

Final
Environmental Assessment

**PROPOSED HALE MUA
AFFORDABLE HOUSING
SUBDIVISION**

Prepared for:

June 2005

**Hale Mua Properties, LLC
and the Accepting Authority,
State of Hawaii, Land Use Commission**


MUNEKIYO & HIRAGA, INC.

CONTENTS

Executive Summary	i
Preface	iii
I. PROJECT OVERVIEW	1
A. PROPERTY LOCATION, EXISTING USE AND LAND OWNERSHIP	1
B. PROPOSED ACTION	1
C. PROJECT NEED/REASONS JUSTIFYING THE REQUEST	11
D. AFFORDABLE HOUSING PROGRAM	15
E. ENTITLEMENTS REQUIRED	16
II. DESCRIPTION OF THE EXISTING ENVIRONMENT	17
A. PHYSICAL SETTING	17
1. Surrounding Land Uses	17
2. Climate	18
3. Topography and Soil Characteristics	19
4. Agricultural Lands of Importance to the State of Hawaii (ALISH) and Land Study Bureau Assessment	23
5. Land Study Bureau Classifications	23
6. Flood Characteristics	25
7. Streams and Wetlands	27
8. Flora and Fauna	27

9.	Archaeological Resources	28
10.	Air Quality	30
11.	Noise Characteristics	30
12.	Visual Resources	30
B.	SOCIO-ECONOMIC ENVIRONMENT	31
1.	Population	31
2.	Housing	31
3.	Economy	33
4.	Employment	33
C.	PUBLIC SERVICES	35
1.	Recreational Facilities	35
2.	Police and Fire Protection	35
3.	Solid Waste	36
4.	Health Care	36
5.	Schools	36
D.	INFRASTRUCTURE	37
1.	Roadways	37
2.	Wastewater	38
3.	Water	38
4.	Drainage	39
5.	Electrical and Telephone Services	39
III.	POTENTIAL IMPACTS AND MITIGATION MEASURES	40

A.	IMPACTS TO THE PHYSICAL ENVIRONMENT	40
1.	Surrounding Land Uses	40
2.	Topography and Landform	40
3.	Flora and Fauna	40
4.	Streams	41
5.	Archaeological Resources	41
6.	Cultural Impact Considerations	43
7.	Air Quality	50
8.	Noise	51
9.	Scenic and Open Space Resources	51
B.	IMPACTS TO THE SOCIO-ECONOMIC ENVIRONMENT	52
1.	Population and Local Economy	52
2.	Housing	52
3.	Agriculture	53
4.	Police, Fire and Medical Services	53
5.	Recreational Facilities	53
6.	Educational Facilities	54
7.	Solid Waste Management	54
C.	IMPACTS TO INFRASTRUCTURE	55
1.	Roadways	55
2.	Water	62
3.	Wastewater	63

4.	Drainage	63
5.	Electricity, Telephone and Cable Television Systems	64
D.	CUMULATIVE IMPACTS	65
1.	Projects Included in the Cumulative Impacts Analysis	65
2.	Assessment of Cumulative Impacts	66
E.	SECONDARY IMPACTS	72
F.	UNAVOIDABLE IMPACTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES	72
1.	Adverse Environmental Impacts Which Cannot Be Avoided	72
2.	Irreversible and Irretrievable Commitment of Resources	73
IV.	RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS	74
A.	STATE LAND USE DISTRICTS	74
B.	CHAPTER 226, HRS, HAWAII STATE PLAN	82
C.	STATE FUNCTIONAL PLANS	86
1.	State Agricultural Functional Plan	86
2.	State Housing Functional Plan	86
3.	State Recreational Functional Plan	86
4.	State Transportation Functional Plan	87
D.	MAUI COUNTY GENERAL PLAN	87
E.	WAILUKU-KAHULUI COMMUNITY PLAN	91
F.	MAUI COUNTY ZONING	95

G.	COASTAL ZONE MANAGEMENT OBJECTIVES AND POLICIES	95
H.	SECTION 201G-118, HRS PROCESSING	103
V.	ALTERNATIVES TO THE PROPOSED ACTION	104
A.	PREFERRED ALTERNATIVE	104
B.	ALTERNATIVES CONSIDERED	104
C.	NO ACTION ALTERNATIVE	104
VI.	ANTICIPATED DETERMINATION AND FINDINGS AND REASONS SUPPORTING THE DETERMINATION	105
VII.	LIST OF PERMITS AND APPROVALS	110
VIII.	AGENCIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS	111
IX.	LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT PUBLIC COMMENT PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS	236
REFERENCES		

LIST OF FIGURES

1	Regional Location Map	2
2	Tax Map for Proposed Subdivision	3
3	Aerial Photograph of Subject Property	4
4	Preliminary Subdivision Plan	5
5	House Model 1	7
6	House Model 2	8
7	Subdivision Intersection Details	9
8	Imi Kala Street Extension	12
9	Typical Road Section for Imi Kala Street Extension	13
10	Imi Kala Street Bridge Crossing at Iao Stream	14
11	Soil Association Map	20
12	Soil Classification Map	21
13	ALISH Map	24
14	Flood Insurance Rate Map	26
15	State Land Use Map	75
16	Community Plan Land Use Map	92

LIST OF APPENDICES

A	Description of Materials Form for Affordable Units
B	Proposed Exemptions for Affordable Housing Subdivision
C	Archaeological Inventory Survey of Subdivision Site
D	Archaeological Inventory Survey of Roadway Extension
E	Cultural Impact Assessment
F	Traffic Impact Analysis Report
F-1	Supplemental Traffic Analysis
G	Preliminary Engineering Report
H	Drainage and Soil Erosion Report

kimwalehu\final\ea.rpt

Executive Summary

Project Name: Proposed Hale Mua Affordable Housing Subdivision

Type of Document: Final Environmental Assessment

Legal Authority: Chapter 343, Hawaii Revised Statutes

Agency Determination: FONSI

Applicable Environmental Assessment review "trigger": Use of County Lands

Location: Maui Island
Waiehu, Wailuku District
TMK: (2) 3-3-02:31

Applicant: Hale Mua, LLC
Sterling Kim
385 Hukilike Street, Suite 210
Kahului, Hawaii 96732
Telephone: 873-9633

Accepting Authority: State of Hawaii
Land Use Commission
State of Hawaii, Land Use Commission
P.O. Box 2359
Honolulu, Hawaii 96804
Telephone: 587-3822

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

Project Summary: The applicant is proposing the development of an approximately 466-lot single-family residential subdivision consisting of 238 affordable house-lot units, 209 market-priced lots, and 19 large lots, with onsite infrastructure improvements. Off-site improvements include water and sewer line installation within the Kahekili Highway right-of-

way, as well as the extension of Imi Kala Street from its current terminus to Kahekili Highway and the construction of a new bridge spanning Iao Stream.

Preface

Hale Mua Properties, LLC, proposes the development of an approximately 466-lot single-family residential subdivision in Waiehu, Maui, Hawaii (TMK (2) 3-3-02:31). The proposed action includes the development of 238 affordable single-family units, 209 market-priced single-family units, and 19 large lots. Off-site infrastructure improvements are required to service the proposed project, including drainage, waterline and sewerline installation within Kahekili Highway. Additionally, the extension of Imi Kala Street, from its current terminus at Eha Street to Kahekili Highway, including the construction of a new bridge across Iao Stream, is proposed as the applicant's contribution towards regional roadway improvements. Inasmuch as Kahekili Highway is a County-owned roadway, an Environmental Assessment (EA) is being prepared pursuant to Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Administrative Rules, Environmental Impact Statement Rules. This EA documents the project's technical characteristics and environmental impacts, and advances findings and conclusions relative to the significance of the project.

It is noted that the EA will serve as the primary technical document for a Section 201G-HRS application to the Maui County Council. The EA will also serve as the technical support document for a petition for district boundary amendment which will be filed with the State Land Use Commission (LUC). The LUC has been identified as the accepting authority for the EA.

Chapter 1

Project Overview

I. PROJECT OVERVIEW

A. PROPERTY LOCATION, EXISTING USE AND LAND OWNERSHIP

The applicant, Hale Mua Properties, LLC, proposes to develop the Hale Mua Subdivision Project, an affordable housing venture in Waiehu, Maui, Hawaii (TMK: (2) 3-3-02:31). See Figure 1. It should be noted that there are two (2) parcels (TMK (2) 3-3-02:9 and TMK (2) 3-3-02:11) embedded within the subject property. These parcels are not owned by the applicant, nor are they part of the proposed action. See Figure 2.

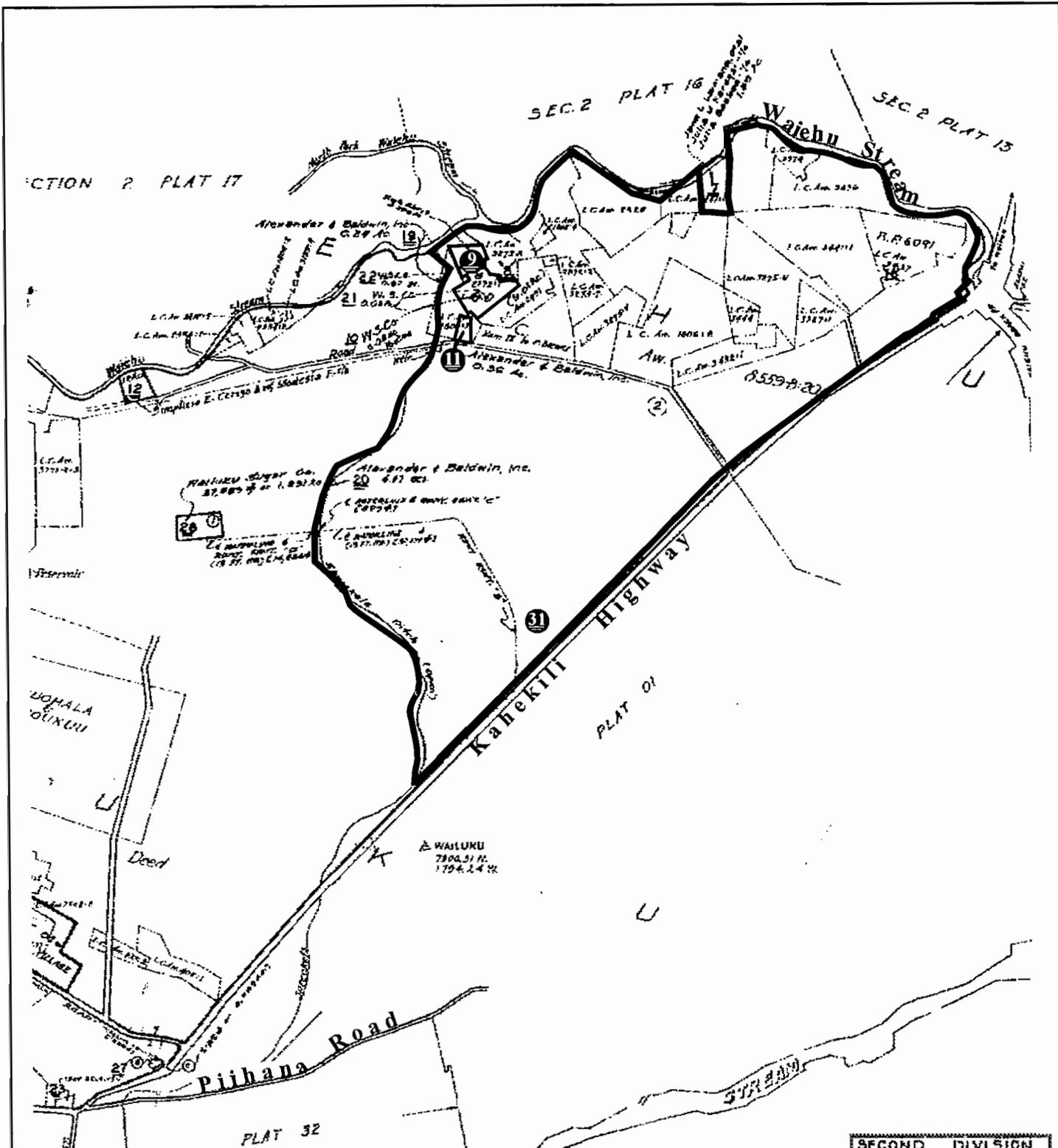
To the north of the site is the Oceanview Estates residential subdivision. To the east of the project site are several existing Waiehu residential subdivisions, including Waiehu Heights and Waiehu Terraces. The Wailuku Country Estates agricultural subdivision is located to the immediate south of the property. Vacant lands are found along the slopes of the West Maui Mountains, while the undeveloped Piihana Project District 3 property is located across Kahekili Highway, immediately east of the project site.

The subject property is approximately 238 acres in size and was formerly used for agricultural cultivation. See Figure 3. The property currently lies fallow. Existing vegetation includes macadamia nut trees, formerly cultivated on the property, and common grasses and weeds.

Hale Mua Properties, LLC is the fee owner of the property.

B. PROPOSED ACTION

The proposed project involves the development of approximately 466 improved lots with approximately 238 lots (51 percent) set aside for affordable house-lot packages. The remaining lots, consisting of approximately 209 residential lots and 19 large lots, will be sold at market price. See Figure 4. The affordable lot sizes are proposed to be a



Note: Parcels 9 and 11 are owned by others and are not part of the proposed action

SECOND DIVISION	
ZONE	SEC. PLAT
3	3 02
CONTAINING PARCELS	

Figure 2 Proposed Hale Mua Affordable Housing Subdivision Tax Map for Proposed Subdivision





Source: Hale Mua Properties, LLC

Figure 3

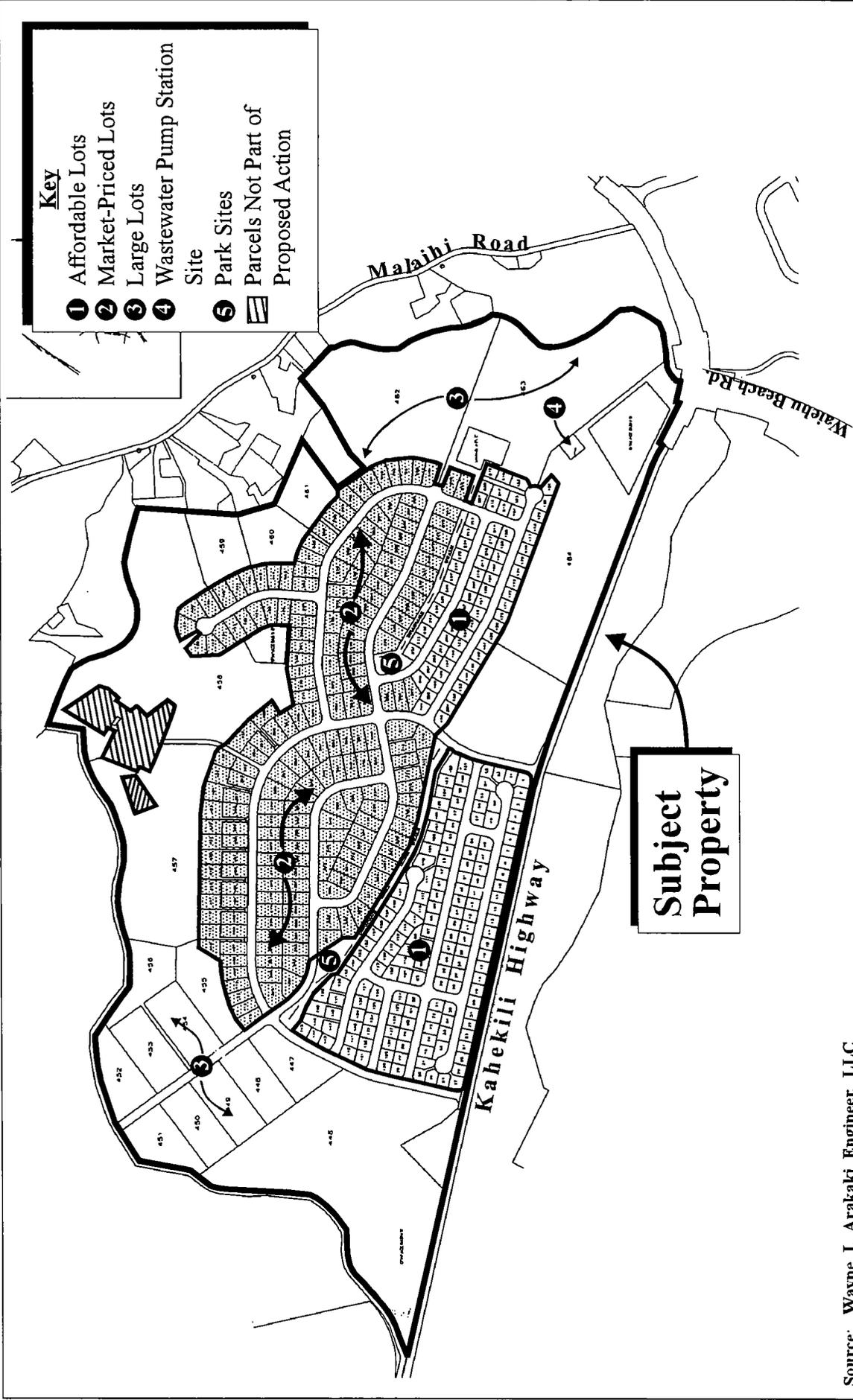


Proposed Hale Mua Affordable
Housing Subdivision
Aerial Photograph of Subject Property

NOT TO SCALE

Prepared for: Hale Mua Properties, LLC

MUNEKIYO & HIRAGA, INC.



Source: Wayne I. Arakaki Engineer, LLC

Figure 4



Proposed Affordable Housing
Subdivision
Preliminary Subdivision Plan

NOT TO SCALE

Prepared for: Hale Mua Properties, LLC



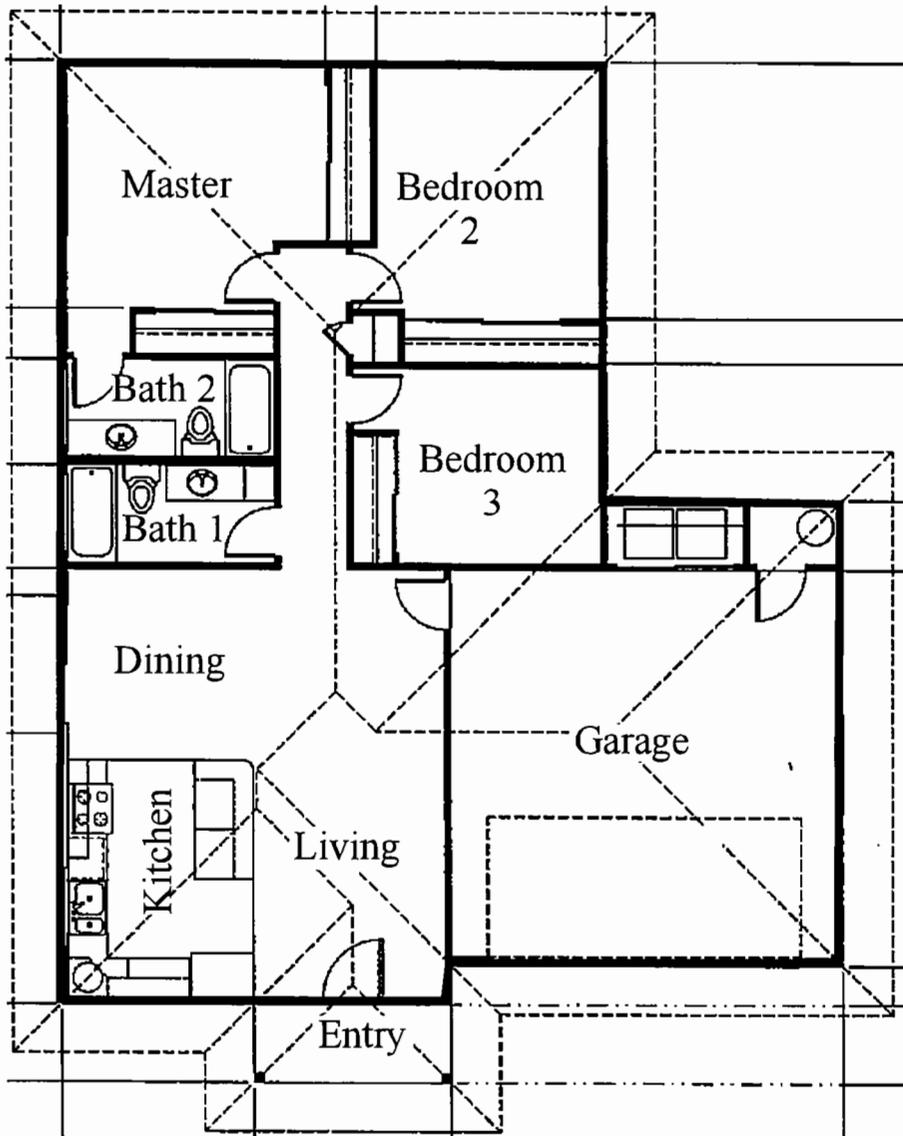
minimum of 5,000 square feet (s.f.) with a zero-lot line concept proposed for the affordable homes. Market priced lots will be on the order of 10,000 s.f. The 19 large lots range in size from 2 to 25 acres. Under the project's preliminary marketing concept, improved market lots would be sold to interested purchasers in fee simple interest.

Sale prices are projected to range from \$170,000.00 to \$180,000.00 for the affordable house-lot packages. House models for the affordable lots will provide approximately 1,100 s.f. to 1,200 s.f. of living area and are depicted in Figure 5 and Figure 6. A "Description of Materials" form for the affordable units is included in this document as Appendix "A". The 209 market-priced residential lots and the 19 large lots have an estimated sales price range of \$300,000.00 to \$800,000.00.

The affordable house-lot packages will be sold with a 10-year, buy-back clause in order to prevent rapid resale and removal of the residences from the affordable pool. After ten (10) years, the seller will be entitled to 20 percent of equity, with the percentage increasing each subsequent year. Market-priced lots will be sold with restrictions on further subdividing and development will be restricted to one (1) main and one (1) accessory dwelling unit. These restrictions have been developed in coordination with the County Department of Housing and Human Concerns.

Access to the proposed subdivision would be provided via two (2) access points on Kahekili Highway. See Figure 7.

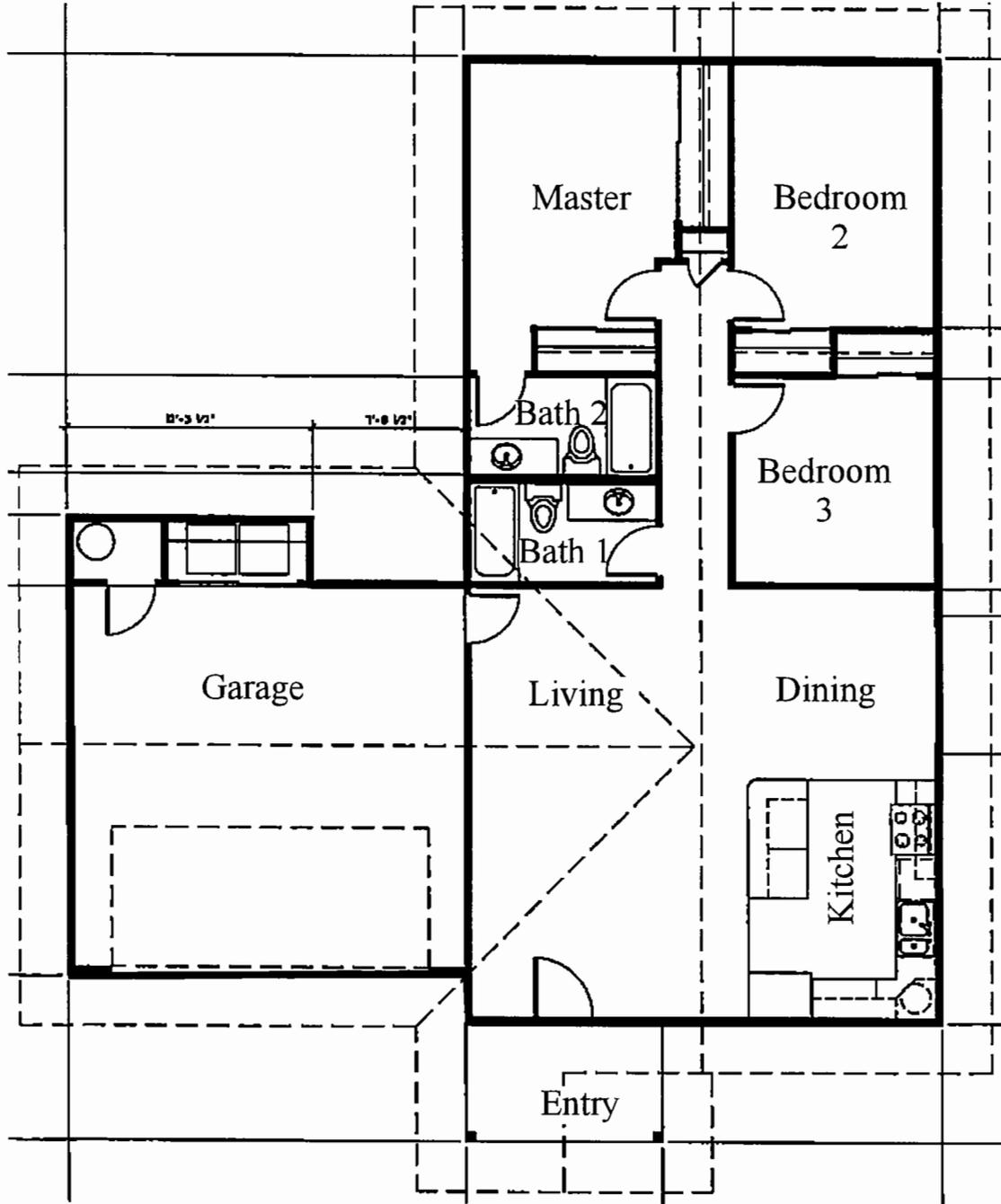
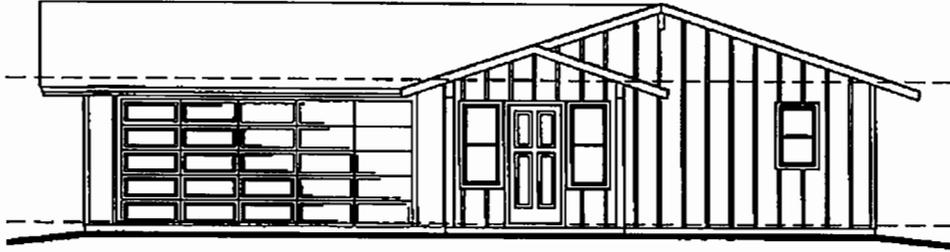
Three (3) neighborhood parks are proposed for development as well. An approximately 5.32-acre park site is proposed along Kahekili Highway, at the northern access point. This park will be provided with parking stalls, a comfort station, and an athletic field; it will be dedicated to the County of Maui. The second and third parks are approximately 0.46-acre and



Source: Windward Construction

Figure 5 Proposed Hale Mua Affordable
Housing Subdivision
House Model 1

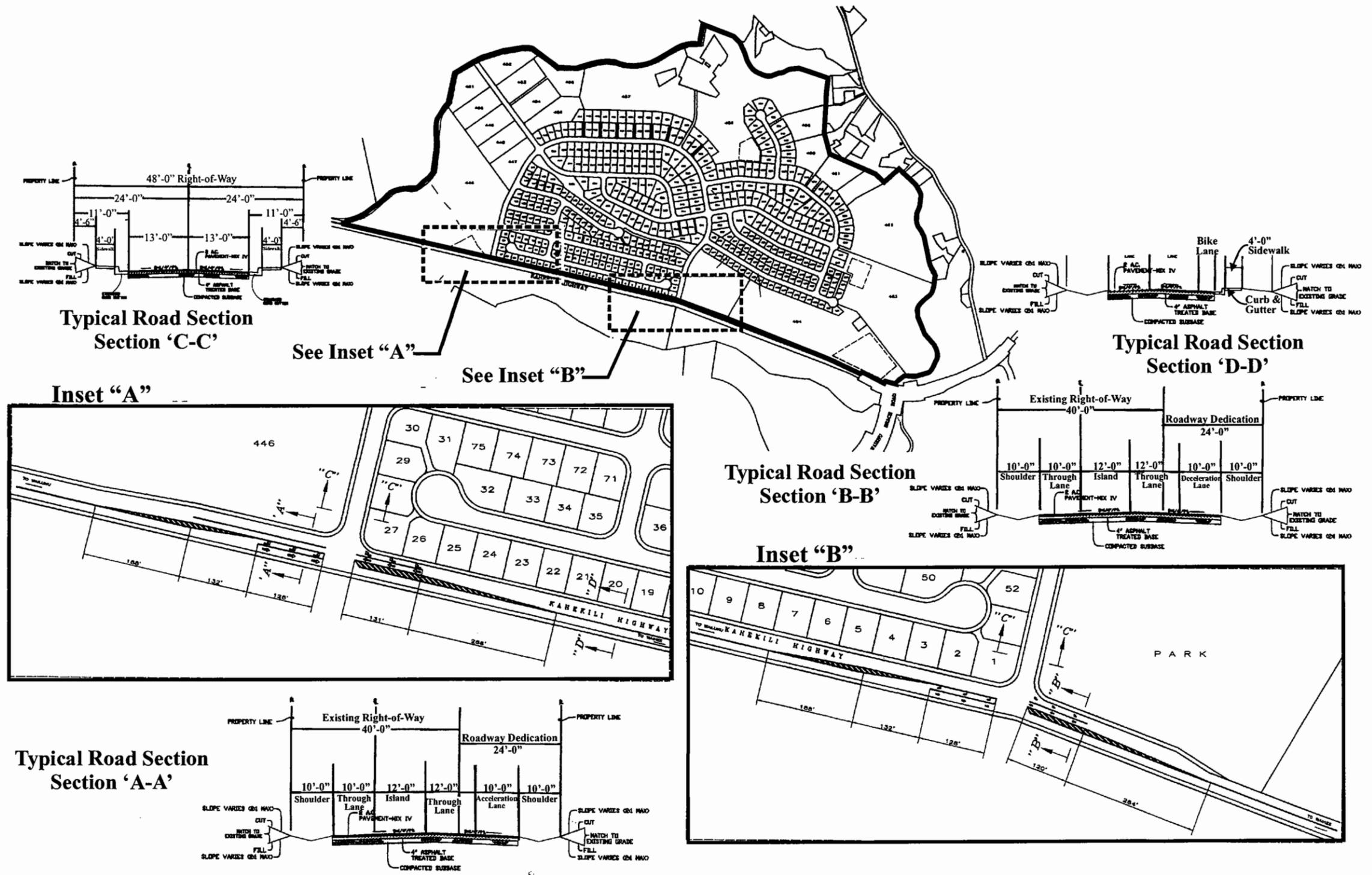
NOT TO SCALE



Source: Windward Construction

Figure 6 Proposed Hale Mua Affordable Housing Subdivision House Model 2

NOT TO SCALE



Source: Wayne I. Arakaki Engineer, LLC

Figure 7

Proposed Hale Mua Affordable Housing Subdivision
Subdivision Intersection Details

NOT TO SCALE



Prepared for: Hale Mua Properties, LLC



1.14 acres, respectively, and located to the northern and southern ends of the subdivision. These parks will be the responsibility of the Homeowners' Association.

Acreage distributions for the project are summarized in Table 1.

Table 1

LAND USE ALLOCATIONS	
<i>Land Use</i>	<i>Approximate Acreage</i>
Affordable Housing	29.0
Market Priced Housing	50.4
Large Lots	120.76
Parks	6.92
Drainage/Open Space	8.42
Roadways	22.5
Total	238.0

Proposed improvements include site grading and utilities installation covering onsite water, sewer and drainage systems. A new wastewater pump station located within the property's northeastern extent will convey flows to a new force main running along Kahekili Highway, ultimately conveying flows to existing County infrastructure and the Wailuku Pump Station. The onsite drainage system will consist of drain inlets and underground culverts leading to four (4) onsite detention basins located throughout the property. Electrical, telephone and cable utility systems will be placed underground. Subdivision roadways will be constructed to County standards.

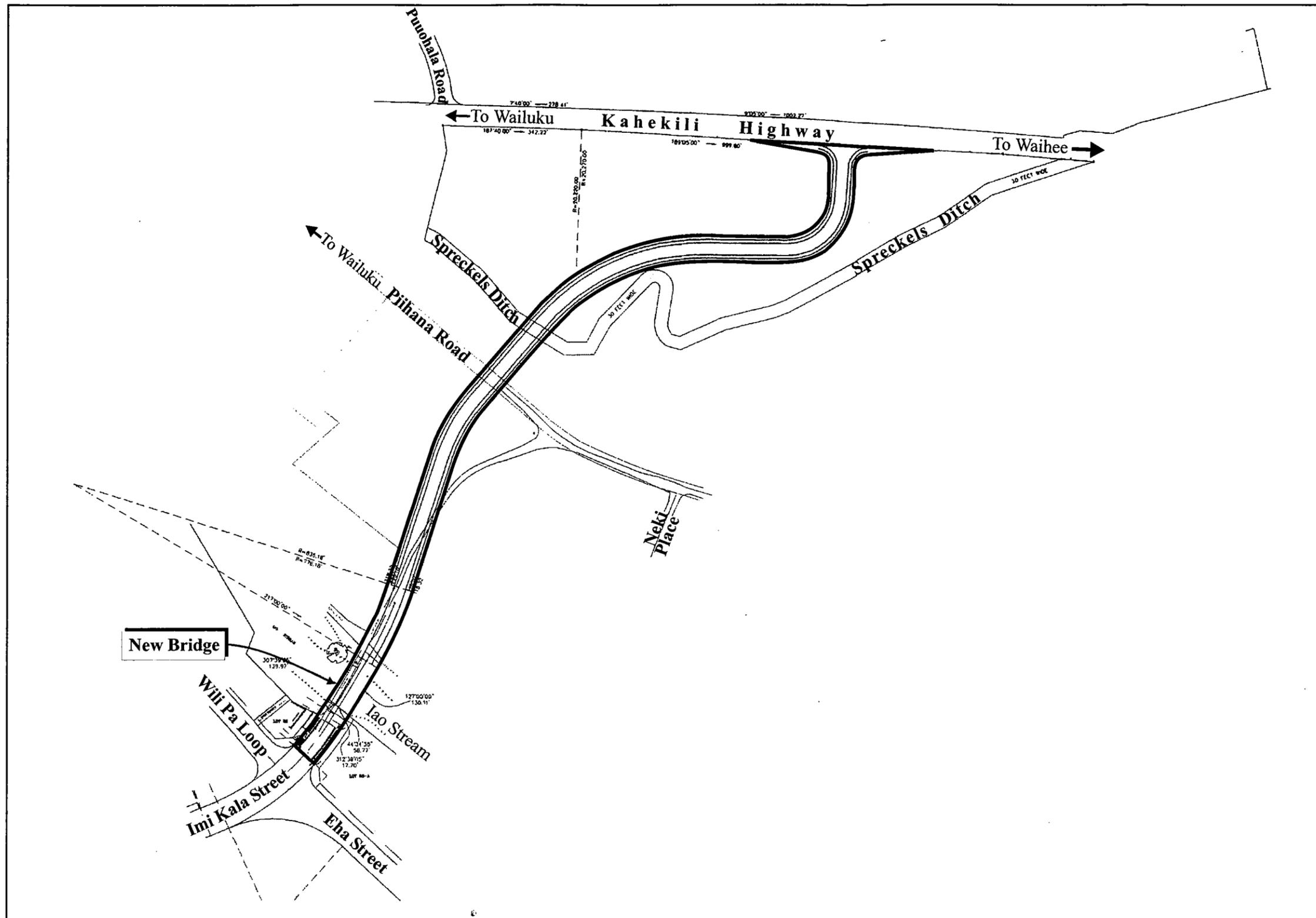
Corollary to the principal project, the applicant proposes improvements to Kahekili Highway in the vicinity of the subdivision. These improvements would consist of acceleration and deceleration lanes, as well as left-turn pockets at the primary access point to the subdivision.

The applicant further proposes to construct a new roadway as a continuation of Imi Kala Street which currently terminates in the Millyard light industrial subdivision. This roadway would run from Kahekili Highway, across Iao Stream, to connect with the existing roadway. See Figure 8. The typical roadway section for the proposed Imi Kala Street Extension is shown in Figure 9. A new bridge across Iao Stream would be constructed as a part of this roadway. See Figure 10. This roadway extension will provide an alternate route to Wailuku Town and is being proposed as the applicant's contribution to regional roadway improvements and will serve as the primary traffic impact mitigation measure for the project.

The estimated cost for the subdivision improvements (excluding house construction on the affordable lots) is \$24 million. This cost estimate covers off-site water and wastewater improvements required to service the subdivision. Separately, the estimated cost for the Imi Kala Street Extension, including the new bridge crossing, is \$10 million.

C. PROJECT NEED/REASONS JUSTIFYING THE REQUEST

The Waiehu area is surrounded by lands used historically for agricultural production. However, agricultural operations have been significantly reduced in recent years while the project site itself is located within an area of existing and planned residential development. The Wailuku-Kahului Community Plan shows residential use designations surrounding the proposed project, along the Kahekili Highway corridor. These



Source: Wayne I. Arakaki Engineer, LLC

Figure 8

Proposed Hale Mua Affordable Housing Subdivision
Imi Kala Street Extension

NOT TO SCALE



Prepared for: Hale Mua Properties, LLC



designations reflect the Waiehu Heights and Waiehu Terraces subdivisions as well as the proposed Piihana Project District.

With continuing stability in local economic conditions, housing demand has exhibited an upward trend. Sales information for single-family subdivisions in Central Maui indicate that demand for single-family homes is strong, with continuing strength in demand anticipated. The year 2002 saw an increase in single-family homes in Central Maui of 11 percent over the previous year, and a median sales price increase of 18 percent over the previous year (Maui County Data Book, 2003). Recent median sales price information for the island of Maui shows that single-family units sold for approximately \$632,000.00 in March of 2005 (Realtor Association of Maui, April 2005).

D. AFFORDABLE HOUSING PROGRAM

The Hale Mua Affordable Housing Subdivision will provide affordable housing in keeping with the County of Maui's affordability guidelines for Section 201G-118, HRS projects. In particular, the project will offer a minimum of 51 percent of the total number of lots to families having an annual income of not more than 120 percent of the Maui County median income. The proposed sales prices for the houses have been preliminarily set at \$170,000.00 to \$180,000.00. At interest rates prevailing at the time of filing of the 201G application, and at the preliminary prices noted herein, the house-lot packages would be affordable to families falling in the 70 percent of median income category. Hale Mua Properties, LLC will enter into an affordable housing agreement with the County of Maui to establish the specific terms and conditions for affordable sales price distribution and marketing requirements.

E. ENTITLEMENTS REQUIRED

The County of Maui's Department of Housing and Human Concerns has certified the Hale Mua affordable housing project as meeting the criteria for a Section 201G-118, Hawaii Revised Statutes (HRS) project. Section 201G-118, HRS promotes the delivery of affordable housing by allowing the exemption of endorsed projects from:

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

As such, a Section 201G-118 application will be filed with the Maui County Council to seek exemptions from the Community Plan Amendment and Change in Zoning processes, as well as other County requirements to support the timely implementation of the project, including the Imi Kala Street extension, without compromising public health, safety or welfare considerations. Proposed exemptions are presented in Appendix "B".

Subsequent to County approval, a petition for a State Land Use Commission (SLUC) District Boundary Amendment (DBA) from the "Agricultural" and "Rural" to the "Urban" district will be processed. The SLUC petition will encompass the entire 38-acre project area.

Design and construction of the proposed improvements will be initiated upon completion of the SLUC DBA and County 201G processes.

Chapter II

***Description of the
Existing Environment***

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL SETTING

1. Surrounding Land Uses

The site of the proposed Hale Mua Subdivision is located in Waiehu, Maui, a rural residential area located north of Wailuku Town, and just south of Waihee. The project site itself is 0.6 mile north of Wailuku Town via Kahekili Highway. It lies approximately 0.5 mile west of the Pacific Ocean shoreline. The property is currently accessed from the highway by a gated, unpaved road near the southern end and by an unpaved road coming off from Malaihi Road at the western side. The Waiehu-Waihee area, together with the project site, is surrounded by lands formerly cultivated in sugar and macadamia orchards by Wailuku Agribusiness Company, Inc.

The immediate borders of the subdivision site are Kahekili Highway to the east, Waiehu Stream on the north/northwest, and Spreckel's Ditch (irrigation flume) on the south/southwest. Surrounding the project site are other areas of single-family residential housing, including the Waiehu Terrace and Waiehu Heights subdivisions to the east. The subject property is across from and mauka of Maka'ala Street, which provides access to the Waiehu Terrace subdivision. Piihana Project District 3, an undeveloped urban area, is located along Kahekili Highway, across from the proposed project site.

The extreme northeastern boundary of the property meets the intersection of Kahekili Highway and Waiehu Beach Road. Northeast of that is Ka Home Ma Ha Mau cemetery and Oceanview Estates, a single-family subdivision. Further north lies

the County-managed Waiehu Beach Park and Waiehu Golf Course. Malaihi Road lies just to the north of the subject property and runs mauka (southwest), traversing a single-family, rural residential neighborhood with some farming. Waiehu Kou, a Department of Hawaiian Home Lands project, borders Kahekili Highway leading to the rural village of Waihee, 0.4 mile north of the property site.

The proposed Imi Kala Street Extension runs southeast of the subdivision site, from Kahekili Highway through the Piihana Project District site to the Millyard and Wailuku Industrial areas. The Piihana Project District is intended for residential use in keeping with the character of the Hale Mua subdivision. The Millyard and Wailuku Industrial areas contain a mixture of light industrial and commercial uses.

Currently, the subdivision site is vacant, largely covered in former macadamia nut orchards that have not been farmed since 1999. There is some other vegetation, including small trees, shrubs, and tall grasses. The project site is in a transitional area; on the outskirts but still near the urban area of Wailuku and in close proximity to single-family subdivisions. Thus, the project would complement the existing residential character of the area.

2. Climate

Like most areas of Hawaii, Maui's climate is relatively uniform year-round. The region's tropical latitude, its position relative to storm tracts and the Pacific anticyclone, and the surrounding ocean combine to produce a stable climate. Variation in climate on the island is largely left to local terrain.

Average temperatures at the project site 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 Wailuku region are predominantly out of the north-northeast and northeast.

3. Topography and Soil Characteristics

The subdivision site gently slopes in a west to east direction. Elevation at the property's eastern extent, along Kahekili Highway, is approximately 80 feet. Elevations at the property's western extent range between 240 and 250 feet. Having been formerly used for large-scale agricultural production, the property's terrain can be characterized as generally level and even.

