

# **Kaanapali 2020 Plan**

---

## **ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE**

**Accepting Authority:**

**State of Hawaii  
Land Use Commission**

**Prepared by:**

**Munekiyo & Hiraga, Inc.  
in coordination with  
PBR Hawaii and  
Wilson Okamoto Corporation**

**February 2005**

# TABLE OF CONTENTS

Preface .....	i
I. PROJECT BACKGROUND, LOCATION, SCOPE AND DESCRIPTION .....	Page 1
A. BACKGROUND TO PLAN FORMULATION FOR KAA NAPALI 2020 .....	Page 1
B. KAA NAPALI 2020 PROJECT AREA .....	Page 5
C. ENTITLEMENTS TO BE REQUESTED .....	Page 7
D. CHAPTER 343, HAWAII REVISED STATUTES REQUIREMENTS	Page 11
E. KAA NAPALI 2020 PLAN DESCRIPTION .....	Page 15
1. Master Plan Concept .....	Page 15
2. Lower Honokowai .....	Page 17
3. Middle Honokowai .....	Page 22
4. Summary .....	Page 24
F. CONCEPTUAL IMPLEMENTATION PHASING PLAN .....	Page 25
II. DESCRIPTION OF THE EXISTING ENVIRONMENT .....	Page 26
A. PHYSICAL SETTING .....	Page 26
1. Surrounding Uses .....	Page 26
2. Climate .....	Page 26
3. Topography and Soils .....	Page 27
4. Flood and Tsunami Hazard .....	Page 31
5. Flora, Fauna and Wetlands Habitat .....	Page 31
6. Nearshore Reef Ecosystems .....	Page 35
7. Mineral Resources .....	Page 35
8. Archaeological Resources .....	Page 35
9. Air Quality .....	Page 36
10. Water Quality .....	Page 36
11. Noise Characteristics .....	Page 37
12. Scenic Resources .....	Page 37
B. SOCIO-ECONOMIC SETTING .....	Page 37
1. Land Use and Community Character .....	Page 37
2. Population .....	Page 38
3. Demography .....	Page 39
4. Household and Family Characteristics .....	Page 40
5. Housing .....	Page 40
6. Labor Force .....	Page 41
7. Economy .....	Page 42
8. Police and Fire Protection .....	Page 42
9. Medical Facilities .....	Page 43
10. Recreational Facilities .....	Page 43
11. Educational Facilities .....	Page 44
C. INFRASTRUCTURE .....	Page 44

1.	Roadways	Page 44
2.	Lahaina Bypass	Page 45
3.	Sugar Cane Train	Page 46
4.	Water	Page 46
5.	Wastewater Systems	Page 47
6.	Solid Waste	Page 48
7.	Drainage	Page 48
8.	Electrical, Telephone and CATV Service	Page 49
III.	POTENTIAL IMPACTS AND MITIGATION MEASURES	Page 50
A.	IMPACTS TO THE PHYSICAL ENVIRONMENT	Page 50
1.	Land Use	Page 50
2.	Flora and Fauna	Page 50
3.	Nearshore Reef Ecosystems	Page 51
4.	Archaeological Resources	Page 51
5.	Cultural Impact Assessment	Page 52
6.	Air Quality	Page 54
7.	Water Quality	Page 54
8.	Noise	Page 55
9.	Visual Resources	Page 56
B.	SOCIO-ECONOMIC IMPACTS	Page 57
1.	Land Use and Community Character	Page 57
2.	Agricultural Land Use Impacts	Page 57
3.	Population and Economy	Page 58
4.	Police, Fire and Medical Services	Page 58
5.	Recreational and Educational Facilities	Page 59
6.	Use of Chemicals and Fertilizers	Page 59
7.	Traditional Beach and Mountain Access	Page 59
C.	IMPACTS TO INFRASTRUCTURE	Page 60
1.	Roadways	Page 60
2.	Water	Page 60
3.	Wastewater	Page 61
4.	Solid Waste	Page 61
5.	Drainage	Page 62
6.	Electrical, Telephone and CATV Service	Page 62
D.	CUMULATIVE AND SECONDARY IMPACTS	Page 62
IV.	RELATIONSHIP TO LAND USE PLANS, POLICIES AND CONTROLS	Page 64
A.	STATE LAND USE DISTRICTS	Page 64
B.	HAWAII STATE PLAN	Page 64
C.	SESSION LAWS OF HAWAII, ACT 15, 1988	Page 65
D.	MAUI COUNTY GENERAL PLAN	Page 66
E.	WEST MAUI COMMUNITY PLAN	Page 67
F.	COUNTY ZONING	Page 69

G.	COASTAL ZONE MANAGEMENT/SPECIAL MANAGEMENT AREA .....	Page 69
H.	OTHER APPROVALS .....	Page 76
V.	SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED .....	Page 78
VI.	ALTERNATIVES TO THE PROPOSED ACTION .....	Page 79
A.	PREFERRED ALTERNATIVE .....	Page 79
B.	ORIGINAL PLAN .....	Page 79
C.	ACT 15 PUUKOLII PLAN ALTERNATIVE .....	Page 79
D.	NO ACTION ALTERNATIVE .....	Page 80
VII.	IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES .....	Page 81
VIII.	FINDINGS AND CONCLUSIONS .....	Page 82
IX.	LIST OF PERMITS AND APPROVALS .....	Page 87
X.	COMMUNITY BASED PLANNING PROCESS .....	Page 88
A.	BACKGROUND .....	Page 88
1.	Vision Statement .....	Page 88
2.	The Formulation of the Preliminary Land Plan (Kaanapali 2020) .....	Page 89
3.	Review of the Preliminary Land Plan .....	Page 89
4.	Refinement of the Preliminary Land Plan .....	Page 90
5.	The Alternative Land Plan (Kaanapali 2020 Plan) .....	Page 90
XI.	AGENCIES AND ORGANIZATIONS TO BE CONSULTED IN THE PREPARATION OF THE DRAFT EIS .....	Page 92

## LIST OF FIGURES

1	Regional Location Map	2
2	Making It Pono Plan	4
3	Project Area Location Map	6
4	Existing State Land Use Classifications	8
5	Existing West Maui Community Plan Land Use Map	9
6	Existing Zoning Map	10
7	Area Subject to State Land Use District Boundary Amendment	12
8	Area Subject to Community Plan Amendment	13
9	Area Subject to County Change in Zoning Map	14
10	Kaanapali 2020 Project Area Master Plan	16
11	Typical Collector Roadway Section	18
12	Lower Honokowai	19
13	Middle Honokowai	23
14	Soils Association Map	29
15	Soil Classification Map	30
16	Agricultural Lands of Significant Importance in Hawaii Map	32
17	Flood Insurance Rate Map	33

## LIST OF TABLES

1	Land Use Entitlement Summary	7
2	Lower Honokowai Land Use Breakdown	20
3	Middle Honokowai Land Use Breakdown	22
4	Kaanapali 2020 Plan Land Use Breakdown	24
5	Age and Ethnicity	39
6	Labor Force Characteristics 2000	41
7	Average Water Demand	60
8	Average Wastewater Flows	61
9	Preliminary Land Plan Summary	89
10	Kaanapali 2020 Plan	91

kdc/cbmpln/eispn/eispn2.rpt

## Preface

To effect the Kaanapali 2020 plan, the following actions will be required, each of which triggers an environmental review pursuant to Chapter 343, Hawaii Revised Statutes.

- (a) An amendment to the West Maui Community Plan;
- (b) Improvements to or a replacement of wastewater pump station no. 1 and no. 2 and to the Lahaina Wastewater Reclamation Facility situated on lands owned by the County of Maui;
- (c) Improvements to Honoapiilani Highway, on lands owned by the State of Hawaii, Department of Transportation; and
- (d) Improvements to Puukolii Road, owned by the County of Maui.

An Environmental Impact Statement Preparation Notice (EISPN) for the Kaanapali 2020 Plan was previously published in the Office of Environmental Quality Control's The Environmental Notice on September 8, 2002. The County of Maui, Department of Planning was named as the accepting authority for the EISPN and the EIS. However, in preparation of the Draft EIS, it became evident that the multiple triggers noted above invoked Chapter 343, HRS, and the accepting authority could be one of a number of possible agencies. In accordance with the requirements of Chapter 343-5(d), Hawaii Revised Statutes, and Chapter 200-4(b), Hawaii Administrative Rules, the agencies resolved that the State of Hawaii, Land Use Commission will be the accepting authority for the Kaanapali 2020 Plan. Consequently, the EISPN, filed on September 8, 2002 naming the Maui County Planning Department as the accepting authority, will be withdrawn and notice to this effect will be published in The Environmental Bulletin upon approval by the State Land Use Commission to be the accepting authority for the EISPN and EIS.

This EISPN, upon approval by the State of Hawaii, Land Use Commission as the accepting authority, will therefore, initiate a new EIS process for the Kaanapali 2020 Plan. Comments received during the former EISPN review period will be addressed in the Draft EIS, as well as additional comments received during the new EIS process.

