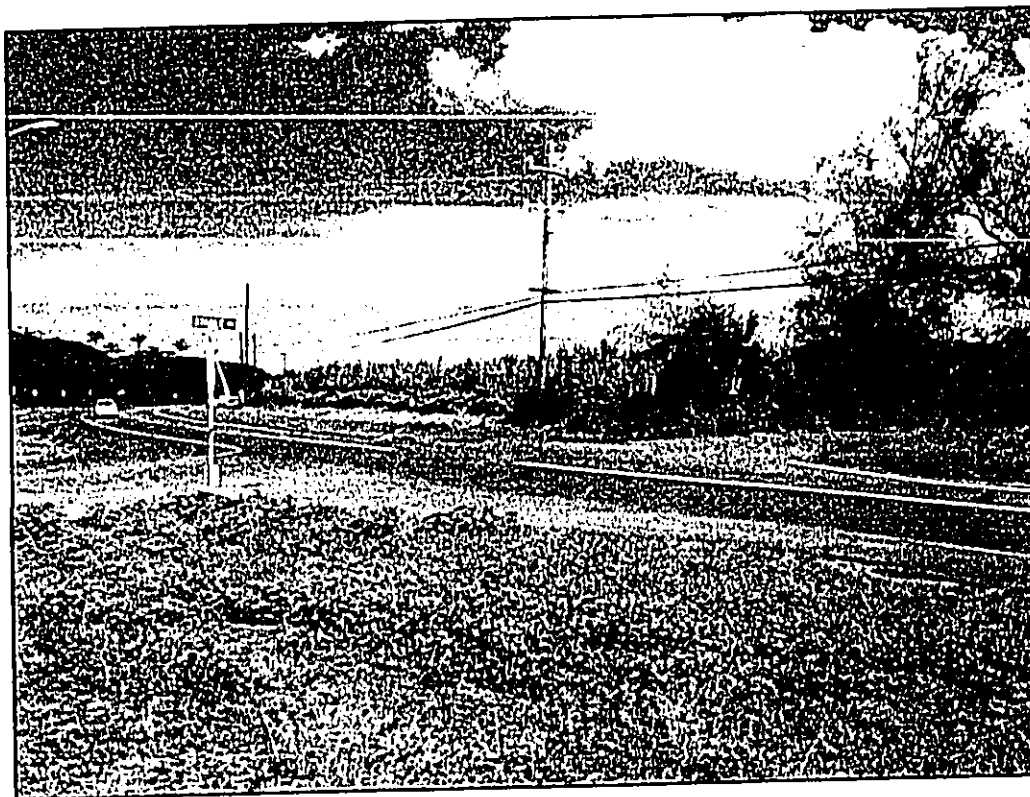


Photograph No. 3

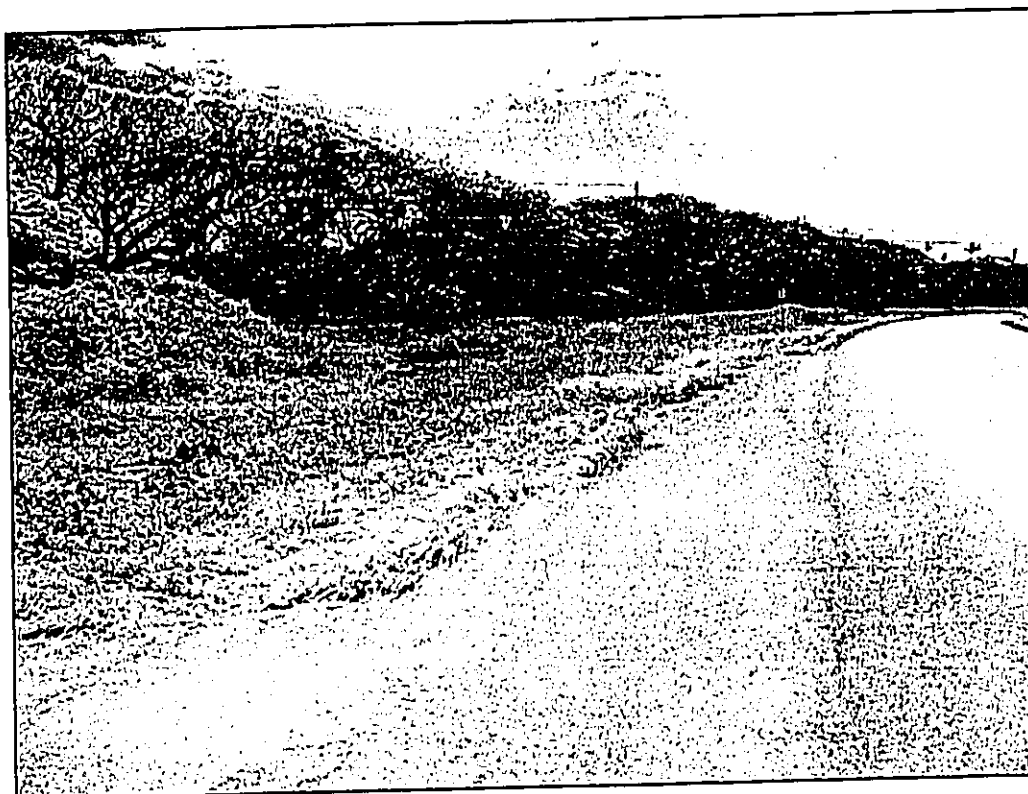


Photograph No. 4

RECEIVED AS FOLLOWS



Photograph No. 5



Photograph No. 6

RECEIVED AS FOLLOWS



Photograph No. 7