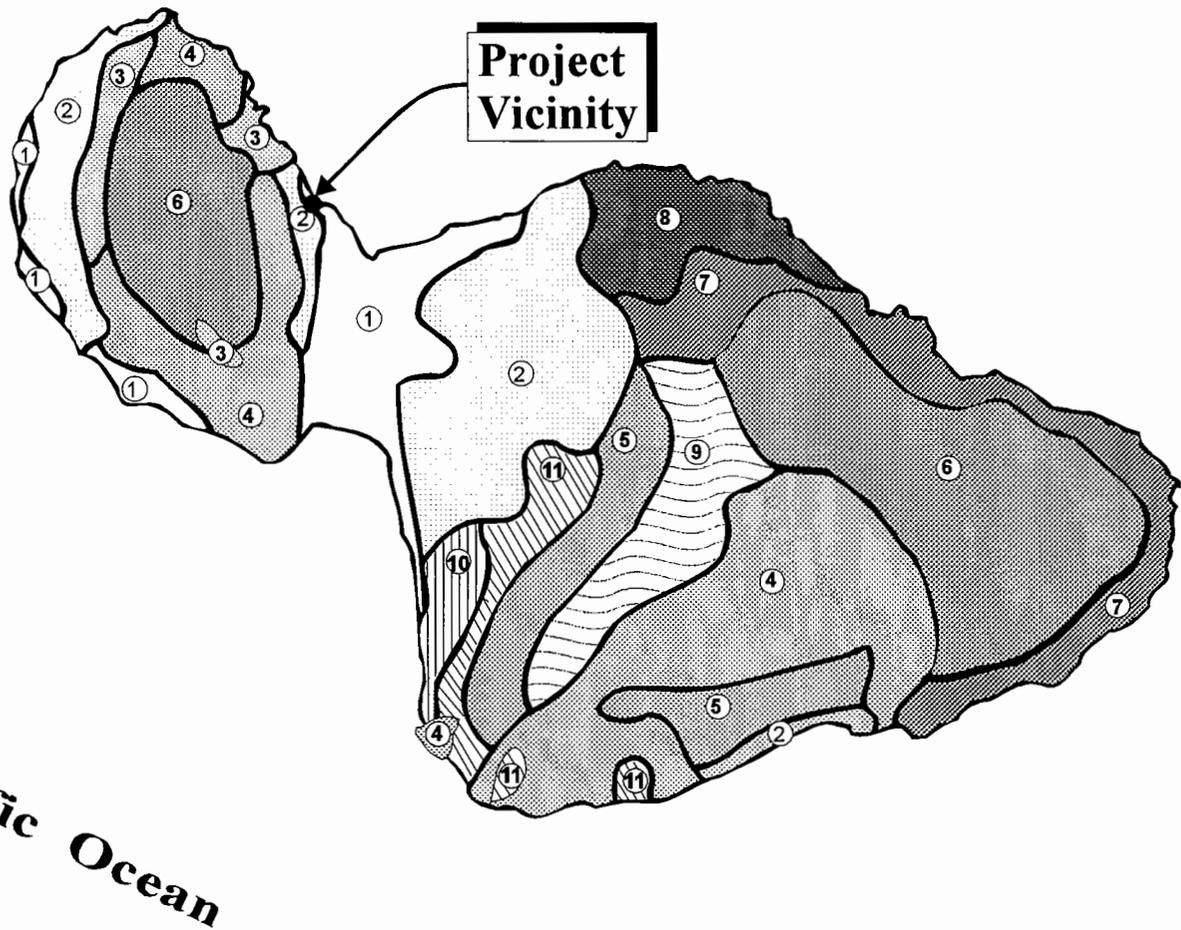
The project site is located within the Pulehu-Ewa-Jaucas association of soils, which is characterized as deep, nearly level to moderately sloping, and well drained that have a moderately fine to course texture. See Figure 11.

The northern and eastern portions of the subdivision site lie on Iao silty clay, 0 to 3 percent slopes (IaA) soil. This soil provides for slow runoff and slight erosion hazard. This type of soil is ideal for sugarcane growth and homesites. See Figure 12.

Wailuku silty clay, 7 to 15 percent slopes (WvC) soil underlies the northern and western extent of the subdivision. In a representative profile, the surface layer was found to have a dark reddish-brown silty clay around 12 inches thick. The subsoil, about 48 inches thick, is dark reddish-brown silty clay that has subangular blocky

LEGEND

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

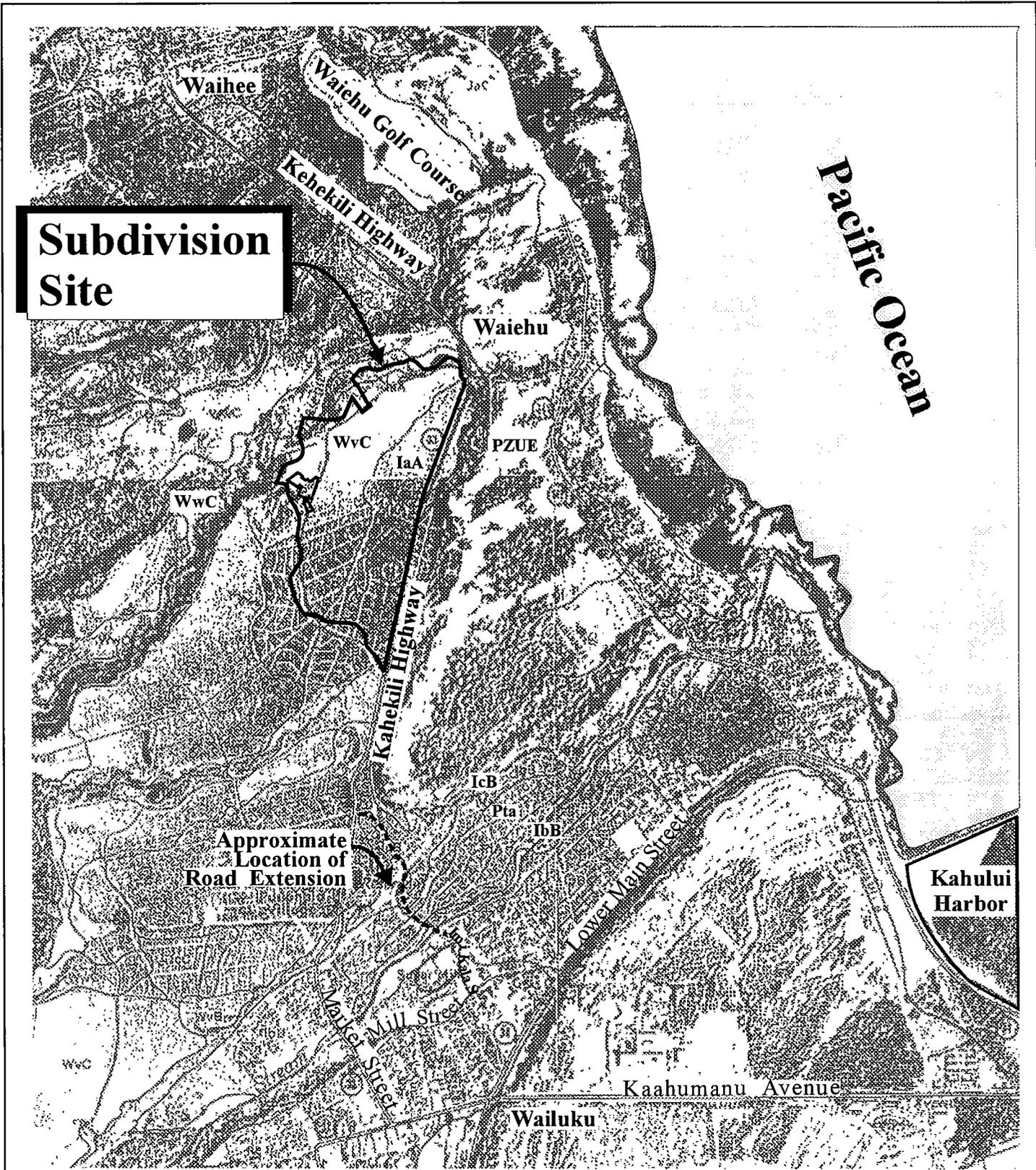


Map Source: USDA Soil Conservation Service

Figure 11 Proposed Hale Mua Affordable Housing Subdivision Soil Association Map

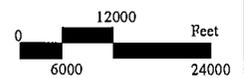
NOT TO SCALE





Source: USDA

Figure 12 Proposed Hale Mua Affordable Housing Subdivision Soil Classification Map



structure. The underlying layer is gravelly and cobbly alluvium. Like the IaA and IbB soils, permeability is moderate, with slow to medium runoff and a slight to moderate erosion hazard.

lao Clay, 3 to 7 percent slopes (IcB), underlies the more northerly areas of the Imi Kala Street Extension corridor. This soil is found on smooth alluvial fans and valley fill. It consists of a dark brown clay surface layer of 15 inches. The subsoil of some 45 inches is very dark brown clay and silty clay. Permeability is moderately slow and runoff is medium. This soil type has an erosion hazard of slight to moderate. lao clay is generally found in areas of sugar cane cultivation and homesites.

lao cobbly silty clay, 3 to 7 percent slopes (IbB) also underlies areas of the Imi Kala Street Extension corridor. Found on smooth alluvial fans and valley fill, this soil consists of approximately 15 inches of brown clay, followed by 45 inches of very dark brown subsoil. IbB soil characteristically contains cobblestone, and has moderately slow permeability, medium runoff and slight erosion hazard.

Pulehu cobbly clay loam, 0 to 3 percent slopes (PtA), underlies the remainder of the roadway extension corridor. This soil is found on alluvial fans and stream terraces and basins. A representative profile consists of 21 inches of dark brown cobbly loam underlain by another 39 inches of various types, including stratified loam, loamy sand, and silt loam. Below this is a coarse, gravelly, or sandy alluvium. The permeability is moderate and the runoff is slow. The erosion hazard is slight. This soil type is used for sugar cane cultivation, truck crops, and pasture.

According to the U.S. Soil Conservation Service, all soils found within the project site are of the classification most commonly used for sugarcane and homesites.

4. **Agricultural Lands of Importance to the State of Hawaii (ALISH) and Land Study Bureau Assessment**

In 1977, the State Department of Agriculture developed a classification system to identify Agricultural Lands of Importance to the State of Hawaii (ALISH), based primarily, though not exclusively, on their soil characteristics. The three (3) classes of ALISH lands are: "Prime", "Unique", and "Other", with the remaining non-classified lands termed "Unclassified". When utilized with modern farming methods, "Prime" agricultural lands have a soil quality, growing season, and moisture supply needed to produce sustained crop yields economically; while "Unique" agricultural lands possess a combination of soil quality, growing season, and moisture supply to produce sustained high yields of a specific crop. "Other" agricultural lands include those that have not been rated as "Prime" or "Unique".

As reflected by the ALISH map for the Wailuku-Kahului region, the proposed project, both the subdivision area and the majority of the Imi Kala Street Extension corridor, are comprised of lands that have been defined as "Prime" agricultural lands. See Figure 13.

5. **Land Study Bureau Classifications**

The University of Hawaii, Land Study Bureau (LSB) developed the Overall Productivity Rating, which classifies soils according to five (5) levels, with "A" representing the class of highest productivity and "E" representing the lowest. The letters are followed by

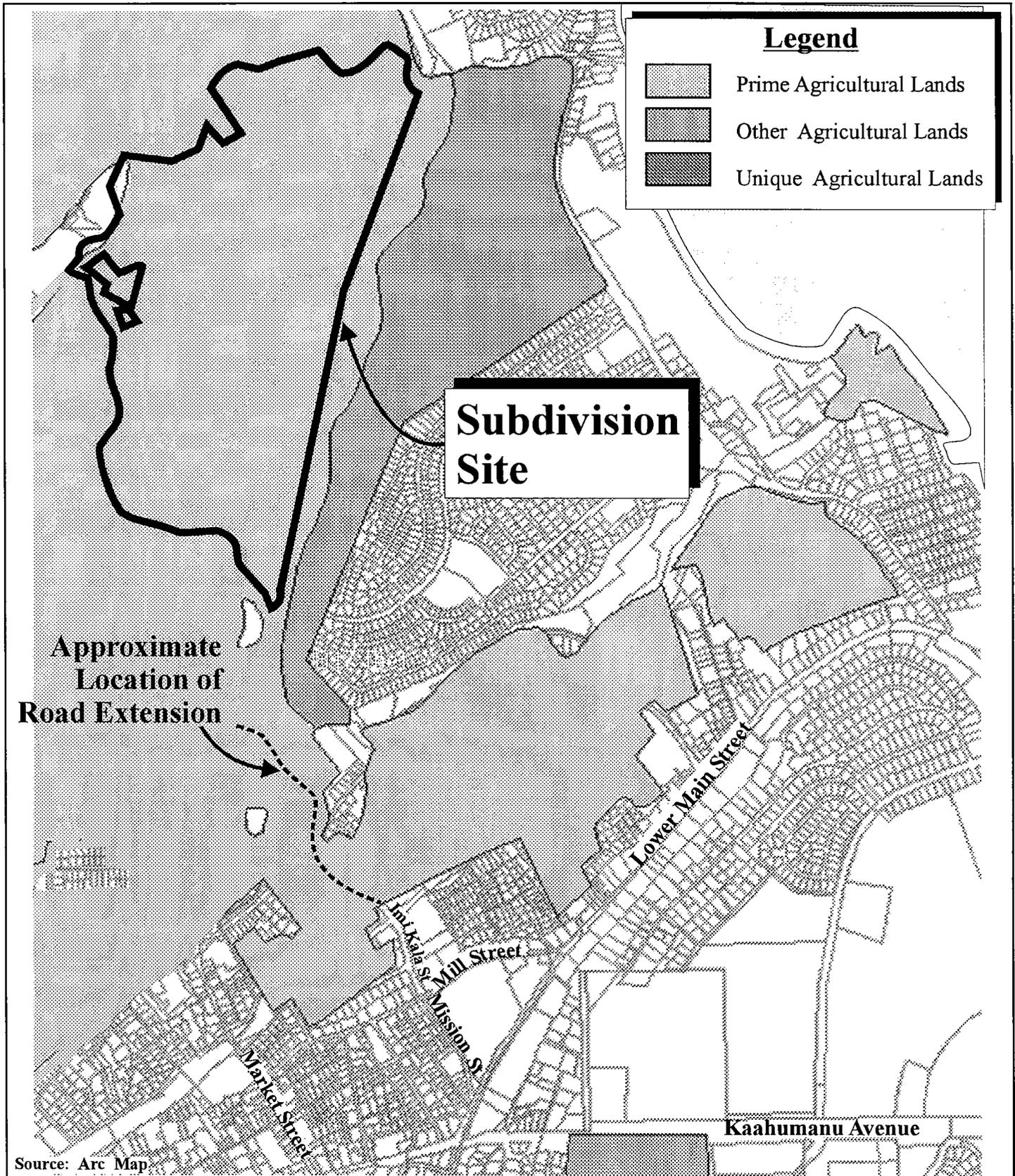


Figure 13 Proposed Hale Mua Affordable Housing Subdivision
 ALISH Map

NOT TO SCALE



numbers which further classify the soil types by conveying such information as texture, drainage, and stoniness.

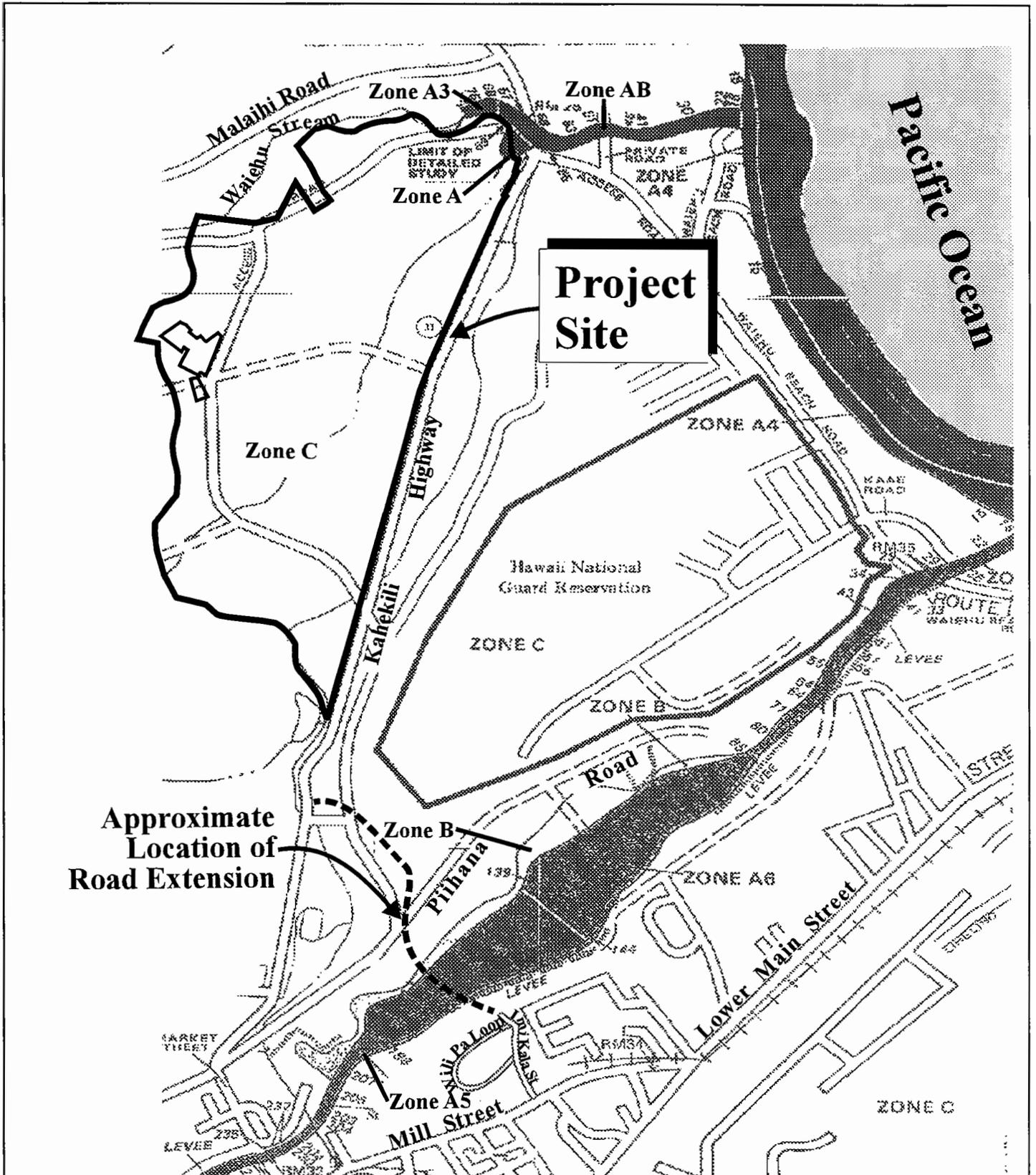
The subdivision area is located on lands designated as "B82i" and "C83i". These are irrigated, well-drained lands with a non-stony, finely textured soil. It should be noted that this formerly productive agricultural land has been fallow since 1999.

The Imi Kala Street Extension corridor lies on lands designated "B82i", as well as "B20i", which designates irrigated, well-drained land with stony and finely textured soil.

6. Flood Characteristics

The subdivision project area is located in the Flood Insurance Rate Map's Zone A, Zone A3 and Zone C. Areas found in the vicinity of the intersection of Waiehu Stream and Kahekili Highway represent Zone A3, a 100-year flood zone, with base flood elevations and flood hazard factors ranging between 67 and 80 feet. The segment jutting from Waiehu Stream and bordering Kahekili Highway is deemed Zone A, an area of 100-year floods with base flood elevations and flood hazard factors undetermined. The balance of the parcel, save the most northerly edge, represents Zone C areas of minimal flooding. See Figure 14.

The Imi Kala Street Extension traverses lands designated as Zones B, C, and A5. A5 designates a Special Flood Hazard Area inundated by the 100-year flood, while Zone B designates an area between a Special Flood Hazard Area and the limits of the 500-year flood.



Source: FIRM Panels 150003 0180B, 150003 0190A

Figure 14 Proposed Hale Mua Affordable Housing Subdivision Flood Insurance Rate Map

NOT TO SCALE



7. Streams and Wetlands

The Waiehu Stream, along with Spreckels Ditch—a plantation irrigation facility—serve as the two water bodies that combine with Kahekili Highway to structure the subdivision site’s boundary lines. The Pacific Ocean is located approximately one-half mile to the east of the property. The Waiehu Stream is a perennial stream with substantial aquatic resources. The stream valley is considered culturally significant and the stream itself is associated with taro cultivation.

The Imi Kala Street Extension includes a bridge across the Iao Stream. The Iao Stream is a perennial stream with substantial aquatic resources and has been associated with taro cultivation in its upper reaches. It is rated an Outstanding Stream by the State of Hawaii and offers such recreational activities as hiking, fishing, swimming, parklands, nature study, and scenic views.

8. Flora and Fauna

The subdivision parcel has been formerly utilized for sugar cane and macadamia orchard cultivation but is currently fallow. Vegetation in the region is generally characterized by introduced grass species. Other plant species typically associated with the area include sandbur, lantana, fingergrass and bristly foxtail. The project site also contains vegetation such as koa haole, monkey pod, and banana. The Imi Kala Street Extension alignment also traverses lands formerly cultivated in sugar cane and macadamia nut trees.

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

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

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

9. Archaeological Resources

An Archaeological Inventory Survey of the subdivision site was carried out by Scientific Consultant Services (SCS). See Appendix "C". The inventory survey included historic background research and settlement pattern analysis prior to fieldwork, a complete pedestrian survey of the project area, subsurface testing, and reporting.

The project site has been heavily affected by its history of commercial cultivation. The area was utilized for sugar cane production for over 100 years, followed by macadamia nut orchards for some 20 years. The land surface has thus been substantially altered by agricultural activities.

Thirteen (13) historic sites were documented during this survey, which were then condensed to seven (7) total sites when assigned State site numbers. One (1) of these, the sugar industry irrigation ditch known as Spreckels Ditch, had been recorded previously as State Site Number (SSN) 50-50-07-1508. The other six (6) were newly recorded. These include historic sugar agriculture features (SSN 50-50-04-5522), isolated lithic finds (SSN B5523), an isolated marine shell find (SSN B5524), an historic terrace and mound likely associated with plantation-era land clearing (SSN B5525), a concrete foundation remnant of an historic pig-raising facility (SSN

B5526), and a terrace complex from an early historic period (SSN B5527).

Although these sites were considered significant because of their ability to yield information about history or prehistory, that information has been documented. Thus, they are no longer deemed significant.

Subsurface testing was also carried out in areas likely to have been least affected by historic activities. The only find of any significance was a sample of charcoal. These areas were determined to be culturally sterile.

An Archaeological Inventory Survey was also carried out in the area of the proposed Imi Kala Street Extension by Scientific Consultant Services, with similar methodology. See Appendix "D".

The Survey identified four (4) sites of potential interest. One of these sites is Speckles Ditch, which has been previously identified and is recorded as SSN 50-50-07-1508. The other three (3) sites have now been recorded. SSN 50-50-04-5564 is the bridge which currently spans the Iao Stream. SSN 50-50-04-5565 represents the remnants of the *lo'i* fields uncovered during trenching in the area between the existing Imi Kala Street and Piihana Road. Finally, SSN 50-50-04-5566 is the unnamed ditch running parallel to Kahekili Highway. This is part of the irrigation system formerly used by Wailuku Agribusiness during agricultural production.

10. Air Quality

Air quality in the Wailuku-Kahului region is considered good as emissions from point sources, including Maui Electric Company's (MECO) power plant and Hawaiian Commercial and Sugar Company's (HC&S) sugar mill as well as non-point sources, such as automobile emissions, do not generate problematic concentrations of pollutants. The relatively high quality of air can also be attributed to the region's constant exposure to winds that quickly disperse concentrations of emissions. This rapid dispersion is evident during burning of sugar cane in fields located to the southeast of the Kahului residential core.

Air quality in the Waihee region is similarly considered good. In the past, with large scale agricultural activities conducted, air quality conditions were temporarily affected by agricultural-related operations. With current fallow conditions on surrounding lands in proximity to the subject property, air quality effects attributed to agricultural operations are not considered problematic.

11. Noise Characteristics

There are no significant fixed noise generators in the vicinity of the subject property. Existing background noise in the project area is attributable to vehicles traveling along Kahekili Highway. Additional noise generated by construction in the project vicinity is considered temporary.

12. Visual Resources

The subject property is located along the West Maui Mountain's foothills. Nearby lands abutting the site were formerly used for large-scale agricultural production activities, with single-family

subdivisions (Oceanview Estates, Waiehu Heights, etc.) occupying lands to the east. The surrounding agricultural lands define the open spaciousness of this part of the island. Additionally, the West Maui Mountains provide the scenic backdrop for the project area and surrounding lands. The Pacific Ocean is visible to the east of the subject property.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

The population of the island of Maui has exhibited relatively strong growth over the last two (2) decades. The 2000 population was estimated at 117,644, an increase from the 1990 projection of 91,361. The projected Year 2005 population is estimated at 127,950, while the population for the Year 2020 is projected at 160,090 (SMS, 2002).

The estimated Year 2000 population for the Wailuku-Kahului Community Plan region is 41,503. The region's population shows an estimated increase to 44,883 in the Year 2005. By the Year 2020, population in the region is projected to increase to 55,424 (SMS, 2002).

2. Housing

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. This area accounts for the largest percentage of housing units on the island. Demand for housing in this region in the 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, 2002).

In 2000, approximately 2 percent of housing units were vacant in the Waiehu-Waihe'e area and approximately 5 percent were vacant in the Wailuku area. This contrasts sharply with the County-wide vacancy rate of approximately 23 percent. Of the occupied housing units, approximately 58 percent are owner occupied in the County as a whole, as compared to a rate of approximately 82 percent for the Waiehu-Waihe'e area and approximately 59 percent for the Wailuku area (Maui County Data Book, 2003).

Average sales price for single-family homes in Central Maui are on par with the County-wide average. During the month of August 2004, the average sales price of a Central Maui single-family home was \$492,500.00, compared to a County-wide average of \$540,000.00 (Realtor Association of Maui, September 2004).

Household and Family Characteristics

The average household size in the Wailuku-Kahului area in the year 2000 was 3.17 compared to an island wide average of 2.90. These numbers are expected to decrease to an average of 3.03 and 2.80 respectively by the year 2010 (SMS, 2002).

The median household income in the Wailuku-Kahului area in the year 2000 was \$43,261.00. This figure is projected to grow to \$44,085.00 in 2010 and to \$43,929.00 in 2020. A more detailed breakdown of household income based on the Housing and Urban

Development (HUD) median county income in this region is provided in Table 2.

Table 2

<i>HOUSEHOLD INCOME</i>			
<i>Number of Households Earning No More Than</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>
50% of HUD Median	4,212	5,143	6,054
80% of HUD Median	6,712	8,279	9,812
100% of HUD Median	8,682	10,734	12,742
120% of HUD Median	9,923	12,289	14,605
140% of HUD Median	10,816	13,416	15,961
Source: SMS Socio-Economic Forecast 2002.			

3. Economy

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

4. Employment

As of August 2004, (for Maui County and the island of Maui) unemployment rates were 3.3 percent and 2.9 percent, respectively

(Labor and Occupational Information Hawaii, State Department of Labor and Industrial Relations, 2004). In the year 2000, there were a total of 32,851 civilian jobs in the Wailuku-Kahului area, representing 48 percent of the island-wide civilian jobs. Of those jobs, 25,688 were wage and salary positions while 7,163 were self-employed (SMS, 2002). In terms of job employment distribution, the Wailuku-Kahului region generally follows the County-wide trends for the labor force characteristics. See Table 3.

Table 3

EMPLOYMENT DISTRIBUTION		
<i>Occupational Category</i>	<i>Maui County</i>	<i>Wailuku-Kahului</i>
Agriculture	3 percent	4 percent
Manufacturing	2 percent	5 percent
Construction	4 percent	1 percent
Transportation, Communication and Utilities	6 percent	10 percent
Trade	21 percent	22 percent
Banking and Finance	4 percent	4 percent
Hotel	14 percent	1 percent
Other Services	16 percent	18 percent
Government	9 percent	14 percent
Self-Employed	21 percent	22 percent
Source: SMS, 2002.		

C. PUBLIC SERVICES

1. Recreational Facilities

The Wailuku-Kahului region encompasses a full range of recreational opportunities, including shoreline and boating activities at the Kahului Harbor and adjoining beach parks, and individual and organized athletic activities offered at numerous County parks and the War Memorial Complex. In relatively close proximity to the property are Wells Park, the Wailuku Community Center, Papohaku Park and Iao Valley State Park.

The County of Maui's Waihee Park is located in Waihee Town to the north of the property. Waihee Park encompasses approximately 1.9 acres and includes a ball field, paved play court, restroom facilities and picnic tables as well as a barbecue area.

The County of Maui's Waiehu Golf Course is also in close proximity of the project area. The 18-hole golf course is a municipal course open to the public.

2. Police and Fire Protection

Police protection for the Wailuku-Kahului region is provided by the County Police Department headquartered on Mahalani Street, approximately 4.0 miles from the proposed project site. The region is served by the Department's Central Maui Patrol.

Fire prevention, suppression and protection services for the Wailuku-Kahului region is provided by the County Department of Fire Control's Wailuku station, located in Wailuku Town, approximately 3.0 miles from the project site.

3. Solid Waste

Single-family residential solid waste collection service is provided by the County of Maui on a once-a-week basis. Residential solid waste collected by County crews are disposed at the County's 55-acre Central Maui Landfill, located 4.0 miles southeast of the Kahului airport. In addition to County-collected refuse, the Central Maui Landfill accepts commercial waste from private collection companies.

4. Health Care

Maui Memorial Medical Center, the only major medical facility on the island, services the Wailuku-Kahului region. Acute, general and emergency care services are provided by the 196-bed facility. In addition, numerous privately operated medical/dental clinics and offices are located in the area to serve the region's residents.

5. Schools

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

Waihee School (Grades K-5) is located approximately 3.0 miles to the north of the proposed project site.

The Maui Community College, a branch of the University of Hawaii, serves as the island's primary educational institution at the collegiate level.

D. INFRASTRUCTURE

1. Roadways

The Wailuku-Kahului region is served by a roadway network that includes arterial, collector and local roads. Major roadways include Kaahumanu avenue, the principal linkage between Wailuku and Kahului, Lower Main/Kahului Beach Road, Hana Highway and Puunene Avenue.

The project site is served by Kahekili Highway, a two-lane, two-way state road with paved shoulders and a posted speed limit of 30 mph. Kahekili Highway begins in Wailuku Town and extends north toward Kahakuloa. Beyond Waihee, this roadway becomes a substandard road which encircles the West Maui Mountains, ultimately connecting to the fully improved Honoapiilani Highway in the vicinity of Honolua. The property is currently accessed from Kahekili Highway by a gated, unpaved road near the southern end and by an unpaved road coming off from Malaihi Street at the western side.

Bordering a portion of the project site along its northern boundary is Malaihi Road. This local roadway extends from Kahekili Highway to provide access to single-family residences and farm lots mauka of Kahekili Highway. Makaala Drive, a two-lane collector street, intersects Kahekili Highway east (makai) of the subdivision site.

The main roadway running through the property itself is an unpaved agricultural road that traverses the property in a northwest-southeast direction. There are numerous unpaved access roads throughout the property extending from the main road in both directions. These were designed to service the now fallow macadamia tree orchard. Many of these roads are in poor condition and most are overgrown with vegetation.

The proposed Imi Kala Street Extension project will connect Imi Kala Street (which currently dead ends just after its intersection with Eha Street and Wili Pa Loop) with Kahekili Highway. Imi Kala currently terminates at its intersection with Mill Street. Mill Street is a two-lane, two-way County road, which, in turn, intersects Market Street, a major arterial roadway between Wailuku Town and the north via Kahekili Highway.

2. Wastewater

There are no sewerlines located in the proposed subdivision site or along Kahekili Highway in the vicinity of the project. The majority of the surrounding parcels are on individual wastewater systems. Nearby sewerlines, such as the sewer main at the intersection of Kahekili Highway and Waiehu Beach Road, are at capacity. Wastewater collected from the Wailuku area is transported to the Kahului Wastewater Treatment Plant.

3. Water

There are several water tanks located mauka of the proposed subdivision site: the Waiehu Heights tank has a capacity of 300,000 gallons, another has a capacity of 1.0 million gallons, and a third has a 100,000 gallon capacity. A series of 8-inch, 12-inch,

and 16-inch waterlines are located around the project site and convey the water from these tanks.

4. Drainage

Waiehu Stream is located on the north side of the subdivision site and extends upstream a distance of 3,000 feet. Based on the United States Geological Survey Map and the Federal Emergency Management Agency, the estimated flow for a 100-year storm at Kahekili Highway is 7,400 cubic feet per second (cfs). The average slope of the stream is about 10 percent. Ground cover along the water course is primarily thick brush and trees. There are no existing drainage improvements along the highway; runoff sheet flows across the highway onto downstream properties and into Waiehu Stream.

The upper portion of the property is bordered by Spreckels Ditch, which is owned by Wailuku Agribusiness Co., Inc. Mauka off-site runoff flows into the ditch and is then transported to a reservoir for irrigation use. There are no drainage improvements located on the proposed subdivision site or the corridor of the Imi Kala Street extension, other than Spreckels Ditch.

5. Electrical and Telephone Services

There are overhead telephone lines along Kahekili Highway and fronting the proposed subdivision site. There are no existing electrical or cable television lines in the immediate project area and no utility service to the subdivision site.

Chapter III

Potential Impacts and Mitigation Measures

III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. IMPACTS TO THE PHYSICAL ENVIRONMENT

1. Surrounding Land Uses

The project site is located in Waiehu, adjacent to Wailuku Town and is in proximity to the Waihee Village and existing single-family residential subdivisions. Single-family residential units are found at Oceanview Estates, Waiehu Heights, and Waiehu Terrace. The project is in close proximity to the Piihana Project District which is also intended for residential development complementary in character to the Hale Mua Subdivision. The proposed Imi Kala Street Extension will traverse a portion of the Piihana Project District.

The development of residential uses at the project site is consistent with already existing residential uses and proposed residential uses at the Piihana Project District.

2. Topography and Landform

The proposed subdivision site will be graded so as to allow the construction of single-family homes, as well as to facilitate drainage through the site. The general trend of the existing slope will be maintained, with elevation highest at the mauka (western) end of the site and decreasing toward the makai (eastern) end of the site.

3. Flora and Fauna

There are no known significant habitats or rare, endangered, or threatened species of flora or fauna located on the project site. In addition, the proposed improvements are not anticipated to impact wetland areas and wildlife habitats. As such, the removal of vegetation and displacement of wildlife from the project site is not

considered an adverse impact to these components of the natural environment.

4. Streams

No work will be performed in Iao Stream or Spreckels Ditch. The bridge over the stream will have supports located outside of the stream bed. Spreckels Ditch will be crossed with a spanspan bridge.

5. Archaeological Resources

The following significance evaluations are broad criteria established for the State and National register of Historic Places. These criteria are as follows:

Criterion A: Site is associated with events that have made a significant contribution to the broad patterns of our history.

Criterion B: Site is associated with the lives of persons significant to our past.

Criterion C: Site is an excellent site type; embodies distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual construction.

Criterion D: Site has yielded or has the potential to yield information important in prehistory or history.

Criterion E: Site has cultural significance; probable religious structures or burials present. (State of Hawaii criterion only).

The sites identified in the Archaeological Inventory Survey of the subdivision site were considered significant under Criterion D because of their ability to yield information about history or prehistory. See Appendix "B". Excavation at the most important sites yielded information that was recorded by Scientific Consultant Services. The recording of these finds amply covers their necessity and relevance to history and is, therefore, no longer deemed significant for archaeological purposes. Stratigraphic trenches were determined to be culturally sterile, implying probability that the rest of the subterranean realm on the property also lacks cultural significance potential.

The eastern portion of the property (nearest to Kahekili Highway) may have the potential to yield inadvertently discovered human remains. Two (2) cemeteries and beach sand (known occasionally to contain traditional human burials) are separated from the eastern portion of the project site by the highway only. Because there is some chance of uncovering burials or important subsurface traditional sites in this area, monitoring should be carried out on this eastern portion.

The sites uncovered in the area of the Imi Kala Street extension are considered significant under Criteria A and D. SSN 50-50-04-5565, the *lo'i* field, is also subject to Criterion B, as it is associated with the life of an unknown but important chief.

Only one (1) of the sites in the roadway extension corridor area is deemed worthy of preservation. Spreckels Ditch is significant and should be preserved. Preservation is not recommended for the

unnamed irrigation ditch once its origin and extent have been ascertained, nor for the bridge spanning Iao Stream.

The presence of the *lo'i* field, underlying approximately 6 feet of sediment, was confirmed with stratigraphic testing and no further testing or preservation is required. However, archaeological monitoring of the area between the current Imi Kala Street and Piihana Road is warranted as features of individual *lo'i* patches or field huts may be encountered if excavation occurs.

6. **Cultural Impact Considerations**

a. **Geopolitical Division**

Prior to Western contact in Hawaii, land was divided into units called *ahupua'a*. Ideally, each *ahupua'a* was self-sufficient, running from *mauka*, the mountain, to *makai*, the ocean (MacKenzie). These divisions served as both cultural and settlement systems as traditional Hawaiian life was tied intimately to the land. Hunting, gathering, cultivation, and habitation took place within three (3) zones which characterized the *ahupua'a*: the *Mauka* Zone, the Agricultural Zone, and the Coastal Zone. The *Mauka* Zone provided access to a variety of trees, plants, and herbs for various needs, customs and practices. Planting of yams, sweet potato, sugar cane, taro, and other foods took place in the Agricultural Zone, where gradual slopes of land allowed terraces to be constructed for more efficient irrigation. The Coastal Zone and low-lying areas was where most of the *kauhale*, group of houses, were found, as well as temples, fishing shrines, and fishponds (Minerbi).

Western contact brought changes to the Hawaiian land system along with the introduction of private ownership of land, a concept foreign to the Native Hawaiians. A Board of Land Commissioners was established in 1845 to uphold or reject all private land claims of both foreigners and Hawaiians. The Commission adopted rules pertaining to the proof of claims, right of tenants, and commutation to the government in attempts to achieve the goal of totally partitioning undivided lands. All lands not claimed by February 1848 were to be forfeited to the government (MacKenzie).

Following the enactment of these rules, the *Mahele* division of 1848 divided all lands of Hawaii between the king and chiefs. Two (2) years later the *Kuleana* act completed the *Mahele* process by authorizing the Land Commission to award fee simple titles to native tenants for their land. These *kuleana* parcels, also known as Land Commission Awards (LCA), were generally among the richest and most fertile in the islands and came from the king, government, or chief's land. All claims and awards were numbered and recorded in the *Mahele* Book (MacKenzie). In addition, government lands were sold as "Royal Patent Grants" or "Grants" in order to meet the increasing costs of government. These grants differed from LCAs, as it was not necessary for the recipients to obtain an award for their land from the Land Commission (Chinen).

Prior to the *Mahele*, the division called Na Wai Eha, meaning "The Four Streams," covered the four (4) great

valleys of the West Maui Mountains which drained eastward into Central Maui. Waiehu is the second valley of “The Four Streams,” or Na Wai Eha, and is watered by twin streams (Handy).

b. Traditional and Customary Rights

Hawaiian customs and practices are recognized as “Hawaiian usage” if it can be shown to have been exercised prior to November 25, 1892, which was when the Hawaiian Kingdom Legislature adopted British common law into the Hawaiian legal system (Minerbi). The traditional and customary rights of Native Hawaiians can be broken down into access rights, gathering rights, burial rights, and religious rights.

Access

Native Hawaiians generally share the same access rights as the general public. However, they have the unique access rights to *kuleana* parcels and between *ahupua'a*. Access to *kuleana* parcels may involve access along ancient trails or expanded access not limited to any route. Additionally, the *Kuleana* Act granted unobstructed access within the *ahupua'a* to obtain items necessary to make the *kuleana* parcel productive. Access rights between *ahupua'a* involve access along ancient or well established trails (MacKenzie).

Gathering

In terms of gathering rights, the Hawaii Supreme Court has upheld gathering rights within an *ahupua'a* for firewood, house-timber, *aho* cord, thatch, and *ki*-leaf under three (3) conditions. The tenant must physically reside within the *ahupua'a*, the right to gather can only be exercised upon undeveloped lands within the *ahupua'a*, and the right must be exercised only for the purpose of practicing Native Hawaiian customs and traditions (MacKenzie).

Burial

According to traditional Hawaiian burial beliefs, following death, the *'uhane*, or spirit, must remain near the *na iwi*, or bones. Burial sites are chosen by Hawaiians for symbolic purposes in places for safekeeping. Often, bones were hidden in caves, cliffs, sand dunes, or deposited in the ocean. Today, federal and state laws protect both unmarked and marked burial sites. Island Burial Councils assist the State Historic Preservation Division with inventory and identification of unmarked Hawaiian burial sites and determine the preservation or relocation of native Hawaiian burial sites (MacKenzie).

Religious

Hawaiian religion and beliefs were intimately tied to the land. While some practices and traditions were lost over the years, basic Hawaiian religious concepts remain. The terms "*aloha 'aina*," love the land and "*malama 'aina*," care for and protect the land, convey the unity of humans, nature, and the gods in Hawaiian philosophy (Minerbi). Furthermore, Hawaiians honored and worshiped *aumakua*, deities, and *akua*, gods. There were numerous *akua* of farming, fishing, tapa making, dancing, sports, and any other activity of Hawaiian life. The concept of *mana* or sacred attachment to places, people, or things also remains as a significant aspect of Hawaiian religion (MacKenzie).

The First Amendment of the U.S. Constitution guarantees the freedom to practice religion. To the Native Hawaiians, freedom to practice religion includes a freedom to practice a way of life which acknowledges the sacredness of places, animals, and natural forces (MacKenzie). However, Hawaii case law has established stringent constitutional tests regarding the infringement on a religious practice. In 1982, the Hawaii Supreme Court ruled that in order to find an act an unconstitutional infringement on religious practice, the following factors must be considered: (1) the legitimacy and sincerity of the practice, (2) whether or not the practice is burdened, (3) the extent of the impact on religious practices, and (4) whether or not the state had a compelling interest that justified the burden (Minerbi).

c. **Waiehu's Settlement and Historical Context**

It has been estimated that the lower coastal valleys of West Maui were settled early as an agriculturally oriented society, sustaining an expanding population into the late prehistoric period. Population growth led to the establishment of agricultural complexes in the upper valleys of West Maui. These population centers, located in either coastal or upland regions, were characterized by extensive terrace and pondfield agriculture and dispersed residential structures on the outskirts of the agricultural complexes. Religious structures and fishponds in coastal areas were significant components of the population centers (Titchenal).

In ancient times, Waiehu was among the largest continuous areas of wet tar cultivation in Hawaii. Terraces ran almost continuously in a belt between the sand dunes and the present irrigation ditch. The area was almost completely taken over by sugar cane, with the exception of *kuleana* parcels still held by Hawaiians who have preserved the old terraces. Up until 1934, a few old plantations persisted and were used primarily for raising wet taro. Nonetheless, most of the old terraces of the upper slopes of Waiehu have been ploughed under (Handy).

d. **Legends and Tales**

Tales of Waiehu go back to the mythological periods of Hawaiian culture. The Pele Collection records that the famous "Goddess of Fire" traveled to the Waiehu area. In the historic period, the area was the site of numerous battles. The mid-1700's saw pitched conflict between a chief

from the island of Hawaii, Kalani'opu'u, and the Mauian chief Kahekili, with Kahekili emerging victorious. Several decades later, the nearby Iao Valley saw the victories of Kamehameha over the local chiefs.

e. **Informant Interviews**

A number of people with connections to the project site and the near vicinity were interviewed as part of a Cultural Impact Assessment carried out by Charles Maxwell, the principal of CKM Cultural Resources. See Appendix "E". The more pertinent interviews are summarized below.

(i) **Marcello S. Dadez**

Mr. Dadez moved to Waihe'e in the 1960's and remembered the period of sugar cane production followed by macadamia nut orchards. He had no knowledge of any cultural practices associated with the property.

(ii) **Ester Kailihiwa Santos**

Ms. Santos was born and raised in the Waihe'e area and is intimately familiar with the project site. She remembered the sugar cane fields and the switch to macadamia nut orchards. She had no information regarding Hawaiian practices on the property, except for the burial sites uncovered in the late 1970's at nearby Waiehu Heights.

(iii) **Ernest F. Santos**

Mr. Santos was born in June 3, 1920, in Upper Waihe'e. His father tended the irrigation ditches for the sugar cane fields on the subject property. He recalled that there was no electricity in those days and that kerosene lamps were used for illumination. He remembered the property and used to travel through it. The only remaining item that he is aware from those days is a Portuguese bread oven. He was unaware of any cultural practices associated with the property.

(iv) **Susan Kanegai Lord**

Ms. Lord was born on the subject property and still resides there. The property was planted in sugar cane as far back as she can recall. She did not know of any burials, but had heard that there were some burial sites on the property somewhere. Her property is *kuleana wai* and she has several taro patches.

(v) **Mary J. Kapalu Kaina**

Ms. Kaina was born in the property area on June 26, 1942. She grew up there and was aware of no cultural practices or burials associated with the area.

(vi) **Robert Kaipou Houpo**

Mr. Houpo was born in Upper Waiehu on April 17, 1951. He has lived in the area for his entire life, working the sugar cane fields when it was in production and tending the irrigation ditches. He

recalled having seen stone piles in the area, but was unaware of any connection between them and any cultural practices or burials.