# **I. Project Background, Location, Scope and Description**

## ***KAANAPALI 2020***

### ***I. PROJECT BACKGROUND, LOCATION, SCOPE AND DESCRIPTION***

#### ***A. BACKGROUND TO PLAN FORMULATION FOR KAAANAPALI 2020***

Community input on regional needs and desires underlies the formulation of the Kaanapali 2020 Plan. Emerging from issues and concerns raised during the approval to a previous development project at North Beach, the Kaanapali 2020 planning effort was initiated with the dual objective of developing a plan with community-wide support and benefits, and providing the applicant with an economically viable land planning program. With this objective in mind, 10 community members agreed in early 1999 to define the parameters for a community-based planning process for 4,325± acres in the Kaanapali/Honokowai area owned by the applicant's affiliates. See Figure 1. An experienced facilitator and planning consultants were selected. A Future Search Conference entitled *Kaanapali 2020: Making It Pono* was arranged with 8 community stakeholder groups: Kaanapali Development Corp. (fka Amfac), Business & Commerce, Community Organizations, Cultural Heritage, Environment, Government, Social Services and Unions. Each stakeholder group included 8 members. On November 4 to 6, 1999, over 60 individuals participated in the Future Search Conference. All participants actively shared their personal, local and global perspectives of the past 40 years. Participants brainstormed current local and global trends, which they believed would affect them and their futures. Following those steps, the participants conceptualized the uses they felt appropriate in year 2020 for the 4,325± acre area to be included in the "Making It Pono" planning process. Refer to Figure 1. Finally, they sought out common ground for their vision, resulting in themes and activities necessary to reach that common vision.

The November 1999 conference also established an umbrella Land Plan and Economic Feasibility group, as well as other working groups. Composed of community members who participated in the November conference and others who asked to participate in the



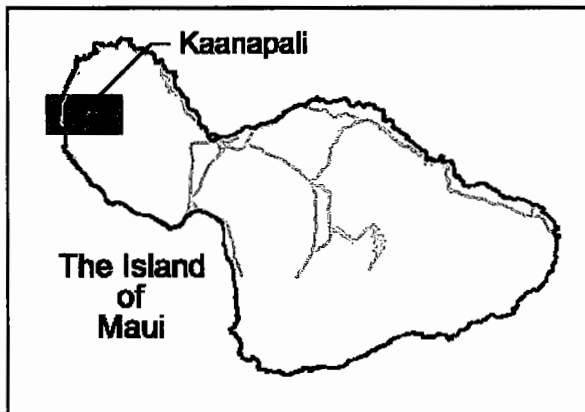
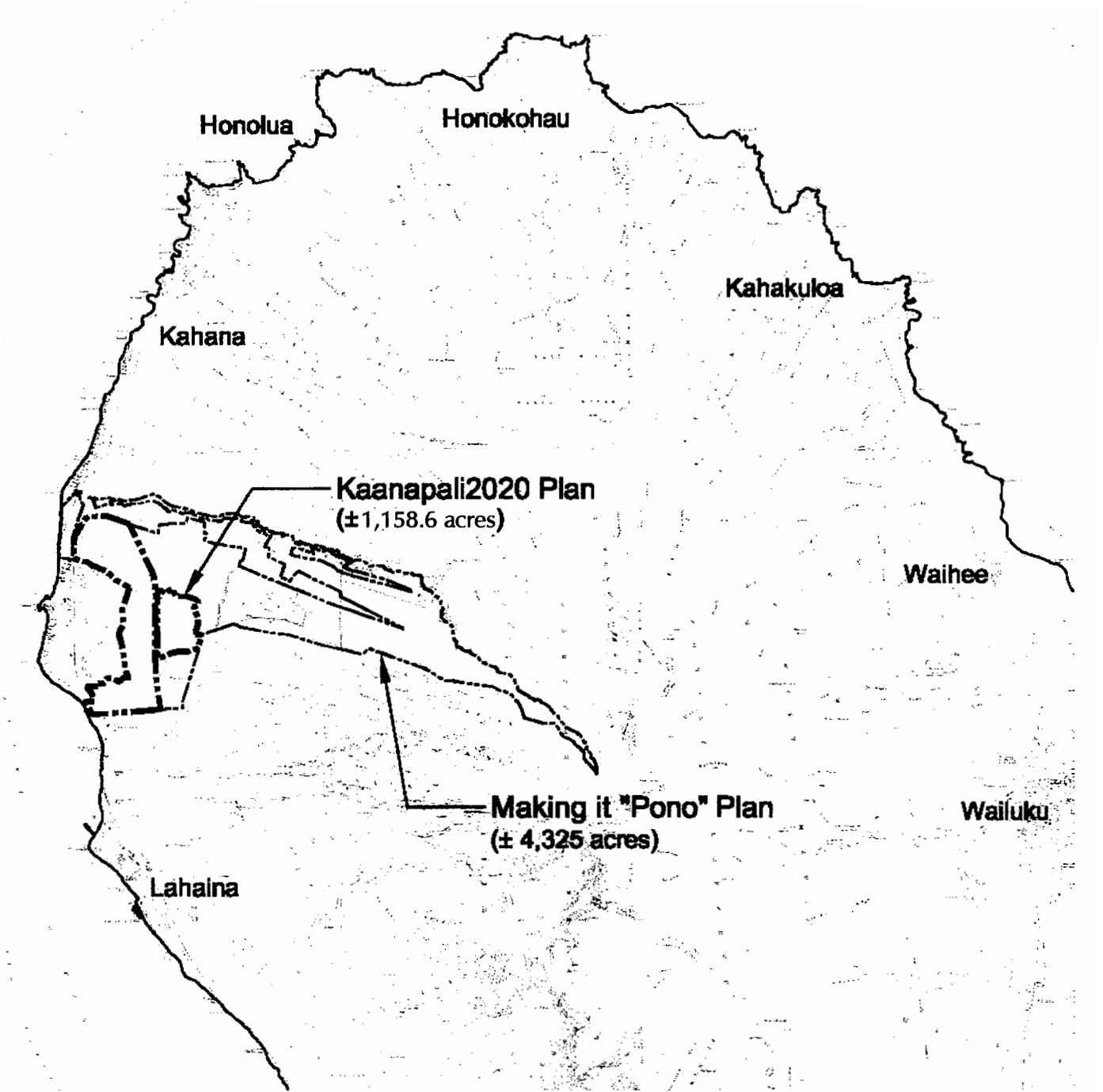


Figure 1  
Regional Location Map  
**Kaanapali 2020**



Source:  
-U.S. Geological Survey

ongoing process, the working groups were charged with studying certain key issues: Agriculture and Soil Stabilization, Education, Environment, Health Facilities, Multi-Cultural Overlay, Recreation, Transportation, and Water Resources. The Working Groups reported their initial findings to the Land Plan and Economic Feasibility Group in February 2000.

Using the findings of the working groups and meeting almost weekly from February into June of 2000, the Land Plan and Economic Feasibility Group members prepared a preliminary "Making It Pono" conceptual land plan for the 4,325± acre area. See Figure 2.

On July 14, 2000, a "Reunion" conference was held and 98 individuals were invited, including everyone who had participated to any extent in the Future Search process for *Kaanapali 2020: Making It Pono*. Approximately 51 community members attended. They reviewed, discussed, and approved the reports of all the Working Groups, and the conceptual land plan prepared by the Land Plan and Economic Feasibility groups.

The following vision statement was formulated to articulate the "Making It Pono" Plan.

***Vision for Kaanapali 2020***

*Kaanapali 2020 Will Have Places*

*What kind of places?*

*Places to work, public places, places to play, places to learn, quiet places, private places,*

*Places to till the soil, places to preserve our heritage, places to exercise,*

*Places to shop, places to relax, fun places, places to gather our families,*

*Places to grow things, places to live, places to walk or bike,*

*Places to get well, places to protect our resources,*

*Places to raise our families, places to remember*

*Green places, places to visit*

*Places to be proud of!*

The "Making It Pono" Plan covering the 4,325± acres included general land use designations for the 96-acre North Beach, the 917-acre Lower Honokowai, the 1,050-