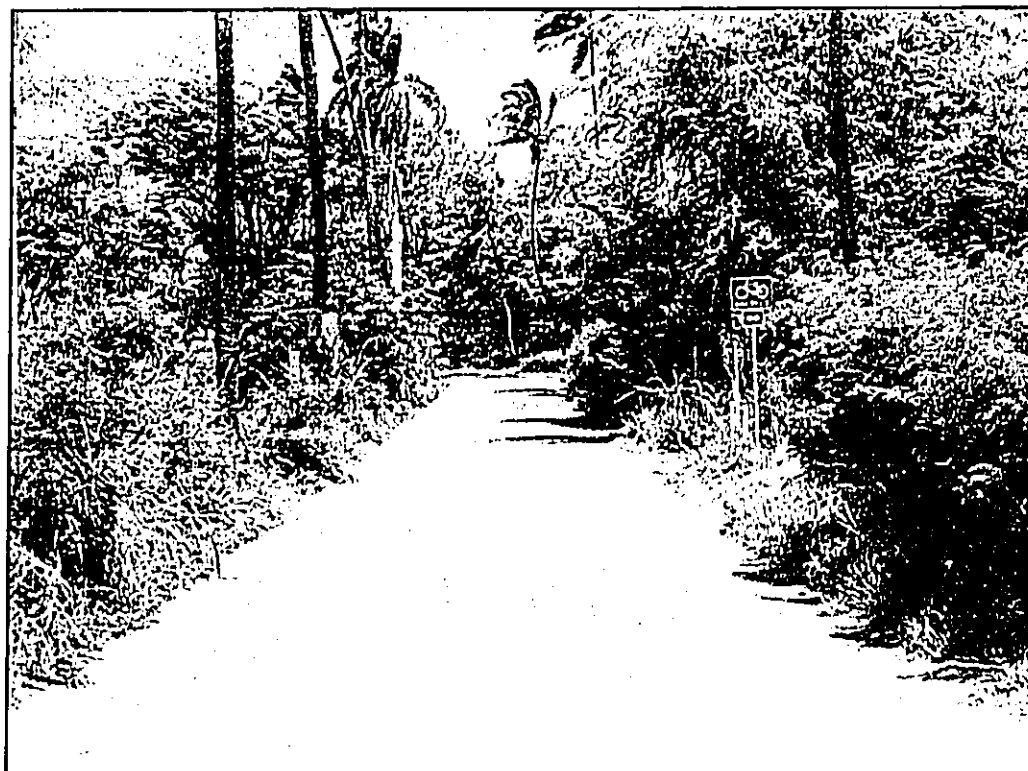


Photograph No. 8

RECEIVED AS FOLLOWS



Photograph No. 9



Photograph No. 10

RECEIVED AS FOLLOWS



Photograph No. 11



Photograph No. 12

RECEIVED AS FOLLOWS



Photograph No. 13



Photograph No. 14