(vii) **Lawrence Miyahira**

Mr. Miyahira was born and raised on the subject property and recalled playing there as a child. He remembered seeing a pile of stones on the site which resembled a grave, but was unaware as to what it actually was.

f. **Assessment of Cultural Impacts**

The area has been in agricultural use for over a century, first in sugar cane and then in macadamia nut cultivation. Despite this, there does exist the possibility of uncovering *iwi* (human remains) when the land is graded. Such were found in what is now the Waiehu Heights subdivision, located immediately east of the subject property. Ancient taro patches are prime candidates for containing remains.

CKM Cultural Resources recommends full-time monitoring along a 100 meter-wide corridor parallel to Kahekili Highway.

7. **Air Quality**

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

In addition, dust generated during construction, especially from earth-moving operations such as excavating, trenching, and filling, may also result in a temporary decrease in ambient air quality. Mitigation measures include utilizing dust barriers, waterwagons, and/or sprinklers to control dust, and watering graded areas upon the completion of daily construction activities and/or weekends and holidays to the extent practicable.

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

8. Noise

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

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

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

9. Scenic and Open Space Resources

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

subdivision configuration maintains a low-density concept which, with use of the existing topographic character of the site, will minimize adverse impacts to the visual character of the surrounding area.

B. IMPACTS TO THE SOCIO-ECONOMIC ENVIRONMENT

1. Population and Local Economy

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

The proposed project is not considered a direct population generator from a long-term perspective. Instead the project is anticipated to accommodate demands for affordable housing by existing residents. Any increase in population in the Wailuku-Kahului region should be within expected growth parameters defined by migration and birth/death rates. In the long term, residential homeowners will require services related to home maintenance and improvement which is expected to further support local business operators.

2. Housing

As noted previously, there is a recognized need for affordable housing in the Central Maui area. The proposed action will address this need through the provision of housing intended for families earning up to 120 percent of the median annual income for the island of Maui. An affordable housing agreement setting forth the terms and conditions of provision of affordable units will be executed by Hale Mua Properties, LLC and the County of Maui.

3. Agriculture

Although the land was previously engaged in large scale agricultural activities, it is presently fallow, undeveloped and predominantly vegetated with macadamia nut trees and introduced grass species. With the parceling and sale of lands owned by Wailuku Agribusiness Company, Inc. (WACI), the viability of large scale agricultural operations in this area of Central Maui has been reduced. The removal of approximately 240 acres of land from the State "Agricultural" District represents a reduction of 0.1 percent of the total agricultural lands designated on the island of Maui. In the context of WACI's land disposition objectives and overall agricultural productivity needs for the island, the conversion of the subject property from fallow conditions to affordable and market housing uses are not deemed adverse.

4. Police, Fire and Medical Services

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

5. Recreational Facilities

The applicant for the project is working with the Department of Parks and Recreation to ensure compliance with applicable park assessment requirements. In particular, it is the intent of the applicant to utilize the three (3) parks interspersed throughout the subdivision to address parks and playground assessment requirements. Park improvements proposed include grading, landscaping, and irrigation.

6. Educational Facilities

The project involves the development of 466 improved residential lots and construction of single-family residences. The State Department of Education's (DOE) general guidelines for student enrollment projections indicates that the proposed subdivision is anticipated to generate new student enrollments as follows:

Elementary School:	154 students
Intermediate School:	75 students
High School:	87 students

The project may be subject to the DOE's facility assessment policy. Coordination with the DOE and the State Land Use Commission will be undertaken to ensure that assessment policy provisions are appropriately addressed.

7. Solid Waste Management

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

According to the County of Maui, Department of Public Works and Environmental Management, on average, the County's Central Maui Landfill accepts approximately 450 tons of solid waste per day, with approximately 125 tons attributed to the County's residential refuse collection service and the remaining 325 tons attributed to non-residential solid waste, including hotel, condominium, retail, commercial and industrial uses.

Currently, the County of Maui's Solid Waste Division is in the process of completing a landfill expansion project, estimated to provide the island with sufficient capacity for several years, which takes into account future growth of residential and non-residential uses. In addition, lands adjacent to the existing landfill are currently utilized for rock quarrying and will likely be available for County expansion of the landfill, further increasing available capacity.

C. IMPACTS TO INFRASTRUCTURE

1. Roadways

A Traffic Impact Assessment Report (TIAR) was prepared for the proposed project by Julian Ng in November 2004. See Appendix "F" and Appendix "F-1".

The TIAR analyzes both the impacts of the proposed subdivision and of the Imi Kala Street extension. These are assessed using Level of Service (LOS) ratings as determined by the Highway Capacity Manual—HCM 2000 methodology. LOS is a qualitative measurement "A" through "F" in which LOS A represents ideal or free-flowing traffic operating conditions and LOS F represents unacceptable or potentially congested traffic operating conditions. The LOS for the analyzed intersections was then determined for both the AM and PM peak periods.

Following the recommendations provided by the Institute of Transportation Engineers, the limits of the study were defined by those areas with an anticipated, project-generated increase of 100 or more peak direction trips. The limits can thus be loosely defined as no farther north than the proposed north access road and no further south than Mill Street.

The section of TIAR concerned with the impacts of the proposed subdivision analyzed the following intersections:

- Kahekili Highway/Makaala Drive
- Kahekili Highway/Proposed North Access Road
- Kahekili Highway/Proposed South Access Road

The traffic impact for the subdivision was evaluated using 691 detached dwelling units; that is the presumption that each market-priced and large lot will contain an ohana unit.

Kahekili Highway/Makaala Drive

The Kahekili Highway/Makaala Drive intersections currently operate at LOS A for eastbound, left-turning movements at both peak periods and at LOS B for northbound, right-turning moving at both peak periods. Southbound, left-turning movements operate at LOS C during the AM peak and LOS B during the PM peak.

The TIAR anticipates that Year 2020 traffic operations without the proposed project will remain the same as current operations. Year 2020 operations with the proposed project are also anticipated to remain largely the same as currently obtain. The exception is southbound, left-turning movements. These operations are anticipated to deteriorate to LOS F during the AM peak period and LOS C during the PM peak period.

Kahekili Highway/North Access Road and Kahekili Highway/South Access Road

The Kahekili Highway/North Access Road intersection is anticipated to operate at LOS C or better in Year 2020. Northbound, left-turning movements would operate at LOS C during both peak periods, while southbound, right-turning movements would operate at LOS B during both peak periods. Westbound, left-turning movements would operate at LOS A during both peak periods.

The Kahekili Highway/South Access Road is anticipated to operate similarly. Northbound, left-turning movements would operate at LOS C during both peak periods. Southbound, right-turning movements would operate at LOS C during the AM peak period, while operating at LOS B during the PM peak period. Westbound, left-turning movements are anticipated to operate at LOS A during both peak periods.

The TIAR recommends that left-turn lanes be provided for northbound traffic on Kahekili Highway at both access roads. Storage lengths should be at least 200 feet at the north intersection and 175 feet at the south intersection.

The section of the TIAR related to the impacts of the Imi Kala Street roadway extension analyzed the following intersections:

- Imi Kala Street/Eha Street/Wili Pa Loop
- Imi Kala Street/Mill Street
- Mill Street/Market Street
- Mill Street/Central Avenue
- Mill Street/Kaniela Street
- Mill Street/Mission Street

The traffic impact at Imi Kala Street is based upon an estimate that 50 percent of the traffic that now uses Kahekili Highway and Market Street through the Happy Valley neighborhood will divert to Imi Kala Street if the extension were built.

Imi Kala Street/Eha Street/Wili Pa Loop

The Imi Kala Street/Eha Street/Wili Pa Loop intersection is unsignalized and currently operates at LOS C for westbound movements during the AM peak period and LOS B during the PM peak period. The eastbound turning movements operate at LOS A during both the AM and PM peak periods. Northbound, right-turns are currently performed with a dedicated, one-way turning roadway and are not problematic. Northbound, left-turning movements operate at LOS A during both the AM and PM peak periods.

The TIAR anticipates that Year 2020 traffic operations without the proposed roadway extension project will deteriorate minimally. Westbound movements would drop substantially to LOS D during the AM peak period and LOS B during the PM peak period. Eastbound and northbound left-turning movements would remain as they are.

Year 2020 operations with the proposed roadway extension are anticipated to deteriorate slightly. Westbound movements would deteriorate to LOS F during the AM peak period, while dropping to LOS D during the PM peak period. Eastbound movements would operate at LOS B during both the AM peak period and PM Peak period. Northbound, left-turning movements would remain at LOS A during both peak periods.

Imi Kala Street/Mill Street

At the Imi Kala Street/Mill Street intersection, southbound, right-turning movements currently operate at LOS B during both peak periods, while southbound, left-turning movements operate at LOS F. Eastbound, left-turning movements operate at LOS A during both peak periods.

Year 2020 estimates without the roadway extension predict deterioration for southbound, right-turning movements during both peak periods to LOS C. Eastbound, left-turning movements are anticipated to drop to LOS B during both peak periods, while southbound, left-turning movements remain generally the same.

With the roadway extension, southbound, right-turning movements are anticipated to deteriorate to LOS F during the AM peak period and at LOS E during the PM peak period. Southbound, left-turning movements are estimated to operate at levels similar to those without the roadway extension. Eastbound, left-turning movements are anticipated to deteriorate slightly to LOS C during the PM peak period.

Mill Street/Market Street

The intersection is unsignalized and currently, southbound, left-turning movements operate at LOS B during both peak periods, while westbound, left-turning movements operate at LOS F during both peak periods. Westbound, right-turning movements operate at LOS B during the AM peak period and LOS D during the PM peak period.

The TIAR anticipates that Year 2020 traffic operations without the proposed roadway extension project will deteriorate somewhat. Southbound, left-turning movements will drop to LOS C during both peak periods. Westbound, left-turning movements will continue largely the same as currently. Westbound, right-turning movements will remain at LOS B during the AM peak period, but drop to LOS F during the PM peak period.

With the proposed Imi Kala Street Extension project, conditions are anticipated to improve somewhat. Southbound, left-turning movements will return to their current LOS B during both peak periods, while westbound, right-turning movements will remain at the current LOS B during the AM peak period and operate at LOS E during the PM peak period. The TIAR discusses complications relating to the practice of drivers making westbound, left-turning movements at this intersection; the proposed project may improve AM peak periods movements to LOS E.

Mill Street/Central Avenue

Current driving conditions at this intersection are such that westbound, left-turning movements operate at LOS B during the AM peak period and LOS A during the PM peak period. Northbound traffic operates at LOS C during the AM peak period and LOS D during the PM peak period.

The TIAR anticipates that Year 2020 operations without the proposed roadway extension project will be such that westbound, left-turning movements will remain largely the same, while northbound movements will deteriorate to LOS F during both peak periods.

With the proposed project, Year 2020 movements for westbound, left-turning traffic will operate at LOS B during both peak periods and improve slightly to LOS E for northbound traffic during the AM peak period; PM peak period movements will remain at LOS F.

Mill Street/Kaniela Street

Westbound, left-turning movements currently operate at LOS A during both peak periods and northbound movements operate at LOS C during both peak periods. Year 2020 conditions without the project are anticipated to remain largely the same, with northbound movements deteriorating substantially, however, to LOS F during the PM peak period.

With the proposed project, conditions are anticipated to improve. While westbound, left-turning movements continue at LOS A, northbound movements are anticipated to improve to LOS B during the AM peak period, which is superior to current conditions; during the PM peak period, LOS B is anticipated.

Mill Street/Mission Street

Westbound, left-turning movements currently operate at LOS A during both peak periods. Northbound movements operate at LOS C during the AM peak period and LOS B during the PM peak period.

The TIAR anticipates that Year 2020 conditions without the proposed roadway extension project will slightly deteriorate. Westbound movements will remain largely the same, but northbound movements will drop to LOS D during the AM peak period and LOS C during the PM peak period. With the proposed

project, these westbound movements will operate at LOS C during both peak periods.

The roadway extension is anticipated to improve driving conditions on Market Street and Mill Street by providing an alternate route into and out of Wailuku from the north. This will increase roadway carrying capacity for this route by approximately 50 percent.

2. Water

The proposed subdivision is estimated to require approximately 415,000 gallons of domestic water per day. See Appendix "G". For this calculation, it is assumed that each market-priced and large lot will develop both a main residence and a cottage; the affordable lots will be limited to only one dwelling. The waterlines within the subdivision will be all 8-inch ductile iron and water service laterals will follow 2002 Department of Water Supply (DWS) standards. The subdivision will meet DWS standards for fire flow demand of 1,000 gallons per minute for two (2) hours and hydrants will be installed with a maximum spacing of 350 feet.

Coordination has been undertaken with DWS to ensure that there is sufficient water supply and storage for the proposed subdivision. The applicant has agreed to coordinate with the DWS to ensure that there is adequate supply for the project. It is noted that in previous testimony given by representatives of DWS to the State Land Use Commission, that agency anticipated adequate water supply resulting from new water sources projected to be online before the build-out of the Hale Mua Affordable Subdivision. These new sources include the expansion of the Iao treatment plant, with a capacity of approximately 3.2 MGD and Kupa'a I, with a capacity

of approximately 2 MGD.

In coordination with the DWS, the applicant has agreed to provide storage for approximately 500,000 gallons.

3. Wastewater

The applicant will be installing a new, sewer pump station in the northwest corner of the subdivision site. This pump station will be privately maintained. Eight-inch sewerlines will convey wastewater to the pump station. From there, wastewater will travel a new force main which will run along Kahekili Highway and then traverse the Piihana Project District along the Imi Kala Street extension route. It will empty into the manhole at the current Imi Kala Street terminus.

It is estimated that wastewater contributions from the subdivision will be approximately 480 gallons per day per unit. At full build-out of 466 units, this will total 223,680 gallons per day.

4. Drainage

There will be four (4) retention basins located in the lower sections of the subdivision. These basins will hold the increased runoff generated by the development of the proposed project. Runoff from throughout the subdivision will be channelled into the retention basins through a series of catch basins, drainage pipes, culverts, and grassed swales. See Appendix "H".

The area along Kahekili Highway between the two (2) access roads will be improved with curbs and gutters. The rest of the property fronting the highway will have a grass swale, which will collect

runoff and divert it into retention basin "B". The existing, 4-foot culvert at Kahekili Highway is insufficient and will be replaced with three (3), 5-foot culverts. It is estimated that there will be a net increase of 265 cubic feet per second (cfs) of sheet flow from the subdivision site post development for a total of 468 cfs.

The proposed drainage improvements have been designed to ensure that adjacent and downstream properties will not be adversely impacted by the proposed action.

The Imi Kala Street extension will have catch basins installed along the road shoulders to convey runoff from the pavement into two (2) detention ponds via 24-inch pipes. There is no anticipated increase in runoff associated with the proposed roadway extension.

5. Electricity, Telephone and Cable Television Systems

Utilities will be installed underground in the proposed subdivision. Early design coordination will be undertaken with utility companies to ensure that services can be provided in accordance with the project development schedule. Electrical service will be provided by Maui Electric Company, Ltd. (MECO) and the utility line will be connected from the overhead lines located along the north side of the site. Street lights will be installed along subdivision streets with the design to be determined by the project's electrical engineer, in coordination with MECO and in conformance with applicable State and County standards.

Telephone service will be provided by Verizon Hawaii, Inc. and cable television service by Hawaiian Cablevision.

D. CUMULATIVE IMPACTS

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

This cumulative impact analysis examines present and reasonably foreseeable future projects in the area that have the potential to contribute to cumulative effects. The analysis uses the best available information at the present time to assess these projects and their potential impacts. Depending on the status of a particular project, each of the projects included in this cumulative impact analysis is supported by different levels of information. Public documents, conceptual plans and documents or applications prepared for environmental reviews or regulatory approvals were the primary sources of information. When adequate data on specific aspects of other projects was unavailable and could not be obtained through reasonable efforts, professional judgement was used to estimate impacts.

1. Projects Included in the Cumulative Impacts Analysis

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

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

-
- c. Projects that are proposed for development that have received or are pending environmental and/or regulatory reviews or approvals and are expected to be implemented.

In the foregoing context, the Hale Mua Subdivision project will be assessed together with the four (4) phases of the Department of Hawaiian Home Lands Waiehu Kou projects; the 184-lot Wailuku Country Estates subdivision; and the 10-lot Maalahi Agricultural Subdivision. The Waiehu Kou projects provide a total of 359 lots. Phases I and II, totalling 148 single-family units, have been completed. Phase III, currently under construction, will provide 115 houselots, while Phase IV, currently in planning, will provide 96 houselots.

2. Assessment of Cumulative Impacts

In considering the impacts of the Hale Mua Subdivision project, together with the other projects developed or proposed in the vicinity, the following resource parameters were examined: (1) topography, (2) plant and animal life; (3) noise and air quality; (4) visual resources; (5) cultural resources; (6) water quality; (7) housing and land use; (8) public services; and (9) infrastructure. The assessment presented herein is intended to identify potential issues, concerns and mitigative measures based on best available planning-level information. Cumulative impact issues relating to each of these resource parameters are described below.

a. Topography

Due to strict regulatory controls and cost considerations, each project seeks to minimize cut and fill quantities, thereby minimizing alterations to topographic features. The need to respect existing landforms is required to ensure that

visual impacts are minimized, drainage patterns are maintained and infrastructure design criteria are met. When taken collectively, therefore, the cumulative impacts of these projects upon regional topography are not anticipated to be adverse.

b. Plant and Animal Life

Both the Hale Mua and Waiehu Kou projects have studied the flora and fauna resources affected by their respective actions in connection with the Chapter 343, HRS process. Both of these projects will affect or have affected lands formerly used for sugar or macadamia nut cultivation activities. Any impacts to flora and fauna parameters have been or will be mitigated through proper land planning measures, utilizing to the maximum extent practicable, previously disturbed lands for proposed new development.

The Wailuku Country Estates and Maalahi Agricultural Subdivision are similarly located on lands formerly used for agriculture.

Collectively, the foregoing projects do not adversely affect rare, threatened or endangered species of flora and fauna.

c. Noise and Air Quality

Construction-related noise is expected for each project. All projects shall comply with Department of Health noise regulations and are expected to employ best management practices to minimize construction-related noise. In the long term, development of areas previously utilized for agricultural

purposes will result in changes in noise characteristics in the vicinity of each project area. Whereas large-scale agricultural equipment and cultivation activities were the primary source of noise, once projects are completed, noise generation will be primarily attributed to traffic utilizing residential roadways. Smaller scale agricultural activities at the Wailuku Country Estates and Maalahi Agricultural Subdivision are not anticipated to generate adverse noise conditions. There are no point sources of noise identified in any of the projects which may result in adverse impacts to surrounding communities.

As with noise, air quality will be temporarily affected during construction. Best Management Practices (BMPs) are required to ensure compliance with Department of Health and County grading requirements. There are no new point sources of air emissions associated with any of the projects. In the long term, automobile traffic is expected to be the primary source of air emissions. As projects are implemented, air impacts formerly associated with large-scale agricultural operations will be replaced by automobile-related emissions less intense operations associated with smaller agricultural lots. From a cumulative standpoint, however, the projects cited are not anticipated to have an adverse impact upon regional ambient air quality conditions.

d. Visual Resources

The projects considered are located on lands formerly used for sugar cane and macadamia nut cultivation. They are contiguous or in near proximity to other, single-family

residential uses and will create a visual character compatible and consistent with nearby uses. When taken collectively, the landscape of the area will change from a predominantly agricultural viewscape to one which includes traditional subdivision patterns and smaller agricultural lots with farm dwellings. The properties are not part of significant, scenic corridors and will not negatively affect views to or along the shoreline and mountain areas.

e. **Cultural Resources**

Projects of the size and scale noted must consider effects of their individual actions on cultural resources. Based on archaeological studies conducted for the Hale Mua and Waiehu Kou projects, appropriate mitigative measures will be utilized to address archaeological resource issues. The other agricultural subdivisions have been required to prepare and implement archaeological monitoring. Collectively, the projects are not anticipated to affect cultural resources and practices based on their long-standing commercial agricultural uses. No items of continuing historic significance were identified.

f. **Water Quality**

Surface runoff and other non-point source pollutants can affect water quality if unmitigated. Construction activities for each project are subject to the NPDES permitting process and implementation of Best Management Practices (BMPs) to control erosion and sediment loss. It is expected that all projects will comply with applicable regulatory requirements to minimize impacts to downstream water bodies. On a

long-term basis, each project will be required to comply with County of Maui drainage regulations to provide required mitigation, including drainage storage areas to ensure that runoff velocities are controlled and water quality effects minimized. From a regional water quality standpoint, compliance with State and local regulatory requirements will help to mitigate adverse impacts to water quality.

g. Housing and Land Use

The availability of affordable housing is an island-wide concern. Cumulatively, the proposed project together with the Waiehu Kou projects will increase the availability of housing for the island of Maui. Specific affordability and marketing requirements for the Hale Mua Subdivision project will be developed as the project advances through the entitlement process. The Waiehu Kou projects have provided and will continue to provide affordable housing opportunities for Native Hawaiian beneficiaries.

The Wailuku Country Estates and Maalahi Agricultural Subdivision also offer new housing inventory through the sale of smaller agricultural lots. By their nature as larger lots, however, they are not intended to address affordability needs.

h. Public Services

Educational assessments may be required for the Hale Mua Subdivision project as it meets the criteria of 50 units or more. Hale Mua, LLC and the Department of Hawaiian Home Lands will work with the Department of Education

(DOE) to discuss the educational impact fees. Should impact fees be assessed and collected, they are assumed to be earmarked for area schools such as Waihee Elementary, Wailuku Elementary, Iao Intermediate or Baldwin High School. Therefore, it is anticipated that these funds will assist in the upgrade and improvement to schools in the Wailuku area.

The projects considered here do not significantly extend the area to be covered by police and fire services. The new housing units and residents will increase the scope of necessary police and fire services. This extended scope should, however, be off-set by the increase in tax revenues from new property taxes resulting from the subdivisions which can be used to fund the increased need for services.

Each of the considered projects will address the required recreation impacts individually and in accordance with Maui County Code 18.16.320.

*i. **Infrastructure***

All the projects considered will implement infrastructure improvements. Wastewater improvements will include the installation of pump stations and force mains. The projects will create retention basins for runoff and culverts and other methods of controlling and directing the flow into the basins. Water will come from County domestic sources with system improvements provided to serve the respective projects. The Wailuku Country Estates and Waiehu Kou projects have or will provide road frontage and intersection improvements

along Kahekili Highway, while the Hale Mua project will design and construct the Imi Kala Street Extension from the Millyard subdivision to Kahekili Highway.

Collectively, the various projects have taken into account the required infrastructure improvements needed to adequately service each project.

E. SECONDARY IMPACTS

Secondary impacts are impacts that have the potential to occur later in time or are farther in distance but are still reasonably foreseeable. They can be viewed as actions of others that are taken because of the presence of the project.

Secondary impacts from highway projects can occur, for example, because they can induce development by removing one of the impediments to growth - transportation access.

Related to the Hale Mua Subdivision project, secondary impacts include new population which will be accommodated in the long term through the building of new residences. Such growth may translate to the need for new public services. Public service needs will be met through property tax revenue, new parks, educational assessment fees to area schools and participation in wastewater and water improvements.

F. UNAVOIDABLE IMPACTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

1. Adverse Environmental Impacts Which Cannot Be Avoided

Potential construction-related impacts include noise-generated impacts occurring from site preparation and construction activities.

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

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

2. Irreversible and Irretrievable Commitment of Resources

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

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

Chapter IV

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

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

This section discusses the relationship of the proposed Hale Mua Subdivision Project to State and County land use plans, policies and controls for the Central Maui region.

A. STATE LAND USE DISTRICTS

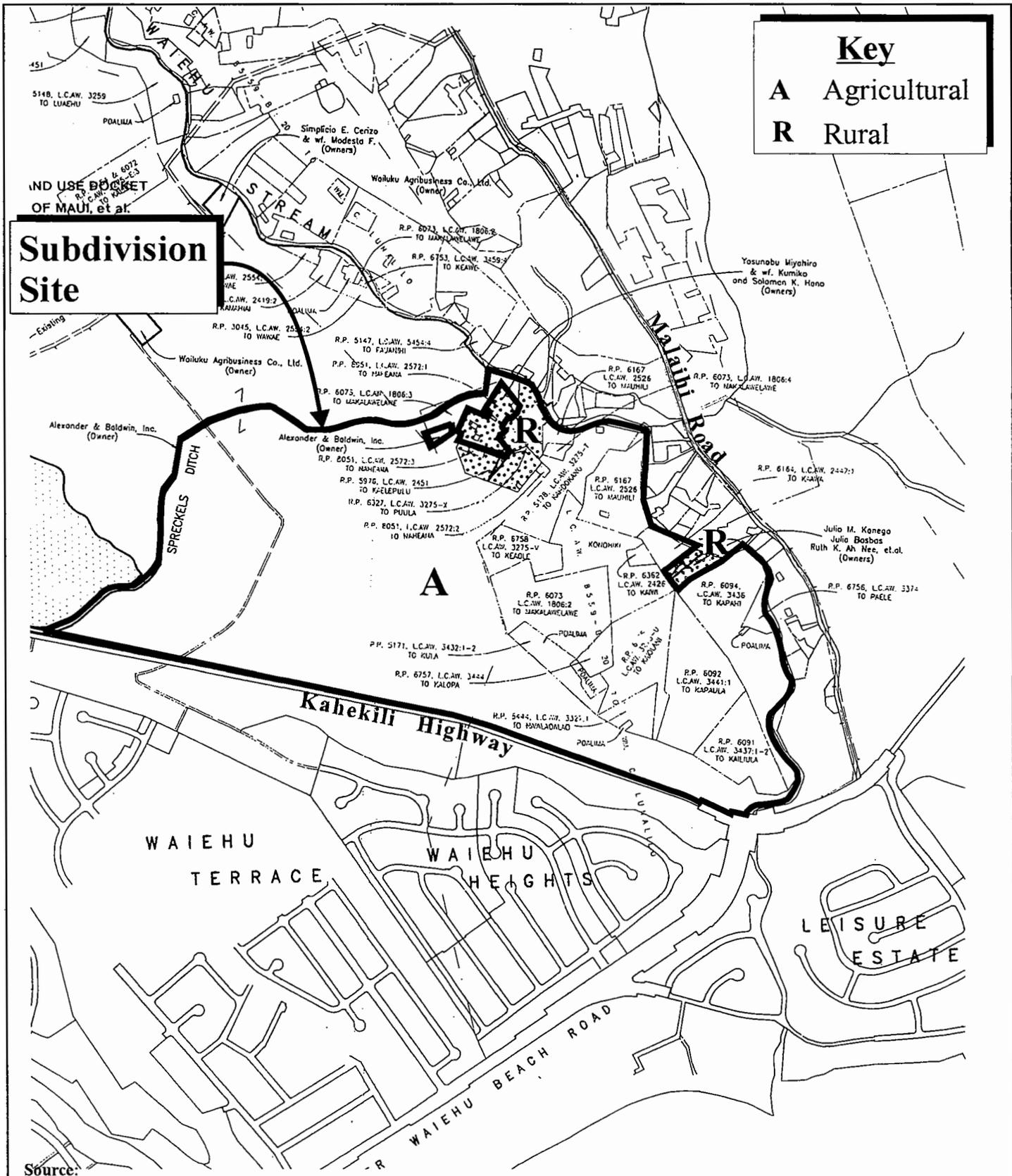
Pursuant to Chapter 205, Hawaii Revised Statutes, all lands in the State have been placed into one (1) of four (4) major land use districts by the State Land Use Commission. These land use districts are designated "Urban", "Rural", "Agricultural", and "Conservation". The project site is largely classified "Agricultural", with one (1) small area falling in the "Rural" District. See Figure 15.

A State Land Use District Boundary Amendment--from the Agricultural and Rural Districts to the Urban District--is being requested as part of the entitlement requirements to bring consistency to the State Land Use District boundaries and the Hale Mua Subdivision project. Criteria considered in the reclassification of lands are set forth in the State Land Use Commission Rules (Chapter 15-15-18, Hawaii Administrative Rules).

The proposed reclassification of the 240 acres within the Project Area from "Agricultural" and "Rural" to "Urban" has been analyzed with respect to the criteria, as discussed below.

Chapter 15-15-18

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



Key
A Agricultural
R Rural

Subdivision Site

Source:

Figure 15 Proposed Affordable Housing Subdivision NOT TO SCALE
State Land Use Map



Comment: The area proposed for reclassification is in the near vicinity to Wailuku and Kahului, the main urban areas of Maui. The subdivision property is itself adjacent and near to various residential subdivisions (e.g., Waiehu Heights, Waiehu Terraces) of a similar character, with structures, streets, and services of an urban type. In this context, the subject property is in immediate proximity to the “city-like” concentrations required.

- (2) It shall take into consideration the following specific factors:
- A. Proximity to centers of trading and employment except where the development would generate new centers of trading and employment.

Comment: The area proposed for reclassification is located adjacent to Wailuku Town and approximately 3.0 miles to Kahului Town. The proposed Hale Mua Subdivision project will provide a residential community in proximity to key employment centers in both towns, as well as generate employment opportunities associated with home building and maintenance services.

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

Comment: The area proposed for reclassification will be serviced by infrastructure and public services without creating capacity and operational constraints. Appropriate onsite and offsite infrastructure improvements will be provided by the applicant as reported in the Preliminary Engineering Report. Refer to Appendix "F". The area is located in close proximity to major existing and planned roadways such as Kahekili Highway and Waiehu Beach Road and includes a planned internal transportation system of

collector and local roads. Additionally, Imi Kala Street will be extended from its current terminus at Eha Street to Kahekili Highway to help address regional roadway capacity issues.

The project area requiring reclassification will be served by neighboring schools, parks and acute care/health facilities. Police and fire protection services are available nearby in both Kahului and Wailuku Towns.

C. Sufficient reserve areas for foreseeable urban growth.

Comment: Other planned areas of urban growth are reflected in the Wailuku-Kahului Community Plan. The Maui Lani, Kehalani and Piihana Project Districts, for example, will also accommodate future urban growth. While the implementation timeframe for the Piihana Project District has not been disclosed, incremental development at Maui Lani and Kehalani is proceeding with build out anticipated over the next several years.

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

Comment: The project site gently slopes in a west to east direction, with elevations ranging between 250 and 80 feet. Having been formerly used for large-scale agricultural production, the property can be characterized as generally level, even with defined drainage patterns. The majority of land proposed for reclassification is located within Zone C, an area of minimal flooding, on the Federal Emergency Management Agency (FEMA) flood insurance rate maps. This land area is not subject to tsunami inundation or unstable soil conditions. A portion of land to be

reclassified in the most northerly edge of the parcel is located in Zones A and A3, which are affected by 100-year flood events. These areas will be designated for open space and in some instances be incorporated into an overall drainage detention plan to control runoff from the proposed subdivision.

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

Comment: The 240-acre parcel proposed to be reclassified is contiguous with existing Urban district lands to the east. The Piihana Project District, which contains urbanized lands for residential development, is located along Kahekili Highway, across the street from the subject property. Adjacent to or in close proximity to the Piihana Project District are the Oceanview Estates, Waiehu Heights and Waiehu Terraces residential subdivisions.

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

Comment: The proposed boundary reclassification is done so in the context of an existing urban master planned community. The 240-acre parcel is adjacent to Wailuku Town and lies adjacent to the Piihana Project District, as well as single-family residential areas, as designated in the Wailuku-Kahului Community Plan.

- (6) It may include lands which do not conform to the standards in paragraphs (1) to (5):
- A. When surrounded by or adjacent to existing urban development; and

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

Comment: The area proposed for reclassification is adjacent to existing urban development and activity. The 240 acres proposed for reclassification represent a minor portion of the 245,777 acres of Agricultural classified lands on the island of Maui (Maui County Data Book, 2003).

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

Comment: The area proposed for reclassification will be implemented as a master-planned development. The property's location adjacent to developed and undeveloped urban lands does not contribute to spot development or burdensome infrastructure investments.

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

Comment: The Project Area contains slopes ranging from 0 to 15 percent. County grading regulations will be followed to ensure the protection of public health, safety and welfare.

- (9) The extent to which the proposed reclassification conforms to the applicable goals, objectives, and policies of the Hawaii state plan and relates to the applicable priority guidelines of the Hawaii state plan and adopted functional plans.

Comment: The proposal to incorporate the land uses as envisioned in the Hale Mua Subdivision project is in alignment with overall theme, goals, objectives and policies of Chapter 226, Hawaii Revised Statutes, relating to Hawaii State Planning Act. The applicable objectives, policies and priority guidelines are set forth in Section B of this Chapter.

- (10) The extent to which the proposed reclassification conforms to the applicable district standards.

Comment: The proposed reclassification conforms to Urban District standards as identified in Chapter 205-2 and in keeping with the Maui County General Plan.

- (11) The impact of the proposed reclassification on the following areas of state concern:

A. Preservation or maintenance of important natural systems or habitats.

Comment: There are no important systems or habitats within the reclassification area.

B. Maintenance of valued cultural, historical or natural resources.

Comment: An archaeological inventory survey was carried out on the subject property, including the Imi Kala Street Extension alignment. An archaeological monitoring and preservation plan for the property will be developed to appropriately cover the recommendations of the SHPD. The property is not being used for cultural practices and adverse impacts to cultural resources are not anticipated as a result of reclassification.

C. Maintenance of other natural resources relevant to Hawaii's economy, including, but not limited to, agricultural resources.

Comment:

The use of the subject property for affordable and market housing purposes will not compromise agricultural productivity for the island. The subject property has not been used for agricultural operations since 1999. Moreover, other natural resources are not anticipated to be adversely affected by the proposed action.

D. Commitment of State funds and resources.

Comment: The proposed reclassification will not require commitment of State funds or resources.

E. Provision for employment opportunities and economic development.

Comment: The Hale Mua Subdivision project as a whole will provide new employment opportunities for Maui residents. The residential projects will provide construction and service-related employment.

F. Provision for housing opportunities for all income groups, particularly the low, low-moderate, and gap groups.

Comment: The Hale Mua Subdivision project as a whole will provide a variety of housing types including affordable and single-family "starter" homes, as indicated by its Hawaiian namesake, *hale mua*, or literally, "first home." The affordable housing parameters for the project includes the provision of at least 51 percent of the lots to families earning not more than 120 percent of the Maui County median income.

B. CHAPTER 226, HRS, HAWAII STATE PLAN

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

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), 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.

226-6, HRS, Objectives 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.

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.

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

226-13(b)(5), HRS: Encourage the design of developments and activities that complement the natural beauty of the islands.

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.

226-19 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 homeownership, 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, Objectives 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. STATE FUNCTIONAL PLANS

The State Functional Plans implement the Hawaii State Plan by identifying needs, problems and issues, and by recommending policies and priority actions which address the identified areas of concern. The proposed reclassification request is consistent with the following State Functional Plans:

1. State Agricultural Functional Plan

The proposed action will reclassify approximately 240 acres of land from the State Agricultural district to the State Urban district. While the subject property was formerly utilized for macadamia nut groves, it is now fallow. The proximity of the subject property to existing and planned urban land uses provide a reasonable nexus and an appropriate foundation for the proposed reclassification request, particularly in the context of meeting affordable housing needs of the community.

2. State Housing Functional Plan

Recent news reports and the growing public demand for affordable housing indicate a current shortage of single-family housing in the Central Maui area. The 466 residential houselots within the proposed subdivision will help to address a critical community need.

3. State Recreational Functional Plan

Outdoor recreation is recognized by the Hawaii State Plan as an important part of life for Hawaii's residents. As the population rises and residential land uses increase, creating areas dedicated to outdoor recreation becomes increasingly vital. The State Functional Plan for Recreation urges the improvement and

expansion of recreational facilities in urban areas and local communities. The proposed action for the subdivision includes provisions to provide approximately 7.88 acres of park to address this need.

4. State Transportation Functional Plan

The Hawaii State Plan addresses the vital role of transportation, particularly in light of population increases and community growth. The State Functional Plan for Transportation calls for the improvement of regional mobility in West Maui by constructing new roadway infrastructure. The proposed action includes the extension of Imi Kala Street across Iao Stream to connect with Kahekili Highway. This will be a major roadway expansion which will relieve a great deal of traffic currently confined to Waiehu Beach Road and Market Street and thus improve the overall roadway infrastructure of the Wailuku region.

D. MAUI COUNTY GENERAL PLAN

The Maui County General Plan (1990 Update) sets forth broad objectives and policies to help guide the long-range development of the County. As indicated by the Maui County Charter, the purpose of the general plan shall be to:

...indicate desired population and physical development patterns for each island within the county; shall address the unique problems and needs of each island and region within the county; shall explain the opportunities and the social, economic and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns and characteristics of future developments. The general plan shall identify objectives to be achieved, and priorities, policies and implementing actions to be pursued with respect to population density, land use maps, land use regulations, transportation systems,

public and community facility locations, water and sewage systems, visitor destinations, urban design and other matters related to development.

The Maui County General Plan developed five (5) major themes that focus on the overall goals of the plan. These themes were devised to reflect the general scope and priorities of the Maui County General Plan. The proposed project responds to the following 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 concurrency 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.

Policies

- a. 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.

Policies

- a. Encourage land use patterns that foster a pedestrian oriented environment to include such amenities as bike paths, linear parks, landscaped buffer areas and mini-parks.
- b. Encourage land use methods that will provide a continuous balanced inventory of housing types in all price ranges.
- c. Encourage programs to stabilize affordable land and housing prices.

ECONOMIC ACTIVITY (General)

Objective

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

Policies

- a. Encourage the adoption of a resource allocation program which gives a high priority to affordable residential projects.

HOUSING

Objective

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

Policies

- a. Provide or require adequate physical infrastructure to meet the demands of present and planned future affordable housing needs.
- b. Encourage the construction of housing in a variety of price ranges and geographic locations.
- c. Encourage the use of innovative performance standards and building methods to reduce housing costs to the consumer.
- d. Streamline or "fast-track" the governmental review process for affordable single-family housing projects.
- e. Make full use of State and Federal programs that provide financial assistance to renters and homebuyers.
- f. Ensure that each community plan region contains its fair share of affordable housing.

URBAN DESIGN

Objective

To encourage development that reflects the character and culture of Maui County's people.

Policies

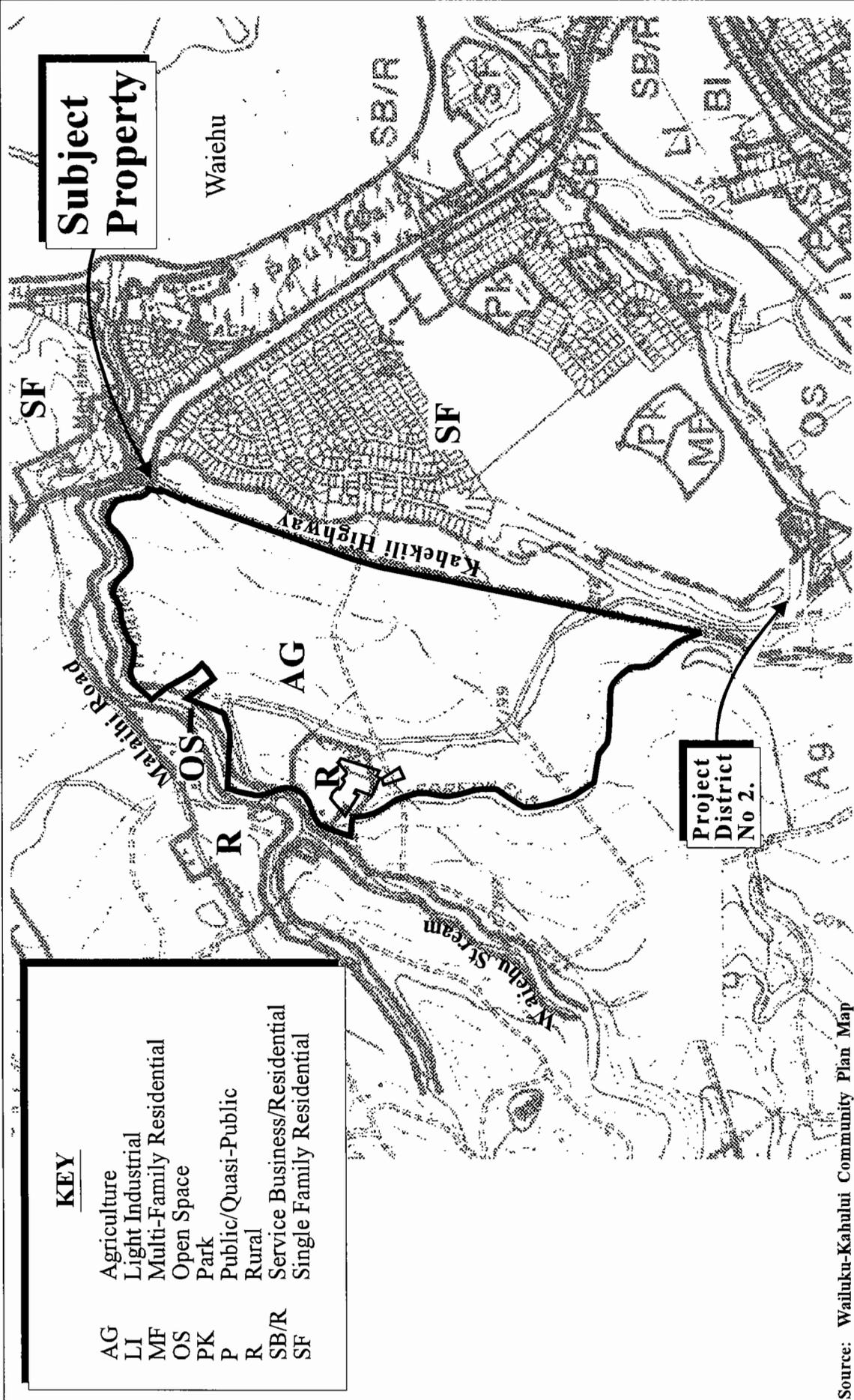
- a. Encourage community design that establishes a cohesive identity
- b. Encourage the establishment of continuous green areas, bike-paths, active and passive recreation areas and mini-parks in new subdivision development.

E. WAILUKU-KAHULUI COMMUNITY PLAN

The subject parcel is located in the Wailuku-Kahului Community Plan region which is one of nine Community Plan regions established in the County of Maui. Planning for each region is guided by the respective Community Plans, which are designed to implement the Maui County General Plan. Each Community Plan contains recommendations and standards that guide the sequencing, patterns and characteristics of future development in the region.

The land use map for the Wailuku-Kahului Community Plan designates majority of the property for "Agricultural" use, with a small portion set aside for "Rural" use. See Figure 16. The Section 201G request for the project will include an exemption from the requirements of a Community Plan Amendment.

The Wailuku-Kahului Community Plan identified the lack of affordable housing as one of its major problems. As the cost of residential housing has dramatically increased in the past 10 to 15 years, the Community Plan recognizes that providing affordable housing opportunities for



KEY

AG	Agriculture
LI	Light Industrial
MF	Multi-Family Residential
OS	Open Space
PK	Park
P	Public/Quasi-Public
R	Rural
SB/R	Service Business/Residential
SF	Single Family Residential

Source: Wailuku-Kahului Community Plan Map

Figure 16

**Proposed Hale Mua Affordable
Housing Subdivision
Community Plan Land Use Map**



NOT TO SCALE

Prepared for: Hale Mua Properties, LLC



residents—specifically those earning below 70 percent to 140 percent of median income—needs to be aggressively pursued.

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

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

- 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.
- 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.
- Coordinate the planning, design and construction of public infrastructure improvements with major residential projects that have an affordable housing component.
- Plan, design and construct off-site public infrastructure improvements (i.e. water, roads, sewer, drainage, police and fire protection, and solid waste) in anticipation of residential, commercial and industrial developments defined in the Community Plan.
- 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

- Provide park and recreation areas as an integral part of project district specifications which will accommodate the needs of population growth.
- 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.

Objectives and Policies for the Wailuku-Kahului Region in General

- Maintain shrubs and trees at street intersections for adequate sight distance
- Incorporate drought tolerant plant species and xeriscaping in future landscape planting.