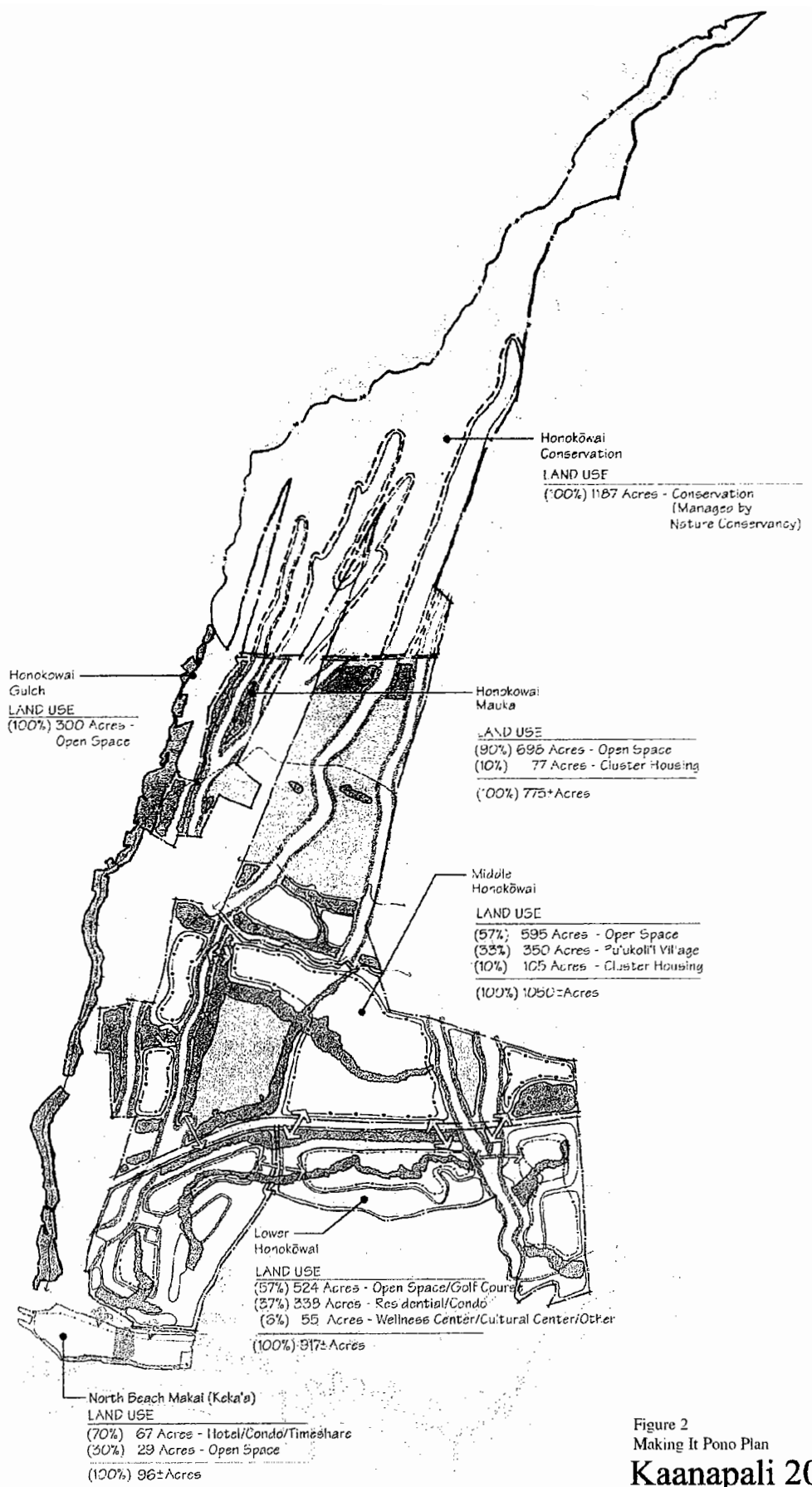


Figure 2  
 Making It Pono Plan  
**Kaanapali 2020**



acre Middle Honokowai, the 775-acre Honokowai Mauka, the 1,187-acre West Maui Forest Reserve, and the 300-acre Honokowai Gulch areas. Refer to Figure 2.

Over the next two years, the Steering Committee and Entitlements Committee worked through numerous meetings to refine the "Making It Pono" Plan. The refined plan was presented at a second "Reunion" conference on August 14, 2002. The plan, as presented, is the basis for this document. The refined plan, referred to as the Kaanapali 2020 Plan, includes the approximately 917.6 acres in Lower Honokowai and the approximately 241-acre former Puukolii Village area in Middle Honokowai (collectively the "Project Area"). See Figure 3. The Project Area excludes the 96-acre North Beach makai area, the 1,187-acre West Maui Forest Reserve area, the 300-acre Honokowai Gulch, the 337-acre Pioneer Farms Subdivision and 295-acre agricultural area to the north of the former Puukolii Village area and the 175-acre agricultural area south of the earlier Puukolii Village in Middle Honokowai, and the approximately 775-acre Honokowai Mauka lands, since land entitlements are not required for these areas. Thus, of the total 4,325± acres of the "Making It Pono" Plan, approximately 1,158.6 acres (917.6 acres in Lower Honoapiilani Highway plus 241 acres in Middle Honokowai) are included in the Kaanapali 2020 Plan entitlement process. Further discussion on the community based planning process is presented in Chapter X of this document.

***B. KAANAPALI 2020 PROJECT AREA***

Kaanapali Development Corp. (the "Applicant") proposes to implement a land use plan ("Kaanapali 2020 Plan") for approximately 1,158.6 acres at Kaanapali, Maui, Hawaii. The vast majority of this land is owned by Kaanapali Development Corp., but Puukolii Road, owned by the County of Maui, is also included. A 0.4-acre parcel owned by Maui Electric Company, Limited (MECO), identified by TMK 4-4-02:28, is located in the vicinity of Lower Honokowai. This parcel is not included in the development area. However, this parcel may be included in the development at a later date subject to agreement being reached between the Applicant and MECO.

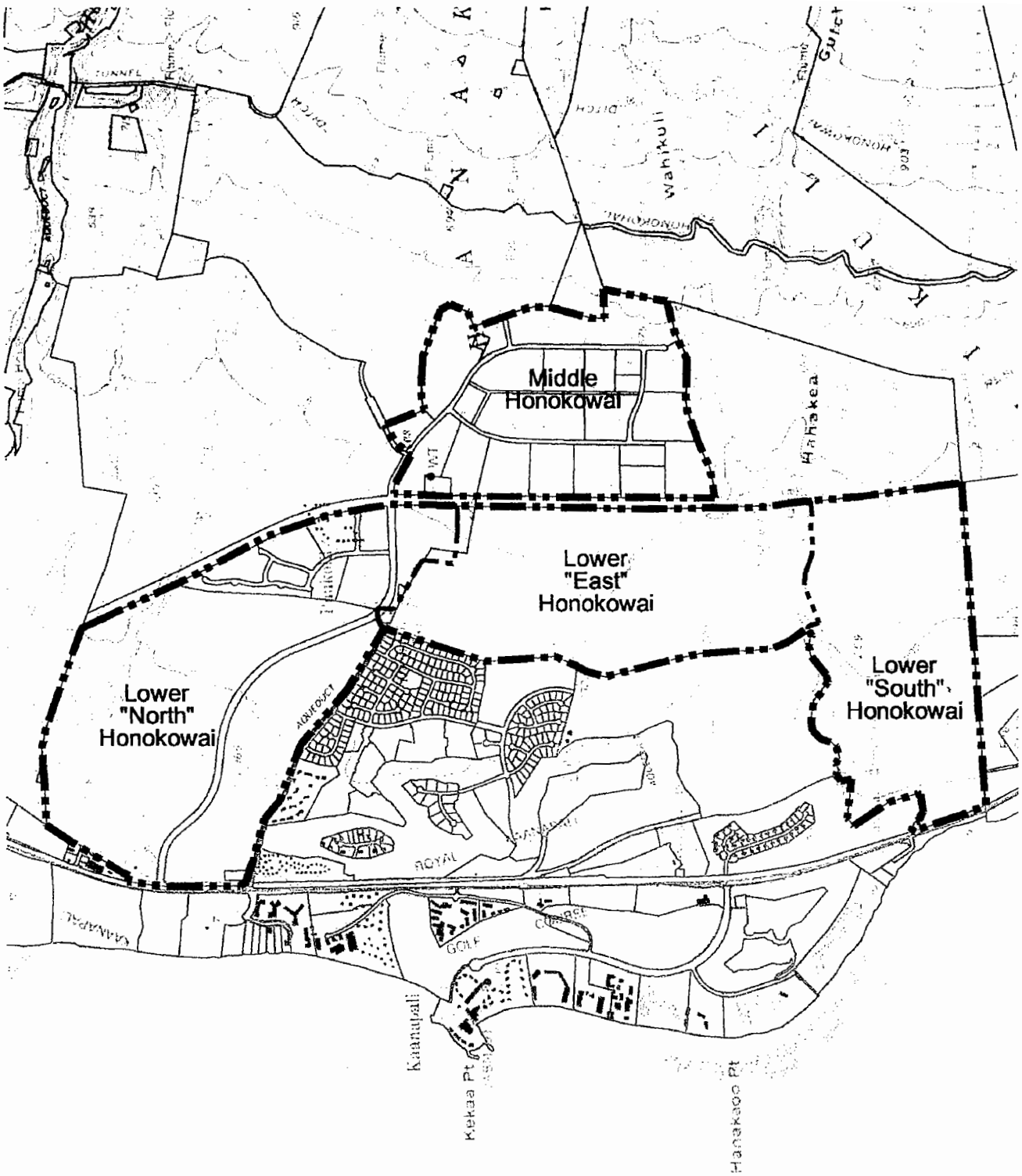
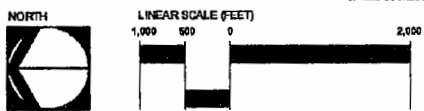


Figure 3  
 Project Area Location Map  
**Kaanapali 2020**

Source:  
 -U.S. Geological Survey  
 -State Office of Planning



The Kaanapali 2020 Plan reflects the vision of the West Maui community for the future uses of the Project Area. This vision includes a mix of residential, recreational, open space, golf course, public/quasi-public and commercial uses.