Implementing Actions

- Develop a comprehensive housing strategy for low and moderate income groups involving government and private industry cooperation that provides an adequate supply of housing for the various strata of income. This approach would combine the resources of Federal, State, County and private enterprise to improve the availability of rental and ownership housing targeted to various need groups. Anti-speculation and specification of a percentage of low and moderate income units in major projects are tools which should be considered as part of an overall housing program.

-
- Develop procedures and regulations to streamline government review and approval for housing projects. This should result in cost reductions by expediting the time required for implementation.

F. MAUI COUNTY ZONING

The proposed Hale Mua Subdivision site is zoned for “Agricultural” uses by Maui County zoning. While the current zoning does not allow for the proposed residential uses, a separate 201G application is being filed with the Maui County Council. Included in the 201G application is a request to exempt the project, including the Imi Kala Street realignment, from the County’s Title 19 processes which will enable full project implementation.

G. COASTAL ZONE MANAGEMENT OBJECTIVES AND POLICIES

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

(1) Recreational Resources

Objective:

Provide coastal recreational opportunities accessible to the public.

Policies:

- (A) Improve coordination and funding of coastal recreational planning and management; and
- (B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
 - (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
 - (ii) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by

-
- development; or requiring reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;
 - (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
 - (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
 - (v) Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;
 - (vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
 - (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and
 - (viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions; and crediting such dedication against the requirements of Section 46-6, HRS.

Response: The proposed project will not affect coastal zone recreational opportunities. Accessibility to shoreline areas will not be impacted by the proposed action. Approximately 6.92 acres of lands are incorporated as "park" as part of the project proposal.

(2) **Historic resources**

Objective:

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

Policies:

- (A) Identify and analyze significant archeological resources;
- (B) Maximize information retention through preservation of remains and artifacts or salvage operations; and
- (C) Support state goals for protection, restoration, interpretation, and display of historic resources.

Response: The project site has already been extensively altered through previous agricultural activities. As reported in the Archaeological Inventory Surveys carried out by SCS, there are no sites of cultural or archaeological importance associated with the subdivision site. See Appendix "C".

There is one (1) site of significance associated with the roadway extension portion of the project: Speckles Ditch. Archaeological monitoring will also be carried out in the vicinity of the remnant *lo'i* fields. See Appendix "D".

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

Objective:

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

Policies:

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

Response: The proposed project will not result in substantive, adverse impacts to scenic or open space resources. While approximately 240 acres of existing agricultural lands will be converted to residential uses, this conversion is deemed to be a community benefit through the provision of needed affordable housing. The proposed project will not involve significant alteration to the existing topographic character of the site and will not affect public views to and along the shoreline.

(4) **Coastal ecosystems**

Objective:

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

Policies:

- (A) Improve the technical basis for natural resource management;
- (B) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- (C) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- (D) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

Response: Appropriate erosion control measures will be implemented during the construction of the project to prevent significant impacts upon coastal water ecosystems. The completion of the proposed project will not significantly disrupt or impact coastal ecosystems.

(5) **Economic Uses**

Objective:

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

Policies:

- (A) Concentrate coastal dependent development in appropriate areas;
- (B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and
- (C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
 - (i) Use of presently designated locations is not feasible;
 - (ii) Adverse environmental effects are minimized; and
 - (iii) The development is important to the State's economy.

Response: The proposed Hale Mua Subdivision will support local economic activity without compromising coastal resources quality. The proposed project is not a coastal dependent development. No adverse economic impacts will be generated as a result of the project.

(6) **Coastal Hazards**

Objective:

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

Policies:

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

-
- (B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;
 - (C) Ensure that developments comply with requirements of the Federal Flood Insurance Program;
 - (D) Prevent coastal flooding from inland projects; and
 - (E) Develop a coastal point and nonpoint source pollution control program.

Response: The majority of the project site is located within Zone C, which is an area of minimal flooding. The Imi Kala Street extension, where it crosses the Iao Stream, traverses lands zoned B and A5, which will be taken into account in designing the bridge. Moreover, tsunami inundation parameters do not apply to the subject project.

(7) **Managing Development**

Objective:

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

Policies:

- (A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
- (B) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and
- (C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Response: The district boundary amendment and 201G application processes involve review by governmental agencies and the Maui County Council. The project was presented to the

Waiehu Community Association on April 21, 2005. Public participation is also afforded through the Chapter 343, HRS, environmental assessment review process.

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

(8) **Public Participation**

Objective:

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

Policies:

- (A) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;
- (B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and
- (C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Response: As previously noted, opportunities for agency and public review of the proposed action are provided through the notification review and comment processes of the SLUC district boundary amendment, County 201G and the Chapter 343, HRS processes.

(9) **Beach Protection**

Objective:

Protect beaches for public use and recreation.

Policies:

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

Response: The proposed project does not involve any construction work having effect on beaches in the region.

(10) **Marine Resources**

Objective:

Implement the State's ocean resources management plan.

Policies:

- (A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- (B) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
- (C) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;
- (D) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
- (E) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
- (F) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Response: The proposed project is not anticipated to have adverse effects upon marine and coastal resources. The project site is located approximately one-half mile away from the nearest marine or coastal resources. Onsite runoff will be accommodated by drainage facilities in compliance with County standards.

H. SECTION 201G-118, HRS PROCESSING

Section 201G-118 of the Hawaii Revised Statutes allows eligible developers/housing projects to be exempt "*from all statutes, ordinances, charter provisions, and rules of any governmental agency relating to planning, development improvement to land, and the construction of units thereon...*" in order to facilitate the timely and cost effective implementation of proposed affordable housing projects. In coordination with the County of Maui's Department of Housing and Human Concerns (DHHC), the Hale Mua Subdivision has been determined to be an eligible project. Accordingly, a Section 201G application has been prepared and will be submitted to DHHC for review and transmittal to the Maui County Council. Upon receipt of the 201G request, the County Council shall have 45 days to render its decision on the request for exemptions.

The list of exemptions sought for the project is listed in Appendix "B" of this document. The proposed exemptions are intended to support the timely implementation of the project (both the affordable subdivision and the Imi Kala Street extension and realignment) without compromising public health, safety, or welfare considerations.

Chapter V

***Alternatives to the
Proposed Action***

V. ALTERNATIVES TO THE PROPOSED ACTION

A. PREFERRED ALTERNATIVE

The proposed project represents the preferred alternative. This alternative will provide much needed affordable housing in a location that is available and underused, in proximity to analogous land uses and yet is not densely-developed. The traffic mitigation offered by the proposed Imi Kala Street extension likewise presents itself as providing a needed traffic alternative without entering into lands better left undeveloped.

These factors make the project proposed in this document the preferred alternative.

B. ALTERNATIVES CONSIDERED

Various site plans were considered for the subdivision, as were alignments for the Imi Kala Street extension. The size and number of large lots and parks were also considered, as were the house-lot packages offered for the affordable lots. In the end, the preferred alternative was deemed the most viable implementation of the project.

C. NO ACTION ALTERNATIVE

This alternative would see the land remain fallow and under-utilized, while the housing market grows steadily worse. The median single-family home price for the month of March 2005 was \$632,000.00 (Realtor Association of Maui, April 2005). The preferred alternative, as set forth in this document, would contribute towards addressing this situation by providing over 200 affordable, single-family homes. The No Action alternative is thus not deemed desirable.

Chapter VI

***Anticipated Determination and
Findings and Reasons
Supporting the Determination***

VI. ANTICIPATED DETERMINATION AND FINDINGS AND REASONS SUPPORTING THE DETERMINATION

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

1. **No Irrevocable Commitment to Loss or Destruction of any Natural or Cultural Resource Would Occur as a Result of the Proposed Project**

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

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

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

The proposed project and the commitment of land resources is not anticipated to curtail the range of beneficial uses of the environment. Fallow agricultural lands would be converted to homesites to help meet affordable housing needs of the community.

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

The State's Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes. The proposed action is not contrary to these policies and guidelines. In conformance with the policies and guidelines of Chapter 344, HRS, the proposed project will create a community which provides a sense of identity, wise use of land, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian. The Hale Mua Affordable Subdivision will foster safe, sanitary, and decent homes, while encouraging green belts, plantings, and landscape plans and designs in urban areas and preserve and promote mountain-to-ocean vistas.

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

The proposed project would have a direct beneficial effect on the local economy during construction. In the long term, the proposed project will support the local economy through homeowners' need for goods and services. The economic and social welfare needs of the community will be advanced with the provision of affordable housing units.

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

No adverse impacts to the public's health and welfare are anticipated as a result of the proposed project. Given the acute shortage of affordable housing on Maui, the proposed project should improve public welfare by providing over 200 affordable housing units.

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

The creation of 466 houselots for residential use at the project site will create a shift in population distribution to the Waiehu region of Central Maui. Demands on infrastructure created by the project will be mitigated through the provision of required offsite improvements by the applicant, including the extension of Imi Kala Street. Public service requirements for this sub-region will similarly be addressed with the provision of applicable fees and dedications.

The proposed subdivision is designed to meet affordable housing requirements for the island's residents.

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

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

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

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

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

The project, as represented herein, is reflected in its entirety. When considered with other housing projects in the vicinity (i.e., DHHL's Waiehu

Kou Subdivisions) and the mitigation measures utilized or proposed, there are no significant adverse effects on the environment anticipated.

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

There are no rare, threatened or endangered species of flora, fauna, avifauna or their habitats on the subject property. All flora and fauna present are common species, largely non-native in origin. The subdivision site is largely covered in macadamia nut orchards and introduced grass species; animal species include Mynah, Spotted Dove, and mice.

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

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

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

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

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

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

The project site is not identified as a scenic vista or viewplane. The subdivision will maintain the general trend of the existing slope, with elevation highest at the mauka (western) end and lowest at the makai (eastern) end. The proposed project will not affect scenic corridors and coastal scenic and open space resources.

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

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

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

Chapter VII

List of Permits and Approvals

VII. LIST OF PERMITS AND APPROVALS

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

State of Hawaii

1. State Land Use Commission district boundary amendment
2. Requirements of the State of Hawaii Department of Health:
 - a. As applicable, project activities shall comply with the Administrative Rules of the Department of Health:
 - Chapter 11-39, Air Conditioning and Ventilation;
 - 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;
 - Chapter 11-62, Wastewater Systems;
 - Chapter 11-60.1-33, Fugitive Dust;
 - Chapter 11-20, Rules Relating to Potable Water Systems;
 - Chapter 11-21, Cross-Connection and Backflow Control;
 - Chapter 11-23, Underground Injection Control;
3. National Pollution Discharge Elimination System (NPDES) Permit. (Coordination with the U.S. Department of the Army has been undertaken.)

County of Maui

1. Section 201G-118, HRS approval
2. Subdivision approval
4. Construction permits

Chapter VIII

***Agencies Consulted During
the Preparation of the Draft
Environmental Assessment;
Letters Received and Responses
to Substantive Comments***

VIII. 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
Chief, Regulatory Branch
U.S. Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Fort Shafter, Hawaii 96858-5440
3. Paul Henson, Ph.D.
Field Supervisor
U. S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 3-122, Box
50088
Honolulu, Hawaii 96813
4. Ted Liu, Director
State of Hawaii
**Department of Business, Economic
Development & Tourism**
P.O. Box 2359
Honolulu, Hawaii 96804
5. Mary Lou Kobayashi, Planning
Program Administration
State of Hawaii
Office of Planning
P.O. Box 2359
Honolulu, Hawaii 96804
6. Patricia Hamamoto, Superintendent
State of Hawaii
Department of Education
P.O. Box 2360
Honolulu, Hawaii 96804
7. Donna Whitford
Maui District Superintendent
Department of Education
54 High Street, 4th Floor
Wailuku, Hawaii 96793
8. Denis Lau, Chief
Clean Water Branch
State of Hawaii
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaii 96814
9. Herbert Matsubayashi
District Environmental Health
Program Chief
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793
10. Peter Young, Chairperson
State of Hawaii
**Department of Land and Natural
Resources**
P. O. Box 621
Honolulu, Hawaii 96809
11. 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

-
12. Rodney Haraga, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813
13. Fred Cajigal, Maui District Engineer
State of Hawaii
Department of Transportation
Highways Division
650 Palapala Drive
Kahului, Hawaii 96732
14. Clyde Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813
15. Micah A. Kane, Chair
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawaii 96805
16. Carl Kaupololo, Chief
County of Maui
Department of Fire Control
200 Dairy Road
Kahului, Hawaii 96732
17. Alice Lee, Director
County of Maui
Department of Housing and Human Concerns
200 S. High Street
Wailuku, Hawaii 96793
18. Michael W. Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793
19. Glenn Correa, Director
County of Maui
Department of Parks and Recreation
1580-C Kaahumanu Avenue
Wailuku, Hawaii 96793
20. Thomas Phillips, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793
21. Gilbert S. Coloma-Agaran, Director
County of Maui
Department of Public Works and Waste Management
200 South High Street
Wailuku, Hawaii 96793
22. George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793
23. Maui Electric Company, Ltd.
P. O. Box 398
Kahului, Hawaii 96732

APR 28 2004

United States Department of Agriculture



 NRCS Natural Resources
Conservation Service

Our People...Our Islands...In Harmony
210 Imi Kala Street, Suite #209, Wailuku, HI 96793-2100

Date: April 26, 2004

Michael T. Munekiyo, A.I.C.P.
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

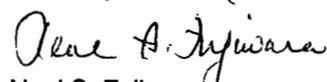
Dear Mr. Munekiyo,

SUBJECT: Early Consultation Request for Proposed Hale Mua Subdivision
TMK: 3-3-002: por. 001

There are many small drainage areas within the parcel boundaries. Some may or may not pick up drainage from above the old cane haul road which seems to be the west or mauka boundary. There is a large grassed waterway near the northern boundary running nearly parallel with the stream. This waterway carries a lot of the runoff from the old cane haul road as well as land above it. Drainage for the whole area should be planned carefully.

Thank you for the opportunity to comment.

Sincerely,



Neal S. Fujiwara
District Conservationist



December 2, 2004

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

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, TMK 3-3-002:001 (por.)

Dear Mr. Fujiwara:

Thank you for your letter of April 26, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. In response to your comments, we note that drainage issues are being carefully considered for the proposed project. A drainage report will be included with the Draft Environmental Assessment, which will describe the methods by which drainage for the proposed subdivision will be effectively managed.

Thank you again for your comments. A copy of the Draft Environmental Assessment will be provided to your office for review and comment

Very truly yours,

Matt Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
kim/waiehu/nrcs.res

APR 19 2004

Linda Lingle ,
GOVERNOR

PATRICIA HAMAMOTO
SUPERINTENDENT



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

OFFICE OF THE SUPERINTENDENT

April 16, 2004

Mr. Michael T. Munekiyo, Project Manager
Munekiyo & Hiraga Inc.
305 High Street, Suite 104
Wailuku, Hawaii'i 96793

Dear Mr. Munekiyo:

SUBJECT: Early Consultation for Hale Mua Subdivision, Waiehu, Maui,
TMK: 3-3-2: por. 1

The Department of Education (DOE) is responding to your request for early consultation comments for a 400-lot single family and 19-lot agricultural subdivision in Waiehu, Maui.

The DOE will request a fair-share contribution from the project developer when the project goes before the State Land Use Commission and/or the Maui County Council and Planning Department.

The DOE would like to know if the subdivision will permit the construction of accessory dwellings on any of the three categories of lots. A second home on a significant number of the 419 lots would have a significant impact on the number of school children who may reside in the project.

The DOE has no other comment at this preliminary stage and looks forward to the opportunity to review the forthcoming documents on the project.

If you have any questions, please call Rae M. Loui, Assistant Superintendent of the Office of Business Services, at 586-3444 or Heidi Meeker of the Facilities and Support Services Branch at 733-4862.

Very truly yours,

A handwritten signature in cursive script that reads "Patricia Hamamoto".

Patricia Hamamoto
Superintendent

PH:jmb

cc: Rae M. Loui, OBS
FSSB
Ron Okamura, Acting CAS, Maui



December 2, 2004

Patricia Hamamoto, Superintendent
State of Hawaii
Department of Education
PO Box 2360
Honolulu, Hawaii 96804

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, TMK 3-3-002:001 (por.)

Dear Ms. Hamamoto:

Thank you for your letter of April 16, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. In response to your comments, we note the following:

1. We understand the need for fair-share contribution to mitigate impact to the educational facilities of the area. The applicant will coordinate with the Department of Education and the Land Use Commission to work out the possible conditions for fair-share participation, as applicable.
2. Hale Mua Properties, LLC, anticipates that accessory dwellings or ohana units will be permitted on the 228 market-priced and large lots. While the total number of lot purchasers desiring ohana units cannot be estimated, it has been assumed that all of the potential ohana will be developed for infrastructure design purposes.

Thank you again for your comments. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. Please feel free to contact me with any questions at 244-2015.

Very truly yours,

Matt Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/doe.res

APR 22 2004



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

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-10444

April 20, 2004

Mr. Michael T. Munekiyo, AICP
Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

Subject: Early Consultation Request for Proposed Hale Mua Subdivision,
Waiehu, Maui, Hawaii (TMK: (2) 3-3-02: por.1)

Thank you for your letter dated April 1, 2004, requesting comments on the subject project consisting of 200 affordable single family residential units and 200 market priced homes surrounded by 19 agricultural lots. The total project acreage is 248 acres.

According to your letter, the applicant, Hale Mua Properties, LLC has obtained certification from the County of Maui's Department of Housing and Human Concerns that the project meets the criteria for a Section 201G-118 project according to the Hawaii Revised Statutes (HRS). It is our understanding that the applicant proposed to "fast track" the property before the State Land Use Commission (LUC) to obtain reclassification from "Agricultural" to "Urban" and to seek exemptions from the Community Plan Amendment and Change in Zoning processes at the Maui County Council.

We recommend that the State Housing and Community Development Corporation of Hawaii be allowed to comment on the proposed project and we would appreciate a copy of the criteria and rationale used by the County of Maui's Department of Housing and Human Concerns to determine the project could be processed as a Section 201G-118 "fast track" project.

The availability of infrastructure and public services such as water, roads, sewer, power, solid waste disposal, and schools, fire/police protection, and healthcare should be thoroughly discussed. Historical and cultural resources have also been important factors for projects in the

Mr. Michael T. Munekiyo, AICP

Page 2

April 20, 2004

Waihee-Waiehu region. State Historic Preservation Division needs to be consulted regarding cultural issues.

Should you have any questions, please call the Land Use Division at 587-2842.

Sincerely,



Mary Lou Kobayashi
Administrator

c: Anthony Ching, LUC
Janice Takahashi, HCDCH
Theodore E. Liu, DBEDT



December 2, 2004

Mary Lou Kobayashi, Administrator
State of Hawaii
Department of Business, Economic Development, and Tourism
235 South Beretania Street, 6th Floor
Honolulu, Hawaii 96804

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, TMK 3-3-002:001 (por.)

Dear Ms. Kobayashi:

Thank you for your letter of April 20, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. In response to your comments, we note the following:

1. A copy of the Draft Environmental Assessment (EA) will be provided to the State Housing and Community Development Corporation of Hawaii for review and comment.
2. The County of Maui requires any housing development seeking exemptions under Section 2012G-118, Hawaii Revised Statutes, to designate at least 51 percent of units as "affordable housing", being defined as housing which could be purchased by those earning no more than 120 percent of the area median income. Hale Mua Properties, LLC, has designated 238 out of a total of 466 residential lots as affordable housing. Preliminary sales prices for affordable house and lot packages will range between \$170,000.00 and \$180,000.00, which meets this criterion.
3. The Draft EA will directly address the infrastructure issues that you mention, as well as potential impacts to cultural resources. A copy of the Draft EA will be provided to your office for review and comment. The State Historic Preservation Division has already been consulted for comments and will also be the recipient of the Draft EA.

Mary Lou Kobayashi, Administrator
December 2, 2004
Page 2

--Thank you again for your comments. Please feel free to contact me with any questions at 244-2015.

Very truly yours,



Matt Slepín, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/dbedt.res

APR 27 2004

LINDA LINGLE
GOVERNOR
STATE OF HAWAII



MICAH A. KANE
CHAIRMAN
HAWAIIAN HOMES COMMISSION

BEN HENDERSON
DEPUTY TO THE CHAIRMAN

KAULANA H. PARK
EXECUTIVE ASSISTANT

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P.O. BOX 1879
HONOLULU, HAWAII 96805

April 23, 2004

Mr. Michael T. Munekiyo, Project Manager
Munekiyo and Hiraga, Inc.
350 High Street, Suite 104
Wailuku, HI 96793

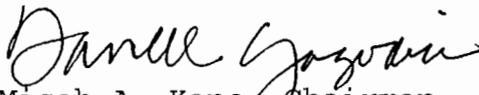
Dear Mr. Munekiyo:

Subject: Early Consultation Request for Proposed Hale Mua
Subdivision, TMK 3-3-2:01 por., Waiehu, Maui

Thank you for the opportunity to review the subject request. The Department of Hawaiian Home Lands is interested in better understanding how the project will mitigate anticipated impacts upon traffic between Waihee and Wailuku, plans for potable water development and use and wastewater treatment plans.

We look forward to reviewing the forthcoming environmental assessment for the subject project. If you have any questions, please call Daniel Ornellas of our Planning Office at 586-3836.

Aloha and mahalo,


Micah A. Kane, Chairman
Hawaiian Homes Commission

fn



December 2, 2004

Micah Kane, Chairman
State of Hawaii
Department of Hawaiian Homelands
PO Box 1879
Honolulu, Hawaii 96805

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, TMK 3-3-002:001 (por.)

Dear Mr. Kane:

Thank you for your letter of April 23, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. In response to your comments, we note the following:

1. A traffic impact analysis report will be carried out and included with the Draft Environmental Assessment (EA). This report will address not only the anticipated impacts of the new subdivision, but also the effects of the proposed roadway improvements, notably the extension of Imi Kala Street to Kahekili Highway so as to provide an effective alternative route for traffic.
2. Engineering reports will also be carried out and included in the Draft EA. The Draft EA will discuss the existing water and wastewater situation, as well as proposed improvements to those systems for the subdivision.

Thank you again for your comments. A copy of the Draft EA will be provided to your office for review and comment. Please feel free to contact me with any questions at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read "Matt Slepina", written in a cursive style.

Matt Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/dhhl.res

LINDA LINGLE
GOVERNOR OF HAWAII



APR 28 2004

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

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

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

April 27, 2004

Mr. Michael Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Mr. Munekiyo:

Subject: **Early Consultation Request for the Proposed Hale Mua
Subdivision**
TMK: (2) 3-3-02:por. 01

Thank you for the opportunity to participate in the early consultation process for the environmental assessment. 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 project is located within or near proximity to the County sewer system. All lots in the proposed project shall connect to the County sewer system.
3. Of major concern is the impact the project will have on the availability of water in central Maui.

Should you have any questions, please call me at 984-8230.

Sincerely,

A handwritten signature in black ink, appearing to be "H. Matsubayashi", enclosed in a hand-drawn oval.

Herbert S. Matsubayashi
District Environmental Health Program Chief

December 2, 2004

Herbert Matsubayashi
State of Hawaii
Department of Health
Maui District Health Office
54 High Street
Wailuku, Hawaii 96793

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, TMK 3-3-002:001 (por.)

Dear Mr. Matsubayashi:

Thank you for your letter of April 27, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. In response to your comments, we note the following:

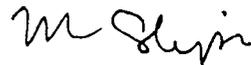
1. The applicant will be seeking a NPDES permit and all other required permits before implementing the proposed action.
2. All lots within the proposed subdivision will be connected to the County sewer system. Hale Mua Properties, LLC, intends to install a new force main to carry the wastewater to the Wailuku pump station, with sewer lines to run along Kahekili Highway and then continue along the new Imi Kala Street extension, which is also part of the proposed action.
3. The applicant has been in communication with various agencies concerned with water supply. Hale Mua Properties, LLC, has entered into an agreement with the Department of Water Supply to provide funds for water system improvements.

Herbert Matsubayashi
December 2, 2004
Page 2

DRAFT

Thank you again for your comments. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. Please feel free to contact me with any questions at 244-2015.

Very truly yours,



Matt Slepín, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/dohmaui.res

APR 16 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-04-077

April 14, 2004

Mr. Michael T. Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

SUBJECT: Early Consultation Request for Draft Environmental Assessment
Proposed Hale Mua Subdivision, Waichu, Maui, Hawaii
TMK: (2)3-3-002:por1

Thank you for allowing us to review and comment on the subject document. We have the enclosed standard comments to offer. If you have any questions about the 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
SDWB

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.

¹"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.

Safe Drinking Water Branch Dated 3/11/04

The Safe Drinking Water Branch administers programs in the areas of: 1) public water systems; 2) underground injection control; and 3) groundwater protection. Our general comments on projects are as follows.

Public Water Systems

Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules, Title 11, Chapter 20, titled Rules Relating to Potable Water Systems.

- **All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment. This requirement involves demonstration that the system will have satisfactory technical, managerial and financial capacity to enable the system to comply with safe drinking water standards and requirements.**
- **Projects that propose development of new sources of potable water serving or proposed to serve a public water system must comply with the terms of Section 11-20-29 of Chapter 20. This section requires that all new public water system sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.**
- **The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the state of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.**
- **All sources of public water system sources must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.**
- **Projects proposing to develop new public water systems or proposing substantial modifications to existing public water systems must receive approval by the Director of Health prior to construction of the proposed system or modification. These projects include treatment, storage and distribution systems of public water systems. The approval authority for projects owned and operated by a County Board or Department of Water or Water Supply has been delegated to them.**
- **All public water systems must be operated by certified distribution system and water treatment plant operators as defined by Hawaii Administrative Rules, Title 11, Chapter 11-25 titled; Rules Pertaining to Certification of Public Water System Operators.**
- **All projects which propose the use of dual water systems or the use of a non-potable water system in proximity to an existing potable water system to meet irrigation or other needs must be carefully design and operate these systems to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the potable system. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the potable water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas**

should be clearly labeled with warning signs to prevent the inadvertent consumption on non-potable water. Compliance with Hawaii Administrative Rules, Title 11, Chapter 11-21 titled; Cross-Connection and Backflow Control is also required.

- All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawai'i Source Water Assessment Plan) within the source water protection area of an existing source of water for a public water supply should address this potential and activities that will be implemented to prevent or reduce the potential for contamination of the drinking water source.
- For further information concerning the application of capacity, new source approval, operator certification, source water assessment, backflow/cross-connection prevention or other public water system programs, please contact the Safe Drinking Water Branch at 586-4258.

Underground Injection Control (UIC)

- Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawai'i Administrative Rules, Title 11, Chapter 11-23, titled Underground Injection Control (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.
- Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operation limitations, monitoring and reporting requirements, and other facility management and operational conditions. A complete UIC permit application form is needed to apply for a UIC permit.
- A UIC permit can have a valid duration of up to five years. Permit renewal is needed to keep an expiring permit valid for another term.

For further information about the UIC permit and the Underground Injection Control Program, please contact the UIC staff of the Safe Drinking Water Branch at 586-4258.

Groundwater Protection Program

Projects that propose to develop a golf course are asked to use the Guidelines Applicable to Golf Courses in Hawai'i (Version 6) in order to address certain groundwater protection concerns, as well as other environmental concerns



December 2, 2004

June Harrigan-Lum, Manager
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

SUBJECT: Hale Mua Subdivision, Waiehu, Maui
TMK 3-3-002:001 (por.)

Dear Ms. Harrigan-Lum:

Thank you for your letter of April 14, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. We acknowledge receipt of the standard comments. The department's planning and regulatory requirements, as set forth in the standard comments, will be addressed in the Draft EA, as applicable. A copy of the Draft EA will be provided to your office for review and comment.

Please feel free to contact me with any questions at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read "Matt Slepina", written in a cursive style.

Matt Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
kim/waiehu/doh.res

APR 29 2004

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

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



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 28, 2004
HALEMAUSUBM&H.RCM

LD-NAV

Munekiyo and Hiraga, Inc.
Michael T. Munekiyo, A.I.C.P.
Project Manager
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

SUBJECT: Pre-Assessment Consultation for the Preparation of a Draft
Environmental Assessment for the Proposed Hale Mua
Subdivision, Waiehu, Island of Maui, Hawaii
TMK: (2) 3-3-002 Portion of 001

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

The Department of Land and Natural Resources' (DLNR) Land Division
distributed or made available a copy of your letter (project description)
dated April 1, 2004 to the following DLNR Divisions for their review and
comment:

- Division of Aquatic Resources
- Division of Forestry and Wildlife
- Na Ala Hele Trails
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office
- Land-Planning and Development
- Land-Project Development Specialist

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 at this time.

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 black ink, appearing to read "Dierdre S. Mamiya".

DIERDRE S. MAMIYA
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII



RECEIVED

APR 8 12:11

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 7, 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

Ref.: HALEMAUASUBM&H.CMT

L-1882

Suspense Date: 4/14/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Na Ala Hele Trails
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Engineering Division
XXX Land-Maui District Land Office
XXX Land-Planning and Development
XXX Land-Project Development Specialist

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Pre-Assessment Consultation for the Preparation of a Draft
Environmental Assessment for the Proposed Hale Mua
Subdivision, Waiehu, Island of Maui, Hawaii
TMK: (2) 3-3-002: Portion of 001
Applicant: Hale Mua Properties, LLC
Consultant: Munekiyo & Hiraga, Inc. (808-244-2015)

Please review the attached letter (project summary) dated April 1, 2004 pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0438.

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.

Signed:

Date:

LINDA LINGLE
GOVERNOR OF HAWAII



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

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

April 14, 2004

TO: Ms. Dede Mamiya, Administrator
Land Division

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

SUBJECT: Hale Muā, 400-lot SF Subdivision

FILE NO.: HALEMUASUBM&H.CMT

RECEIVED
LAND DIVISION
2004 APR 15 A 9:40
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

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:

The Iao Aquifer, primary water source for this project, is now a ground-water management area under the State Commission on Water Resource Management (CWRM), and while more water is available within the sustainable yield, the safe yield of the current infrastructure may be at its limit. New water sources for the Central Maui Service Area intended to relieve this infrastructure burden are fully committed to relieve new demand as soon as they are available.

Well owners in the Iao Aquifer must apply for water use permit applications. 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



AQUATIC RESOURCES

Suspense Date:	
Draft Reply	<input type="checkbox"/>
Reply Direct	<input type="checkbox"/>
Comments	<input type="checkbox"/>
Information	<input type="checkbox"/>
Comp Act & File	<input type="checkbox"/>
Return to:	
Copies to:	



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

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 7, 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
Ref.: HALEMAUASUBM&H.CMT

L-1882
Suspense Date: 4/14/04

MEMORANDUM:

- TO:
- XXX Division of Aquatic Resources
 - XXX Division of Forestry & Wildlife
 - XXX Division of State Parks
 - XXX Na Ala Hele Trails
 - Division of Boating and Ocean Recreation
 - XXX Commission on Water Resource Management
 - XXX Office of Conservation and Coastal Lands
 - XXX Engineering Division
 - XXX Land-Maui District Land Office
 - XXX Land-Planning and Development
 - XXX Land-Project Development Specialist

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Pre-Assessment Consultation for the Preparation of a Draft Environmental Assessment for the Proposed Hale Mua Subdivision, Waiehu, Island of Maui, Hawaii
TMK: (2) 3-3-002: Portion of 001
Applicant: Hale Mua Properties, LLC
Consultant: Munekiyo & Hiraga, Inc. (808-244-2015)

Please review the attached letter (project summary) dated April 1, 2004 pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0438.

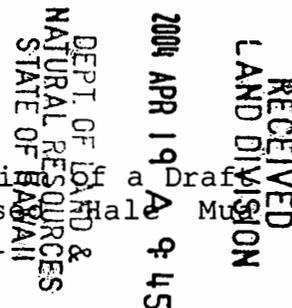
If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no comments.

() Comments attached.

Signed: *William S. Devick*
William S. Devick, Administrator

Date: 4/16/04



LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION

2004 APR 14 A 9 18



DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 7, 2004

2004 APR 12 PM 1:29

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
Ref.: HALEMAUASUBM&H.CMT

L-1882
Suspense Date: 4/14/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Na Ala Hele Trails
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Engineering Division
XXX Land-Maui District Land Office
XXX Land-Planning and Development
XXX Land-Project Development Specialist

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Pre-Assessment Consultation for the Preparation of a Draft
Environmental Assessment for the Proposed Hale Mua
Subdivision, Waiehu, Island of Maui, Hawaii
TMK: (2) 3-3-002: Portion of 001
Applicant: Hale Mua Properties, LLC
Consultant: Munekiyo & Hiraga, Inc. (808-244-2015)

Please review the attached letter (project summary) dated
April 1, 2004 pertaining to the subject matter and submit your
comment (if any) on Division letterhead signed and dated by the
suspense date.

Should you need more time to review the subject matter, please
contact Nick Vaccaro at ext.: 7-0438.

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.

Signed: *James K. King*

Date: 4-13-04

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 APR 15 A 10:43

STATE OF HAWAII
DEPT. OF LAND AND NATURAL RESOURCES
LAND DIVISION
STATE OF HAWAII

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 7, 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

Ref.: HALEMAUASUBM&H.CMT

L-1882

Suspense Date: 4/14/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Na Ala Hele Trails
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Engineering Division
XXX Land-Maui District Land Office
XXX Land-Planning and Development
XXX Land-Project Development Specialist

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Pre-Assessment Consultation for the Preparation of a Draft
Environmental Assessment for the Proposed Hale Mua
Subdivision, Waiehu, Island of Maui, Hawaii
TMK: (2) 3-3-002: Portion of 001
Applicant: Hale Mua Properties, LLC
Consultant: Munekiyo & Hiraga, Inc. (808-244-2015)

Please review the attached letter (project summary) dated
April 1, 2004 pertaining to the subject matter and submit your
comment (if any) on Division letterhead signed and dated by the
suspense date.

Should you need more time to review the subject matter, please
contact Nick Vaccaro at ext.: 7-0438.

**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.

Signed:

Date:

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LA/NAV

Ref.: HALEMAUASUBM&H.CMT

COMMENTS

- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- (X) **Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone C.**
- () 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 Emiler 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: Andrew M. Monden
for ERIC T. HIRANO, CHIEF ENGINEER

Date: 4/13/09

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 APR 15 A 9:24

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

April 7, 2004

LD/NAV
Ref.: HALEMAUASUBM&H.CMT

L-1882
Suspense Date: 4/14/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Na Ala Hele Trails
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Engineering Division
XXX Land-Maui District Land Office
XXX Land-Planning and Development
✓ XXX Land-Project Development Specialist

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Pre-Assessment Consultation for the Preparation of a Draft
Environmental Assessment for the Proposed Hale Mua
Subdivision, Waiehu, Island of Maui, Hawaii
TMK: (2) 3-3-002: Portion of 001
Applicant: Hale Mua Properties, LLC
Consultant: Munekiyo & Hiraga, Inc. (808-244-2015)

Please review the attached letter (project summary) dated
April 1, 2004 pertaining to the subject matter and submit your
comment (if any) on Division letterhead signed and dated by the
suspense date.

Should you need more time to review the subject matter, please
contact Nick Vaccaro at ext.: 7-0438.

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

(X) We have no comments.

() Comments attached.

Signed:

Date: 4/15/04



December 2, 2004

Dierdre Mamiya, Administrator
State of Hawaii
Department of Land and Natural Resources
Land Division
PO Box 621
Honolulu, Hawaii 96809

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, TMK 3-3-002:001 (por.)

Dear Ms. Mamiya:

Thank you for your letter of April 28, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. In response to your comments, we note the following:

1. The applicant has been in communication with various County agencies concerned with water supply. Hale Mua Properties, LLC, is coordinating with the County of Maui in this regard and has agreed to provide funds to the County Department of Water Supply for off-site water system improvements.
2. The Flood Zone designation, as reflected in the Flood Insurance Rate Map (FIRM) has been noted and will be documented in the Draft Environmental Assessment.

Thank you again for your comments. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. Please feel free to contact me with any questions at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read "M Slepina", written in a cursive style.

Matt Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
kim/waiehu/dlnr.res

MAY 25 2004

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

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



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

May 21, 2004

LOG NO: 2004.1580
DOC NO: 0405CD30

Michael T. Munekiyo, A.I.C.P.
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo,

**SUBJECT: Chapter 6E-42 Historic Preservation Review – Early Consultation for the Proposed Hale Mua Subdivision
Waiehu and Wailuku Ahupua`a, Wailuku District, Island of Maui
TMK: (2) 3-3-002: 001 por.**

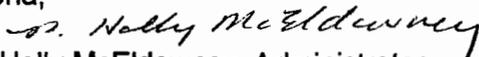
Thank you for the opportunity to provide comments for the Early Consultation for the Proposed Hale Mua Subdivision, which was received by our staff April 5, 2004. Our review is based on reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was conducted of the subject property.

Based on the submitted Early Consultation request, we understand the proposed undertaking consists of the development of an approximately 400 acre lot single-family residential subdivision, site grading, utility installations (on-site water, sewage, and drainage systems). The subject property is currently vacant, but previously in commercial agriculture.

Scientific Consultant Services (SCS) has recently conducted an archaeological inventory survey of the proposed project area. During the survey six historic sites were identified. We have reviewed the report documenting the findings of the survey (*Archaeological Inventory Survey of a 240.087 Acres Located in Wai`ehu, Wai`ehu and Wailuku Ahupua`a, Wailuku District, Maui Island [TMK: (2) 3-3-02 portion of 001].* Wilson and Dega 2004) and recommended revisions (SHPD DOC NO.: 0405MK04/LOG NO.: 2004.1454). To date we have not received the requested revisions. Thus, we are unable to provide comments at this time. We will be better able to provide comments for the early consultation upon our receipt and review of the requested revisions.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,


P. Holly McEldowney, Administrator
State Historic Preservation Division

CD:jen

c: Michael Foley, Director, Dept of Planning, 250 S. High Street, Wailuku, HI 96793
Maui Cultural Resources Commission, Dept of Plng, 250 S. High Street, Wailuku, HI 96793

LINDA LINGLE
GOVERNOR



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

APR 28 2004

RODNEY K. HARAGA
DIRECTOR

Deputy Director
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1109

April 21, 2004

Mr. Michael T. Munekiyo, A.I.C.P.
Project Manager
Munekiyo & Hiraga, Inc.
350 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

Subject: Proposed Hale Mua Subdivision, Waiehu, Maui
201G HRS Project
TMK: 3-3-02: por. 01

Thank you for the notice on the proposal to develop the subject subdivision.

A traffic assessment report should be prepared and submitted along with the development proposal and anticipated timetables, through full build out of the subdivision, for our review and approval. The report must include an evaluation of and address the impacts by the development on our State highway facilities.

We appreciate the opportunity to provide our comments.

Very truly yours,

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

RODNEY K. HARAGA
Director of Transportation

c: Michael W. Foley, Maui Department of Planning



December 2, 2004

Rodney Haraga, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, TMK 3-3-002:001 (por.)

Dear Mr. Haraga:

Thank you for your letter of April 21, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. In response to your comments, we note that a full traffic impact analysis report will be carried out and included with the Draft Environmental Assessment. This report will address not only the anticipated impacts of the new subdivision, but also the effects of the proposed roadway improvements, notably the extension of Imi Kala Street to Kahekili Highway so as to provide an effective alternative route for traffic.

Thank you again for your comments. A copy of the Draft EA will be provided to your office for review and comment. Please feel free to contact me with any questions at 244-2015.

Very truly yours,

Matt Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/dot.res

APR 21 2004

PHONE (808) 594-1888

FAX (808) 594-1885



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

HRD04-1360

April 16, 2004

Michael T. Munekiyo
Project Manager
Munekiyo & Hiraga, Inc.
350 High Street, Suite 104
Wailuku, HI 96793

Subject: Early Consultation Request for Hale Mua Subdivision, Waieha, Maui, Hawaii, (2) 3-3-02: Portion 1

Dear Mr. Munekiyo:

Thank for your letter dated April 1, 2004 regarding the early consultation request for Early Consultation Request for Hale Mua Subdivision, Waieha, Maui, Hawaii, (2) 3-3-02: Portion 1. Your letter requests that the Office of Hawaiian Affairs (OHA) review and comment on the proposed project.

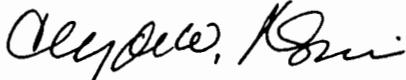
The preliminary consultation letter notes the proposed project involves 248 acres and the development of "approximately 200 affordable single-family units and 200 market-priced units, with lot sizes of approximately 5,000 square feet for affordables and approximately 10,000 square feet for the market-priced lots."¹ The preliminary consultation letter notes that a Draft Environmental Assessment (EA) will be prepared for the proposed project.

The Office of Hawaiian Affairs looks forward to your Draft EA for the proposed project, which should clarify the project scope and define the project footprint more clearly.

¹The DEA should clarify the following: exact number of units proposed and the exact square footage for each of these units, cultural and archaeological impacts, known or potential burials on potential site, grading plans, location of water and sewer lines, electrical infrastructure, roadways, et. al. for the proposed project.

If you have questions or concerns please contact Matthew Myers, Policy Advocate at 594-1945 or matthewm@oha.org.

'O wau iho nō,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o". The signature is fluid and cursive, with the first name being the most prominent.

Clyde W. Nāmu'o
Administrator



December 2, 2004

Clyde Namu'o, Administrator
State of Hawaii
Department of Hawaiian Affairs
711 Kapi'olani Boulevard, Suite 500
Honolulu, Hawaii 96813

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, TMK 3-3-002:001 (por.)

Dear Mr. Namu'o:

Thank you for your letter of April 1, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. In response to your comments, we note that the Draft Environmental Assessment (EA) will clarify the scope and specifications of the proposed project. The exact number and lot design parameter will be addressed, as well as surveys of existing resources and potential impacts to them. A copy of the Draft EA will be provided to your office for review and comment.

Very truly yours,

A handwritten signature in black ink that reads "Matt Slepina". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Matt Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
kim/waiehu/oha.res

APR 14 2004

ALAN M. ARAKAWA
MAYOR



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

April 12, 2004

Munekiyo & Hiraga, Inc.
Michael T. Munekiyo, Project Manager
350 High Street, Suite 104
Wailuku, HI 96793

Subject: Hale Mua subdivision, Waiehu, Maui, Hawaii TMK (2)3-3-002:001

Dear Mr. Munekiyo,

I have reviewed your request to comment on the subject property. We will review the construction plan in detail in the future during the plan review process. Some of the information that we will need includes:

1. Fire flow calculations and hydrant spacing
2. Roadway widths, street designs.

Please feel free to contact me if you have any questions at 270-7568.

Sincerely,

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

Valeriano F. Martin
Captain
Fire Prevention Bureau



December 2, 2004

Valeriano Martin, Captain
County of Maui
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawaii 96732

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, Hawaii
TMK 3-3-002:001

Dear Mr. Martin:

Thank you for your letter of April 12, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001, Waiehu, Maui. In response to your comments, we note that the information that you requested shall be included in the construction plans for the proposed subdivision. A copy of the Draft EA will be provided to your office for review and comment.

Please feel free to contact me at 244-2015 should you have any questions.

Very truly yours,

Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/mfd.res

APR 15 2004



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

April 8, 2004

Mr. Michael Munekiyo, A.I.C.P.
Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

**SUBJECT: PROPOSED HALE MUA SUBDIVISION,
WAIEHU, MAUI, HAWAII [TMK (2) 3-3-02:por. 1]**

We have reviewed your April 1, 2004 letter and enclosures regarding the subject project and would like to offer the following comments:

1. Please include the estimated selling prices for the affordable and market-priced units.
2. Please provide the living area for the affordable housing units.
3. The policy of the Department of Housing and Human Concerns is that a minimum of fifty-one percent (51%) of the housing units in a Section 201G-118, HRS, project must qualify as affordable housing. Therefore, in the case of this project, a minimum of 204 units must qualify as affordable housing.
4. Since the affordable housing units in the project will consist of detached, single-family units, the selling prices for the affordable housing units must be affordable to families whose annual income does not exceed one hundred percent of the County's median income (\$60,700 for calendar year 2004).

Mr. Michael Munekiyo
Page 2
April 8, 2004

The maximum selling price for an affordable housing unit will be determined at the time the affordable housing units are ready for marketing. In determining the maximum selling price, a 30-year, fixed-rate loan with no points at the "then prevailing" interest rate will be used.

5. The following is a statement in the third paragraph of your letter:

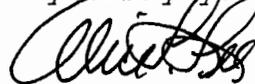
The applicant will thus file a Section 201G-118, Application with the State Land Use Commission (LUC) to reclassify the parcel from the current "Agriculture" to "Urban" District.

To mitigate any possible confusion, we would like to request that the application to the LUC not be referred to as a Section 201G-118, HRS application. Could it be identified as a "District Boundary Amendment Petition (Pursuant to Section 201G-118, HRS)" or something of that nature?

6. Please indicate if there will be any sales restrictions for the market-priced units, such as preference being granted to first-time homebuyers or Maui residents.
7. Please describe the sales restrictions (e.g. qualifications of eligible buyers, owner-occupancy requirements, re-sale restrictions, etc.) for the affordable units.

Thank you for the opportunity to comment.

Very truly yours,



ALICE L. LEE
Director

ET0:hs

c: Housing Administrator



December 2, 2004

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

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, TMK 3-3-002:001 (por.)

Dear Ms. Lee:

Thank you for your letter of April 8, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. In response to your comments, we note the following:

1. The estimated selling prices for the market-priced lots, as well as the estimated selling prices and living spaces for the affordable houses and lots will be included in the Draft Environmental Assessment (EA). The applicant understands that affordable units must be affordable to those earning 120 percent or less of the area median income and is prepared to price accordingly. Sales restrictions will also be discussed in the EA document.
2. As the total number of units has changed, the number of affordable units has been adjusted to meet the 51 percent balance necessary for processing under a 201G application.
3. The petition to the LUC will be clarified to avoid confusion with the County's 201-G process.

Alice Lee, Director
December 2, 2004
Page 2

Thank you again for your comments. A copy of the Draft EA will be provided to your office for review and comment. Please feel free to contact me with any questions at 244-2015.

Very truly yours,

A handwritten signature in cursive script that reads "Matt Slepín".

Matt Slepín, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/dhhc.res

APR 15 2004

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

April 12, 2004

Michael T. Munekiyo, A.I.C.P.
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

SUBJECT: PROPOSED HALE MUA SUBDIVISION
WAIEHU, MAUI, HAWAII
TMK 3-3-02:por.1

We have reviewed the early consultation request for the subject project and have no comments or objections to the proposed action.

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



December 2, 2004

Glenn Correa, Director
County of Maui
Department of Parks and Recreation
700 Hali'a Nakoia Street, Unit 2
Wailuku, Hawaii 96793

SUBJECT: Hale Mua Subdivision, Waiehu, Maui
TMK 3-3-002:001 (por.)

Dear Mr. Correa:

Thank you for your letter of April 12, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. A copy of the Draft EA will be provided to your office for review and comment.

Please feel free to contact me with any questions at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read "Matt Slepik", written in a cursive style.

Matt Slepik, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/dpr.res

APR 27 2004

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

April 27, 2004

Mr. Michael Munekiyo, AICP
Munekiyo & Hiraga, Inc.
350 South High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

RE: Preliminary Consultation Comments for the Draft Environmental Assessment prepared for the Proposed Hale Mua Subdivision located at TMK 3-3-002: 001, portion, Waiehu, Island of Maui, Hawaii (LTR 2004/1211)

The Maui Planning Department (Department) is in receipt of your request for preliminary consultation comments pursuant to Title 11, Chapter 200, Section 9 of the Hawaii Administrative Rules (HAR).

As indicated in your letter, the proposed action involves the development of an approximately 400-lot single-family residential subdivision on 248 acres in Waiehu, Maui. Approximately 200 affordable single-family units and 200 market-priced units are proposed in addition to 19 agricultural lots. The County Department of Housing and Human Concerns (DHHC) has certified the project as meeting the criteria for Section 201G-118, HRS.

The Department provides the following comments:

1. Provide a description of proposed energy conservation measures incorporated into the project.
2. Discuss proposed landscape features, buffers, berms, streetscapes, and boundary walls for the subdivision, of particular concern is the frontage along Kahekili Highway and the impact of urban development on the existing open space character of the area.

Mr. Michael Munekiyo, AICP

April 27, 2004

Page 2

3. View analysis from Kahekili Highway to the West Maui Mountains. The site layouts of future houses and other vertical structures that may impact the area.
4. Provide a discussion as to the potential impacts of converting agricultural lands to urban uses. The discussion should include, at a minimum, the loss of productive agricultural lands, the pressure for more urban development in the area, conflicts with the existing agricultural operations in the area, and compliance with the Land Use Objectives and Policies of the Wailuku-Kahului Community Plan relating to agricultural lands.

Discuss how the project complies with the Agricultural District Ordinance recommendation of maintaining lands that should be kept in agriculture (e.g., ALISH classification, 75% contiguous to agricultural lands, etc.).

5. At a minimum, discuss the potential impacts and proposed mitigative measures for:
 - a. Infrastructure - traffic water, wastewater, drainage, fire protection, solid waste;
 - b. Public facilities, including educational facilities; and
 - c. Archaeological/Cultural Resources.
6. Discuss potential impacts of historical usage of pesticides associated with past agricultural activities.
7. Presently, a network of abandoned agricultural roads are utilized for recreational uses and to access the West Maui Mountains. The Department recommends integrating a network of green space, open land recreation corridors, and trails within and along the perimeter of the project area for multi recreational uses.
8. The proposed park area appears to also serve as a drainage retention basin. Discuss alternatives to this configuration.
9. Identify the 19 agricultural lots on the site plan.
10. Identify the surrounding uses of adjacent lots on the site plan.

Mr. Michael Munekiyo, AICP
April 27, 2004
Page 3

11. Discuss how the proposed project will connect to the existing subdivision located south of the project area.

Thank you for the opportunity to comment. Should you need additional clarification on these comments or the DEA process, please contact Ms. Kivette A. Caigoy, Environmental Planner, of my office at 270-7735.

Sincerely,

A handwritten signature in black ink that reads "Mike Foley". The signature is written in a cursive style with a large, stylized "F" at the end.

MICHAEL W. FOLEY
Planning Director

MWF:KAC:lar

c: Wayne Boteilho, Deputy Planning Director
Clayton Yoshida, AICP, Planning Program Administrator
Kivette Caigoy, Environmental Planner
Joe Alueta, Staff Planner
General File
K:\WP_DOCS\PLANNING\EA\PreConComments\2004\1211_HaleMuaSubdivision.wpd



December 2, 2004

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

SUBJECT: Early Consultation Request for Hale Mua Affordable Housing Subdivision; Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por. 1)

Dear Mr. Foley:

Thank you for your letter of April 27, 2004, responding to our request for early consultation comments on the proposed affordable housing subdivision, located in Waiehu, Maui. Our responses have been numbered to correspond with your comments.

1. Affordable units will be equipped with gas, flash heaters, which should reduce water waste. Low-flow fixtures will also be installed.
2. Proposed landscape features, including those along Kahekili Highway, and their impacts will be discussed in the Draft EA.
3. Impacts to the scenic character of the project area will be discussed in the Draft EA. The proposed landscaping will maintain the general character of the existing topography, with a slope from mauka to makai. The subdivision plat concept calls for the placement of the affordable lots along the makai extent of the property with the large lots located along the mauka portion of the property. This configuration maintains a low density concept on mauka areas in keeping with the adjacent agricultural and open space characteristics of lands located further mauka of the property.
4. The subject property has not been used for agricultural production since 1999 and there are no plans by the current owners to resume such activities. The 248 acres comprising the project site represent a small fraction of the approximately 245,000 acres of land classified as agricultural on the island of Maui.

With respect to Chapter 10.30A of the Maui County Code, relating to the Agricultural District, the property is classified as "Prime" under the State of Hawaii's ALISH system. Lot perimeter calculations will be confirmed prior to the filing of the petition for district boundary amendment with the Land Use Commission to determine the

applicability of the 75% contiguity criteria. The applicant has considered that agricultural lands which meet the criteria should be given the highest priority for retention in the agricultural district. Notwithstanding the importance of agricultural land retention, the applicant has also recognized the need to address the equally pressing community need for affordable housing. The parcel is deemed appropriate for affordable housing use, given its current and foreseeable non-productive agricultural use conditions. Moreover, the property's proximity to urban designated lands provides land use compatibility opportunities which will advance the objective of providing safe and affordable neighborhoods for Maui's residents. In this context, the removal of lands from the agricultural district is considered appropriate in terms of potential effects on agricultural productivity.

5. The Draft EA will discuss potential impacts and mitigation measures for infrastructure, public facilities and services, and archaeological and cultural resources.
6. A Phase I, Environmental Site Assessment was conducted for the subdivision site by Clayton Group Services. This study concluded that there was no evidence of improper or excessive use of agricultural chemicals, such as pesticides, associated with the property. It does suggest baseline soil sampling be conducted prior to residential development.
7. We note that there are no plans for adjacent properties which would provide a comprehensive context for regional greenway development. Given the need for timely and efficient delivery of affordable homes, the applicant's primary criteria for plat design included the provision of efficient lot design together with adequate drainage areas and park facilities which would provide open space relief and recreational value. In this regard, it is noted that the drainage swales, which have been incorporated in the subdivision layout, may be used as pedestrianways as well.
8. The design of the subdivision has been revised and the larger 6.28-acre park no longer occupies the same area as retention basin "B".
9. The preliminary subdivision concept called for 19 lots to remain within the Agricultural District. However, the plan has been modified and District Boundary Amendment to Urban is now being sought for the entire parcel. Those lots which had been termed "agricultural lots" are now referred to as "large lots". All of the lots will be identified on the site plan.
10. The Draft EA will discuss the surrounding land uses.

Michael W. Foley, Director
December 2, 2004
Page 3

11. The proposed affordable housing subdivision will contain two (2) access roads connecting the subdivision with Kahekili Highway. All entrance to and egress from the subdivision will utilize those roads and there will no internal connection with the existing subdivision located to the south of the proposed project.

Thank you again for providing your input into the proposed action. A copy of the Draft EA will be provided to your office for review and comment. Please contact me at 244-2015 with any questions or concerns.

Very truly yours,



Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/planning.res

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

July 7, 2004

FILE COPY

MEMO TO: MICHAEL W. FOLEY, PLANNING DIRECTOR

FROM: *GC* GILBERT S. COLOMA-AGARAN, DIRECTOR OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT *Milton Arakawa*

SUBJECT: ENVIRONMENTAL ASSESSMENT EARLY CONSULTATION
HALE MUA SUBDIVISION
TMK: (2) 3-3-002:001 (POR)

We reviewed the subject application and have the following comments:

1. Include a Solid Waste Management Plan for cleared and grubbed material and construction waste.
2. A road-widening lot shall be provided for the adjoining half of Kahekili Highway to provide for future 60 foot wide right-of-way and improved to County standards to include, but not be limited to, pavement widening, construction of curb, gutter and sidewalk, street lights and relocation of utilities underground. Said lot shall be dedicated to the County upon completion of the improvements.
3. A 30 foot radius shall be provided at the intersection of proposed subdivision road/driveway and the adjoining subdivision roads and State roads.
4. A detailed and final drainage report and a Best Management Practices (BMP) Plan 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.

5. A detailed Traffic Master Plan for the entire subdivision shall be submitted for our review and approval.
6. A site plan and a sight distance report to determine required sight distance and available sight distance at existing and proposed street intersections shall be provided for our review and approval.
7. The applicant shall obtain street name approvals from the Commission on Naming Streets, Parks and Facilities and show street names on the map.
8. Although wastewater system capacity is currently available as of June 4, 2004, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
9. Wastewater contribution calculations are required before building permit is issued.
10. Developer shall pay assessment fees for treatment plant expansion costs in accordance with ordinance setting forth such fees.
11. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.
12. Plans should show the installation of a single service lateral and an advance riser for each lot.
13. 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.
14. Kitchen facilities within the proposed project shall comply with pre-treatment requirements (including grease interceptors, sample boxes, screens, etc.).

15. Non-contact cooling water, condensate, etc. should not drain to the wastewater system.
16. We do not agree that the entire subdivision should be exempt from wastewater assessment fees. The 230 lots designated as affordable housing may be exempt provided they meet the requirements set forth by the Maui County Code. The remaining lots will be required to pay assessment fees.
17. The pump station to be constructed by this project shall be designed to handle other nearby projects. The developer shall research the expected demand at this location and submit his proposal to the Wastewater Reclamation Division for review.
18. The proposed alignment of the wastewater force main/gravity system along Kahekili Highway and Eha Street is acceptable, however, details (flow calculations, location, etc.) need to be submitted and reviewed prior to final approval.
19. The County has not yet determined if it will accept the dedication of the new pump station. As noted in previous meetings, the pump station would need to serve other projects, be built to County specifications, and be situated on a lot dedicated to the County before we would consider acceptance for ownership and/or maintenance. The wastewater force main/gravity system will need to be within dedicated roadway for the County to consider ownership or maintenance of the lines.
20. Drainage facilities located outside road rights-of-way shall remain under private ownership and maintenance.
21. The plans submitted for this project do not adequately show sufficient detail to determine whether the project is compliant with the building and housing codes. We will review the project for building and housing code requirements during the building permit application process.
22. Comply with the requirements of Title 18 (Subdivision Ordinance) of the Maui County Code.
23. Comply with the requirements of Chapter 20.08 (Soil Erosion and Sedimentation Control) of the Maui County Code. Best

Memo to Michael W. Foley, Planning Director
July 7, 2004
Page 4

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.

GSCA:MA:bs
S:\LUCA\ICZM\Draft Comments\33002001_Hale_Mua_Subdivision_ea_bs.wpd



December 2, 2004

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

SUBJECT: Early Consultation Request for Hale Mua Affordable Housing
Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Mr. Coloma-Agaran:

Thank you for your letter of July 7, 2004, responding to our request for early consultation comments on the proposed affordable housing subdivision, located in Waiehu, Maui. In response to your comments, we note the following:

1. A Solid Waste Management Plan for cleared and grubbed material and construction waste will be submitted to your office for review and approval.
2. After consultation with your office, the applicant agrees to provide a road-widening lot on the adjoining half of Kahekili Highway to provide for a future 60-foot wide right-of-way and be dedicated to the County. This lot will be improved to County standards by the inclusion of curbs, gutters, and sidewalks in the area between the two (2) subdivision access roads. The utilities will be located underground in this area.
3. A 30-foot radius will be provided at the intersection of the proposed subdivision road/driveway and adjoining subdivision roads and Kahekili Highway.
4. A final drainage report and a Best Management Practices (BMP) Plan will be submitted with the grading plans for review and approval by your office. The drainage report will include all necessary information, comply with the provisions of the "Rules and Design of Storm Drainage Facilities in the County of Maui", and verify that the project will not impact adjacent or downstream properties in an adverse manner. The BMP Plan will detail all measures taken to minimize erosion and sedimentation.

Gilbert Coloma-Agaran, Director

December 2, 2004

Page 2

5. A detailed Traffic Master Plan for the subdivision will be submitted to your office for review and approval.
6. A site plan and sight distance report will be submitted to your office for review and approval.
7. The applicant will obtain street name approvals from the Commission on Naming Streets, Parks, and Facilities and these names will be shown on the map of the subdivision.
8. The applicant acknowledges that wastewater system capacity cannot be insured until the issuance of the building permit.
9. The applicant acknowledges that wastewater contribution calculations are required before the building permit is issued.
10. The applicant will pay applicable assessment fees for treatment plant expansion costs.
11. The applicant will fund necessary off-site improvements to the collection system and wastewater pump stations.
12. Plans showing the installation of single service laterals and an advance riser for each lot will be submitted.
13. Plans indicating the ownership of each easement will be submitted.
14. There are no commercial kitchen facilities proposed for the project.
15. Neither non-contact cooling water nor condensate will not drain into the wastewater system.
16. The applicant acknowledges that the market-priced and large lots will be assessed wastewater fees, while the affordable lots will be exempt.
17. The pump station to be constructed by this project will be designed to have a capacity for other, nearby projects. The applicant will coordinate with the Wastewater Reclamation Division to determine an acceptable capacity.
18. The applicant acknowledges that the Department finds the proposed alignment of the wastewater system acceptable. The required details will be submitted to your office for review and approval.

Gilbert Coloma-Agaran, Director

December 2, 2004

Page 3

19. The applicant acknowledges that the County has not yet determined whether or not to accept dedication of the new pump station. The applicant further acknowledges the design requirements necessary for the County to accept dedication, and will continue coordination with your office on the design and ultimate ownership of the pump station.
20. Drainage facilities located outside of road rights-of-way will remain under private ownership and maintenance.
21. The applicant acknowledges that your office will review the plans pursuant to building and house codes.
22. The proposed subdivision will comply with the requirements of Title 18 of the Maui County Code, Subdivisions, except in those instances where exemptions are being sought as part of the County's 201G process.
23. The proposed subdivision will comply with the requirements of Chapter 20.08 of the Maui County Code, Soil Erosion and Sedimentation Control. Best Management Practices will be implemented to the maximum, practical extent.

Thank you again for providing your input to the proposed action. A copy of the Draft Revised EA will be provided to your office for review and comment.

Very truly yours,



Matt Slepín, Planner

MS:tn

kim/walehu/dpwem.res

APR 29 2004

ALAN M. ARAKAWA
Mayor



GEORGE Y. TENGAN
Director

JEFFREY T. PEARSON, P.E.
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 South High Street
WAILUKU, MAUI, HAWAII 96793-2155
Telephone (808) 270-7816 • Fax (808) 270-7833
www.mauewater.org

April 27, 2004

Mr. Michael Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street Suite 104
Wailuku HI 96793

Subject: Early Consultation Request for the Preparation of an Environmental Assessment for Hale Mua Subdivision, Waiehu, Maui, Hawaii TMK: 3-3-02:por.1

Dear Mr. Munekiyo:

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:

Source Availability and Consumption

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. The County will issue meters up to 800,000 gallons per day (gpd) to those ready to receive service from the service area. To date, the Department has issued meters equivalent to 62%. Water for this project may not be available until new sources are on-line. The EA should include the sources and expected potable and non-potable water usage. Empirical water use for single-family services in Waihee area is 428 gpd and for agricultural services 2,580 gpd. Due to cumulative demand for this project likely exceeding 200,000 gpd, we recommend the applicant develop source or participate in source development.

System Infrastructure

The Department 16-inch, 36-inch and 42-inch transmission lines are traversing the South section of the project site. There is not adequate storage in the area for the proposed development. The applicant should contact our engineering division at 270-7835 to discuss system improvements and provide easements for all Department waterlines. A copy of the fire protection map for the project area is attached for your reference. The applicant will be required to meet Department Subdivision rules and regulations. Fire flow requirements for residential subdivisions are 1000 gallons per minute (gpm) per 2 hours with fire hydrants installed at 350 ft spacing and for agricultural subdivisions 500 gpm per 2 hours with fire hydrants at 500 ft spacing.

Pollution Prevention

The project overlies the Iao aquifer. The Southwest section of the project site proposed for agricultural lots is within the Wellhead Protection Area of Waiehu Heights wells. In order to protect the ground and surface water sources of the area, we recommend that Best Management Practices (BMPs) designed to minimize infiltration and runoff from construction and agricultural practices be incorporated and implemented in project design and construction. We have attached sample BMPs for agricultural operations and construction for reference. Additional information can be obtained from the State Department of Health.

ALAN M. ARAKAWA
Mayor

GEORGE Y. TENGAN
Director

JEFFREY T. PEARSON, P.E.
Deputy Director

Conservation

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 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.

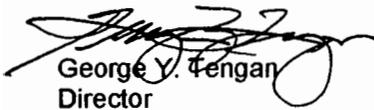
Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. Refer to the attached handout, "The Costly Drip". The applicant should establish a regular maintenance program.

Use Climate-adapted Plants: The project is located in the "Maui County Planting Plan" - Plant Zone 4. 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 contact our Water Resources and Planning Division at 270-7199.

Sincerely,


George Y. Tengan
Director
emb

c: engineering division

attachments:

The Costly Drip

Maui County Planting Plan-Plant Zone 4-Saving Water in the Yard-What and How to Plant in your Area

Ordinance No. 2108 - A Bill for an Ordinance Amending Chapter 16.20 of the Maui County Code, Pertaining to the Plumbing Code

A Checklist of Water Conservation Ideas For the Home

Selected BMPs from "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters"-EPA

Selected BMPs from Hawaii's Coastal Nonpoint Pollution Control Program, Management Plan

Selected BMPs from Fact Sheet No. 102: Proper Pesticide Storage. Hawaii Cooperative Extension Service. 1985

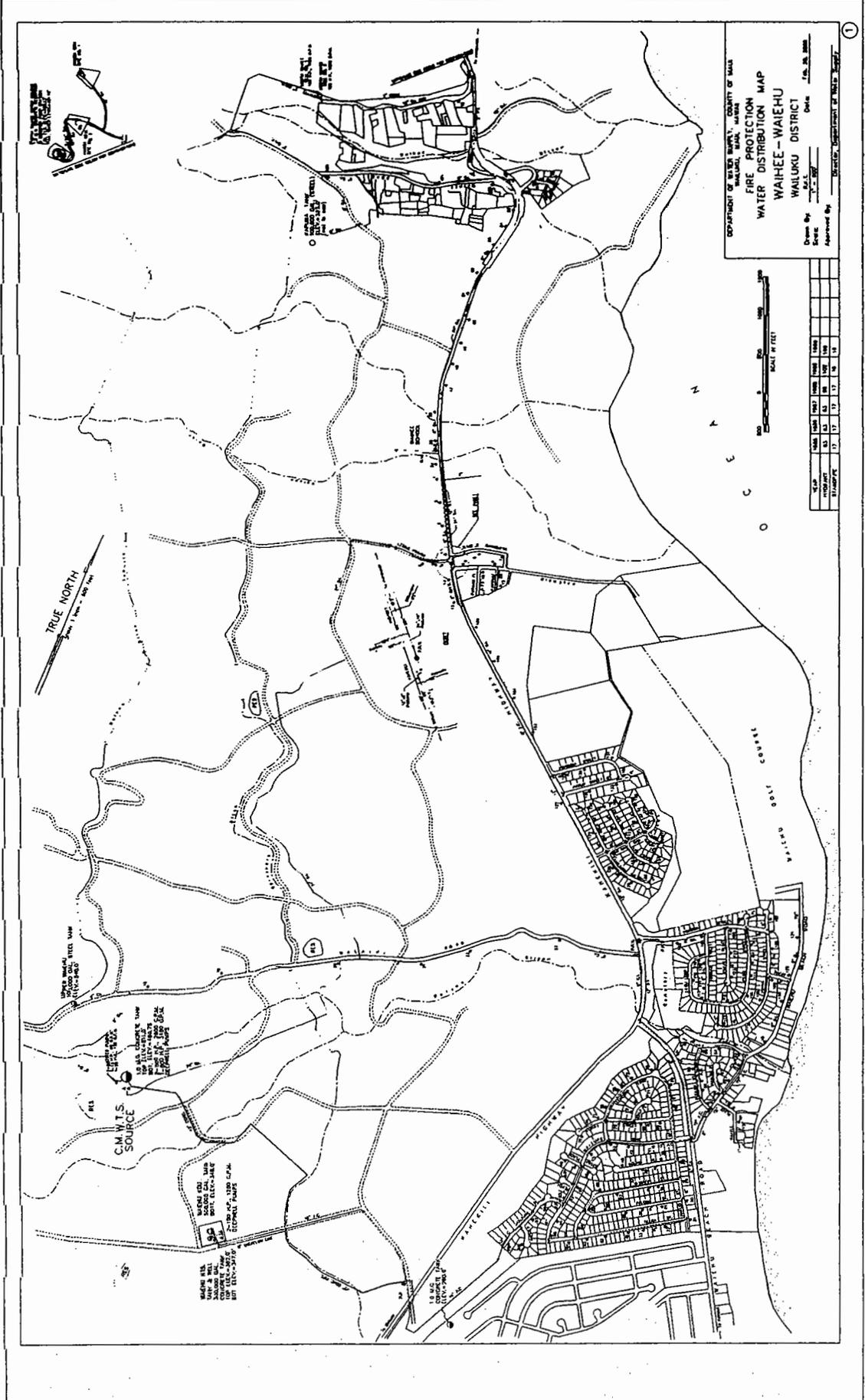
Selected BMPs from Massachusetts Nonpoint Source Management Manual "The MegaManual", A Guidance For Municipal Officials.

Massachusetts Department of Environmental Protection. 1994

USDA Soil Conservation Service. Leaflet "Plants Repel Pests" and Pesticides and Groundwater Protection, Massachusetts Audubon Society, 1985.

C:\WPdocs\EAs EISs\Hale Mua SD pre EA.wpd

By Water All Things Find Life



DEPARTMENT OF PUBLIC WORKS, COUNTY OF MAUI
 FIRE PROTECTION MAP
 WATER DISTRIBUTION MAP
 WAIHEE - WAIEHU
 WAILUKU DISTRICT
 Drawn By: J.L.L. Date: Feb. 28, 1938
 Scale: 1" = 100' Approved By: [Signature]

CLASS	NO.	DATE	BY	REVISION
1	1	1938	J.L.L.	ORIGINAL
2	2	1938	J.L.L.	REVISION
3	3	1938	J.L.L.	REVISION
4	4	1938	J.L.L.	REVISION
5	5	1938	J.L.L.	REVISION
6	6	1938	J.L.L.	REVISION
7	7	1938	J.L.L.	REVISION
8	8	1938	J.L.L.	REVISION
9	9	1938	J.L.L.	REVISION
10	10	1938	J.L.L.	REVISION
11	11	1938	J.L.L.	REVISION
12	12	1938	J.L.L.	REVISION
13	13	1938	J.L.L.	REVISION
14	14	1938	J.L.L.	REVISION
15	15	1938	J.L.L.	REVISION
16	16	1938	J.L.L.	REVISION
17	17	1938	J.L.L.	REVISION
18	18	1938	J.L.L.	REVISION
19	19	1938	J.L.L.	REVISION
20	20	1938	J.L.L.	REVISION

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

Blue

Zone 4

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

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
F	<i>Psilotum nudum</i>	moa, moa kula	1'	1'	sea to 3,000'	Dry to Wet
F	<i>Sadleria cyatheoides</i>	'ama'u, ama'uma'u				
G	<i>Colubrina asiatica</i>	'anapanapa	3'	10'	sea to 1,000'	Dry to Wet
G	<i>Eragrostis monticola</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'u'aki'aki fimbriatylis	0.5'	1'	sea to 1,000'	Dry to Medium
Gr	<i>Chamaesyce celastroides</i> var. <i>laehiensis</i>	'akoko	2'	3'	sea to 1,000'	Dry to Medium
Gr	<i>Ipomoea tuboides</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'iaka	0.5'	6'	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>	'ilie'e	1'			
Gr	<i>Sida fallax</i>	'lima	0.5'	3'	sea to 1,000'	Dry to Medium
Gr	<i>Tephrosia purpurea</i> var. <i>purpurea</i>	'auhuhu	2'	2'	sea to 1,000'	Dry to Medium
Gr - Sh	<i>Hibiscus calyphyllus</i>	ma'o hau hele, 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
P	<i>Cocos nucifera</i>	coconut, niu	100'	30'	sea to 1,000'	Dry to Wet
P	<i>Pritchardia arecina</i>	lo'ulu, hawane	40'	10'	1,000' to 3,000'	Dry to Wet
P	<i>Pritchardia forbesiana</i>	lo'ulu	15'			
P	<i>Pritchardia hillebrandii</i>	lo'ulu, fan palm	25'	15'	sea to 1,000'	Dry to Wet
S	<i>Mariscus javanicus</i>	marsh cypress, 'ahu'awa	0.5'	0.5'	sea to 1,000'	Dry to Medium
Sh	<i>Argemone glauca</i> var. <i>decipiens</i>	pua kala	3'	2'	sea to 3,000'	Dry to Medium
Sh	<i>Artemisia australis</i>	'ahinahina	2'	3'	sea to 3,000'	Dry to Medium

Blue

Zone 4

Zone-specific Native and Polynesian plants for Maui County

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Sh	<i>Artemisia mauiensis</i> var. <i>diffusa</i>	Maui wormwood, 'ahinahina	2'	3'	1,000' to higher	Dry to Medium
Sh	<i>Bidens hillebrandiana</i> ssp. <i>hillebrandiana</i>	ko'oko'olau	1'	2'	sea to 1,000'	Dry to Wet
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>Cordylone fruticosa</i>	ti, ki	6'			
Sh	<i>Dianella sandwicensis</i>	'uki	2'	2'	1,000' to higher	Dry to Medium
Sh	<i>Lipochaeta lavarum</i>	nehe	3'	3'	sea to 3,000'	Dry to Medium
Sh	<i>Osteomeles anthyllifolia</i>	'ulei, eluēhe	4'	6'	sea to 3,000'	Dry to Medium
Sh	<i>Scaevola sericea</i>	naupaka, naupaka-kahakai	6'	8'	sea to 1,000'	Dry to Medium
Sh	<i>Solanum nelsonii</i>	'akia, beach solanum	3'	3'	sea to 1,000'	Dry to Medium
Sh	<i>Styphelia tameiameia</i>	puklawe	6'	6'	1,000' to higher	Dry to Medium
Sh	<i>Vitex rotundifolia</i>	pohinahina	3'	4'	sea to 1,000'	Dry to Medium
Sh	<i>Wikstroemia uva-ursi</i> <i>kauaiensis</i> <i>kauaiensis</i>	'akia, Molokai osmanthus				
Sh-Tr	<i>Broussonetia papyrifera</i>	wauke, paper mulberry	8'	6'	sea to 1,000'	Dry to Medium
Sh-Tr	<i>Myoporum sandwicense</i>	naio, false sandalwood	10'	10'	sea to higher	Dry to Medium
Sh-Tr	<i>Nolotrichium sandwicense</i>	kulu'i	8'	8'	sea to 3,000'	Dry to Medium
Sh-Tr	<i>Dodonaea viscosa</i>	'a ali'i	6'	8'	sea to higher	Dry to Medium
Tr	<i>Acacia koa</i>	koa	50' - 100'	40' - 80'	1,500' to 4,000'	Dry to Medium
Tr	<i>Aleurites moluccana</i>	candlenut, kukui	50'	50'	sea to 3,000'	Medium to Wet
Tr	<i>Calophyllum inophyllum</i>	kamani, alexandrian laurel	60'	40'	sea to 3,000'	Medium to Wet
Tr	<i>Canthium odoratum</i>	Alahe'e, 'ohē'e, walahe'e	12'	8'	sea to 3,000'	Dry to Medium
Tr	<i>Charpentiera obovata</i>		15'			
Tr	<i>Cordia subcordata</i>	kou	30'	25'	sea to 1,000'	Dry to Wet
Tr	<i>Diospyros sandwicensis</i>	tama	12'	15'	sea to 3,000'	Dry to Medium
Tr	<i>Hibiscus furcellatus</i>	'akiohala, hau-hele	8'			
Tr	<i>Metrosideros polymorpha</i> var. <i>macrophylla</i>	ohi'a lehua	25'	25'	sea to 1,000'	Dry to Wet
Tr	<i>Morinda citrifolia</i>	indian mulberry, noni	20'	15'	sea to 1,000'	Dry to Wet

Blue

Zone 4

Zone-specific Native and Polynesian plants for Maui County

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Tr	<i>Nestegis sandwicensis</i>	olopua	15'	15'	1,000' to 3,000'	Dry to Medium
Tr	<i>Pandanus tectorius</i>	hala, punaha (HALELIST)	35'	25'	sea to 1,000'	Dry to Wet
Tr	<i>Pleomele auwahiensis</i>	halapepe	20'			
Tr	<i>Rauvolfia sandwicensis</i>	hao	20'	15'	sea to 3,000'	Dry to Medium
Tr	<i>Santalum ellipticum</i>	coastal sandalwood, 'ili-ahi	8'	8'	sea to 3,000'	Dry to Medium
Tr	<i>Sophora chrysophylla</i>	mamane	15'	15'	1,000' to 3,000'	Medium
Tr	<i>Thespesia populnea</i>	milo	30'	30'	sea to 3,000'	Dry to Wet
V	<i>Alyxia oliviformis</i>	malle	Vine		sea to 6,000'	Medium to Wet

DO NOT PLANT THESE PLANTS !!!

Common name	Scientific name	Plant family
black wattle	Acacia mearnsii	Mimosaceae
blackberry	Rubus argutus	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, wait-a-bit	Caesalpinia decapetala	Caesalpinaceae
common ironwood	Casuarina equisetifolia	Casuarinaceae
common velvet grass, Yorkshire fog	Holcus lanatus	Poaceae
fiddlewood	Citharexylum spinosum	Verbenaceae
fire tree, faya tree	Myrica faya	Myricaceae
glorybower	Clerodendrum laponicum	Verbenaceae
hairy cat's ear, gosmore	Hypochoeris radicata	Asteraceae
haole koa	Leucaena leucocephala	Fabaceae
ivy gourd, scarlet-fruited gourd	Coccinia grandis	Cucurbitaceae
juniper berry	Citharexylum caudatum	Verbenaceae
kahlili flower	Grevillea banksii	Proteaceae
klu, popinac	Acacia farnesiana	Mimosaceae
logwood, bloodwood tree	Haematoxylon campechianum	Caesalpinaceae
loquat	Eriobotrya japonica	Rosaceae
meadow ricegrass	Eriharta stipoides	Poaceae
mela-leuca	Mela-leuca quinquerivaria	Myrtaceae
miconia velvet leaf	Miconia calvenscens	Melastomataceae
narrow-leaved carpetgrass	Axonopus fissifolius	Poaceae
oleaster	Elaeagnus umbellata	Elaeagnaceae
oriental mangrove	Bruguiera gymnorhiza	Rhizophoraceae
padang cassia	Cinnamomum burmannii	Lauraceae
palmgrass	Setaria palmifolia	Poaceae
pearl flower	Heterocentron subtripplinervium	Melastomataceae
quinine tree	Cinchona pubescens	Rubiaceae
satin leaf, calmitillo	Chrysophyllum oliviforme	Sapotaceae
silkwood, Queen'sland maple	Findersia brayleyana	Rutaceae
silky oak, silver oak	Grevillea robusta	Proteaceae
strawberry quava	Psidium cattleianum	Myrtaceae
swamp oak, saltmarsh, longleaf ironwood	Casuarina glauca	Casuarinaceae
sweet vernalgrass	Anthoxanthum odoratum	Poaceae
tree of heaven	Ailanthus altissima	Simaroubaceae
trumpet tree, guarumo	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
black wattle	Acacia mearnsii	Mimosaceae
blackberry	Rubus argutus	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, wait-a-bit	Caesalpinia decapetala	Caesalpinaceae
common ironwood	Casuarina equisetifolia	Casuarinaceae
common velvet grass, Yorkshire fog	Holcus lanatus	Poaceae
fiddlewood	Citharexylum spinosum	Verbenaceae
fire tree, faya tree	Myrica faya	Myricaceae
glorybower	Clerodendrum laponicum	Verbenaceae
hairy cat's ear, gosmore	Hypochoeris radicata	Asteraceae
haole koa	Leucaena leucocephala	Fabaceae
ivy gourd, scarlet-fruited gourd	Coccinia grandis	Cucurbitaceae
juniper berry	Citharexylum caudatum	Verbenaceae
kahlil' flower	Grevillea banksii	Proteaceae
klu, popinac	Acacia farnesiana	Mimosaceae
logwood, bloodwood tree	Haemaloxylon campechianum	Caesalpinaceae
loquat	Eriobotrya japonica	Rosaceae
meadow ricegrass	Ehrharta stipoides	Poaceae
mela-leuca	Melaleuca quinquenervia	Myrtaceae
miconia, velvet leaf	Miconia calvenscens	Melastomataceae
narrow-leaved carpetgrass	Axonopus fissifolius	Poaceae
oleaster	Elaeagnus umbellata	Elaeagnaceae
oriental mangrove	Bruguiera gymnorhiza	Rhizophoraceae
padang cassia	Cinnamomum burmannii	Lauraceae
palmgrass	Setaria palmifolia	Poaceae
pearl flower	Heterocentron subtriplinervium	Melastomataceae
quinine tree	Cinchona pubescens	Rubiaceae
salin leaf, caimitillo	Chrysophyllum oliviforme	Sapotaceae
silkwood, Queensland maple	Flindersia brayleyana	Rubiaceae
silky oak, silver oak	Grevillea robusta	Proteaceae
sirawberry guava	Psidium cattleianum	Myrtaceae
swamp oak, salmarsh, longleaf ironwood	Casuarina glauca	Casuarinaceae
sweet vernalgrass	Anthoxanthum odoratum	Poaceae
tree of heaven	Ailanthus altissima	Simarubaceae
trumpet tree, guarumo	Cecropia obtusifolia	Cecropiaceae
white ginger	Hedychium coronarium	Zingiberaceae
white moho	Heliconia popayanensis	Tiliaceae
yellow ginger	Hedychium flavescens	Zingiberaceae

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. FUKUSHIMA
Deputy Corporation Counsel
County of Maui
c:\wp51\ords\flows4\pk

WE 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	Leinaala 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

"THE COSTLY DRIP"



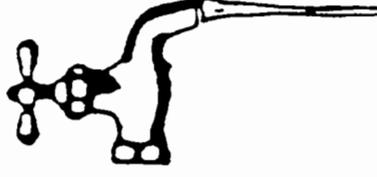
Slowly Dripping
Spigot Wastes
15 Gallons a day.



1/32" Leak Wastes
25 Gallons a day.



1/16" Stream Wastes
100 Gallons a Day.



1/8" Stream Wastes
400 Gallons a day.



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 permit³ 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

³ 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	1.4 million tons eroded per year.	Woodward-Clyde, 1991
North Carolina	6.7 million tons eroded per year.	
Louisiana	5.1 million tons eroded per year.	
Oklahoma	4.2 million tons eroded per year.	
Georgia	3.8 million tons eroded per year.	
Texas	3.5 million tons eroded per year.	
Tennessee	3.3 million tons eroded per year.	
Pennsylvania	3.1 million tons eroded per year.	
Ohio	3.0 million tons eroded per year.	
Kentucky	3.0 million tons eroded per year.	

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.*

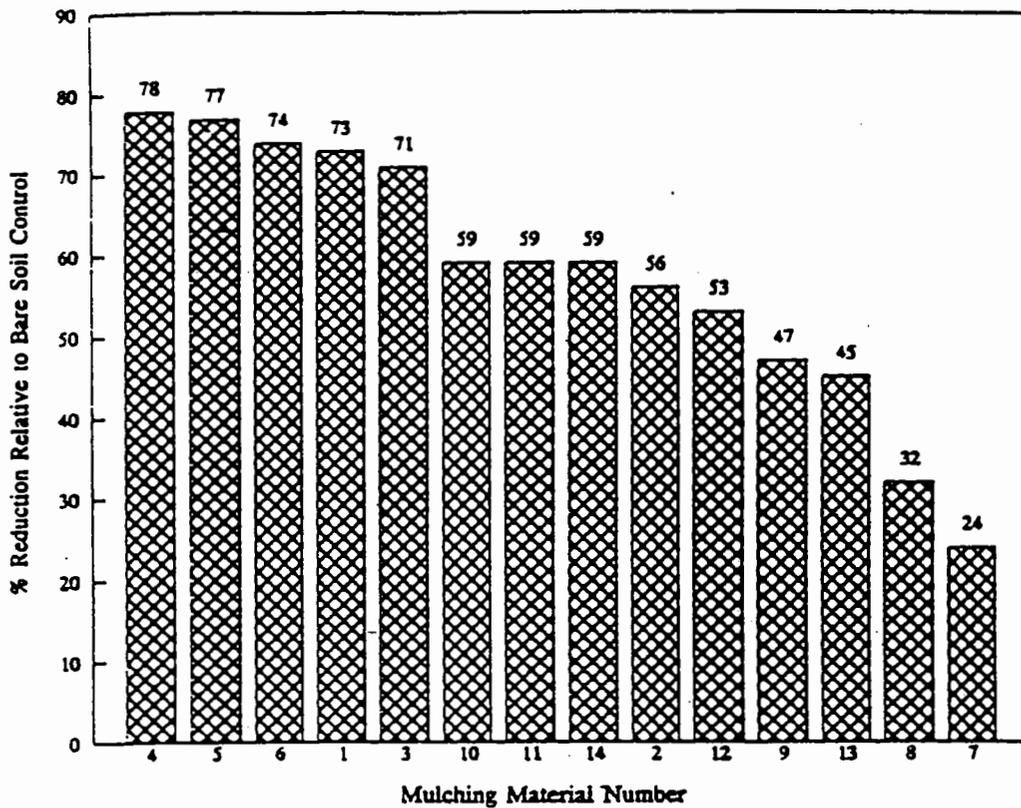
Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once the vegetative cover has been established. The mulching/mats protect the disturbed area while the vegetation becomes established.

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).

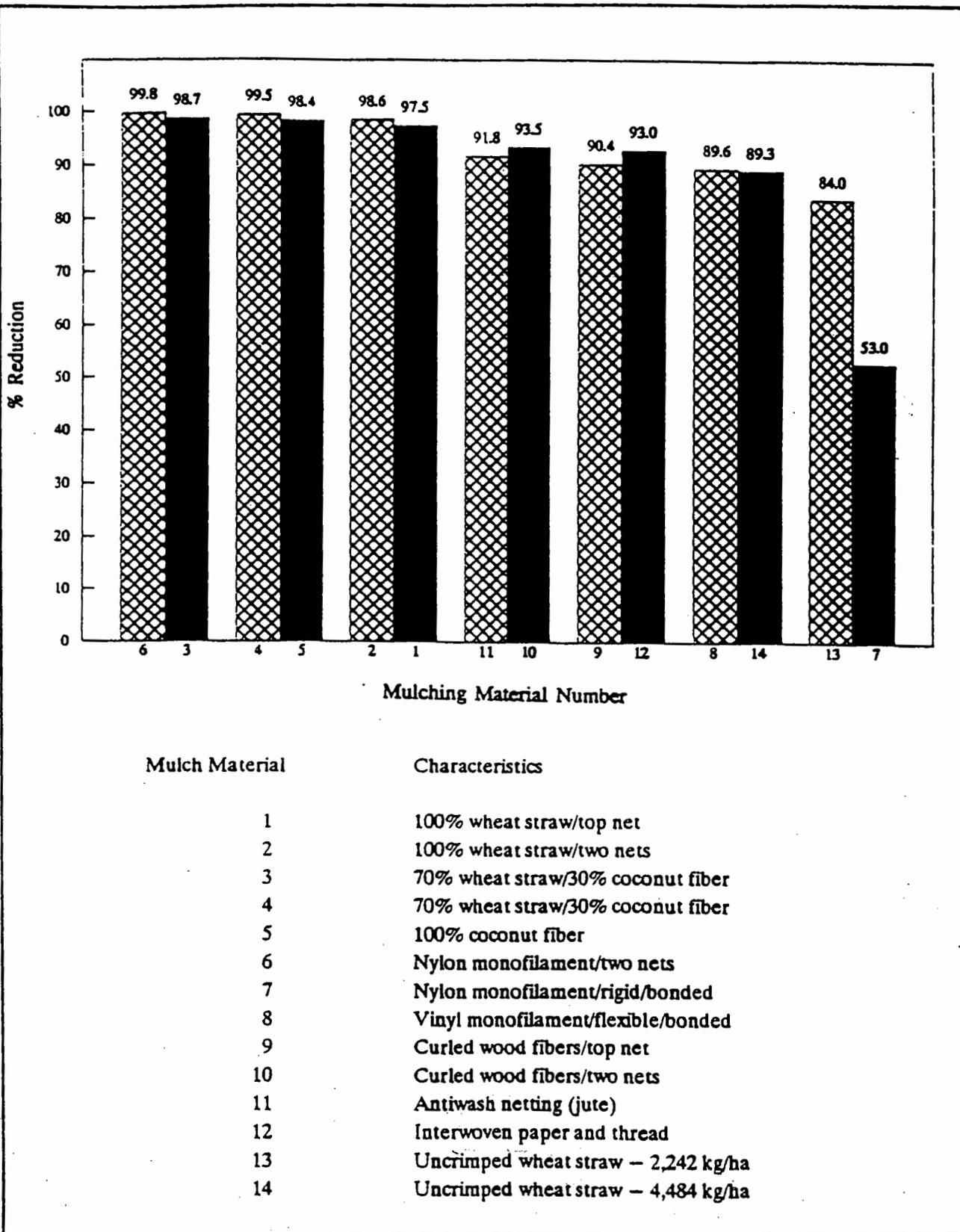


Figure 4-6. Actual soil loss reductions for different mulch treatments (adapted from Harding, 1990).