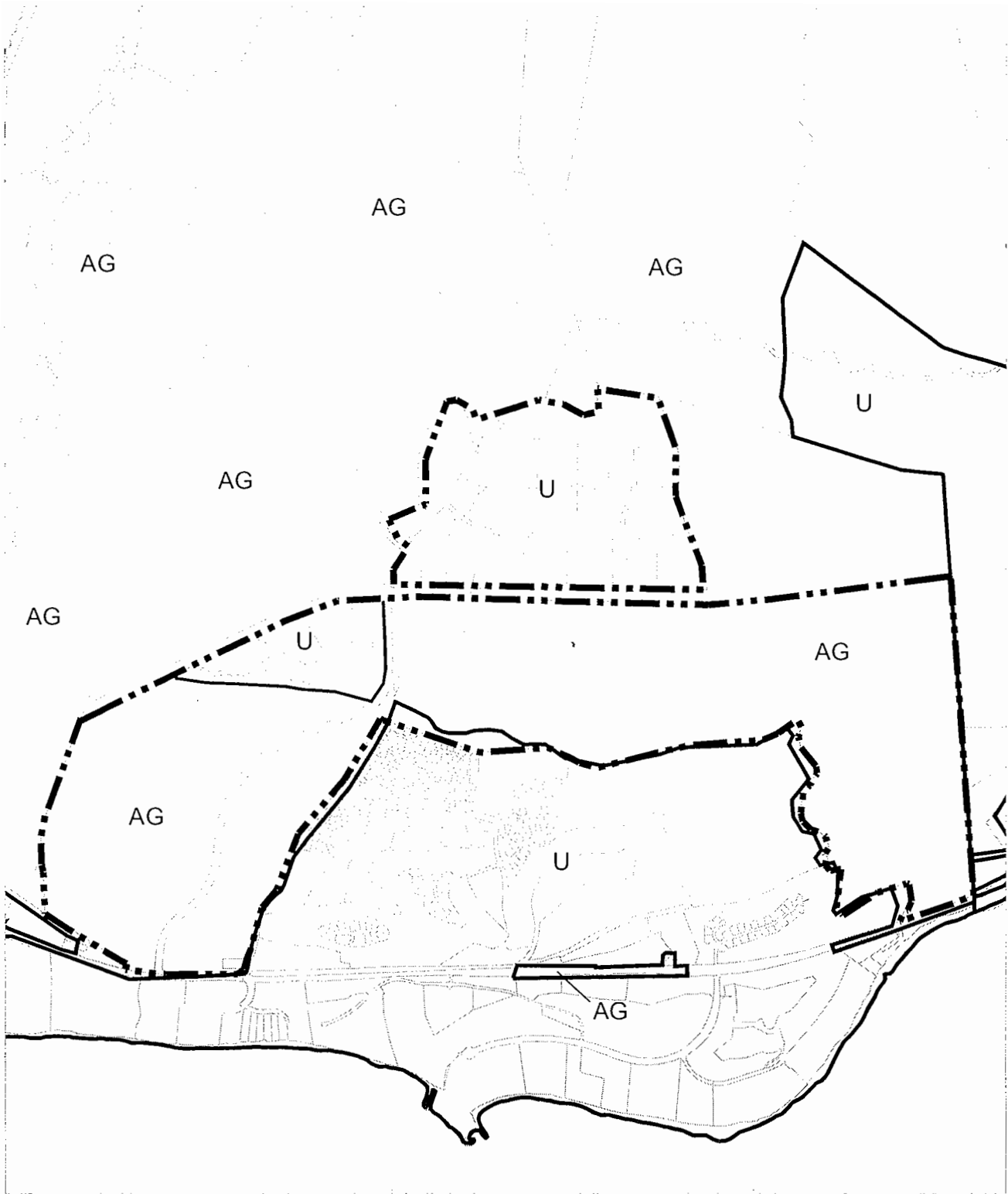
**C. ENTITLEMENTS TO BE REQUESTED**

Implementation of the plan for the Kaanapali 2020 Project Area requires a number of land use actions.

The current State Land Use map designations for the Project Area are Agricultural and Urban. See Figure 4. Approximately 299 acres within the Project Area received State Land Use Urban designation in 1993 as part of the Puukolii Village project, approved by the Housing Finance and Development Corporation (HFDC) pursuant to Act 15 (1988). It is also noted that an approximate 9.47-acre area in the northwestern portion of Lower East Honokowai and an approximate 0.37-acre area in the vicinity of the northerly boundary of Lower South Honokowai had previously received urban designation. Therefore, the 299 acres designated Urban under Act 15 and two (2) areas previously designated Urban are excluded from the State District Boundary Amendment area. See Table 1. The West Maui Community Plan variously designates the Project Area as Project District 3, Agricultural and Open Space. See Figure 5. The Project Area is zoned either County Agricultural, R-3 Residential or Interim under the Maui County zoning ordinances. See Figure 6. Although the Puukolii Village Act 15 project

**Table 1**

<i>LAND USE ENTITLEMENT SUMMARY</i>		
<i>Land Use Entitlement</i>	<i>Current Designation</i>	<i>Requested Designation</i>
State Land Use District	Agricultural (849.8 acres) and Urban (308.8 acres)	Urban
West Maui Community Plan	Project District 3 (310 acres) and Agricultural (848.6 acres)	Project District 3
County Zoning	R-3 (310 acres), Agricultural (848.6 acres)	Project District



**LEGEND**

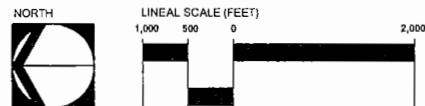
- AG - Agricultural
- C - Conservation
- U - Urban

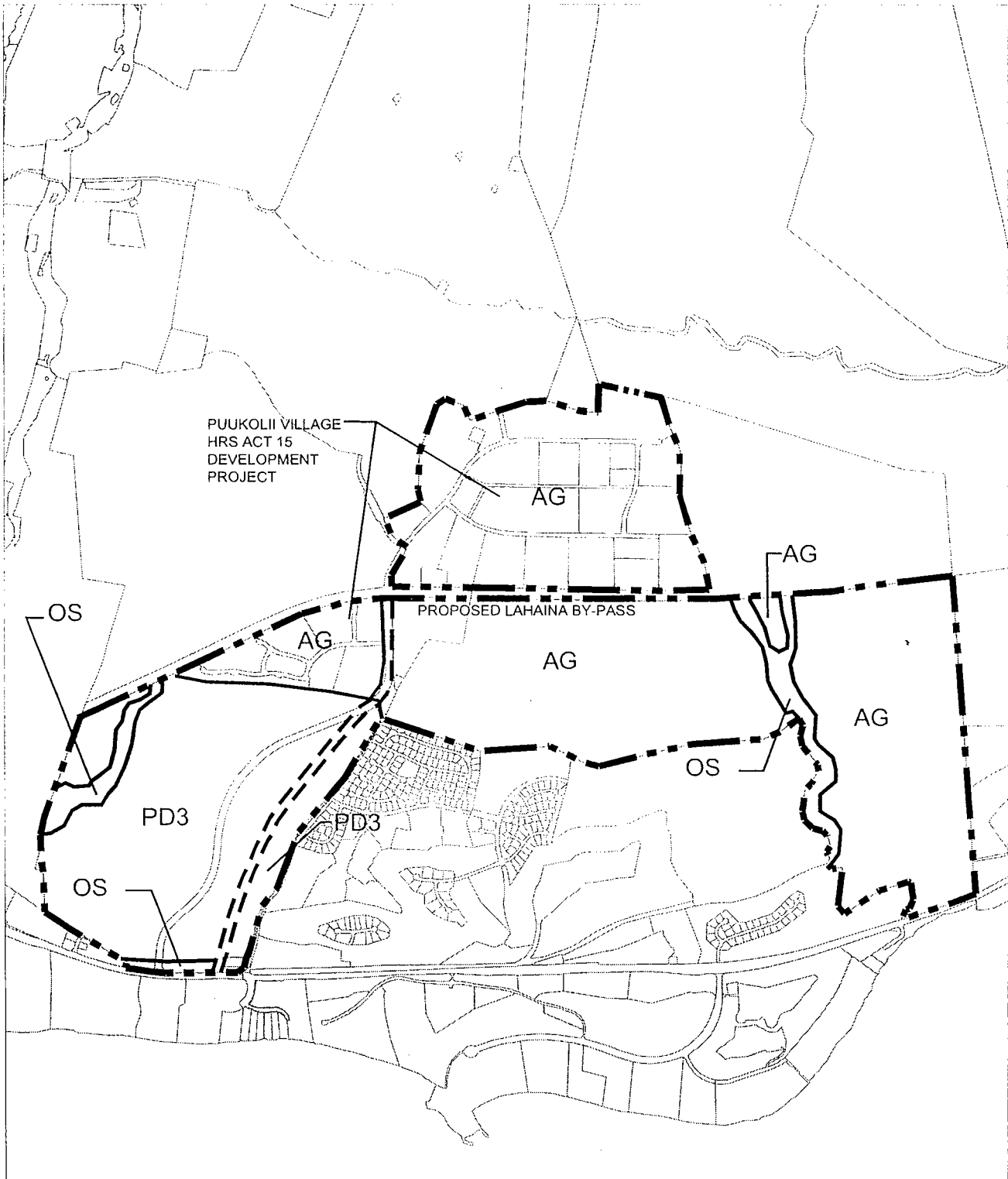
Source:  
 -State Land Use Commission  
 -State Office of Planning

Figure 4  
 Existing State Land Use Classifications

**Kaanapali 2020**

Island of Maui





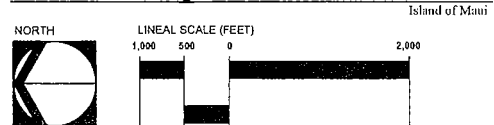
**LEGEND**

- AG - Agricultural
- OS - Open Space
- PD3 - Project District 3

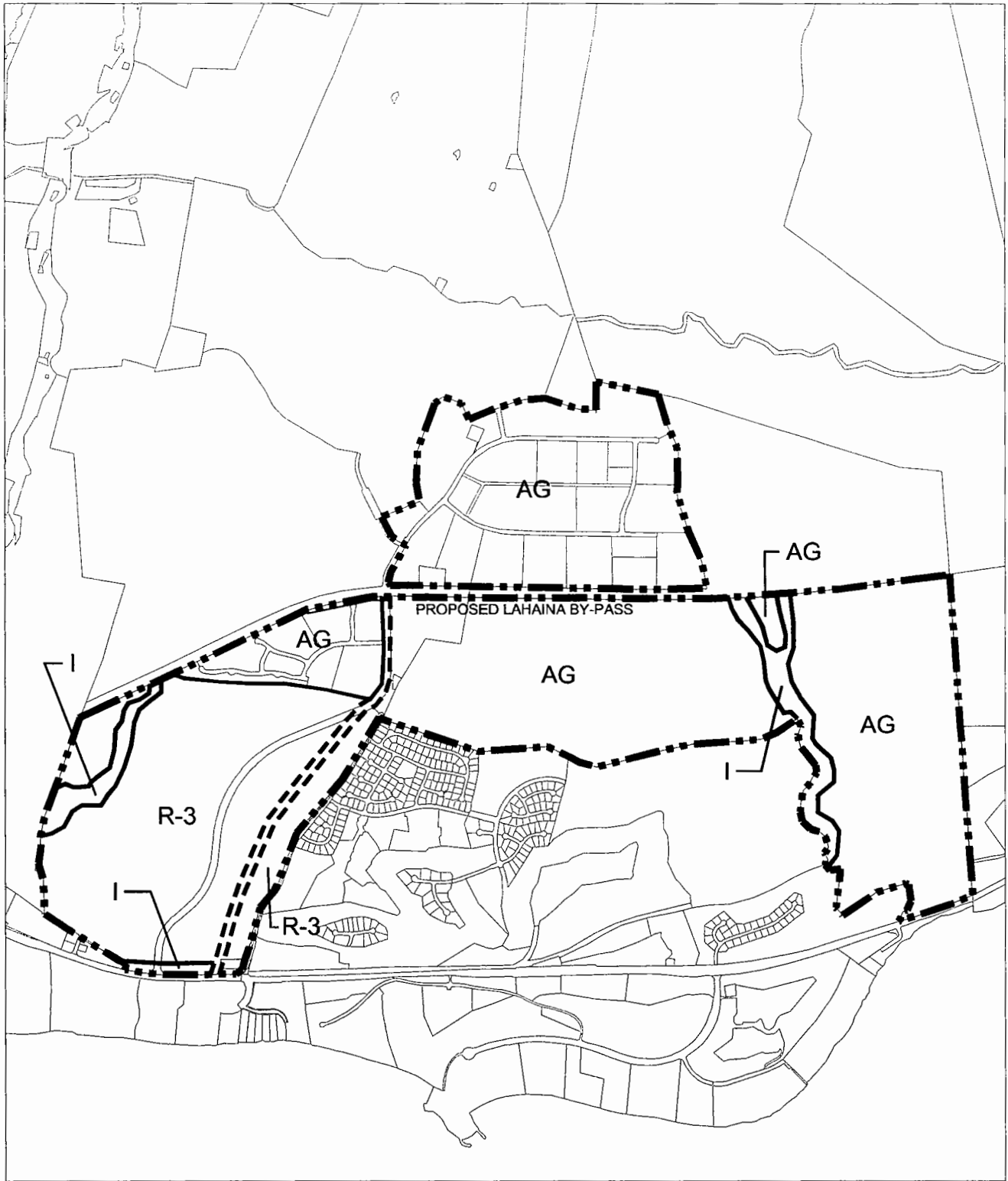
Source:  
 -County of Maui  
 -State Office of Planning

Figure 5  
 Existing West Maui Community Plan  
 Land Use Map

**Kaanapali 2020**







**LEGEND**

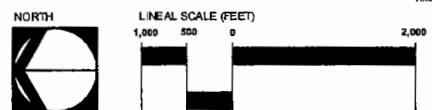
- AG: Agricultural
- R-3: Residential
- I: Interim

Source:  
 -County of Maui  
 -State of Hawaii GIS Database

Figure 6  
 Existing Zoning Map

**Kaanapali 2020**

Island of Maui



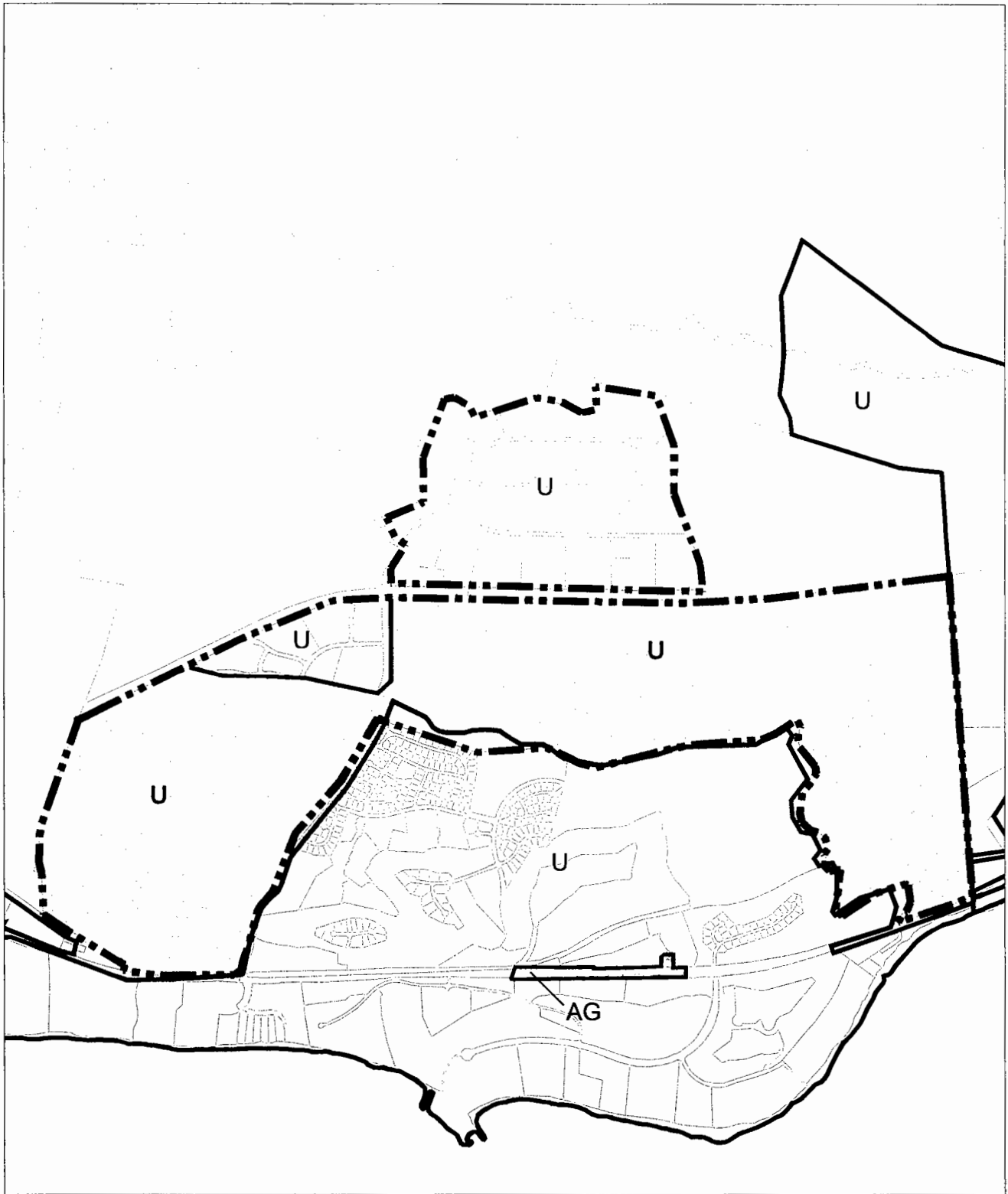
falls within the Project Area and is designated State Urban and zoned for residential, school, park, commercial and public/quasi-public uses, the Kaanapali 2020 Plan proposes a different development scheme for its approximate 299 acres, as further discussed in Chapter IV of this document. It is noted that although Act 15 established zoning for the Puukolii Village, the County of Maui's zoning maps still reflect an underlying "Agricultural" zoning designation since these areas were not zoned via County ordinance. Refer to Figure 6. This mapping difference notwithstanding, the zoning established by Act 15 is still valid.