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: 98% Observed range: 98% - 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: 90% Observed range: 50% - 100% References: SCS, 1985 cited in EPA, 1991; Minnesota Pollution Control Agency, 1989; Oberbs, 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: 90% Observed range: 50% - 100% References: SCS, 1985 cited in EPA, 1991; Minnesota Pollution Control Agency, 1989; Oberbs, 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: sand:	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, 1980; Virginia, 1980	Average: NA ^b Range: NA References: None	Straw mulch: \$7,500 per acre
	wood fiber @ 1500 lb/ac	20% slope 50-60%	50% slope 0-20%			
	wood fiber @ 3000 lb/ac	50-85%	50-70%			
	straw @ 3000 lb/ac	80-100%	95%			
	<u>Silt-loam:</u>			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	20% slope 20-60%	50% slope 40-60%			
	wood fiber @ 3000 lb/ac	60-90%	60-70%			
	straw @ 3000 lb/ac	80-95%	70-90%			
	<u>Silt-clay-loam:</u>			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 @ 1500 lb/ac	10-30% slope	30-50% slope			
	wood fiber @ 3000 lb/ac	5% 40%	-- 0.33			
	jute netting	30-60%	30%			
	straw @ 3000 lb/ac	40-70%	20-40%			
	wood chips	60-80%	50-60%	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
	@ 10,000 lb/ac					
	mulch blanket	60-80%	50-60%			
	excelsior blanket	60-80%	50-60% and			
	multiple treatment (straw and jute)	90%	90% jute: 0.33			

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.	<p>Observed range:</p> <p><u>Land Slope</u> 1-12% 12-18% 18-24%</p> <p><u>Reduction in Erosion</u> 70% 60% 55%</p> <p>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</p>	2	<p>Average: \$5 per lin ft Range: \$1 - \$12 References: SWRPC, 1991; Goldman, 1986; Virginia, 1991</p>	<p>Average: 20% Range: 20% Reference: SWRPC, 1991</p>	\$4 per lin ft
All Erosion Controls	Reduce amount of sediment entering runoff.	<p>Average: 85% Observed range: 85% Reference: Schueler, 1990</p>	--	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 ^c) 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 ^c) 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 \$800 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 ^c) 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, 1990	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 (\$1,600 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.	<p>Average: 70%</p> <p>Observed Range: 20% - 80%</p> <p>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</p>	2	<p>Established from existing vegetation-</p> <p>Average: \$0</p> <p>Range: \$0</p> <p>References: Schueler, 1987</p> <p>Established from sod-</p> <p>Average: \$11,300 per acre</p> <p>Range: \$4,500 - \$48,000 per acre</p> <p>References: Schueler, 1987; SWRPC, 1991</p>	<p>Average: NA</p> <p>Range: NA</p> <p>References: None</p>	NA

NA - Not available.

- ^a Useful life estimated as length of construction project (assumed to be 2 years)
- ^e For Total Annual Cost, assume Annual Maintenance Cost=20% of construction cost.
- ^b Assumes trap volume = 1800 cf/ac (0.5 inches runoff per acre).
- ^c Assumes drainage area of 0.5 acre per 100 feet of fence (maximum allowed).
- ^d Assumes drainage area of 0.25 acre per 100 feet of barrier (maximum allowed).

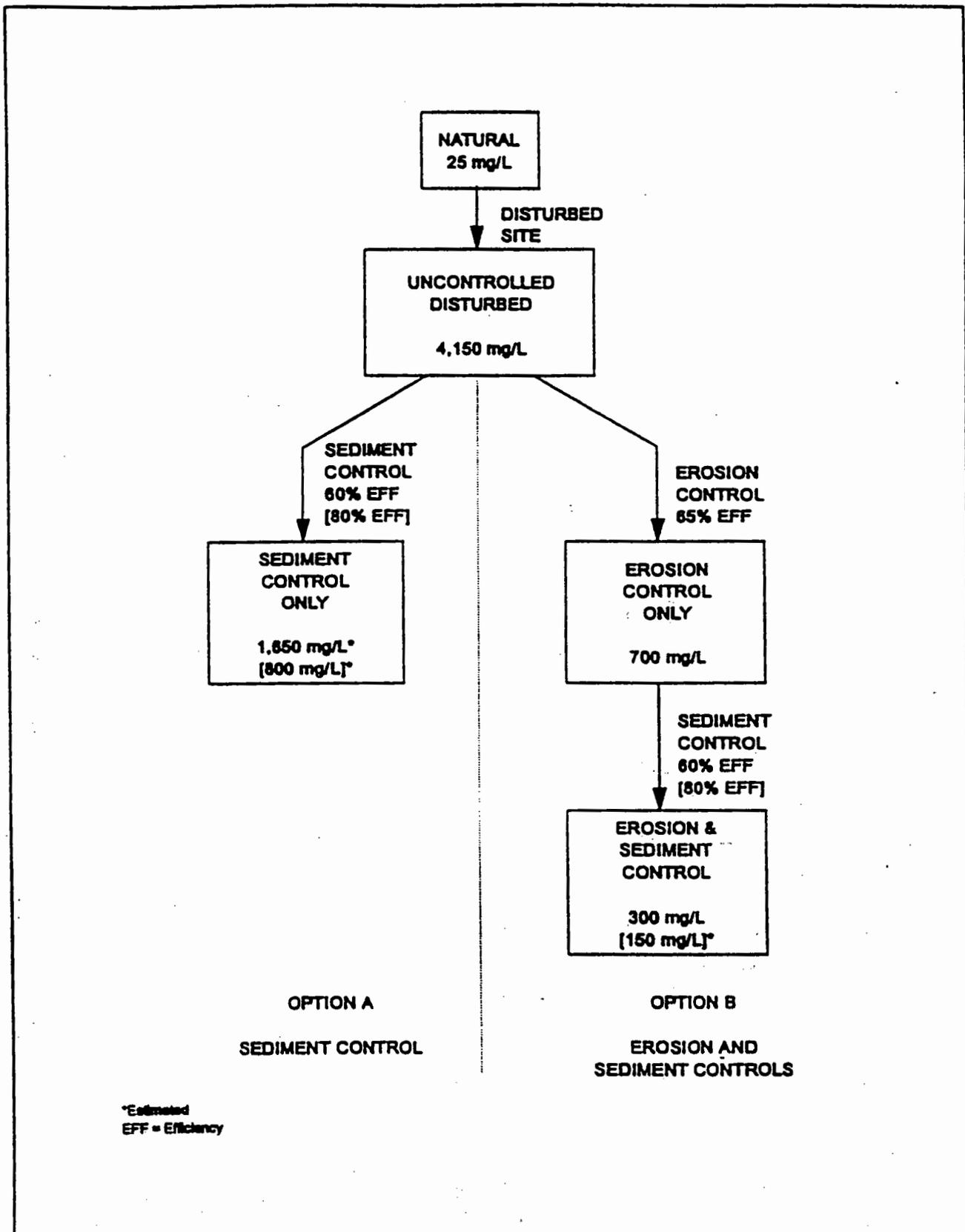


Figure 4-7. TSS concentrations from Maryland construction sites (Schueler, 1987).

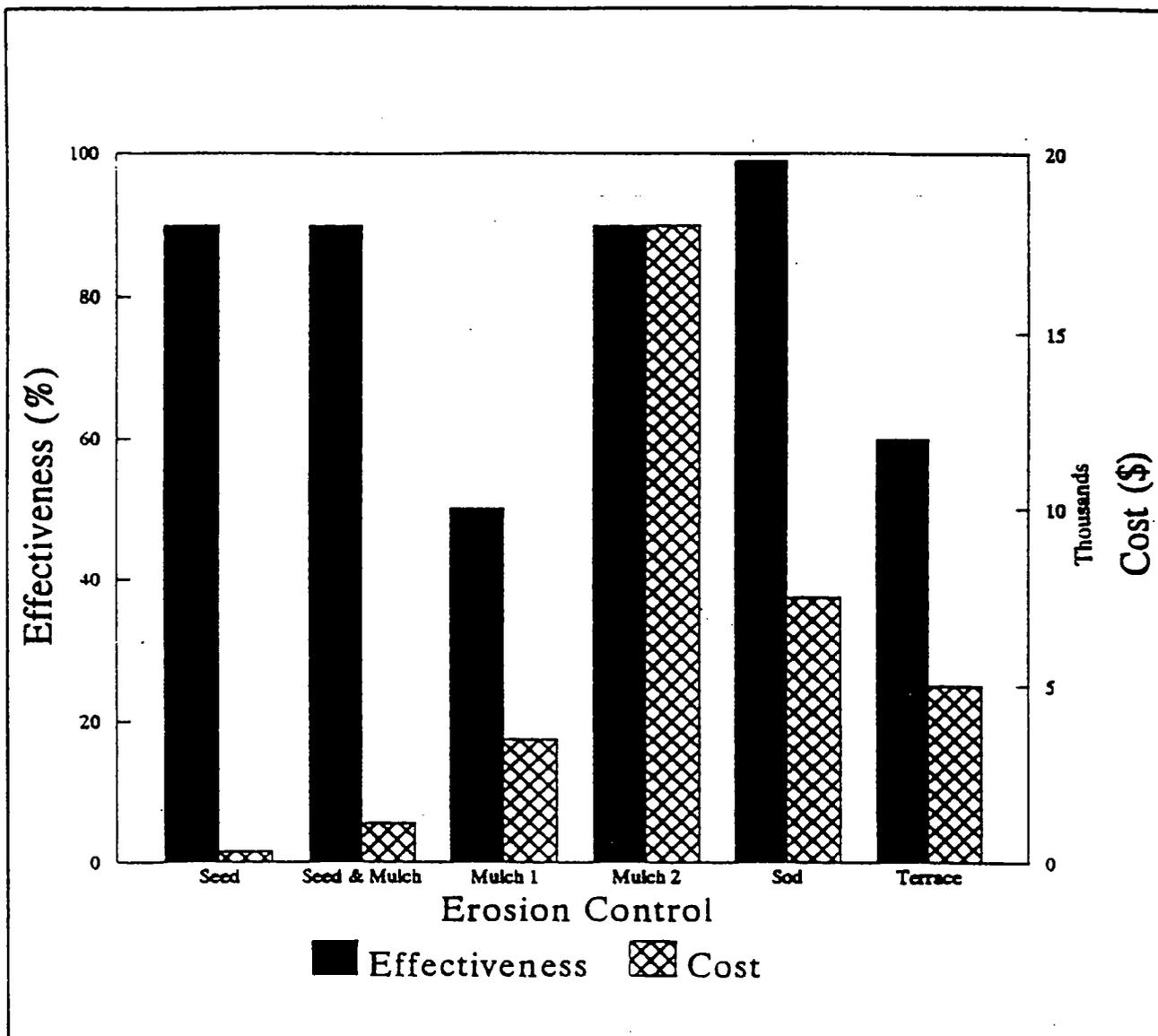


Figure 4-8. Comparison of cost and effectiveness for erosion control practices (based on information in Tables 4-15 and 4-16).

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. *Properly 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.

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. Property 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.

■ **n. 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.**

LAND_USE: Irrigated crops
SOURCE: Pesticides and other pollutants in irrigation water return flow
EFFECTS: Decrease infiltration rate of irrigation water that may carry pollutants
REFERENCE: Hawaii's Coastal Nonpoint Pollution Control Program, Management Plan Vol
PICTURE:

PRACTICE: Irrigation Water Management Measure to reduce nonpoint source pollution of surface waters caused by irrigation:

1. Operate the irrigation system so that the timing- and amount of irrigation water applied match crop water needs. This will require, as minimum: (a) the measurement of soil-water depletion volume and the volume of irrigation water applied; and b) uniform application of water; and (c) application rate which does not exceed infiltration rate in the field
2. When chemigation is used, include backflow preventers for wells, minimize the harmful amounts of chemigated waters that discharge from the edge of the field, and control deep percolation. In cases where chemigation is performed with furrow irrigation systems, a tailwater management system may be needed.

The following limitation and special conditions apply:

1. In some locations, irrigation return flows are subject to other water rights or are required to maintain stream flow. In these special cases, on-site reuse could be precluded and would not be considered part of the management measure for such locations.
2. By increasing the water use efficiency, the discharge volume from the system will usually be reduced. While the total pollutant load may be reduced somewhat, there is the potential for an increase in the concentration of pollutants in the discharge. In these special cases, where living resources or human health may be adversely affected and where other management measures (nutrients and pesticides) do not reduce concentrations in the discharge, increasing water use efficiency would not be considered part of the management measure.
3. The time interval between the order for and the delivery of irrigation water to the farm may limit the irrigator's ability to achieve the maximum on-farm application efficiencies that are otherwise possible.
4. In some locations leaching is necessary to control salt in the soil profile. Leaching for salt control should be limited to the leaching requirement for the root zone.
5. Where leakage from delivery systems or return flows supports wetlands or wildlife refuges, it may be preferable to modify the system to achieve a high level of efficiency and then divert the "saved water" to the wetland or wildlife refuge. This will improve the quality of water delivered to wetlands or wildlife refuges by preventing the introduction of pollutants from irrigated lands to such diverted water.
6. In some locations, sprinkler irrigation used for crop cooling or other benefits (eg, watercress) In these special cases, applications should be limited to the amount necessary for crop protection, and applied water should not contribute to erosion or pollution

Description

The goal of this management measure is to reduce nonpoint source pollution of surface waters caused by irrigation. For the purposes of this management measure, "harmful amounts" are those amounts that pose a significant risk to aquatic plant or animal life, ecosystem health, human health, or agricultural or industrial uses of the water. A problem associated with irrigation is the movement of pollutants from the land into ground or surface water.

Return flows, pipe or hose leaks, runoff, and leachate from irrigated lands may transport the following types of pollutants: sediment and particulate organic solids; particulate-bound nutrients, chemicals, and metals, such as phosphorus, organic nitrogen, a portion of applied pesticides, and a portion of the metals applied with some organic wastes; soluble nutrients, such as nitrogen, soluble phosphorus; a portion of the

applied pesticides, soluble metals, salts, and many other major and minor nutrients; and bacteria, viruses, and other microorganisms.

Since irrigation is a consumptive use of water, any pollutants in the source waters that are not consumed by the crop (e.g., salts, pesticides, nutrients) can be concentrated in the soil, concentrated in the leachate or seepage, or concentrated in the runoff or return flow from the system. Salts that concentrate in the soil profile must be removed for sustained crop production.

Application of this management measure will reduce the waste of irrigation water, improve the water use efficiency, and reduce the total pollutant discharge from an irrigation system. It is not the intent of this management measure to require the replacement of major components of an irrigation system. Instead, the expectation is that components to manage the timing and amount of water applied will be provided where needed, and that special precautions (i.e., backflow preventers, prevent tailwater, and control deep percolation) will be taken when chemigation is used.

Applicability:

This management measure applies to activities on irrigated lands, including agricultural crop and pasture land (except for isolated of less than 10 acres in size that are not contiguous to other irrigated lands); orchard land, specialty cropland; and nursery cropland. Those land users already practicing effective irrigation management in conformity with the irrigation water management measure may not need to purchase additional devices to measure soil-water depletion or the volume of irrigation water applied, and may not need to expend additional labor resources to manage the irrigation system.

Management Practices:

- a. Irrigation water management: Determining and controlling the rate, amount, and timing of irrigation water in a planned and efficient manner.
- b. Water-measuring device: An irrigation water meter, flume, weir, or other water-measuring device installed in a pipeline or ditch.
- c. Soil and crop water use data: From soils information the available water-holding capacity of the soil can be determined along with the amount of water that the plant can extract from the soil before additional irrigation is needed.
- d. Irrigation system, drip or trickle (441): A planned irrigation system in which all necessary facilities are installed for efficiently applying water directly to the root zone of plants by means of applicators (orifices, emitters, porous tubing, or perforated pipe) operated under low pressure. The applicators can be placed on or below the surface of the ground.
- e. Irrigation system, sprinkler (442): A planned irrigation system in which all necessary facilities are installed for efficiently applying water by means of perforated pipes or nozzles operated under pressure.
- f. Irrigation system, surface and subsurface (443): A planned irrigation system in which all necessary water control structures have been installed for efficient distribution of irrigation water by surface means, such as furrows, borders, contour levees, or contour ditches, or by subsurface means.
- g. Irrigation field ditch (388): A permanent irrigation ditch constructed to convey water from the source of supply to a field or fields in a farm distribution system.
- h. Irrigation land leveling (464): Reshaping the surface of land to be irrigated to planned grades.
- i. Irrigation water conveyance ditch and canal lining (428)
- j. Irrigation water conveyance, pipeline (430)
- k. Structure for water control (587)
 1. Irrigation system, tailwater recovery (447): A facility to collect, store, and transport irrigation tailwater for reuse in the farm irrigation distribution system.
- m. Filter strip (393): A strip or area of vegetation for removing sediment, organic matter, and other pollutants from runoff and waste water.
- n. Surface drainage field ditch (607): A graded ditch for collecting excess water in a field.
- o. Subsurface drain (606): A conduit, such as corrugated plastic tile, or pipe, installed beneath the ground surface to collect and/or convey drainage water.
- p. Water table control (641): Water table control through proper use of subsurface drains, water control structures, and water conveyance facilities for the efficient removal of drainage water and distribution of irrigation water.
- q. Controlled drainage (335): Control of surface and subsurface water through use of drainage facilities and water control structures.

Backflow devices: The American Society of Agricultural Engineers recommends, in standard EP409, safety devices to prevent backflow when injecting liquid chemicals into irrigation systems (ASAE 1989).

Implementation of Management Measure

The irrigation management measure will be implemented as a part of a single non-regulatory Agricultural PPP Program that encompasses all agricultural management measures.

LAND_USE: Fertilizing
SOURCE: nitrogen and phosphorus from commercial fertilizers and manure
EFFECTS: Proper management of nutrients to improve the soil and prevent leaching to groundwater
REFERENCE: Hawaii's Coastal Nonpoint Pollution Control Program, Management Plan Vol
PICTURE:

PRACTICE: Nutrient Management:
Nitrogen and phosphorus are the two major nutrients from agricultural land that may degrade water quality. Nutrients are applied to agricultural land in several different forms and come from various sources, including commercial fertilizers, manure from animal production facilities, effluent and sludge from (domestic) wastewater treatment plants, legumes and crop residue, irrigation waters; and atmospheric deposition.
All plants require nutrients for growth. In aquatic environments, nutrient availability usually limits plant growth. Nitrogen and phosphorus generally are present at background or natural levels below 0.3 and 0.05 mg/L, respectively. When these nutrients are introduced into a stream, lake, or estuary at higher rates, aquatic plant productivity may increase dramatically. This process, referred to as cultural eutrophication, may adversely affect the suitability of the water for other uses.

The goal of this management measure is to minimize edge-on-field delivery of nutrients and minimize leaching of nutrients from the root zone. Nutrient management is pollution prevention achieved by developing a nutrient budget for the crop, applying nutrients at the proper time, applying only the types and amounts of nutrients necessary to produce a crop, and considering the environmental hazards of the site. Nitrogen is the major agricultural nutrient of concern with respect to nonpoint source pollution. Phosphorus as a nonpoint source pollutant can be minimized by controlling erosion in most areas.

This measure may result in some reduction in the amount of nutrients being applied to the land, thereby reducing the cost of production as well as protecting both groundwater and surface water quality. However, application of the measure may in some cases cause more nutrients to be applied where there has not been a balanced use of nutrients in the past. This will usually allow all the nutrients to be used more efficiently, thereby reducing the amount of nutrients that will be available for transport from the field during the non-growing season. While the use of nutrient management should reduce the amount of nutrients lost with surface runoff to some degree, the primary control for the transport of nutrients that are attached to soil particles will be accomplished through the implementation of erosion and sediment control practices.

Nutrient management plans should be reviewed and updated at least once every 3 years, or whenever a crop rotation or nutrient source is changed. Application equipment should be calibrated and inspected for wear and damage periodically, and repaired when necessary. Records of nutrient use and sources should be maintained along with other management records for each field. This information will be useful when it is necessary to update or modify the management plan.

Applicability

This management measure applies to activities associated with the application of nutrients, including both manures and commercial fertilizers, to agricultural lands.

Nutrient Management Measure

Develop, implement, and periodically update a nutrient management plan to: (1) apply nutrients at rates necessary to achieve realistic crop yields, (2) improve the timing of nutrient application, and (3) use agronomic crop production technology to increase nutrient use efficiency. When the source of the nutrients is other than commercial fertilizer, determine the nutrient value. Determine and credit the nitrogen contribution of any legume crop. Soil and/or plant tissue testing should be used at a suitable interval. Nutrient management plans contain the following core components:

1. Farm and field maps showing acreage, crops, soils, and waterbodies

2. Realistic yield expectations for the crop(s) to be grown, based on achievable yields for the crop. Individual producer constraints and other producers yields would be considered in determining achievable yields.
3. A summary of the soil condition and nutrient resources available to the producer, which at a minimum would include:
 - An appropriate mix of soil (pH, P, K) and/or plant tissue testing or historic yield response data for the particular crop
 - Nutrient analysis of manure, sludge, mortality compost (birds, pigs, etc.), or effluent (if applicable);
 - Nitrogen contribution to the soil from legumes grown in the rotation (if applicable); and
 - Other significant nutrient sources (e.g., irrigation water).
4. An evaluation of field limitations based on environmental hazards or concerns, such as: lava tubes, shallow soils over fractured bedrock, and soils with high leaching or runoff potential, distance to surface water, highly erodible soils, and shallow aquifers.
5. Best available information is used in developing recommendations for the appropriate mix of nutrient sources and requirements for the crops
6. Identification of timing and application methods for nutrients to: provide nutrients at rates necessary to achieve realistic crop yields; reduce losses to the environment; and avoid applications as much as possible during periods of leaching or runoff
7. Methods and practices used to prevent soil erosion or sediment loss
8. Provisions for proper calibration and operation of nutrient application equipment

Management Practices

The following general management practices should be adapted and refined to specific crops. The following crop categories may have different sets of BMPs or management strategies: leafy vegetables; other vegetables; root crops; flowers and other ornamentals; foliage; grain crops (non-legumes); legumes; forage crops; tree crops (including banana); and turf grass.

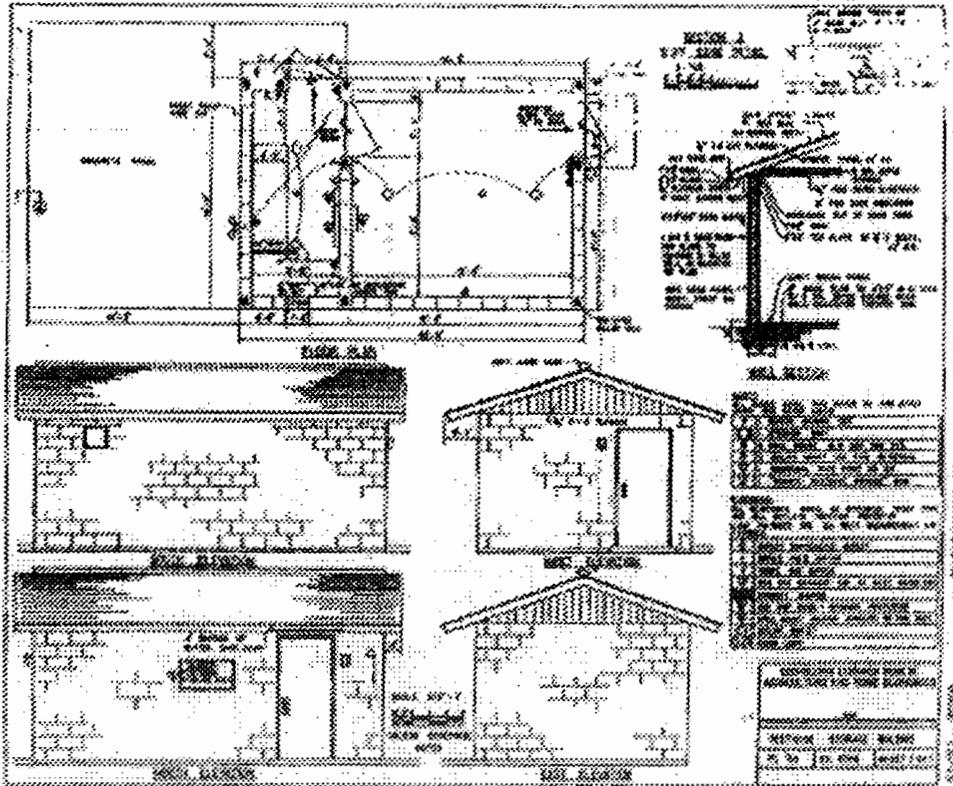
- a. Soil sampling (should not be required for all crops until necessary calibration data is available);
- b. Plant tissue testing (should not be required for all crops until necessary calibration data is available);
- c. Timing of fertilizer applications to maximize plant utilization and minimize loss to environment;
- d. Fertilizer placement;
- e. Nutrient credits for previous crops and green manures;
- f. Animal manure/compost management;
- g. Base fertilizer applications on realistic yields;
- h. Irrigation systems management;
- i. Slow-release fertilizers;
- j. Variable fertility management;
- k. Improve soil properties;
 1. Control soil erosion;
 - m. Identify environmentally-sensitive areas;
 - n. Buffer areas to protect environmentally-sensitive areas;
 - o. Provide a 50-foot natural buffer on all undeveloped stream corridors;
 - p. Consider the surface loss and leaching potential of soils.

Implementation of Management Measure

The nutrient management measure will be implemented as part of a single non-regulatory Agricultural PPP Program.

LAND_USE: Pesticide storage
SOURCE: Pesticide waste and spills
EFFECTS: Prevent stored pesticides exposure to environment
REFERENCE: Fact Sheet No. 102: Proper Pesticide Storage.
 Hawaii Cooperative Extension Service. 1985

PICTURE:



PRACTICE: Proper Pesticide Storage:

The responsible use of pesticides in agriculture must include a properly designed pesticide storage shed, which in turn will help prevent injury to people and livestock. A storage shed that is properly constructed will also prevent unauthorized and perhaps unqualified persons from handling and removing pesticides. Pesticides should be shielded from direct exposure to the environment, e.g., light, temperature extremes, and humidity. Such conditions may cause chemical decomposition and thus decrease the effectiveness of the pesticide. Improperly stored pesticides are more hazardous to handle and may violate federal regulations. Another concern of the applicator is the possibility of being sued or held liable for pesticide contamination of surface or groundwater due to improper storage.

Use of Existing Structures

Small quantities of pesticides may be stored in a separate enclosure within an existing building, constructed of fire resistant material and having a smooth-finished concrete floor. It is recommended this enclosure be on the first floor. All pesticides must be stored away from food, animal feed, seed, fertilizer or other materials that might become contaminated. Also, workers rest and lunch areas must not be near the pesticide enclosure.

A properly designed ventilation system will prevent the buildup of toxic vapors and dust in the storage enclosure. The exhaust from the ventilation system must be vented outside and into a restricted area to minimize the contamination of people and livestock.

The enclosure is to be kept secured at all times, never left open when unattended and properly identified as a place of pesticide storage.

Site Selection

The quantity and type of pesticides stored and the availability of suitable existing structures will

determine the need to construct a separate storage shed. Site selection is an important consideration when building the structure. Locating the shed at a distance downwind and downhill from sensitive areas such as houses, play areas, wells, feedlots, animal shelters, gardens and ponds will minimize pesticide exposure, especially in the event of a fire. Selecting an area where flooding is unlikely will reduce the possibility of contaminating surface and groundwaters. Place the shed with its front entrance in the direction of the prevailing winds to facilitate ventilation.

Shed Construction

It is important that the pesticide storage shed be constructed on a 4-inch thick, smooth-finished concrete slab to resist chemical action and facilitate decontamination in the event of a pesticide accident. Floor drains will be needed for washing and decontaminating the storage shed therefore, the concrete slab must have a 1/4" per foot slope to the drains to prevent water from puddling. The placement and number of drains will depend on the layout and size of the storage shed.(see sample USDA Pesticide Storage Building Plans)

Both cost reduction and improvement in security are achieved by constructing a windowless structure which could prevent some pesticides from being broken down when exposed to sunlight. Having doors on opposite ends of the shed will provide easy access and an escape route in case of an emergency. Standard exit locking hardware(which automatically locks from the outside when closing) for each door is required to ensure that the shed is secured when left unattended.

Ceiling-hung light fixtures should meet National Electronic Code (NEC) provisions. Light switches should also meet NEC ratings and be placed just inside each door. These switches are wired so that either switch may be used to control the lights.

Minimizing toxic or flammable vapors and dust buildup can be accomplished by using a forced-air ventilation system. Louvers are installed near the ceiling just above the front entrance to the shed. A two-speed electrically shielded centrifugal fan is placed above the back entrance. The system will provide approximately six air changes per hour at all times. When the interior lights are switched on, it is important that the fan speed up to give approximately 20 air changes per hour, thus assuring a safe working environment. Keep the area immediately beneath the vent outlet restricted to avoid exposing people and livestock to the hazardous exhaust.

Whenever large quantities of pesticides are stored, a fire detection system should be installed. An automatic sprinkler system hung from the ceiling of the shed will give additional protection in the event of fire. It is recommended that floor plane, records, location and nature of pesticides be kept on file at the police and fire departments and the Department of Agriculture. Place a Type ABC fire extinguisher of 10 pound capacity near each door.

In localities where lightning is common, the electrical wiring system will be protected against high voltage surges by following NEC requirements. This is especially important where electrical power supplied to the storage shed is delivered by overhead power lines.

Posting of weather-proof pesticide warning signs stating Danger Pesticides Keep Out! or similarly worded signs on the doors and outside walls are required. No Smoking signs are also required when any of the pesticides are labeled as flammable. The lettering on the signs must be large enough so they may be read from a distance of at least 50 feet. Warning signs in a language other than English may also be advisable.

The Wash Down Area

A concrete slab, six inches thick and sloped 1/4" per foot to a drain is attached to the back wall of the shed. It will be used as an area to complete the preparation of the pesticide spray mixes and for washing equipment used in the spray operation. Its size will depend on the needs and type of equipment used by the farmer. Spray rigs and other pesticide application equipment should be washed down in the area (field) where the application was made. A stainless steel wash basin and drain board should be located within the shed, near the back door and beneath an exhaust fan. This area should be used for initial mixing of pesticides and for washing utensils.

Install a deluge shower and eye wash fountain near the back door for emergency use. Always maintain access to the safety equipment by keeping its surroundings clear at all times.

Vacuum breakers must be installed on sink faucets and water lines to prevent pesticides from being siphoned into the water system. This may occur when the hose to the spray tank is partially submerged after there is a break in water pressure. (It is recommended that the hose never be submerged in the pesticide mix.) The vacuum breakers are installed on the downstream side of any shut-off valve and above the level to which an outside water hose may be elevated.

Handling the Pesticide Wastes

Incorporate a waste system to collect all materials from the interior sink, the floor drains and the

exterior wash area. A waste system collection tank (of up to 1000 gallons capacity) is used to store pesticide solutions generated as a result of washing application and safety equipment. However, it should not be used for storing excess pesticide tank mix will be left. At present, there are no legal means permitting the disposal of the diluted liquid waste pesticides collected in the storage tank.

The Federal Resource Conservation and Recovery Act (FCRA) addresses the problem related to storage and disposal of hazardous wastes including pesticides. Special antileak precautions for storage tanks must be followed if more than 10% of their volume is buried. Keeping pesticide storage tanks and pipes above ground is a simple way to allow constant inspection of the tank for leaks and eliminates the regulation of FCRA requirements. It is highly recommended to install a cement slab to collect leakage that might occur from or above the ground tank. The Hazardous Waste Program (telephone 548-3075) should be contacted for any questions dealing with pesticide waste storage tanks. Farmers and other pesticide applicators who have unused pesticides in their spray tanks, unusable pesticides in their storage shed, or who in other ways generate hazardous waste must consider how they are to manage and legally dispose of them. The Environmental Protection Agency and the Hawaii Department of Health have entered into a cooperative agreement to regulate hazardous waste management. Currently, there are no sanitary landfills that can or will accept substantial quantities of unused or unusable pesticide waste. At this time, the DOH recommends that farmers and other users do not generate hazardous waste, but closely follow label directions. This will require the applicator to accurately calculate acreage and concentrations. Further questions regarding disposal of rinsate, unused or unusable pesticides should be addressed to the local DOA (telephone 548-7125) office.

Pesticide Storage

Within the storage shed the different groups of pesticides (herbicide, insecticide, fungicide, rodenticide, etc.) must be kept separate to prevent accidental use and contamination of the different chemical groups. Metal shelves are advisable when storing these pesticides because they are much easier to decontaminate than wooden shelves. Place shelves, pallets and drums along the walls of the shed; the center must be kept clear to allow access and escape.

It is important that very toxic pesticides with the signal word DANGER-POISON be stored in a separate enclosure within the storage shed. This enclosure must be kept locked at all times except when this pesticides are being used. Vents should be build into the special enclosure to prevent toxic dust and vapor buildup.

Preventing health or environmental contamination problems from occurring by careful and proper storage is the cheapest way of handling pesticide storage.

In summary, keep the following points in mind when using the storage shed:

1. Keep the storage area free of unlabeled and empty containers.
2. Dispose of all containers in accordance with manufacturers directions.
3. Keep only enough pesticide for immediate use.
4. Keep only pesticides and application equipment in the storage area.
5. Total decontamination of the storage shed is virtually impossible; therefore, never use the shed for any other type of storage or as an animal shelter.
6. Never remove containers with pesticides from the secured storage area except when returning them to the dealer or manufacturer.
7. Always keep the pesticide storage shed secured when left unattended.

Pesticides by their very nature may be hazardous to those who work with or around them. Proper storage can greatly reduce the possibility of accidental exposure; therefore take the time to evaluate your needs and plan accordingly.

LAND_USE: Pesticide use
SOURCE: Pesticide application can contaminate groundwater
EFFECTS: Minimize groundwater and surface water contamination
REFERENCE: Massachusetts Nonpoint Source Management Manual "The MegaManual", A Guidance For Municipal Officials. Massachusetts Department of Environmental Protection. 1994

PICTURE:

PRACTICE:

1. Minimize groundwater and surface water contamination by exactly following label directions. The label's use instructions, approved by EPA, have been carefully developed after many years of study and testing.
2. Avoid the temptation to use more product than the label directs. "Overdosing" will not do a better job of controlling the pests - it will only increase both the cost of the pest control and the chance that the material may reach groundwater or a surface water body.
3. Create one location as a mixing, loading, and storage area. Avoid locating loading and mixing areas near wells, high runoff areas or surface water bodies.
4. Apply pesticides when they are most effective in terms of temperature, wind, and moisture conditions.
5. Calibrate application equipment at the beginning of the growing season and then re-calibrate regularly during the growing season. The required quantity of pesticide should be carefully measured to insure proper application rates and to prevent leftover tank mixes.
6. Formulate comprehensive pest management plans that allow for safe pesticide use and reduce the potential for contamination of water resources
7. Understand that improper disposal of pesticide waste can cause surface or groundwater contamination. A good way to prepare containers for disposal is to pressure rinse them, returning the rinse water to the spray tank. Answers to pesticide waste disposal problems are complex. For more information about proper management of waste pesticides and the chance of pesticide leaking is minimized. By matching irrigation water to crop needs, surface water runoff containing sediment, nutrients and pesticides during irrigation can be minimized.

LAND_USE: Pesticide use

SOURCE: Pesticide application

EFFECTS: Reduce pesticide use

REFERENCE: USDA Soil Conservation Service. Leaflet "Plants Repel Pests" and Pesticides and Groundwater Protection, Massachusetts Audubon Society, 1985.

PICTURE:

PRACTICE: Integrated Pest Management (IPM) involves choosing, integrating, and implementing pest control measures after consideration of predicted economic, ecological, and sociological consequences. For instance, under an IPM strategy, a limited number of pests may be tolerated. The IPM approach assumes that the pest does not need to be controlled until it becomes economically significant or a real nuisance. Instead of targeting individual species for control, IPM focuses on ecosystem management. Natural controls are maximized. IPM is not a specific combination of pest-control techniques, but rather a set of alternative methods that are prescribed on a case-by-case basis. Farmers should contact the Cooperative Extension Service or Natural Resources Conservation Service for appropriate IPM measures on their land.



December 2, 2004

George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Hale Mua Subdivision, Waiehu, Maui, TMK 3-3-002:001 (por.)

Dear Mr. Tengan:

Thank you for your letter of April 27, 2004, responding to our request for early consultation comments for the proposed subdivision at TMK 3-3-002:001 (por.), Waiehu, Maui. In response to your comments, we note the following:

1. In discussions with your Department, Hale Mua Properties, LLC, has agreed to provide \$1 million in funds to support water system improvements, as your department sees fit.
2. The applicant is advised of Department Subdivision rules and regulations and intends to develop in accordance with them.
3. Construction BMPs will be implemented in the development of the proposed project in order to minimize impacts to area water sources.
4. Conservation measures suggested by the Department will be considered in the design and construction of the proposed subdivision. Affordable units will be constructed so as to utilize "low-flow" fixtures pursuant to Maui County Code Subsection 16.20A.680.

George Tengan, Director
December 2, 2004
Page 2

Thank you again for your comments. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. Please feel free to contact me with any questions at 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read "M Slepín". The signature is written in a cursive style with a dot over the "i".

Matt Slepín, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
kim/waiehu/dws.res

APR 23 2004



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

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

April 21, 2004

Mr. Michael Munekiyo, A.I.C.P.
Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Munekiyo:

SUBJECT: Early Consultation Request for Proposed Hale Mua Subdivision,
Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por 1

Thank you for your letter of April 1, 2004, requesting comments on the above subject.

We have reviewed the proposed summary and have enclosed our comments and recommendations. As always, thank you for giving us the opportunity to comment on this project.

Very truly yours,

A handwritten signature in black ink, appearing to read "Sydney Kikuchi".

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

Enclosure

c: Michael W. Foley, Dept. of Planning

COPY

TO : CHIEF THOMAS PHILLIPS, MAUI POLICE DEPT CHIEF OF POLICE
 VIA : CHANNELS
 FROM : CRAIG S. BAJADALI, WAILUKU COMMUNITY POLICE OFFICER
 SUBJECT : HALE MUA SUBDIVISION , WAIEHU MAUI (T.M.K. (2)3-3-02:por1)

Sir, this TO/FROM is being submitted regarding the above mentioned subject matter.

Upon reviewing the letter for Hale Mua Estates Subdivision traffic impact is the key concern. Its noted that within the letter generated April 01, 2004 that an environmental impact study as well as a Traffic Impact study should be conducted. This is due to this subdivision being next the Wailuku Country Estates Subdivision and that this roadway Kahekili Hwy at Waiehu Beach Rd is congested during the morning rush hours between 0730 and 0830 hrs. A afternoon impact study should also be recommended.

No other concerns are noted at this time.

Respectfully submitted for your perusal.

Concur with Officer BAJADALI, regarding an afternoon traffic study. With the estiamted amount of vehicles in the area due to this project, traffic use and congestion issues need to be addressed before proceeding.


 Craig S. BAJADALI #E 8914

Date: 04/16/04

Time: 1630 hrs

Sgt. John Alalata

*(concur)
 4/19/04*

NOTE: Ofc. BAJADALI was sick on 4/15 & 4/16 and thus not able to turn in his comments until this date 04/19/04.

- Early morning traffic is already substantial w/ this subdivision, w/ka. country Estates, or the upcoming Haw'n Homes.
- No other subdivisions are feasible unless our infrastructure is upgraded.
- Police services will be taxed... another beat (6 officers) will have to be authorized by the County.



December 2, 2004

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

SUBJECT: Early Consultation Request for Hale Mua Affordable Housing
Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Chief Philips:

Thank you for your letter of April 21, 2004, responding to our request for early consultation comments on the proposed affordable housing subdivision, located in Waiehu, Maui. In response to your comments, we note the following:

1. An Environmental Assessment (EA) is being prepared for the proposed affordable housing subdivision.
2. As a part of the EA process, a traffic impact study has been prepared by Julian Ng, Inc. This traffic study involved analysis of traffic movements at key intersections during both morning and afternoon/evening peak traffic periods.
3. A significant element of the proposed project is the extension of Imi Kala Street from its current terminus at Eha Street to a new intersection with Kahekili Highway. This project element has been designed as traffic mitigation for the proposed subdivision and will represent a major infrastructure improvement to the area roadway system.

Thank you again for providing your input to the proposed action. A copy of the Draft Revised EA will be provided to your office for review and comment.

Very truly yours,

A handwritten signature in black ink, appearing to read "M Slepín", written in a cursive style.

Matthew Slepín, Planner

MS:tn
kim/waiehu/mpd.res

Chapter IX

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

IX. 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 February 8, 2005. 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 February 8 and March 9, 2005, as well as additional responses received at a later date. Responses to the substantive comments are also incorporated herein.

1. Ranae Ganske-Cerizo
Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793-2100
2. George Young
Chief, Regulatory Branch
U.S. Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Fort Shafter, Hawaii 96858-5440
3. Paul Henson, Ph.D.
Field Supervisor
U. S. Fish and Wildlife Service
300 Ala Moana Blvd.
Rm. 3-122, Box 50088
Honolulu, Hawaii 96813
4. Ted Liu, Director
State of Hawaii
**Department of Business, Economic
Development & Tourism**
P.O. Box 2359
Honolulu, Hawaii 96804
5. Edward T. Teixeira
State of Hawaii
Department of Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816
6. Patricia Hamamoto
State of Hawaii
Department of Education
P.O. Box 2360
Honolulu, Hawaii 96804
7. Ken Nomura
Complex Area Superintendent
Department of Education
54 High Street, 4th Floor
Wailuku, Hawaii 96793
8. Denis Lau, Chief
Clean Water Branch
State of Hawaii
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaii 96814
9. Herbert Matsubayashi
District Environmental Health
Program Chief
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793

-
- | | |
|---|---|
| <p>10. Peter Young, Chairperson
State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809</p> | <p>18. Alice Lee, Director
County of Maui
Department of Housing and Human Concerns
200 S. High Street
Wailuku, Hawaii 96793</p> |
| <p>11. Melanie Chinen, Administrator
State of Hawaii
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaii 96707</p> | <p>19. Michael W. Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793</p> |
| <p>12. Rodney Haraga, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813</p> | <p>20. Glenn Correa, Director
County of Maui
Department of Parks and Recreation
700 Hali'a Nakoa Street, Unit 2
Wailuku, Hawaii 96793</p> |
| <p>13. Genevieve Salmonson, Director
State of Hawaii
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813</p> | <p>21. Thomas Phillips, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793</p> |
| <p>14. Clyde Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813</p> | <p>22. Milton Arakawa, Director
County of Maui
Department of Public Works and Environmental Management
200 South High Street
Wailuku, Hawaii 96793</p> |
| <p>15. Micah A. Kane, Chair
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawaii 96805</p> | <p>23. George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793</p> |
| <p>16. State of Hawaii
Office of State Planning
P.O. Box 2359
Honolulu, Hawaii 96804</p> | <p>24. Neal Shinyama, Manager - Engineering
Maui Electric Company, Ltd.
P. O. Box 398
Kahului, Hawaii 96732</p> |
| <p>17. Carl Kaupalolo, Chief
County of Maui
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawaii 96732</p> | |

FEB 08 2005

United States Department of Agriculture



 Natural Resources
Conservation Service

Our People...Our Islands...In Harmony

210 Imi Kala Street, Suite #209, Wailuku, HI 96793-2100

February 4, 2005

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

Dear Mr. Slepín,

SUBJECT: Proposed Hale Mua Affordable Subdivision
TMK (2) 3-3-02: 02: por.1

This area is a major watershed therefore we advise an operation and maintenance plan for the planned detention ponds and major drainage areas. As for the planned grass swales they should be adequately designed to carry the runoff throughout the entire project. Drainage for the entire project should be planned carefully to avoid degradation of the land and water quality concerns of Speckels ditch, Waiehu and Iao stream.

Educating the homeowners concerning water quality issues is highly recommended.

Thank you for the opportunity to comment.

Sincerely,

Ranae F. Ganske-Cerizo
District Conservationist

cc: State Land Use Commission



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

April 29, 2005

Ranae Ganske-Cerizo, District Conservationist
U. S. Department of Agriculture
Natural Resources Conservation Service
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing
Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Ms. Ganske-Cerizo,

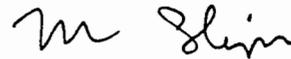
Thank you for your letter of February 4, 2005, providing comments on the Draft Environmental Assessment for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. In response to your comments, we note the following:

1. We acknowledge that drainage issues are important in the project area and confirm that careful planning has been and will continue to be used in drainage design.
2. The grass swales and other drainage improvements have been designed to adequately carry stormwater runoff through the subdivision into one of the retention basins.
3. An operation and maintenance plan will be prepared for the subject property. All drainage issues will become the responsibility of the subdivision homeowner's association.
4. We acknowledge your recommendation regarding water quality education for the subdivision homeowners.

Ranae Ganske-Cerizo, District Conservationist
April 29, 2005
Page 2

Thank you again for providing your input to the proposed action.

Very truly yours,

A handwritten signature in black ink, appearing to read "M Slepina".

Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/nrcsdea.res

LINDA LINGLE
GOVERNOR

MAJOR GENERAL ROBERT G. F. LEE
DIRECTOR OF CIVIL DEFENSE

EDWARD T. TEIXEIRA
VICE DIRECTOR OF CIVIL DEFENSE



PHONE (808) 733-4300
FAX (808) 733-4287

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

February 28, 2005

Mr. Blaine J. Kobayashi
Carlsmith Ball, LLP
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Hawaii 96793-1691

CARLSMITH

05 MAR -1 P 3:06

Dear Mr. Kobayashi:

Docket No. A05-755, Hale Mua Properties, LLC

We appreciate the opportunity to comment on the Petition for District Boundary Amendment A05-755, Hale Mua Properties, LLC.

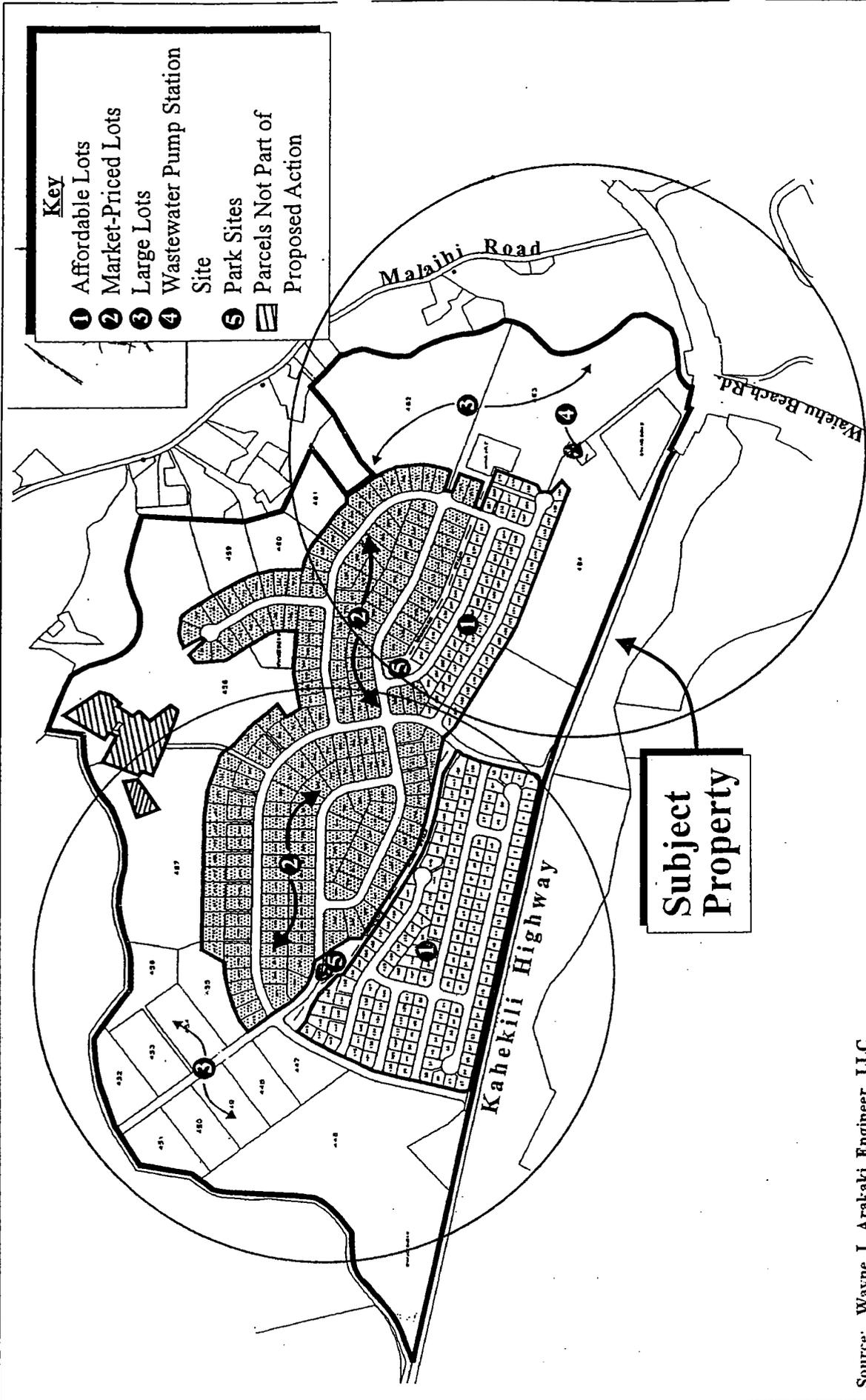
There is no siren coverage in the area of this development. As such, the developer should install at least two solar-powered 118Dbc outdoor warning sirens. The first siren should be located at the park in the south end of the subdivision. The second siren should be installed in the southwest corner of the Wastewater Pump Station. Please refer to the marked copy of Figure 4 for the approximate locations of these sirens. (Note that the circles are approximate coverage areas only and no scale is provided.)

Technicians and planners are available to assist and answer any questions you may have. Please have your staff call Mr. Norman Ogasawara, State Civil Defense, at 733-4300, ext. 531, if you have any questions.

Sincerely,


EDWARD T. TEIXEIRA
Vice Director of Civil Defense

c: MCDA
Radio Shop



Source: Wayne I. Arakaki Engineer, LLC

Figure 4



Proposed Affordable Housing
Subdivision
Preliminary Subdivision Plan

NOT TO SCALE

Prepared for: Hale Mua Properties, LLC





MICHAEL T. MUNEKIYO
GWEN DHASHI HIRAGA
MITSURU "MICH" HIRANO

April 29, 2005

Edward Teixeira, Vice-Director
State of Hawaii
Office of the Director of Civil Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816

SUBJECT: Petition for District Boundary Amendment Hale Mua Affordable Housing Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Mr. Teixeira:

Thank you for your letter of February 28, 2005, providing comments on the Petition for District Boundary Amendment for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. In response to your comments, the applicant looks forward to coordination with your office so that appropriate siren-coverage for the subdivision area can be provided.

Thank you again for providing your input to the proposed action.

Very truly yours,

A handwritten signature in black ink, appearing to read "Matthew Slepina", written in a cursive style.

Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
kim/waiehu/civildef.res

FEB 24 2005

LINDA LINGLE
GOVERNOR



PATRICIA HAMAMOTO
SUPERINTENDENT

**STATE OF HAWAII
DEPARTMENT OF EDUCATION**

P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

February 24, 2005

Mr. Matthew Slepín
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Slepín:

SUBJECT: Draft Environmental Assessment for Hale Mua Subdivision
Waiehu, Maui, TMK: 3-3-02: por. 1

The Department of Education (DOE) has reviewed the Draft Environmental Assessment (DEA) for the Hale Mua Subdivision in Waiehu, Maui. The property is being developed by Hale Mua Properties, LLC (Applicant). The proposed development is for approximately 466 lots.

Information Included in the DEA

The DEA correctly identifies the public schools that could serve the Hale Mua subdivision. The DEA identifies both Wailuku and Waihee elementary schools. Currently, a student who resided in the Hale Mua area would attend Waihee Elementary, but the DOE complex area administrators may decide to change the service area boundary between the two elementary schools. For the purpose of this review of Hale Mua impacts, we will consider both schools as potentially serving Hale Mua.

The DEA also correctly estimates that approximately 316 students are expected to reside in the project. The estimate is based on 466 single-family residential units and 228 accessory or ohana units.

Current Status of Schools Serving the Project Area

The schools that are currently serving the area where Hale Mua is located have either exceeded the DOE's annual facility capacity calculation or are close to the capacity figure, with the exception of Wailuku Elementary, which currently has some excess capacity. However, enrollment at Wailuku is expected to grow over the next few years.

The DOE's enrollment estimates for up to six years into the future are heavily based on the current levels of enrollment growth at each individual school. To a slightly lesser degree, information on residential developments in construction or in the planning stage is also taken into account. In the Baldwin Complex, estimated enrollment impacts of construction underway or expected over the next few years have been incorporated in the enrollment projections.

As the table below indicates, Baldwin High School's enrollment has exceeded its facility capacity for several years. Its enrollment is expected to remain level over the next few years but will increase in the 2009-2010 school year.

Iao Intermediate School is expected to have a slight enrollment decline over the next few years but it will return to 2004-2005 levels by the 2009-2010 school year. Enrollment remains at just below or at facility capacity levels.

Waihee Elementary School is presently over its facility capacity enrollment but is expected to experience declines in enrollment over the next few years.

Wailuku Elementary School is expected to see steady enrollment increases through the 2009-2010 school year. It will be close to its facility capacity by that year.

Baldwin Complex Schools Enrollment, Projected Enrollment, Facility Capacity								
	Actual Enrollment			Projected Enrollment			Capacity	Capacity Minus 2009 Projection
School	2002 - 2003	2003 - 2004	2004 - 2005	2005 - 2006	2007 - 2008	2009 - 2010	2003 - 2004	
Baldwin High	1726	1651	1680	1672	1672	1716	1516	-200
Iao Intermediate	825	830	831	776	791	832	833	1
Waihee Elementary	828	833	869	855	834	806	855	49
Wailuku Elementary	959	937	955	965	995	1099	1104	5

Estimated Impact of the Project

When Hale Mua is completely built out, and if all of the larger, market priced lots include an accessory dwelling, the DOE would expect to see a total of approximately 316 students living in the project. This will have a significant impact on the enrollments of Baldwin High, Iao Intermediate, and one of the elementary schools.

The enrollment impact is expected to be felt starting in 2007. The next new school in the Baldwin Complex is an elementary school within the Kehalani development. The new Wailuku elementary school is presently scheduled to open in the 2012-2013 school year. The new school is expected to primarily serve the new residential projects in the Waikapu areas as well as Kehalani. It is not expected to greatly reduce enrollment at Wailuku Elementary.

Once Hale Mua is fully built out, we would expect that its students would require an additional six regular elementary classrooms and two special education classrooms. An additional three classrooms would be required for intermediate students and three to four classrooms for the high schoolers.

Mr. Matthew Slepín
Page 3
February 24, 2005

The DOE Requested Action

The DOE requests that the State Land Use Commission impose a condition requiring the Applicant to make a school fair-share contribution to offset the impacts of the Hale Mua project on the schools in the Baldwin Complex. Funds collected from the developer will be used only for schools in the Baldwin Complex. We ask for the standard condition language, which reads as follows:

“The Applicant shall contribute to the development, funding, and/or construction of school facilities, on a fair-share basis, as determined by, and to, the satisfaction of the Department of Education. Terms of the contribution shall be agreed upon in writing by the Applicant and the Department of Education prior to obtaining building permits for any area of the development.”

The importance of using the standard condition language is particularly stressed for the Hale Mua request. The DOE must be able to rely on language requiring a written agreement with a specific deadline. Recently the DOE has been faced with vaguely worded conditions that the DOE will have no way to monitor or enforce. A school condition that requires a contribution “in the event that the base price of any unit of the Project exceeds \$383,400” fails to define what “base price” means. The same condition lacks any requirement for a written agreement so the DOE has no way of receiving accurate data on the number of sales or the sale price. There is also no requirement for when the fair condition would be paid. With that lack of accountability, the DOE is left to assume that it will never receive a contribution from that project.

The DOE appreciates the opportunity to review the Hale Mua DEA. If you have any questions, please call Rae Loui, Assistant Superintendent of the Office of Business Services, at 586-3444 or Heidi Meeker of the Facilities and Support Services Branch at 733-4862.

Very truly yours,



Patricia Hamamoto
Superintendent

PH:jmb

c: Rae Loui, OBS
Ken Nomura, CAS
Anthony J.H. Ching, State Land Use Commission
Mary Lou Kobayashi, Office of Planning



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

April 29, 2005

Patricia Hamamoto, Superintendent
State of Hawaii
Department of Education
PO Box 2360
Honolulu, Hawaii 96804

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing
Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Ms. Hamamoto:

Thank you for your letter of February 24, 2005, providing comments on the Draft Environmental Assessment for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. We acknowledge your confirmation of the anticipated number of students resulting from the proposed subdivision. In response to your comments, the applicant looks forward to continuing coordination with your office and the State Land Use Commission so that appropriate fair-share contributions can be made.

Thank you again for providing your input to the proposed action.

Very truly yours,

Matthew Slepik, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
kim/waiehu/doedea.res

LINDA LINGLE
GOVERNOR OF HAWAII



FEB 25 2005

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

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

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

February 24, 2005

Mr. Matthew Slepín
Planner
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Mr. Slepín:

Subject: **Hale Mua Affordable Subdivision**
TMK: (2) 3-3-02: por. 1

Thank you for the opportunity to comment on the proposed Hale Mua Affordable Subdivision. The following comments are offered:

1. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46 "Community Noise Control". A noise permit may be required and should be obtained before the commencement of work.
2. HAR, Chapter 11-46, sets maximum allowable sound levels from stationary equipment such as compressors and HVAC equipment. The attenuation of noise from these sources may depend on the location and placement of these types of equipment. This should be taken into consideration during the planning, design, and construction of the building and installation of these types of equipment.
3. Due to the nature and location of the project, there is a significant potential for fugitive dust emissions during site work preparations. It is recommended that a dust control management plan be developed. Implementation of adequate dust control measures during all phases of the project is warranted. Construction activities must comply with the provisions of HAR, Chapter 11-60.
4. National Pollutant Discharge Elimination System (NPDES) permit coverage is required for this project. The Clean Water Branch should be contacted at 808 586-4309. The Army Corps of Engineers (COE) should be contacted to identify whether a Federal license or permit including a Department of Army permit is required for this project. A Section 401, Water Quality Certification is required when a federal permit is required.

Mr. Matthew Slepik
February 24, 2005
Page 2

5. The property may be harboring rodents that will be dispersed to the surrounding areas when the site is cleared. The applicant is required by 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.

Should you have any questions, please call me at 984-8230.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. Matsubayashi', enclosed within a hand-drawn oval.

Herbert S. Matsubayashi
District Environmental Health Program Chief

c: Anthony J. H. Ching



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

April 29, 2005

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

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing
Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Mr. Matsubayashi:

Thank you for your letter of February 24, 2005, providing comments on the Draft Environmental Assessment for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. In response to your comments, we note the following:

1. We acknowledge that a noise permit may be required for the proposed action. The applicant shall comply with all applicable requirements of Chapter 11-46, HAR.
2. Consideration will be given to the placement of construction equipment so as to attenuate the noise of their operation to the fullest extent practicable.
3. We acknowledge your recommendation regarding a dust management plan. The applicant shall comply with all applicable requirements of Chapter 11-60, HAR.
4. We acknowledge your comments regarding National Pollutant Discharge Elimination System (NPDES) Permits and Section 401, Water Quality Certification. Appropriate permitting will be sought for the proposed project. An NPDES permit will be obtained by the applicant.
5. The applicant will comply with all applicable requirements of Chapter 11-26, HAR, regarding rodent control.

Herbert Matsubayashi, District Environmental
Health Program Chief
April 29, 2005
Page 2

Thank you again for providing your input to the proposed action.

Very truly yours,

A handwritten signature in black ink, appearing to read "M Slepina".

Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/mauidoh.res

LINDA LINGLE
GOVERNOR



APR 11 2005

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1673

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

March 29, 2005

Mr. Matthew Slepín
Muneikyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Slepín:

Subject: Proposed Hale Mua Affordable Subdivision
Draft Environmental Assessment (DEA)
TMK: (2) 3-3-02: por. 1

Thank you for your transmittal requesting our review of the subject Draft Environmental Assessment.

Our comments previously communicated to Mr. Julian Ng, traffic consultant for the subject project in our letter STP 8.1594 dated February 17, 2005 (copy enclosed) remain valid and are applicable to the DEA.

We appreciate the opportunity to provide our comments.

Very truly yours,

A handwritten signature in black ink that reads "Rodney K. Haraga".

RODNEY K. HARAGA
Director of Transportation

Enc.

c: Anthong Ching, State Land Use Commission

LINDA LINGLE
GOVERNOR



RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

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

IN REPLY REFER TO:

STP 8.1594

February 17, 2005

Mr. Julian Ng
Julian Ng, Incorporated
P.O. Box 816
Kaneohe, Hawaii 96744

Dear Mr. Ng:

Subject: Hale Mua Project – Traffic Impact Assessment Report

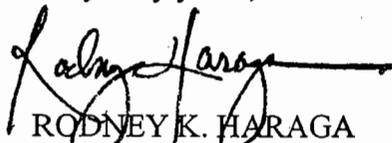
Thank you for your transmittal of the subject Traffic Impact Assessment Report (TIAR) for our review and approval.

Our comments are as follows:

1. The TIAR should be revised to reassess the intersection at Kahekili Highway (Market Street end) and Main Street. Project generated traffic from the subject development will impact our State highway facilities. While the subject project does not abut a state highway, the addition of traffic from the subject project will aggravate the traffic conditions at the intersection of Kahekili Highway (Market Street end) and Main Street. The applicant should be responsible to identify and implement required mitigation measures. The subject project report appears to be based on data collected from other reports and does not include any on-sight observations to verify the existing conditions.
2. The proposed project will have an impact on drainage in the area. No drainage will be permitted onto our highway. The applicant will need to provide a drainage report to our Highways Division Maui District Office for review and approval.
3. The applicant should be required to contribute its fair share toward regional roadway improvements.

We appreciate the opportunity to provide comments.

Very truly yours,


RODNEY K. HARAGA
Director of Transportation

c: Munekiyo & Hiraga
Michael Foley, Maui Planning Department

April 29, 2005

Rodney Haraga, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Mr. Haraga:

Thank you for your letter of March 29, 2005, providing comments on the Draft Environmental Assessment (EA) for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui, and enclosing comments to the traffic engineer, dated February 17, 2005. In response to your comments, we note the following:

1. The comments in the February 17, 2005 letter were in response to a traffic report dated July 2004 that was provided to your department for review. The developer and the traffic engineer subsequently coordinated with various sections within your department; a revised report, entitled Traffic Impact Analysis Report, Hale Mua Subdivision dated November 2004 was subsequently prepared to address the concerns expressed. The November 2004 report was attached to the Draft EA.

In the course of the traffic study, the traffic engineer's assessment was that there will be minor impact to the intersection of Kahekili Highway (Market Street) with Main Street. In the traffic study, detailed intersection analyses were done only at locations where the project impact in a peak hour would be greater than 100 vehicles per hour in the peak direction. This minimum impact level, or threshold, was selected because a volume of 100 vehicles per lane is the approximate volume that would change conditions by one Level of Service. The analyses indicate that the estimated impact of the project at any location south of Mill Street would be less than this threshold.

2. A drainage report was prepared for the proposed project and included in the Draft EA. This will be submitted to the Highways Division Maui District Office for review and approval. The drainage system has been designed to accommodate the 50 year, 1 hour storm with no impacts to Kahekili Highway.

Rodney Haraga, Director
April 29, 2005
Page 2

3. The applicant acknowledges that contributions to regional roadway improvements may be required of the proposed project.

Thank you again for providing your input to the proposed action.

Very truly yours,



Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
Wayne Arakaki, Arakaki Engineering
Julian Ng, Julian Ng Inc.

kim@waiehu.doldea.res

LINDA LINGLE
GOVERNOR OF HAWAII



MAR 08 2005

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

March 7, 2005

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

Mr. Sterling Kim
Hale Mua Properties, Inc.
385 Hukilike Street, Suite 210
Kahului, Hawaii 96732

Mr. Anthony Ching
Land Use Commission
Department of Business, Economic Development and Tourism
State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804

Mr. Matthew Slepín
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Messrs. Kim, Ching and Slepín:

The Office of Environmental Quality Control has reviewed the draft environmental assessment for the Hale Mua Affordable Housing Subdivision situated at Tax Map Key (2nd) 3-3-02, portion of parcel 1, in the judicial district of Wailuku, and offers the following comments for your consideration and response.

1. **Author of the Cultural Impact Assessment Report:** We have read the subject report in Appendix D and would like to note that while the report contains a wealth of useful information, the abstract (pp. iv – vii) of the report makes use of the first person singular pronoun “I” in a number of instances, yet nowhere in the report, is this person specifically identified, other than references to the persons experience in reburying iwi and formerly living in lower Waiehu. Generally speaking, professional reports should be written in the third person. Is this person CKM Cultural Resources, Inc.? If so, the principals of the corporation should be identified.
2. **Guidelines Available on OEQC’s Internet Site:** Please make use of guidelines concerning sustainable building design and landscaping with native plants in the implementation of the project. Please refer to <http://www.state.hi.us/health/oeqc/index.html> for more information.

If there are any questions, please call Mr. Leslie Segundo, Environmental Health Specialist, at (808) 586-4185.

Sincerely,

GENEVIEVE SALMONSON
Director

April 29, 2005

Genevieve Salmonson, Director
State of Hawaii
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing
Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Ms. Salmonson:

Thank you for your letter of March 7, 2005, providing comments on the Draft Environmental Assessment for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. In response to your comments, we note the following:

1. It is our understanding that CMK Cultural Resources has coordinated with your office regarding your formatting concerns in regard to the Cultural Impact Assessment Report.
2. The applicant acknowledges your suggestion regarding OEQC guidelines concerning sustainable building design and landscaping.

Thank you again for providing your input to the proposed action.

Very truly yours,



Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
kim/waiehu/oeqcdea.res



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

HRD05/1731

February 25, 2005

Mr. Matthew Slepín
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawaii 96793

Re: Proposed Hale Mua Affordable Subdivision, Waiehu, Island of Maui, TMK: (2) 3-3-02: 001

Dear Mr. Slepín:

The Office of Hawaiian Affairs (OHA) is in receipt of the Petition of Hale Mua Properties, LLC, to Amend the Land Use District Boundary of Certain Lands Situated at Waiehu, Island of Maui, State of Hawai'i, Consisting of 240.087 Acres, from the Agriculture and Rural Districts to the Urban District, TMK No. 3-3-002:001, and the Draft Environmental Assessment for the same project. After reviewing the submitted information, OHA offers the following comments and concerns in the area of historical and cultural resources and native flora.

Historical and Cultural Resources

The proposed Hale Mua Affordable Housing Project area is situated slightly mauka of areas known to contain sub-surface cultural deposits, most significantly, unmarked human burial sites, mostly containing the remains of native Hawaiians. From Paukukalo to Waihe'e, and in Waiehu in particular, unmarked burial sites have been frequently encountered.

An archaeological inventory survey was conducted of portions of the affected parcels, to include surface reconnaissance and sub-surface testing in the form of trenching. Given the large size of the project area, and the limitations associated with any archaeological investigation and sampling project, OHA is concerned that unmarked burial sites are dispersed throughout the project area.

Matthew Slepín
February 25, 2005
Page 2

Local informants interviewed as part of the cultural assessment recalled various accounts of possible burial sites in the area in the form of rock formations. Archaeologists informed of these accounts were unable to locate any of the subject features but this would not be inconsistent with heavy surface alterations that occurred in the area such as with sugarcane cultivation.

We concur with the cultural impact study findings that:

Although this project site is presently covered with macadamia nut trees, and previously planted with sugarcane, there is a strong possibility that iwi (bones) could still be encountered when the land is cleared and graded.

Sub-surface cultural features have been known to survive intensive surface agricultural activities. We would disagree with the assertion from the developer that the present activities would amount to the same usage as the previous agricultural activities. Urbanization would lead to the installation of infrastructure and potentially deeper, and more linear excavations, which have been known to impact underground sites such as unmarked burial sites.

Although the studies note that there is a shift from soil to a more sandy matrix as one moves makai in the project area, the reported nineteen land claims in the Northern portion of the project area, combined with the noted pattern of permanent habitations being associated with lo'i in the region lead to a likelihood of family burial areas being encountered in the Northern portion.

OHA recommends that full-time archaeological monitoring occur during all grading and grubbing activities in the project area and during all excavations for infrastructure to include installation of water, sewer and electrical lines.

Native Flora

OHA would encourage the continued propagation of native species naturally found in the area and the utilization of native species in landscaping along the common areas to provide some continuity in the cultural landscape of the region. This would also serve to protect any gathering practices related to native plants which may occur in the project area and which are currently unknown by those involved with this assessment process.

Conclusion

OHA would highly recommend that archaeological monitoring occur during periods of extensive ground disturbance such as mass grading to address the possible presence of sub-surface cultural deposits such as human burials known to exist in the area. We would also recommend that archaeological monitoring occur during trenching and excavations associated with utilities installation such as waterline, sewerline and electrical line infrastructure.

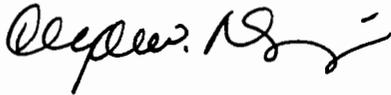
Matthew Slepín
February 25, 2005
Page 3

In accordance with Section 6E-43.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division shall be contacted.

OHA would also like to suggest that, to the extent feasible, native plants be utilized in landscaping and encouraged to propagate in the area to preserve and protect possible gathering rights in the area, and to maintain some semblance of the cultural landscape in a region slated for urbanization.

If you have any questions or concerns, please contact Kai Markell, Policy Advocate, at 594-1945 or kaim@oha.org. Once again, thank you for your patience during our review and assessment of this important matter.

‘O wau iho nō,



Clyde W. Nāmu‘o
Administrator

- c. Mr. Anthony J.H. Ching
State Land Use Commission
P.O. Box 2359
Honolulu, Hawaii 96804-2359

April 29, 2005

Clyde Namu'o, Administrator
State of Hawaii
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Mr. Namu'o:

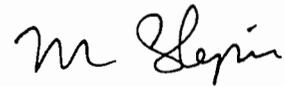
Thank you for your letter of February 25, 2005, providing comments on the Draft Environmental Assessment for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. In response to your comments, we note the following:

1. The applicant shares your concern over the possibility of unmarked burial sites located within the project area. Hale Mua Properties will coordinate with your office and the State Historic Preservation Division to determine when and where full-time archaeological monitoring is warranted for the project.
2. We acknowledge your recommendation regarding the use of native flora species for landscaping. Consideration will be given to using native flora to the extent practicable.
3. As discussed in the Draft EA, all work shall cease if cultural deposits or human remains are encountered during project implementation and the relevant authorities contacted.

Clyde Namu`o, Administrator
April 29, 2005
Page 2

Thank you again for providing your input to the proposed action.

Very truly yours,

A handwritten signature in black ink, appearing to read "M Slepina". The signature is fluid and cursive.

Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
kim/waiehu/ohadea.res



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

FEB 16 2005

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 10, 2005

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

Dear Mr. Slepín:

**SUBJECT: PROPOSED HALE MUA AFFORDABLE
HOUSING SUBDIVISION
TMK (2) 3-3-02:POR.1**

We have reviewed the Draft Environmental Assessment (DEA) for the proposed Hale Mua Affordable Housing Subdivision and would like to offer the following comments:

1. The following is stated in paragraph three of page 6 of the DEA:

"The affordable house-lot packages will be sold with a 10-year, buy-back clause in order to prevent rapid resale and removal of the residences from the affordable pool. After ten (10) years, the seller will be entitled to 20% of equity, with the percentage increasing each subsequent year."

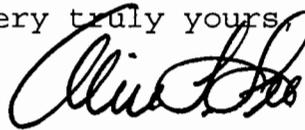
We would like to be involved in establishing the specific restrictions for the 10-year buy-back clause and the subsequent re-sale restriction period. If these restrictions will be specified in an affordable housing agreement with the County of Maui, please state that in paragraph three of page 6 of the Final Environmental Assessment.

Mr. Matthew Slepín
Page 2
February 10, 2005

2. The DEA states that a Section 201G-118, HRS, application will be filed with the Maui County Council for the subject project. That being the case, please ensure that the project's Section 201G-118, HRS, application is prepared and processed in accordance with the Department of Housing and Human Concern's Section 201G-118, HRS, Application Process (copy attached). Any deviation from this application process must be with the approval of the Director of Housing and Human Concerns.
3. The project's Section 201G-118, HRS, application must also include the preliminary specifications for the affordable housing units. That being the case, it is suggested that a Description of Materials form (copy attached) be completed for the two house models and included in the Final Environmental Assessment.

Thank you for the opportunity to comment on the DEA.

Very truly yours,



ALICE L. LEE
Director

ETO:hs

Attachments

c: Mr. Anthony J. H. Ching w/attachments
Mr. Edwin Okubo w/attachments

(Revised 5/04/04)

SECTION 201G-118, HRS, APPLICATION PROCESS
DEPARTMENT OF HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

To qualify as a Section 201G-118, HRS, project, a minimum of fifty-one percent (51%) of the proposed units must qualify as affordable housing units.

To qualify as an affordable housing unit, a housing unit must be affordable to persons/families in one or more of the applicable income group(s) shown below, as determined by the Director of Housing and Human Concerns, County of Maui.

Ownership Units

Single-Family Detached (Includes duplexes)	-	120% or less of the County's median income.
Multi-Family Attached	-	110% or less of the County's median income.

Rental Units

Detached/Attached	-	100% or less of the County's median income.
-------------------	---	--

In addition, the final selling price(s) and/or the final rental rate(s) must be approved by the Director of Housing and Human Concerns.

- I. Applicant prepares preliminary Section 201G-118, HRS, application.
- II. Preliminary Section 201G-118, HRS, application shall include but not be limited to the following:
 - A. INTRODUCTION
 1. PROJECT LOCATION, EXISTING USE, AND LAND OWNERSHIP
 2. BACKGROUND
 3. PROJECT NEED
 4. PROPOSED IMPROVEMENTS
 5. REQUESTED WAIVERS AND EXEMPTIONS

B. DESCRIPTION OF THE EXISTING ENVIRONMENT

1. PHYSICAL ENVIRONMENT

- a. Surrounding Land Use
- b. Climate
- c. Flood and Tsunami Zone
- d. Topography and Soils
- e. Flora and Fauna
- f. Archaeological Resources
- g. Air Quality
- h. Noise Characteristics
- i. Visual Resources

2. COMMUNITY SETTING

- a. Regional Setting
- b. Population
- c. Economy
- d. Police and Fire Protection
- e. Medical Facilities
- f. Recreational Facilities
- g. Schools
- h. Solid Waste Disposal

3. INFRASTRUCTURE

- a. Roadway Systems
- b. Water system
- c. Wastewater System
- d. Drainage

e. Electrical and Telephone Service

C. POTENTIAL IMPACTS AND MITIGATION MEASURES

1. IMPACTS TO PHYSICAL ENVIRONMENT

a. Surrounding Uses

b. Flora and Fauna

c. Archaeological Resources

d. Air Quality

e. Noise

f. Visual Impact

2. IMPACTS TO COMMUNITY SETTING

a. Population and Local Economy

b. Housing

c. Police, Fire and Medical Services

d. Recreational and Social Service

e. Solid Waste

3. IMPACTS TO INFRASTRUCTURE

a. Roadways

b. Water

c. Drainage

d. Wastewater

e. Electrical and Telephone Services

D. RELATIONSHIP TO LAND USE PLANS, POLICIES AND CONTROLS

1. STATE LAND USE DISTRICTS

2. GENERAL PLAN OF THE COUNTY OF MAUI

3. COMMUNITY PLAN

4. ZONING

E. FINDINGS AND CONCLUSIONS

F. AGENCIES CONTACTED IN THE PREPARATION OF THE PRELIMINARY SECTION 201G-118, HRS, APPLICATION AND COMMENTS RECEIVED

G. COMMENTS RECEIVED DURING PUBLIC REVIEW PERIOD AND APPLICABLE RESPONSES

H. COMMENTS RECEIVED AFTER PUBLIC REVIEW PERIOD

I. APPENDICES - Preliminary Grading and Drainage Report
- Preliminary Building Specifications

J. LIST OF FIGURES

- 1 Regional Location Map
- 2 Site Location Map
- 3 Site Plan
- 4 Exterior Building Elevations
- 5 Unit Floor Plans
- 6 Flood Insurance Rate Map
- 7 Soil Association Map
- 8 Soil Classifications
- 9 State Land Use District Classifications
- 10 Community Plan Land Use Designations

III. Fifteen (15) copies of the preliminary Section 201G-118, HRS, application is submitted to the Director of Housing and Human Concerns, County of Maui.

IV. Director of Housing and Human Concerns transmits preliminary Section 201G-118, HRS, application to the following agencies for review and comment, and requests that comments be submitted within (30) days.

Highways Division (Maui), State Department of
Transportation

Environmental Health Division (Maui), State Department
Of Health

Historic Preservation Division, State Department of
Land and Natural Resources

Department of Public Works and Environmental
Management, County of Maui (3 copies)

Department of Planning, County of Maui

Department of Water Supply, County of Maui (2 copies)

Department of Fire and Public Safety, County of Maui

Department of Parks & Recreation, County of Maui

Department of Police, County of Maui

Department of Transportation, County of Maui
Department of Housing and Human Concerns, County of
Maui (2 copies)

- V. Agency comments are forwarded to the applicant by the Director of Housing and Human Concerns with a request that all issues of concern be addressed or resolved prior to the Section 201G-118, HRS, application being finalized.
- VI. Section 201G-118, HRS, application is finalized and twenty-one (21) copies are submitted to the Director of Housing and Human Concerns.
- VII. Director of Housing and Human Concerns transmits nineteen (19) copies of the final Section 201G-118, HRS, application to the County Council via the Mayor with a recommendation for approval. Also transmitted are two resolutions. One resolution is for approval of the project and the second resolution is for disapproval of the project. The County Council has forty-five (45) days to approve or disapprove the project. If the project is not disapproved by the forty-sixth day, the project is deemed approved.
- VIII. If a district boundary amendment by the State Land Use Commission (LUC) is required, a petition shall be submitted to the LUC by the applicant. The LUC has forty-five (45) days to approve or disapprove the petition. If the petition is not disapproved by the forty-sixth day, the petition is deemed approved.
- Note: If the proposed project is subject to Chapter 343, Hawaii Revised Statutes (HRS), the preliminary and final Section 201G-118, HRS, applications shall contain all of the information that is specified for an Environmental Assessment.

Proposed Construction

DESCRIPTION OF MATERIALS

No. _____
(To be inserted by Agency)

Under Construction

Property address _____ City _____ State _____

Mortgagor or Sponsor _____
(Name) (Address)

Contractor or Builder _____
(Name) (Address)

INSTRUCTIONS

1. For additional information on how this form is to be submitted, number of copies, etc., see the instructions applicable to the FHA Application for Mortgage Insurance, VA Request for Determination of Reasonable Value or other, as the case may be.

2. Describe all materials and equipment to be used, whether or not shown on the drawings, by marking an X in each appropriate check-box and entering the information called for in each space. If space is inadequate, enter "See misc." and describe under item 27 or on an attached sheet: THE USE OF PAINT CONTAINING MORE THAN THE PERCENT OF LEAD BY WEIGHT PERMITTED BY LAW IS PROHIBITED.

3. Work not specifically described or shown will not be considered unless

required, then the minimum acceptable will be assumed. Work exceeding minimum requirements cannot be considered unless specifically described.

4. Include no alternates, "or equal" phrases, or contradictory items. (Consideration of a request for acceptance of substitute materials or equipment is not thereby precluded.)

5. Include signatures required at the end of this form.

6. The construction shall be completed in compliance with the related drawings and specifications, as amended during processing. The specifications include this Description of Materials and the applicable building code.

1. EXCAVATION:

Bearing soil, type _____

2. FOUNDATIONS:

Footings: concrete mix _____; strength psi _____ Reinforcing _____

Foundation wall: material _____ Reinforcing _____

Interior foundation wall: material _____ Party foundation wall _____

Columns: material and sizes _____ Piers: material and reinforcing _____

Girders: material and sizes _____ Sills: material _____

Basement entrance arcaway _____ Window arcaways _____

Waterproofing _____ Footing drains _____

Termite protection _____

Basementless space: ground cover _____; insulation _____; foundation vents _____

Special foundations _____

Additional information: _____

3. CHIMNEYS:

Material _____ Prefabricated (make and size) _____

Flue lining: material _____ Heater flue size _____ Fireplace flue size _____

Vents (material and size): gas or oil heater _____; water heater _____

Additional information: _____

4. FIREPLACES:

Type: solid fuel; gas-burning; circulator (make and size) _____ Ash dump and clean-out _____

Fireplace: Facing _____; lining _____; hearth _____; mantel _____

Additional information: _____

5. EXTERIOR WALLS:

Wood frame: wood grade, and species _____ Corner bracing, Building paper or felt

sheathing _____; thickness _____; width _____; solid; space _____ "o.c.; diagonal;

Siding _____; grade _____; type _____; size _____; exposure _____"; fastening _____

Shingles _____; grade _____; type _____; size _____; exposure _____"; fastening _____

Stucco _____; thickness _____"; Lath _____; weight _____ lb.

Masonry veneer _____ Sills _____ Lintels _____ Base flashing _____

Masonry: solid faced stuccoed; total wall thickness _____"; facing thickness _____"; facing material _____

Backup material _____; thickness _____"; bonding _____

Door sills _____ Window sills _____ Lintels _____ Base flashing _____

Interior surfaces: dampproofing, _____ coats of _____; furring _____

Additional information: _____

Exterior painting: material _____; number of coats _____

Gable wall construction: same as main walls; other construction _____

6. FLOOR FRAMING:

Joists: wood, grade, and species _____; other _____; bridging _____; anchors _____

Concrete slab: basement floor; first floor; ground supported; self-supporting; mix _____; thickness _____";

reinforcing _____; insulation _____; membrane _____

Fill under slab: material _____; thickness _____". Additional information: _____

7. SUBFLOORING: (Describe underflooring for special floors under item 21.)

Material: grade and species _____; size _____; type _____

Laid: first floor; second floor attic _____ sq. ft; diagonal; right angles. Additional information: _____

8. FINISH FLOORING: (Wood only. Describe other finish flooring under item 21.)

LOCATION	ROOMS	GRADE	SPECIES	THICK-NESS	WIDTH	BLDG. PAPER	FINISH
First floor							
Second floor							
Attic floor							

Additional information: _____

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0575-0042. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

9. PARTITION FRAMING:
 Studs: wood, grade, and species _____ size and spacing _____ Other _____
 Additional information: _____

10. CEILING FRAMING:
 Joists: wood, grade, and species _____ Other _____ Bridging _____
 Additional information: _____

11. ROOF FRAMING:
 Rafters: wood, grade, and species _____ Roof trusses (see detail): grade and species _____
 Additional information: _____

12. ROOFING:
 Sheathing: wood, grade, and species _____ ; solid spaced _____ " o.c.
 Roofing _____ ; grade _____ ; size _____ ; type _____
 Underlay _____ ; weight or thickness _____ ; size _____ ; fastening _____
 Built-up roofing _____ ; number of plies _____ ; surface material _____
 Flashing: material _____ ; gage or weight _____ ; gravel stops; snow guards
 Additional information: _____

13. GUTTERS AND DOWNSPOUTS:
 Gutters: material _____ ; gage or weight _____ ; size _____ ; shape _____
 Downspouts: material _____ ; gage or weight _____ ; size _____ ; shape _____ ; number _____
 Downspouts connected to: Storm sewer; sanitary sewer; dry-well. Splash blocks: material and size _____
 Additional information: _____

14. LATH AND PLASTER:
 Lath walls, ceilings: material _____ ; weight or thickness _____ Plaster: coats _____ ; finish _____
 Dry-wall walls, ceilings: material _____ ; thickness _____ ; finish _____
 Joint treatment _____

15. DECORATING: (Paint, wallpaper, etc.)

ROOMS	WALL FINISH MATERIAL AND APPLICATION	CEILING FINISH MATERIAL AND APPLICATION
Kitchen _____		
Bath _____		
Other _____		

Additional information: _____

16. INTERIOR DOORS AND TRIM:
 Doors: type _____ ; material _____ ; thickness _____
 Door trim: type _____ ; material _____ Base: type _____ ; material _____ ; size _____
 Finish: doors _____ ; trim _____
 Other trim (item, type and location) _____
 Additional information: _____

17. WINDOWS:
 Windows: type _____ ; make _____ ; material _____ ; sash thickness _____
 Glass: grade _____ ; sash weights; balances, type _____ ; head flashing _____
 Trim: type _____ ; material _____ Paint _____ ; number coats _____
 Weatherstripping: type _____ ; material _____ Storm sash, number _____
 Screens: full; half; type _____ ; number _____ ; screen cloth material _____
 Basement windows: type _____ ; material _____ ; screens, number _____ ; Storm sash, number _____
 Special windows _____
 Additional information: _____

18. ENTRANCES AND EXTERIOR DETAIL:
 Main entrance door: material _____ ; width _____ ; thickness _____ " ; Frame: material _____ ; thickness _____ "
 Other entrance doors: material _____ ; width _____ ; thickness _____ " ; Frame: material _____ ; thickness _____ "
 Head flashing _____ Weatherstripping: type _____ ; saddles _____
 Screen doors: thickness _____ " ; number _____ ; screen cloth material _____ Storm doors: thickness _____ " ; number _____
 Combination storm and screen doors: thickness _____ " ; number _____ ; screen cloth material _____
 Shutters: hinged; fixed. Railings _____ , Attic louvers _____
 Exterior millwork: grade and species _____ Paint _____ ; number coats _____
 Additional information: _____

19. CABINETS AND INTERIOR DETAIL:
 Kitchen cabinets, wall units: material _____ ; lineal foot of shelves _____ ; shelf width _____
 Base units: material _____ ; counter top _____ ; edging _____
 Back and end splash _____ Finish of cabinets _____ ; number coats _____
 Medicine cabinets: make _____ ; model _____
 Other cabinets and built-in furniture _____
 Additional information: _____

20. STAIRS:

STAIR	TREADS		RISERS		STRINGS		HANDRAIL		BALUSTERS	
	Material	Thickness	Material	Thickness	Material	Thickness	Material	Thickness	Material	Thickness
Basement _____										
Main _____										
Attic _____										

Disappearing: make and model number _____
 Additional information: _____

21. SPECIAL FLOORS AND WAINSCOT: (Describe carpet as listed in Certified Products Directory.)

Floors	Location	Material, Color, Border, Sizes, Gage, Etc.	Threshold Material	Wall Base Material	Underfloor Material
	Kitchen				
Bath					
Wainscot	Location	Material, Color, Border, Sizes, Gage, Etc.	Height	Height Over Tub	Height in Showers (From Floor)
	Bath				

Bathroom accessories: Recessed; material _____; number ____; Attached; material _____; number _____
 Additional information: _____

22. PLUMBING

Fixture	Number	Location	Make	Mfr's Fixture Identification No.	Size	Color
Sink						
Lavatory						
Water closet						
Bathtub						
Shower over tub Δ						
Stall shower Δ						
Laundry trays						

Δ Curtain rod Δ Door Shower pan: material _____
 Water supply: public; community system: individual (private) system.*
 Sewage disposal: public; community system: individual (private) system.*
 * Show and describe individual system in complete detail in separate drawings and specifications according to requirements.
 House drain (inside): cast iron; tile; other _____ House sewer (outside): cast iron; tile; other _____
 Water piping: galvanized steel; copper tubing; other _____ Still cocks, number _____
 Domestic water heater: type _____; make and model _____; heating capacity _____
 _____ gph. 100 $^{\circ}$ rise. Storage tank: material _____; capacity _____ gallons.
 Gas service: utility company; liq. pct. gas; other _____ Gas piping: cooking; house heating.
 Footing drains connected to: storm sewer; sanitary sewer; dry well. Sump pump; make and model _____
 _____; capacity _____; discharges into _____

23. HEATING

Hot water. Steam. Vapor. One-pipe system. Two-pipe system.
 Radiators. Convectors. Baseboard radiation. Make and model _____
 Radiant panel: floor; wall; ceiling. Panel coil: material _____
 Circulator. Return pump. Make and model _____; capacity _____ gpm.
 Boiler: make and model _____ Output _____ Btuh.; net rating _____ Btuh.
 Additional information: _____
 Warm air: Gravity. Forc. Type of system _____
 Duct material: supply _____; return _____ Insulation _____; thickness _____ Outside air intake.
 Furnace: make and model _____ Input _____ Btuh.; output _____ Btuh.
 Additional information: _____
 Space heater; floor furnace; wall heater. Input _____ Btuh.; output _____ Btuh.; number units _____
 Make, model _____ Additional information: _____
 Controls: make and types _____
 Additional information: _____
 Fuel: Coal; oil; gas; liq. pct. gas; electric; other _____; storage capacity _____
 Additional information: _____
 Firing equipment furnished separately: Gas burner, conversion type. Stoker: hopper feed bin feed
 Oil burner: pressure atomizing; vaporizing _____
 Make and model _____ Control _____
 Additional information: _____
 Electric heating system: type _____ Input _____ watts; @ _____ volts; output _____ Btuh.
 Additional information: _____
 Ventilating equipment: attic fan, make and model _____; capacity _____ cfm.
 kitchen exhaust fan, make and model _____
 Other heating, ventilating, or cooling equipment _____

24. ELECTRIC WIRING:

Service: overhead; underground. Panel: fuse box; circuit-breaker; make _____ AMP's _____ No. circuits _____
 Wiring: conduit; armored cable; nonmetallic cable; knob and tube; other _____
 Special outlets: range; water heater; other _____
 Doorbell. Chimes. Push-button locations. _____ Additional information: _____

25. LIGHTING FIXTURES:

Total number of fixtures _____ Total allowance for fixtures, typical installations, \$ _____
 Nontypical installation _____
 Additional information: _____

26. INSULATION:

Location	Thickness	Material, Type, and Method of Installation	Vapor Barrier
Roof			
Ceiling			
Wall			
Floor			

27. MISCELLANEOUS: (Describe any main dwelling materials, equipment, or construction items not shown elsewhere; or use to provide additional information where the space provided was inadequate. Always reference by item number to correspond to numbering used on this form.)