Therefore, to implement fully the Kaanapali 2020 Plan, the following entitlements are required: (a) a State Land Use District Boundary Amendment to the Urban District for those lands in Lower Honokowai now designated as Agricultural district; (b) an amendment to the existing State Land Use Commission decision and order for Act 15 Puukolii Village areas; (c) a West Maui Community Plan Amendment from Agricultural, Open Space and Project District 3 to a new Project District 3 designation encompassing the approximate 917.6-acre Lower Honokowai area and the approximate 241-acre former Puukolii Village area east (mauka) of the proposed Lahaina Bypass; and (d) a County Change in Zoning for the approximate 917.6-acre Lower Honokowai area and the approximate 241-acre Puukolii Village area mauka of the proposed Lahaina Bypass from the Agricultural, Interim and R-3, Residential zoning district to Project District, coupled with the adoption of a site specific Project District zoning ordinance containing performance standards. The areas subject to the entitlement requests are summarized in Table 1, and are graphically depicted in Figure 7, Figure 8, and Figure 9.


**D. CHAPTER 343, HAWAII REVISED STATUTES REQUIREMENTS**

To effect the Kaanapali 2020 Plan, the following actions will be required, each of which triggers an environmental review pursuant to Chapter 343, Hawaii Revised Statutes.

- (a) An amendment to the West Maui Community Plan;



**LEGEND**

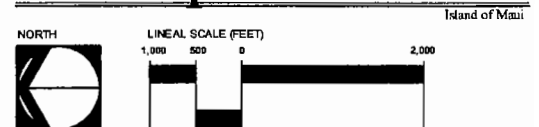
 State Land Use District Boundary Amendment from Agricultural District to Urban District

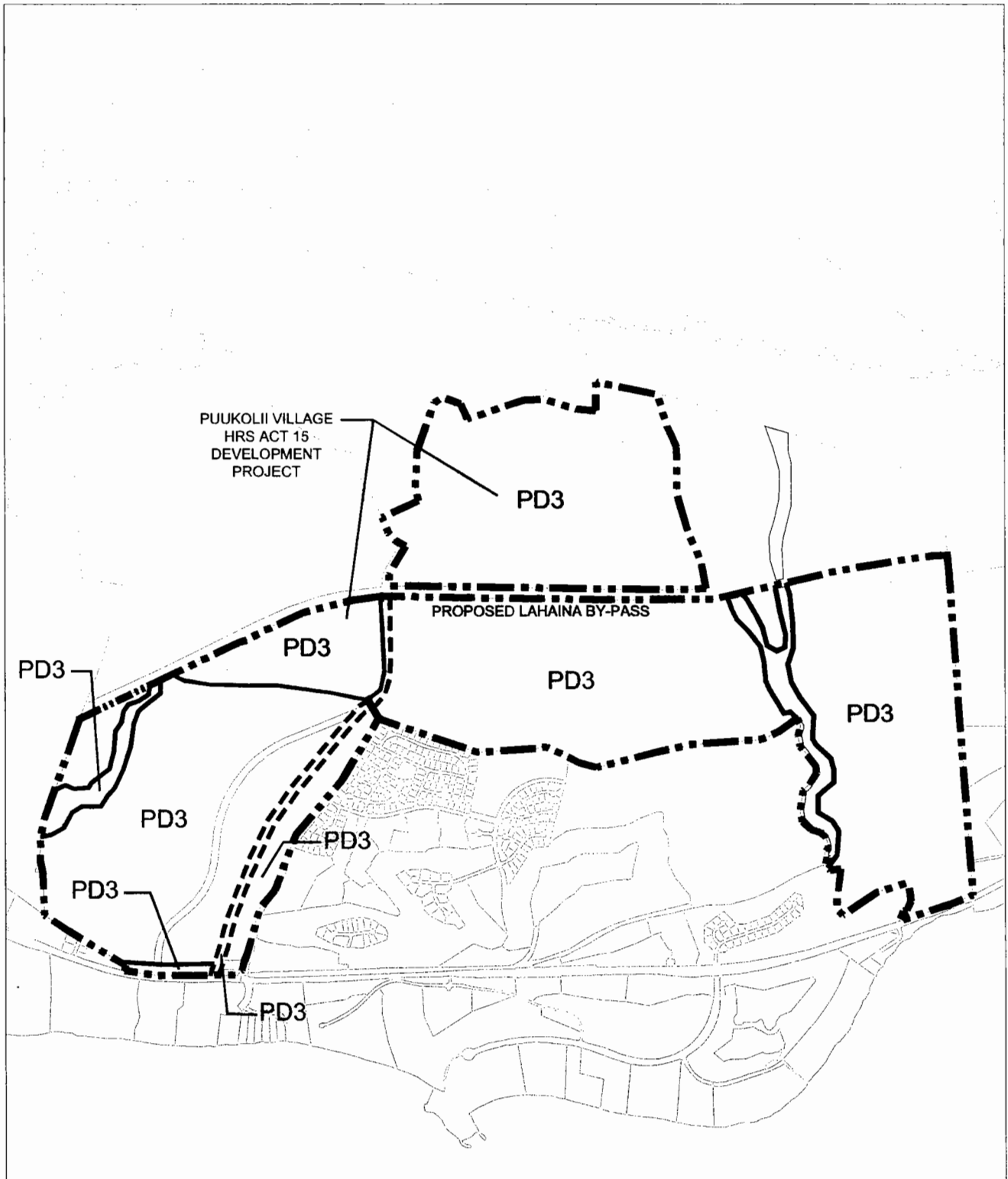
AG - Agricultural  
U - Urban

Source:  
-State Land Use Commission  
-State of Hawaii GIS Database


Figure 7  
Area Subject to State Land Use District  
Boundary Amendment

**Kaanapali 2020**





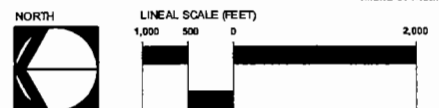
**LEGEND**

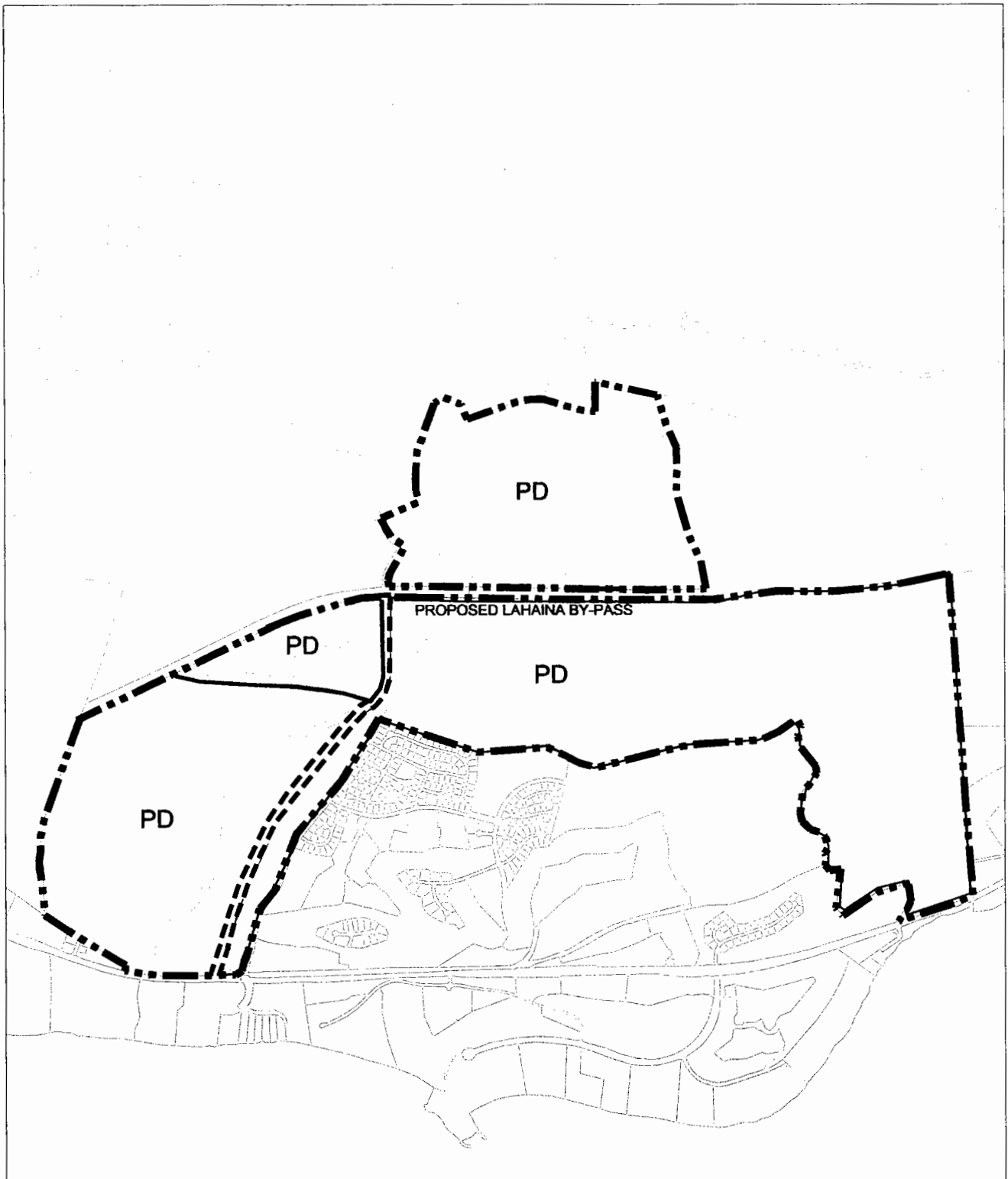
 Area Subject to Community Plan Amendment to Project District 3