HARDWARE: (make, material, and finish.) _____

SPECIAL EQUIPMENT: (State material or make, model and quantity. Include only equipment and appliances which are acceptable by local law, custom and applicable FHA standards. Do not include items which, by established custom, are supplied by occupant and removed when he vacates premises or chattles prohibited by law from becoming realty.)

PORCHES:

TERRACES:

GARAGES:

WALKS AND DRIVEWAYS:

Driveway: width _____; base material _____; thickness _____"; surfacing material _____; thickness _____

Front walk: width _____; material _____; thickness _____". Service walk: width _____; material _____; thickness _____

Steps: material _____; treads _____"; risers _____". Check walls _____

OTHER ONSITE IMPROVEMENTS:
 (Specify all exterior onsite improvements not described elsewhere, including items such as unusual grading, drainage structures, retaining walls, fence, railings, and accessor structures.)

LANDSCAPING, PLANTING, AND FINISH GRADING:

Topsoil _____" thick: front yard; side yards; rear yard to _____ feet behind main building:

Lawns (seeded, sodded, or sprigged): front yard _____; side yards _____; rear yard _____

Planting: as specified and shown on drawings; as follows:

_____ Shade trees, deciduous, _____" caliper. _____ Evergreen trees _____' to _____', B & B.

_____ Low flowering trees, deciduous. _____' to _____' _____ Evergreen shrubs _____' to _____', B & B.

_____ High-growing shrubs, deciduous. _____' to _____' _____ Vines, 2-years _____

_____ Medium-growing shrubs, deciduous, _____' to _____' _____

_____ Low-growing shrubs, deciduous. _____' to _____' _____

IDENTIFICATION. This exhibit shall be identified by the signature of the builder, or sponsor, and/or the proposed mortgagor if the latter is known at the time of application.

Date _____ Signature _____

Signature _____

April 29, 2005

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

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing
Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Ms. Lee:

Thank you for your letter of February 10, 2005, providing comments on the Draft Environmental Assessment (EA) for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. In response to your comments, we note the following:

1. Hale Mua Properties, LLC will coordinate with your office regarding the specific restrictions on the affordable units. The final nature of the restrictions will be reflected in the Final EA.
2. It is the intention of the applicant to prepare and process the project's Section 201 G-118 application in the required manner. We will coordinate with your office to ensure that the proper procedures are followed or to request the Director's approval for any variances required from this process.
3. We will include the Description of Materials form that you have provided as an appendix to the Final EA.

Thank you again for providing your input to the proposed action.

Very truly yours,



Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/dhhdcea.res

ALAN M. ARAKAWA
Mayor



FEB 18 2005

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

DEPARTMENT OF PARKS AND RECREATION

Planning & Development Division
700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

(808) 270-7931
Fax (808) 270-7162

February 8, 2005

Matthew Slepín, Planner
Muenkiyo & Hiraga, Inc.
305 High Street Suite 104
Wailuku, Hawaii 96793

**RE: Draft Environmental Assessment
Proposed Hale Mua Affordable Housing Subdivision
TMK: (2) 3-3-002:001 por.**

Dear Mr. Slepín:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the proposed Hale Mua Affordable Housing Subdivision. Upon review of the submitted document, we have no additional comments to offer, at this time.

We look forward to continuing to work with the developer on the planning and design of the new park facilities.

Should you have any questions or need of additional comments, please call me or Patrick Matsui, Chief of Parks Planning & Development at 808-270-7387.

Sincerely,

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

Glenn T. Correa
Director

c: Patrick Matsui, Chief of Parks Planning & Development
Anthony J. H. Ching, State Land Use Commission

MAR 09 2005

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

March 8, 2005

Mr. Michael Munekiyo, AICP
Munekiyo & Hiraga, Inc.
350 South High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

RE: Draft Environmental Assessment Prepared for the Proposed Hale Mua Subdivision located at TMK 3-3-002:001, portion, Waiehu, Island of Maui, Hawaii (LTR 2004/1211)

The Maui Planning Department (Department) is in receipt of the above referenced document and provides the following comments:

1. Discuss in detail how the proposed action maintains consistency with the following objectives and policies of the Wailuku-Kahului Community Plan:
 - a. Environment
 1. Preserve agricultural lands as a major element of the open space setting that borders the various communities within the planning region. The close relationship between open space and developed areas is an important characteristic of community form.
 6. Encourage the use of siltation basins and other erosion control features in the design of drainage systems.
 14. Promote the planting and maintenance of trees and other landscape planting to enhance the streetscapes and the built-environment.

b. Land Use

14. Maintain physical separation between traditional towns and villages in the region. Where possible, provide specific design or landscape elements, such as open space buffers or changes in streetscape, to clearly delineate the boundary between Kahului and Wailuku. Maintain open space around traditional rural areas, such as Waikapu and Waihe'e, to provide a sense of community and to prevent envelopment of these areas by urban expansion.

c. Water and Utilities

6. Coordinate expansion of and improvements to the water system to coincide with the development of residential expansion areas.

d. Transportation

2. Provide bikeway and walkway systems in the Wailuku-Kahului area which offer safe and pleasant means of access, particularly along routes accessing residential districts, major community facilities and activity centers, school sites, and the shoreline between Kahului Harbor and Pa'ia.
6. Accommodate bicycle and pedestrian ways within planned roadway improvements.

e. Urban Design

3. Improve pedestrian and bicycle access within the region.
6. Promote a unified street tree planting program along major highways and streets.
9. Save and incorporate healthy mature trees in the landscape planting plans of subdivisions, roads and other developments.

14. Require all future subdivisions, construction projects and developments to comply with the adopted Maui County Planting Plan.
2. To further reduce potential impacts from stormwater runoff provide a discussion on the alternative of designing the drainage system to retain more than the net increase of stormwater on the property.
3. Identify the resources used to confirm that there are no significant habitats or rare, endangered, or threatened species.
4. Although the proposed project area is not identified as a scenic corridor, the property provides Open Space visual relief as well as a demarcation between the communities of Wailuku and Waiehu. Further the objectives and policies of the Wailuku-Kahului Community Plan (noted in Item 1 above) promote the preservation of prime agricultural land as a major element of open space and to maintain separation between traditional towns. In this context, the proposed action will impact scenic and open space resources for the area.
5. Discuss the conceptual timeframe of construction for the affordable housing unit component.
6. Traffic Impact Assessment Report (TIAR)
 - a. Discuss the peak hour conditions (existing, future with Hale Mua, and future without Hale Mua) at the intersection of Kahekili Highway and Waiehu Beach Road.
 - b. Clarify whether the TIAR analysis included other projects in the immediate region (refer to Item 7 below). Discuss the cumulative impact of the proposed action and these other projects.
7. Chapter III, Cumulative Impacts – In addition to the four (4) phases of the Department of Hawaiian Homelands (DHHL) Waiehu Kou projects, the following projects are proposed and should be included within the analysis:

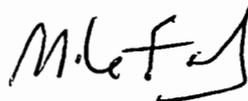
Mr. Michael Munekiyo, AICP
March 8, 2005
Page 4

- a. Wailuku Country Estates – 184 units located south of the project area.
 - b. Malaihi Agricultural Subdivision – 10 agricultural lots over an area of 69.315 acres located north of the proposed action.
 - c. Waihee Mauka Agricultural Subdivision - 14 agricultural lots covering an area of 113 acres located north of proposed action.
8. Chapter VIII, Agencies Consulted During the Preparation of the DEA
- a. The applicant's response to the State Historic Preservation Division's (SHPD) letter dated May 21, 2004, is not included within the DEA. Discuss the significant revisions as recommended by SHPD.
 - b. The response to the Department of Housing and Human Concerns (DHHC) letter dated April 8, 2004, does not address Items No. 6 and 7. Please provide a response in the FEA.
9. As indicated in the Department's preconsultation comments dated April 27, 2004:
- a. Further discuss the proposed landscape features, buffers, berms, streetscapes, and boundary walls for the subdivision, of particular concern is the frontage along Kahekili Highway and the impact of urban development on the existing open space character of the area.
 - b. Provide a view analysis from Kahekili Highway to the West Maui Mountains, including site layouts of future houses and other vertical structures that may impact the area.
 - c. The Department maintains our recommendation of integrating a network of green space, open land recreation corridors, and trails within and along the perimeter of the project area for multi recreational uses.

Mr. Michael Munekiyo, AICP
March 8, 2005
Page 5

Thank you for the opportunity to comment. Should you need additional clarification on these comments or the DEA process, please contact Ms. Kivette A. Caigoy, Environmental Planner, of my office at 270-7735.

Sincerely,



MICHAEL W. FOLEY
Planning Director

MWF:KAC:lar

c: Wayne Boteilho, Deputy Planning Director
Clayton Yoshida, AICP, Planning Program Administrator
Kivette Caigoy, Environmental Planner
Colleen Suyama, Staff Planner
Anthony Ching, State Land Use Commission
General File
K:\WP_DOCS\PLANNING\EA\DEAComments\2005\0325_HaleMuaSubdivision.wpd

April 29, 2005

Michael Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Mr. Foley:

Thank you for your letter of March 8, 2005, providing comments on the Draft Environmental Assessment (DEA) for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. Our responses have been numbered to correspond with your comments:

- 1.a. The large lots forming the border of the proposed subdivision will be a key element in preserving the open space between the subdivision and neighboring communities. As these lots will be restricted to one (1) main dwelling unit and one (1) ohana unit, a substantial space in each lot will be undeveloped and function as bordering open space.

Erosion control features in the proposed drainage system include:

- Exposed ground will be grassed and maintained to prevent soil erosion.
- Culverts, drainage ditches, and overflow outlets will have either a concrete/rock or gunite finished floor.
- Jute netting will be installed for finished surfaced areas with slopes greater than 2:1. These areas will also be grassed to minimize erosion.
- Landscaping of the project site will also provide erosion control measures.
- The detention ponds will slow down stormwater runoff and encourage sediment to accumulate.
- An irrigation system will be provided for the common areas to maintain ground cover. This will substantially reduce soil erosion.
- All loosened and excavated soil and debris will be removed from the drainage ways.
- All drainage structures, detention, silting and debris basins will be maintained by the Homeowner's Association to prevent sediment buildup.

- The applicant will comply with guidelines stated in Chapter 20.08, Maui County Code, Soil Erosion and Sedimentation Control, during grading and grubbing activities.

A landscaping plan for Kahekili Highway is being prepared for the project and will be submitted as an Exhibit in the proceedings for the Petition for District Boundary Amendment. Landscape features will comply with the objectives, policies, and provisions of the Maui County Planting Plan, as revised in 1994, in regard to the selection of tree types and placement within the proposed subdivision. Maintenance of subdivision trees will be the responsibility of the Homeowner's Association.

- 1.b. As discussed in Item No. 1.a. above, the development restriction on the large lots will serve to substantially preserve open space around the proposed subdivision and provide visual separation from adjacent communities, as well as between Wailuku and Waiehu.
- 1.c. The applicant has been in coordination with both the Department of Public Works and Environmental Management and the Department of Water Supply regarding the expansion of infrastructure service to meet residential use needs.
- 1.d. A bicycle path will be provided along that segment of Kahekili Highway between the subdivision access roads. Interior subdivision roads will be designed to County standards to provide for continuous pedestrian access. Additionally, opportunities for pedestrian access along the interior drainageways will be provided.
- 1.e. See Item No. 1.d. above regarding pedestrian and bicycle access. See Item No. 1.a. above in regard to landscaping plans.
2. The drainage system for the proposed subdivision has been designed to comply with all applicable requirements, except where exemptions have been requested relating to inspections and fees as part of the 201G-118, HRS, process. Were the drainage system to exceed applicable requirements and handle more than the net increase in stormwater runoff generated by the project, there would be a corresponding loss of land available for other purposes, such as affordable housing.

As the proposed drainage system complies with applicable requirements that the natural drainage patterns remain substantially the same, the system as proposed has been deemed the most appropriate design.

3. The subdivision area has been in agricultural production for over a century and has been substantially disturbed by that. The United States Department of Fish and Wildlife and the State Department of Land and Natural Resources have been provided with copies of the Draft EA and have raised no concerns over rare, threatened, or endangered species.
4. The development restriction on the large lots will serve to substantially preserve open space around the proposed subdivision. Notwithstanding, the applicant understands that the conversion of agricultural lands to residential use will affect the viewscape of the project vicinity. The provision of affordable housing is also considered a significant community need, with the project site being uniquely qualified for this purpose based on proximity to infrastructure and topographic qualities.
5. At present, the project schedule calls for the beginning of construction of the first affordable units early in 2007 with the final affordable units being completed early in 2008.
- 6.a. The study area included in the traffic report was determined by significant impacts of more than 100 vehicles per hour in one direction during the peak hour, as defined on page 2 of the report. The analysis indicated that the project's estimated impact on Kahekili Highway to the north was 25 vehicles per hour southbound and 75 vehicles per hour northbound during the AM peak period and 90 vehicles per hour southbound and 50 vehicles per hour northbound during the PM peak period. Because these estimated impacts fell under the threshold of 100 vehicles per hour, the Waiehu Beach Road and Kahekili Highway intersection operations were not analyzed in the report.
- 6.b. The traffic analysis applied a 2 percent per year growth rate (37 percent total) on existing traffic to account for other developments in the project area. Based on the 2000 Census data, the population of the "Waihee-Waiehu" area was 7,310 persons. With an estimated two-thirds of this population in the Waiehu area and served by Waiehu Beach Road, an increase in 37 percent would result in a population increase of approximately 900 people, or approximately 250 additional dwelling units (over and beyond that being proposed by the Hale Mua Subdivision), affecting traffic on Kahekili Highway fronting the project. By the applied growth rate assumption, therefore, the analysis included the cumulative impact of the proposed project and other area projects, including new projects yet to be defined or the increased occupancy of existing homes.

7. It is our understanding that the Waihee Mauka Agricultural Subdivision has withdrawn its application for subdivision approval. The other projects which you discuss will be included in the Cumulative Impacts Analysis in the Final EA.
- 8.a. Revisions to the archaeological inventory report, pursuant to the State Historic Preservation Division's comments, have been completed. See Exhibit "A".
- 8.b. Items No.6 and 7 in the Department of Housing and Human Concerns letter (dated April, 8, 2004) were responded to in our item No.1. Sales restrictions are discussed in the DEA, Chapter I, Section B, page 6 and will also be discussed in the Final EA.
- 9.a. See Item 1.a. and Item 4 above. To further mitigate view impacts from Kahekili Highway, the applicant will prepare a landscaping plan for the portion of the property bordering the highway. This plan will be submitted as an exhibit in the Land Use Commission's district boundary amendment proceedings.
- 9.b. The proposed subdivision site is the site of former macadamia nut cultivation and is currently overgrown. There is limited visual penetration into the subject property from Kahekili Highway. The West Maui Mountains are visible to the west of the subdivision site and are a visual resource in the area. The subdivision site plan concept would place the single-story, affordable lots along the makai extent of the property (along the highway), with the large lots spaced around the mauka periphery of the subdivision. As discussed in Item No. 1.a. above, the development restrictions on the large lots will help maintain the open space characteristics of those lands located mauka of the project area. This subdivision configuration is intended to minimize impacts to the viewplane from Kahekili Highway to the West Maui Mountains.
- 9.c. As noted in response 1.d., the subdivision concept calls for the secondary use of the grassed, drainage swales located throughout the subdivision as recreational trails.

Michael Foley, Director
April 29, 2005
Page 5

Thank you again for providing your input to the proposed action.

Very truly yours,

A handwritten signature in black ink, appearing to read "M Slepina". The signature is fluid and cursive.

Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
Wayne Arakaki, Arakaki Engineering, LLC
Julian Ng, Julian Ng Inc.

kim/waiehu/planndea.res

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

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

January 3, 2005

Robert Spear, Ph.D.
Scientific Consultant Services, Inc.
711 Kapiolani Boulevard, Suite 975
Honolulu, Hawaii 96813

LOG NO: 2004.3632
DOC NO: 0412MK14

Dear Dr. Spear:

SUBJECT: Chapter 6E-42 Historic Preservation Review - Revised Archaeological Inventory Survey of 240.087 Acres in Wai'ehu, for Mr. Sterling Kim Notice of Intent to be Covered Under NPDES General Permit for The Hale Mua Properties, Wai'ehu and Wailuku Ahupua'a, Wailuku District, Maui Island TMK (2) 3-3-002: portion of 001

Thank you for the opportunity to review this revised report which was first received on August 23, 2004 (Wilson and Dega 2004, *An Archaeological Inventory Survey Report of 240.087 Acres Located in Wai'ehu, Wai'ehu and Wailuku Ahupua'a, Wailuku District, Maui Island, Hawaii* [TMK (2) 3-3-02: portion of 001]. Scientific Consultant Services, Inc. ms.). Subsequently, the revised document was apparently lost in transit to the Maui State Historic Preservation Division (SHPD) office; we apologize for the delay in rectifying this situation.

In our initial review we indicated that the background section and the survey were both adequately reported in the original report (Log 2004.1456/Doc 0405MK04). The survey located one previously identified site, the Spreckels Ditch (Statewide Inventory of Historic Places [SIHP] 50-50-04-1508). Thirteen discrete features were identified, which were combined into six newly recorded sites. The sites consisted of historic period agricultural activities accorded SIHP No. 50-50-04-5522 (ditches, berms, dirt roads), an isolated lithic find (SIHP No. -5523), an isolated marine shell find (SIHP No. 5524), an agricultural terrace and mound dating to the historic period (SIHP No. -5525) a concrete foundation related to piggery activities (SIHP No. -5526), and an agricultural site (SIHP No. -5527). We recommended several revisions in our review, and awaited the revised report to evaluate significance and mitigation commitments.

You have acceptably addressed our concerns expressed in our initial review letter (Log No 2004.1456/Doc No 0405MK04). You have also provided rationale for your inclusion of the agricultural berms within the overall Plantation Site complex SIHP 50-50-04-5522 in your letter dated December 3, 2004. In this letter you explain the integral relationship between the ditches,

Robert Spear, Ph.D.

Page 2

roads and berms, and your evidence is clear. This is acceptable. You have also plotted the berms on a map, as recommended and provided additional information on the size and horizontal extent. We note that they transverse nearly the entire parcel.

We concur that all six newly identified sites are significant under Criterion "D", have yielded information important to history. We also concur that the sites have been adequately documented. We note that examples of the berms (SIHP No. -5522) have been preserved within at Launiupoko. We appreciate your facilitating dialog with the property owner regarding the feasibility of preserving a representative portion of these on this parcel.

We also agree that monitoring is warranted on the parcel. We appreciate the recommendation of monitoring within 50 meters of the highway. During a telephone conversation between Dr. Melissa Kirkendall and Dr. Mike Dega, it was agreed that the precise extent of monitoring will be determined in consultation with SHPD prior to submission of a monitoring plan.

We find this report to be adequate and can accept it as final. We anticipate future discussion with you, your client, and SHPD Maui office prior to submittal of the monitoring plan. 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,



Melanie A. Chinen, Administrator
State Historic Preservation Division

MK:jen

c: Michael Foley, Director, Dept of Planning, 250 S. High Street, Walluku, HI 96793
Maui Cultural Res Commission, Dept of Planning, 250 S. High Street, Walluku, HI 96793
Thomas Lim, Branch Chief, Architecture

MAR 11 2005

ALAN M. ARAKAWA
Mayor

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

MICHAEL M. MIYAMOTO
Deputy Director

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



COUNTY OF MAUI
**DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT**

200 SOUTH HIGH STREET, ROOM 322
WAILUKU, MAUI, HAWAII 96793

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

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

Solid Waste Division

March 7, 2005

Mr. Matthew Slepín
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Mr. Slepín:

**SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED HALE MUA AFFORDABLE HOUSING SUBDIVISION
TMK: (2) 3-3-002:001 (POR)**

We reviewed the subject application and have the following comments:

1. Section B.7, Page 54, addresses disposal; need to add plans for recycling of materials resulting from the site and construction activities.
2. Although wastewater system capacity is currently available as of February 14, 2005, 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 plant expansion costs in accordance with ordinance setting forth such fees.
5. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.

Mr. Matthew Slepín
March 7, 2005
Page 2

6. Plans should show the installation of a single service lateral and an advance riser for each structure.
7. Non-contact cooling water, condensate, etc. should not drain to the wastewater system.
8. 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.
9. The proposed alignment of the wastewater force main/gravity system along Kahekili Highway and Eha Street is acceptable, however, details (flow calculations, location, etc.) need to be submitted and reviewed prior to final approval.
10. As the new wastewater pump station will be privately owned and operated, so should the accompanying force main. As the force main crosses the Spreckels Ditch, exposure of the force main will not be permitted.
11. All existing features such as structures, driveways, drainage ways, edge of the pavement, etc. shall be shown on the project plat plan.
12. Preliminary construction plan submittal shall include a completed technical assistance review performed by the Disability and Communication Access Board (DCAB) for compliance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) for all facilities. All structural infeasible assessments shall be the responsibility of the developer and an agreement waiving the County of Maui of any future liability, including redesign and reconstruction for said facility, shall be recorded with the State's Bureau of Conveyances.
13. The plans submitted for this project do not adequately show sufficient detail to determine whether the project is compliant with the building and housing codes. We will review the project for building and housing code requirements during the building permit application process.
14. The 100-year flood inundation limits shall be shown on the project site plans. Lot geometrics cannot be approved until such data is submitted and reviewed.

15. The final Traffic Impact Assessment Report needs to assume for the 2020 condition that Imi Kala Street is extended to Lower Main Street. It should also include assessments from the local community police officer.
16. Figure 7, Subdivision Intersection Details, Typical Road Sections "A-A" and "B-B" are not consistent with early consultation comment regarding road widening. The typical road sections need to include a bike route on Kahekili Highway.
17. The new bridge to be constructed over Iao Stream, should have sufficient height between the channel and the bottom of the bridge to permit the passage of maintenance equipment under the bridge. In the stream's current "natural conditions" state, a D-7 bulldozer is utilized to clean and enhance the abutting river banks with material from the center of the stream.
18. The proposed Imi Kala Road extension will impact Piihana Road. The new intersection should be improved to meet County standards.
19. A verification shall be provided by a Registered Civil Engineer that the grading and runoff water generated by the project will not have an adverse effect on the adjacent and downstream properties.
20. The dry wells proposed for the Imi Kala Road extension road shoulders should be eliminated in favor of having runoff disposed of into a drainage facility. Dry wells are costly to maintain/clean and fail to maintain its capacity.
21. Due to the rainfall in this area, the use of grassed swales for drainage will be a high-maintenance item as weeds/shrubs will quickly colonize such open areas and grow rapidly. This type of growth is evident at the Wailuku Country Estates Subdivision along Kahekili Highway, just south of this proposed development. Grassed swales are acceptable if they are kept under private ownership and maintenance.
22. Page 10 indicates that there will be four (4) onsite detention basins to hold drainage waters. Any drainage outside of the road rights-of-way shall remain under private ownership/maintenance, provided that said road rights-of-way are intended to be dedicated to the County of Maui. Drainage systems within private road

Mr. Matthew Slepín
March 7, 2005
Page 4

rights-of-way shall remain under private ownership and maintenance.

23. Clarify/explain the following statement from Appendix F - Preliminary Engineering Report, Section C.2. Drainage:

“There will be an increase in runoff from the project site, after construction of the development is completed. This is in accordance with Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui”.

24. All studies affected by these comments should be modified and resubmitted for review.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,


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

MMA:MMM:da
xc: State Land Use Commission
S:\LUCA\CM\Prop_Hale_Mua_Aff_Hsg_dea_33002001_da.wpd

April 29, 2005

Milton Arakawa, Director
County of Maui
Department of Public Works and
Environmental Management
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing
Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Mr. Arakawa:

Thank you for your letter of March 7, 2005, providing comments on the Draft Environmental Assessment (EA) for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. Our responses have been numbered to correspond with your comments:

1. Solid waste generated from site construction will be recycled to the extent practicable. Where recycling is not feasible, construction waste will be conveyed to an approved construction waste disposal site.
2. We acknowledge that wastewater capacity cannot be ensured until the issuance of building permits.
3. Wastewater contributions will be approximately 480 gallons per day per dwelling. At full build-out of 466 units, there would be 223,680 gallons per day. These calculations will be provided in the Final EA, with detailed calculations to be provided during the construction plans preparation phase of work.
4. As part of the project's 201G application, the applicant proposes to seek an exemption from Chapter 14.35, MCC relating to wastewater assessments. This request for exemption is intended to support the affordability objectives of the project.
5. We acknowledge that the applicant may be required to fund necessary off-site improvements to wastewater systems.

6. The plans will show the installation of a single service lateral and advance riser for each structure.
7. Non-contact cooling water and condensate will not drain into the wastewater system.
8. The plans submitted for construction permits will indicate the ownership of each easement.
9. Details for the proposed wastewater system along Kahekili Highway and Eha Street will be submitted during the construction permitting phase of the project.
10. The force main for the new wastewater pump station will be privately owned and operated and will not be exposed where it crosses Spreckels Ditch.
11. All existing structures shall be shown on the project plat map.
12. The plans to be submitted during the construction permitting process will address compliance issues with the Americans with Disabilities Act. All structural infeasibility assessment will be the responsibility of the applicant and an agreement waiving the County of Maui from liability will be recorded with the State Bureau of Conveyances.
13. We acknowledge that the plans will be reviewed for compliance with building and housing codes during the construction permitting process.
14. Flood inundation limits will be shown on the project site plans.
15. The traffic engineer will provide a supplementary analysis for the conditions which you have requested. This will be included in the Final EA.

Comments on the proposed project were received from the Police Department as part of the Draft EA comment period. In this regard, comments were received from Community Police Officer Lisa Ann Rodrigues.

16. Figure 7, Subdivision Intersection Details, will be revised to accurately reflect the specifics of the road widening. A bike lane will be provided on the subdivision side of Kahekili Highway between the two (2) access roads.
17. The new bridge over Iao Stream will be of sufficient height to permit the clearance of a D-7 bulldozer. Details will be submitted in the construction plans.

18. The intersection of Imi Kala Road and Piihana Road will be improved to County standards. There will not be a provision of signal lights.
19. The Drainage Report will be revised so as to verify that runoff from the project will not have adverse impact on adjacent or downstream properties.
20. As an alternate to using drywells to capture runoff from the Imi Kala Street extension, the drainage system will consist of catch basins installed along the road shoulders to convey runoff from the pavement to two (2) detention ponds via 24-inch pipes. Plans for the proposed Imi Kala Street extension drainage system will be submitted to your office for review.
21. The grassed swales will be owned and maintained by the Homeowners Association. The two (2) major drainage ways will have concrete bases and grassed shoulders.
22. We acknowledge that drainage outside of the roadway rights-of-way will remain under private ownership.
23. The referenced section of the Preliminary Engineering Report (PER) relating to drainage will be clarified to state that there will be no increase in runoff from the project site.
24. The PER, revised as discussed, as well as the supplementary traffic analysis, will be included in the Final EA.

Thank you again for providing your input to the proposed action.

Very truly yours,



Matthew Slepina, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
Wayne Arakaki, Arakaki Engineering

kim/walehu/dpwemdea.res

MAR 03 2005

ALAN M. ARAKAWA
MAYOR



GEORGE Y. TENGAN
DIRECTOR
JEFFREY T. PEARSON,
P.E.

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109
Telephone (808) 270-7816 • Fax (808) 270-7833

February 15, 2005

Mr. Matthew Slepín
Munekiyo & Hiraga, Inc.
305 High Street Suite 104
Wailuku HI 96793

Subject: Draft Environmental Assessment for Proposed Hale Mua Affordable Subdivision
TMK: 3-3-02:001 (por)

Dear Mr. Slepín:

Thank you for the opportunity to provide comments on this Draft Environmental Assessment (EA). We note that our April 27, 2004 letter to the applicant is included in the EA.. We have attached a copy of the Department letter to the applicant of December 20, 2004.

Source Availability and Consumption

The project area is served by the Central Maui System. The main sources of water for this system are the designated Iao aquifer, Waihee aquifer, the Iao tunnel and the Iao-Waikapu Ditch. DWS will not issue reservations for future meters until new sources are brought on-line. New source development include 0.7 MGD scheduled for April 2005 from the Hamakuapoko wells, 0.2 MGD additional yield from Kupaa well and 1.1 MGD of surface water from Iao Treatment Plant are scheduled for 2007. Water for this project may not be available until new sources are on-line.

The applicant estimates total water demand for this project to about 415,000 gallons per day. Non-potable demand for irrigation of 136.33 acres of agricultural land and 7.88 acres of park should be added for a total of about 430,000 - 908,000 gpd based on system standards. Due to the size of this development, the applicant may be required to provide water source for this project. The applicant has indicated that a private source will be provided for non-potable use on the 19 agricultural lots.

System Infrastructure

The applicant will be required to meet Department Subdivision rules and regulations. Fire flow requirements for residential subdivisions are 1000 gallons per minute per 2 hours with fire hydrants installed at 350 ft spacing and for agricultural subdivisions 500 gpm per 2 hours with fire hydrants at 500 ft spacing. The Department has indicated in the December 20, 2004 letter that there is currently not adequate storage available in the project area to serve this development. At least two storage tanks and a booster pumps station will be required.

Pollution Prevention

The project overlies the Iao aquifer. The Southwest section of the project site proposed for agricultural lots is within the Wellhead Protection Area of Waiehu Heights wells. Waiehu Stream runs along the North boundary of the project site and traverses the East section of the project site. Spreckels ditch runs along the West boundary of the project site. The Department of Water Supply strives to protect the integrity of surface and groundwater

By Water. All Things Find Life

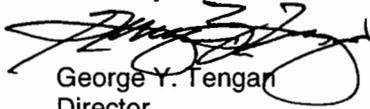
resources by encouraging the applicant to adopt best management practices (BMPs) designed to minimize infiltration and runoff from all construction and vehicle operations. We note that the applicant will implement construction BMPs . Please also refer to the sample BMPs for principle operations provided with our April 27, 2004 letter.

Conservation

We note that the applicant will consider conservation measures suggested in our April 27, 2004 letter in design and construction of this project.

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

Sincerely,



George Y. Tengan
Director
emb

attachments: DWS letter dated December 20, 2004

c: engineering division
 State Land Use Commission

C:\WPdocs\EA EIS SLUD\Hale Mua Affordable SD DEA.wpd

ALAN M. ARAKAWA
Mayor



GEORGE Y. TENGAN
Director

JEFFREY T. PEARSON, P.E.
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

December 20, 2004

Hale Mua Properties, LLC
385 Hukilike Street - Suite 210
Kahului, Hawaii 96732
ATTN: Sterling Kim

VIA FAX AND MAIL

Gentlemen:

Subject: Hale Mua Subdivision Storage Requirements

Please be informed that based on your project consisting of 466 residential lots and 19 lots on 136 acres each containing one dwelling, the total storage requirement for the subdivision will be approximately 500,000 gallons. The total storage is based on 1,000 gallons per lot for the 466 residential lots. At least two storage tanks and a booster pump station will be required. The size breakdown of the two tanks will depend on the pressure zones within the subdivision. The storage capacity required is also based on your representation that a private source will be provided for the non-potable use on the 19 lots which total 136 acres and that only one dwelling will be constructed on each of those lots.

At present, we do not have adequate storage to accommodate your project. The Department will accept bonding of the construction of the required storage for the purpose of granting final subdivision approval. However, all improvements including the storage tank or tanks have to be constructed in accordance with the Department's Water System Standards before meters are issued for the project.

Finally, please be informed that this storage requirement does not constitute a commitment for an adequate supply of water for your project. Availability of water will be determined at the time of application for water service.

Due to the size of this development, you may be required to provide water source to supply the subdivision. Your development plans and schedule will determine what will be required.

Sincerely,

A handwritten signature in black ink, appearing to read "George Y. Tengan".

George Y. Tengan, Director
GYT:MF:jaw

copy: Alan M. Arakawa, Mayor

"By Water All Things Find Life"

April 29, 2005

George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Mr. Tengan:

Thank you for your letter of February 15, 2005, providing comments on the Draft Environmental Assessment for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. In response to your comments, we note the following:

1. We acknowledge your information regarding water sources for the project area. The applicant will continue to work with the Department to provide required water system improvements to serve the Hale Mua project.
2. We acknowledge that no water meter reservations will be issued by your Department until new sources are brought on-line and that water for the project may be unavailable until that time.
3. The applicant intends to continue coordination with your Department regarding the provision of water source for the project.
4. The project will be developed in conformance with all applicable departmental rules and regulations.
5. We acknowledge your recommendations regarding Best Management Practices to mitigate possible water integrity impacts.

George Tengan, Director
April 29, 2005
Page 2

Thank you again for providing your input to the proposed action.

Very truly yours,

A handwritten signature in black ink, appearing to read "M Slepín".

Matthew Slepín, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC

kim/waiehu/dwsdea.res

MAR 02 2005



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

KEKUAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

February 25, 2005

Mr. Matthew Slepín
Munekiyó & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Slepín:

SUBJECT: Proposed Hale Mua Affordable Subdivision
TMK (2) 3-3-02:por.1

Thank you for your letter of February 1, 2005, requesting comments on the above subject.

We have reviewed the information submitted for this project and have enclosed a copy of our comments. As always, thank you for giving us the opportunity to comment on this project.

Very truly yours,

A handwritten signature in black ink, appearing to be "Sydney Kikuchi".

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

c: Michael Foley, Planning Department
State Land Use Commission (Anthony J.H. Ching)

Enclosure

COPY

TO: THOMAS PHILLIPS, CHIEF OF POLICE

VIA: CHANNELS

FROM: LISA ANN RODRIGUES, POIII, COMMUNITY POLICING

SUBJECT: COMMENTS RE: PROPOSED HALE MUA AFFORDABLE HOUSING DIVISION, WAIEHU, MAUI, HAWAII (TMK 3-3-2:01 POR.)

Agree } Traffic improvements needed on
 Kahekili Hwy Happy Valley
 Waiehu Beach Rd thru Kah.

This proposed project will be a 466-lot single-family residential subdivision at Waihee, Maui, Hawaii (TMK(2)3-3-02:001 (por.)). It includes the development of 238 affordable single-family units, 209 market-priced single-family units, and 19 large lots. This is located bordering Kahekili Hwy and south of Malaihi Rd. This project includes the extension of Imi Kala Street from Eha Street to Kahekili Highway, including the construction of a new bridge across Iao Stream.

CONCERNS:

1. These 466 single-family residential homes would add a low end estimate of about 900 additional vehicles causing an increase in traffic in arterial roadways leading to and from the Waiehu area, which are being addressed by other entities which includes the Kahekili Highway widening project up to the intersection at Waiehu Beach Road and Kahekili Highway. The increase in traffic on a whole will add to the already heavily congested areas that lead out of the outskirt areas, ie., Waiehu Beach Road morning traffic leading to Kahului Beach Road and Waiehu Beach Road intersection, as well as the A.M. traffic that goes through Happy Valley, not including the proposed extension of Imi Kala Street, which has the intersection of Imi Kala Street and Mill Street without a traffic signal.
2. Also the tsunami zone of this area and of the main roadways leading to and from which are also in the tsunami zone, which includes L. Waiehu Beach Rd., Waiehu Beach Rd., and Kahului Beach Rd., will the flow for an area emergency evacuation be affected?
3. Significant area population increase without an increase in police manpower.
4. Will Waihee Elementary, Iao Intermediate, and Baldwin High School be able to accommodate the increase in students or are these students already a part of these schools' jurisdictions?

Respectfully submitted for your perusal.

The concerns noted by Officer Rodrigues should be considered heavily as present traffic on Waiehu Beach Road and through Happy Valley especially during the AM is bumper-to-bumper, with no place for vehicle to pull over during emergencies. The proposed Imi Kala extension may help if approved. Student populations as well as student activities (parks) should also be considered.

Lisa Ann Rodrigues
Lisa Ann Rodrigues / e2158
02-23-05 / 1100 hours

I concur with the concerns mentioned.
2/24/05

Sgt. [Signature]

April 29, 2005

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

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Chief Philips:

Thank you for your letter of February 25, 2005, providing comments on the Draft Environmental Assessment (EA) for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. In response to your comments, we note the following:

1. A traffic study for the proposed project was prepared and included in the Draft EA. This report addresses the increase in traffic from the additional homes. It is noted that the extension of Imi Kala Street will provide additional roadway capacity between Waiehu and Wailuku. As indicated on Table 16 of the traffic report, the project could increase peak hour traffic volumes across Iao Stream by as much as 28 percent, while the Imi Kala Street extension will increase capacity by 50 percent. The traffic study further notes that the provision of a traffic signal at the intersection of Imi Kala Street and Mill Street is warranted with or without the proposed project. It is noted that the provision of a signal is not considered a mitigation measure attributed to the Hale Mua project.
2. Traffic flow during emergency evacuations are not anticipated to be affected adversely as a result of the project. The extension of Imi Kala Street from Kahekili Highway to Mill street provides an alternate route to the project area via Eha Street and Lower Main Street, in lieu of the coastal route (Waiehu Beach Road) which may be subject to tsunami effects. This new major corridor can therefore be considered a supportive component of the County's emergency evacuation plan.
3. The applicant acknowledges your concerns concerning rising populations in police manpower. The applicant is hopeful that portions of the increased County revenue generated by new real property taxes will be used to meet public service requirements, including the provision of fire and police protection services.

Thomas Phillips, Chief
April 29, 2005
Page 2

4. It is expected that many of the students attending local area schools will not need to transfer schools as the project site is located within their present school district. However, the applicant also acknowledges that new student enrollment will result from new residents moving into the Hale Mua Subdivision. The applicant is, therefore, coordinating with the Department of Education to address school facilities impact assessment requirements.

Thank you again for providing your input to the proposed action.

Very truly yours,



Matthew Slepina, Planner

MS:tn

cc. Sterling Kim, Hale Mua Properties, LLC
Julian Ng, Julian Ng Incorporated

kim/waiehu/mpddea.res

FEB 09 2005



February 8, 2005

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

Dear Mr. Slepín,

Subject: Proposed Hale Mua Affordable Subdivision –
Kahekili Highway, Wailuku, Maui, Hawaii
TMK: (2) 3-3-02:por. 1

Thank you for allowing us to comment on the Draft Environmental Assessment (EA) for the subject project, which was received on February 2, 2005.

In reviewing our records and the information received, Maui Electric Company (MECO) will be requiring access and electrical easements for our facilities to serve the subject project site. Since permits will be required prior to MECO's installation, we highly encourage the customer's electrical consultant to submit the electrical demand requirements, project time schedule, and schedule a meeting with us as soon as practical to verify and indicate the desired service location so that service can be provided on a timely basis.

MECO will install street lights along State of Hawaii highways and subdivision roadways owned and maintained by the County of Maui, as requested and approved by the respective governing agency. However, the street light design shall be completed by the customer's electrical consultant and conform with applicable State of Hawaii and County Standards, and MECO's standard installation practices. This contradicts statements made in Chapter III, page 64 and Appendix F, section C, item 5 of this draft, stating that street light locations are determined by MECO. We would appreciate if this item is clarified.

Should you have any questions or concerns, please call Ray Okazaki at 871-2340.

Sincerely,

A handwritten signature in black ink, appearing to read "Neal Shinyama". The signature is fluid and cursive, with the first name "Neal" being more prominent.

Neal Shinyama
Manager, Engineering

NS:ro

April 29, 2005

Neal Shinyama, Manager – Engineering
Maui Electric Company, Ltd.
P.O. Box 398
Kahului, Hawaii 96733

SUBJECT: Draft Environmental Assessment for Hale Mua Affordable Housing
Subdivision, Waiehu, Maui, Hawaii (TMK (2) 3-3-02:por.1)

Dear Mr. Shinyama,

Thank you for your letter of February 8, 2005, providing comments on the Draft Environmental Assessment for the proposed Hale Mua Affordable Subdivision, located in Waiehu, Maui. In response to your comments, we note the following:

1. We acknowledge that MECO will require access and easements in order to provide service to the proposed subdivision. The applicant will coordinate with your office as early as is practicable to facilitate the provision of service.
2. The Final Environmental Assessment will correct the statements regarding the responsibility for the street light design in the proposed subdivision. It will state that the applicant will design the street lighting scheme, in coordination with MECO, and in conformance with applicable State and County standards.

Thank you again for providing your input to the proposed action.

Very truly yours,



Matthew Slepik, Planner

MS:tn

cc: Sterling Kim, Hale Mua Properties, LLC
kim/waiehu/mecodea.res

References

References

Chinen, Jon, The Great Mahele: Hawaii's Land Division of 1848, Honolulu: University of Hawaii P, 1958. County of Maui, The General Plan of the County of Maui, September 1990 Update.

County of Maui, Wailuku-Kahului Community Plan, 2002.

County of Maui, Office of Economic Development, Maui County Data Book 2003, September 2003.

Federal EMA, Flood Insurance Study: Maui County, Hawaii, 1995.

Federal Emergency Management Agency, Flood Insurance Rate Map, Community Panel No. 150003 0180B.

Federal Emergency Management Agency, Flood Insurance Rate Map, Community Panel No. 150003 0190D.

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

Hawaii Cooperative Park Service Unit, Hawaii Stream Assessment, December 1990.

Labor and Occupational Information Hawaii, State Department of Labor and Industrial Relations, <http://www.state.hi.us/dlir/rs/loihi/>

Mackenzie, Melody Kapiliaoloha, ed., Native Hawaiian Rights Handbook, Honolulu: Native Hawaiian Legal Corporation, 1991.

Minerbi, Luciano et. al., Native Hawaiian and Local Cultural Assessment Project, Honolulu: University of Hawaii at Manoa, 1993.

Realtor Association of Maui, Inc., <http://www.mauiboard.com>

SMS, Maui County Community Plan Update Program: Socio-Economic Forecast, Final June 14, 2002.

Titchenal, Paul, Archeological Inventory Survey of the Proposed Retention Basin and Adjoining Lands Waikapu and Wailuku Ahupua'a, Wailuku District, Maui Island, Aki Sinoto Consulting, 1996.

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

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

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