PD3 - Project District 3


Source:  
 -County of Maui  
 -State of Hawaii GIS Database

Figure 8  
 Area Subject to  
 Community Plan Amendment  
**Kaanapali 2020**  
 Island of Maui





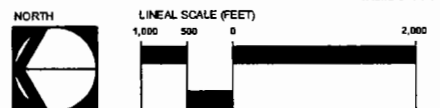
**LEGEND**

 Area Subject to County Change in Zoning to Project District

PD: Project District

Source:  
 -County of Maui  
 -State Office of Planning

Figure 9  
 Area Subject to  
 County Change in Zoning Map  
**Kaanapali 2020**  
 Island of Maui



- (b) Improvements to or a replacement of wastewater pump station no. 1 and no. 2 and to the Lahaina Wastewater Reclamation Facility situated on lands owned by the County of Maui;
- (c) Improvements to Honoapiilani Highway, on lands owned by the State of Hawaii, Department of Transportation; and
- (d) Improvements to Puukolii Road, owned by the County of Maui.

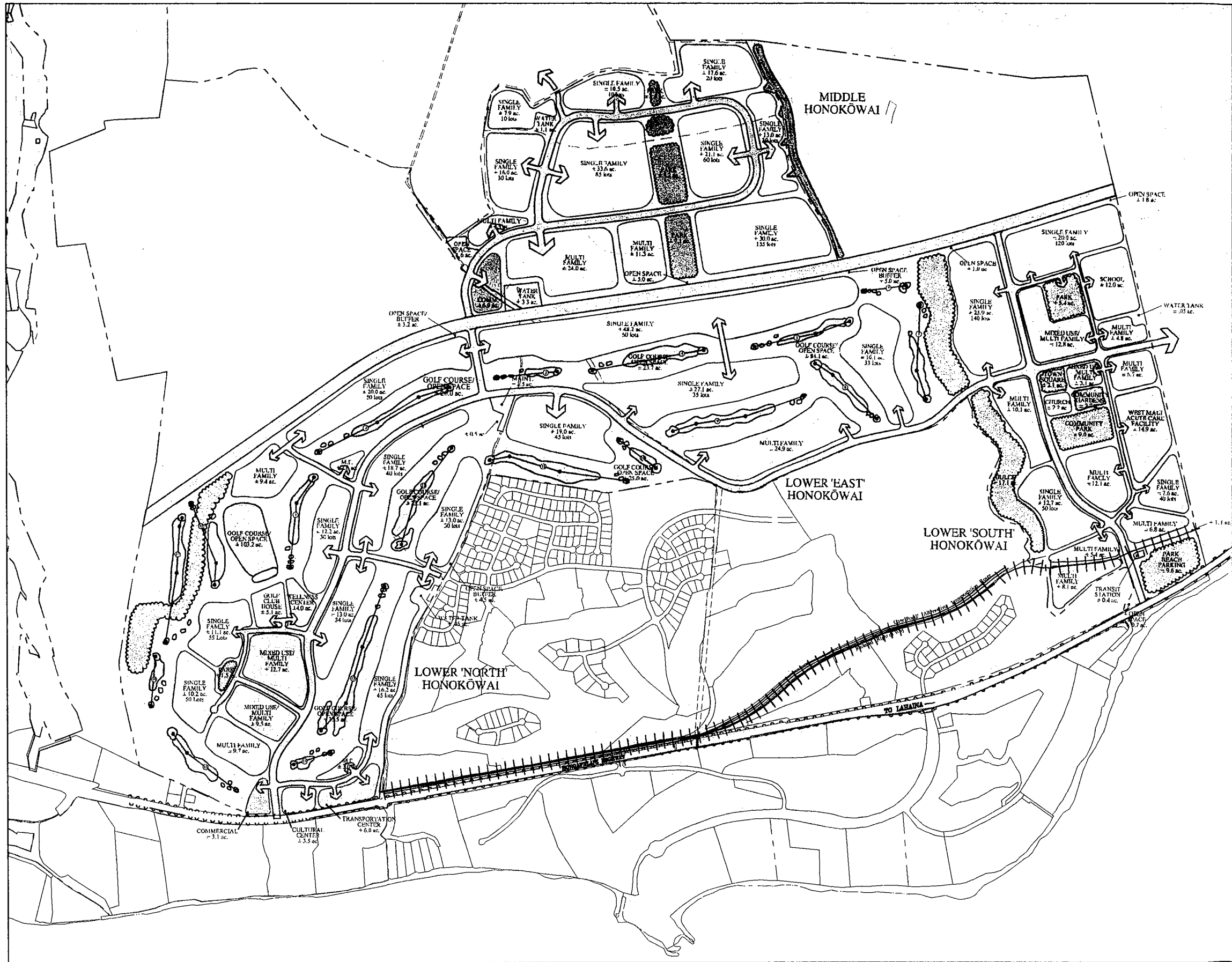
An Environmental Impact Statement (EIS) will be prepared for the proposed Kaanapali 2020 Plan in light of the geographic scope and size of the land use request. Pursuant to Chapter 200, Title 11, Hawaii Administrative Rules, Section 11-200-4, the Accepting Authority for the Environmental Impact Statement is the State Land Use Commission.

***E. KAANAPALI 2020 PLAN DESCRIPTION***

***1. Master Plan Concept***

Set against the backdrop of the West Maui mountains, the vision for the 1,158.6-acre Kaanapali 2020 Plan is to create distinct communities that provide options for residents with varying lifestyles and incomes. These communities will be integrated through a transportation system that allows for alternative modes of transportation so residents can walk, bike, use a golf cart, take a trolley or drive within and between the communities. See Figure 10. The Kaanapali 2020 Plan groups the Project Area into two (2) sections: (a) Lower Honokowai encompassing 917.6 acres, between the Honoapiilani Highway and the proposed Lahaina Bypass right-of-way, composed of separate communities in its southern and northern sections as bookends to a golf course and residential areas; and (b) Middle Honokowai, encompassing the approximate 241-acre former Puukolii Village section mauka of the proposed Lahaina Bypass right-of-way.

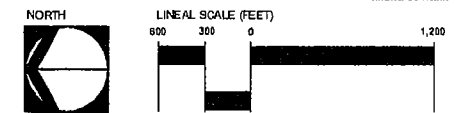
Using Smart Growth principles, a range of housing types and densities will generally extend outward from the community centers. Housing densities within the communities will include both stand-alone single- and multi-family residential areas, as well as multi-family residences within mixed use areas. Both affordable housing and market housing will be provided. Sites for a



**Legend**

-  Single Family Residential
-  Multi-Family Residential
-  Mixed Uses
-  Commercial
-  Schools/Churches
-  West Maui Acute Care Facility/Wellness Center
-  Cultural Center
-  Golf Course
-  Golf Club House/Maintenance Facility
-  Transit Station/Transportation Center
-  Gulches/Parks
-  Pedestrian/Equestrian Trail

Figure 10  
 Kaanapali 2020  
 Project Area Master Plan  
**Kaanapali 2020**  
 Island of Maui



school, transit stops, acute care facility, an 18-hole golf course, parks, open space, a wellness center, and a cultural center, along with commercial mixed uses located within the community centers, are also proposed.

Access to the various communities in the Project Area will be provided from two (2) connector roads between Honoapiilani Highway and the proposed Lahaina Bypass right-of-way, and a new mauka arterial road to the former Puukolii Village area in Middle Honokowai. From these roads, an interior collector roadway system will provide vehicular access within and between the communities. A right-of-way for a trolley system and dedicated lanes for pedestrian, bicycle and golf cart traffic will offer alternative transportation modes. Four (4) types of roadways are proposed: (1) the two bypass connector roads will each have a 100 ft. right-of-way; (2) the collector loop road will have an 80 ft. right-of-way; (3) main street roads will have 60 ft. rights-of-way; and (4) minor streets will have 56 ft. rights-of-way. A typical road section is shown in Figure 11. The community main streets will extend from the collector roadway into the heart of the separate community areas. Each main street will be designed to be walkable and pedestrian oriented. Trolley stops and bike routes will also be included along the main streets.

A description of the communities and their land uses follows.

2. **Lower Honokowai**

The Lower Honokowai area has a total acreage of approximately 917.6 acres. See Figure 12. Lower Honokowai is defined by three (3) distinct areas, referred as Lower "South", "East", and "North" Honokowai. An interconnected "lei" of open space is provided throughout Lower Honokowai. The open space uses include an 18-hole golf course, 50-foot buffers around the residential areas, and a number of parks within the residential communities. A breakdown of the Lower Honokowai land uses is presented in Table 2.



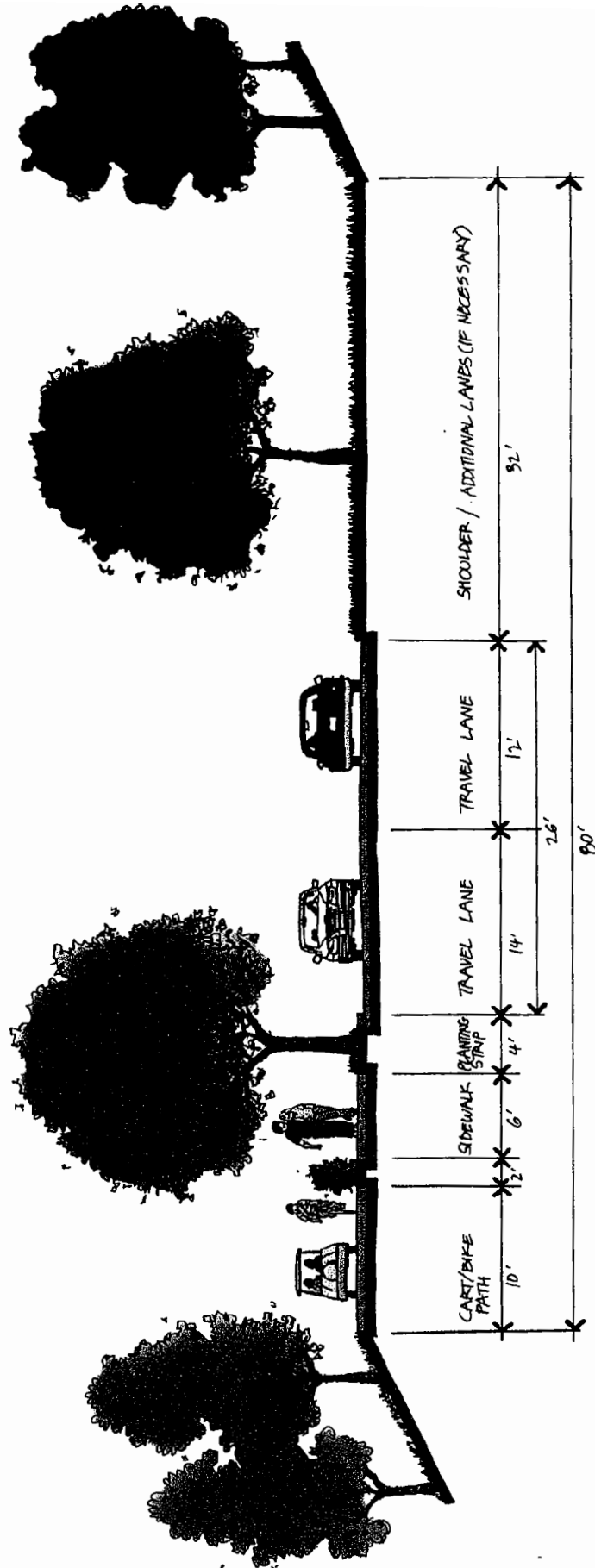
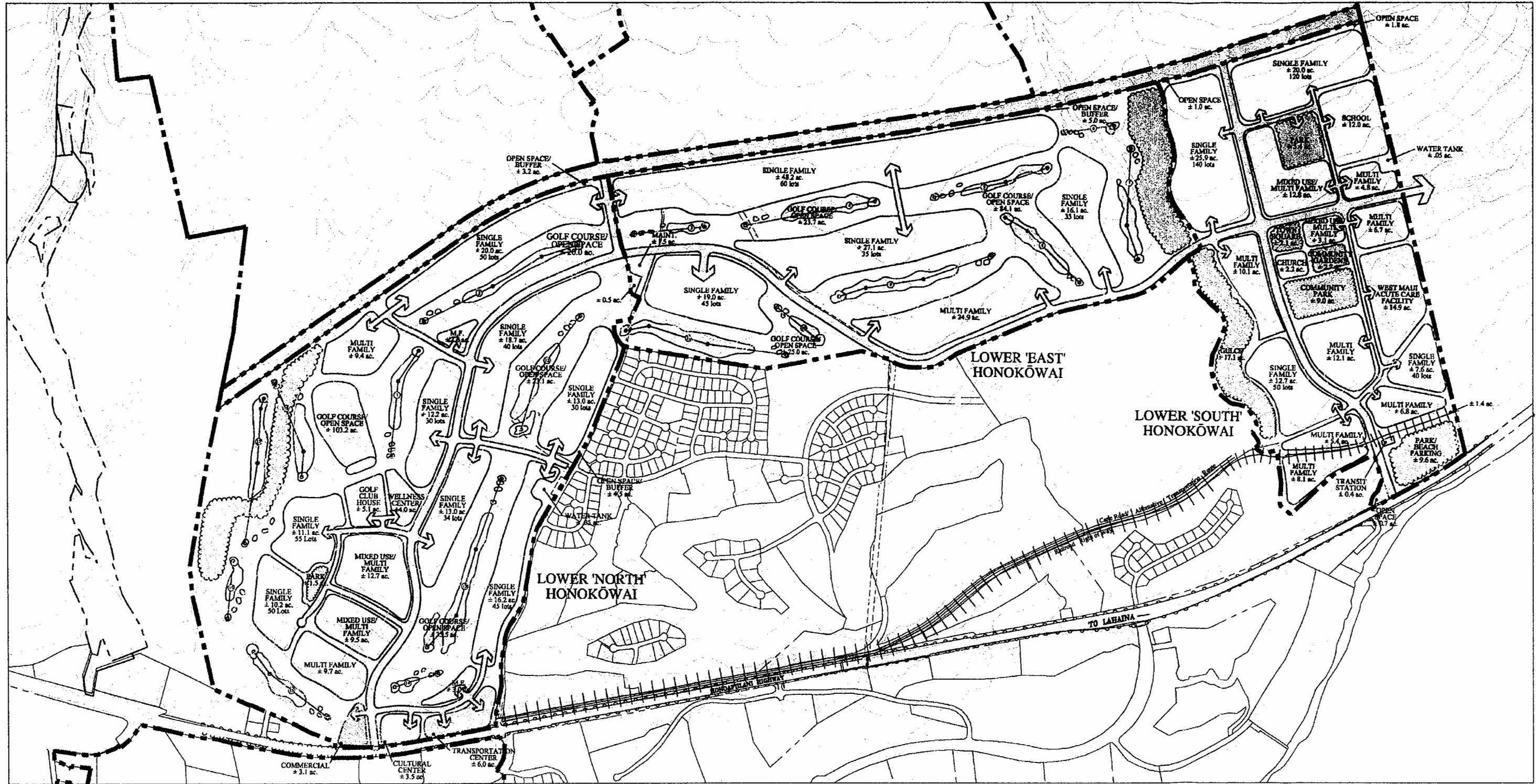


Figure 11  
 Typical Collector Roadway Section  
**Kaanapali 2020**  
State of Maui



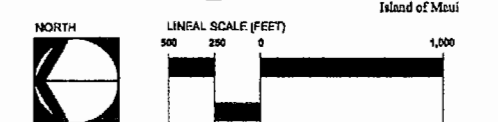
**Legend**

- |  |                           |  |   |  |                                      |
|--|---------------------------|--|---|--|--------------------------------------|
|  | Single Family Residential |  | Schools/Churches                                  |  | Golf Course                          |
|  | Multi-Family Residential  |  | West Maui Acure Care Facility/<br>Wellness Center |  | Golf Club House/Maintenance Facility |
|  | Mixed Uses                |  | Transit Station/Transportation Center             |  | Gulches/Parks                        |
|  | Commercial                |  |   |  |                                      |

Figure 12

Lower Honokowai

**Kaanapali 2020**



Island of Maui

**Table 2**

<b>LOWER HONOKOWAI LAND USE BREAKDOWN</b>		
<b><i>Land Use Category</i></b>	<b><i>Gross Area (Acres)</i></b>	<b><i>No. of Units</i></b>
Single-Family Residential	290	857
Multi-Family Residential	105	853
Mixed Use/Multi-Family	38	390
Commercial	3	
Golf Course/Open Space	319	
Park	31	
Public/Quasi-Public	14	
West Maui Acute Care Facility	15	
School and Churches	14	
Open Space/Buffer	35	
Roads/Utilities	53.6	
<b>TOTAL</b>	<b>917.6</b>	<b>2,100</b>

A description of each of the Lower Honokowai planned areas follows.

***a. Lower South Honokowai***

Lower South Honokowai is located adjacent to the Lahaina Civic and Recreation Center and the State of Hawaii’s proposed Villages of Lealii development, and covers an area of approximately 234.6 acres. This community is envisioned as the primary residential community for the people working in West Maui. It will be the link between major civic, recreational and proposed residential developments to the south and the existing Kaanapali Resort to the west.

Single- and multi-family housing, with varying price and density ranges are proposed in this community. Approximately 350 single-family

houses would be developed on approximately 66 acres of land with an approximate average density of 5.3 units per acre. Multi-family residential uses include approximately 475 units on about 54 acres of land with densities ranging from 8 to 10 units per acre and approximately 160 mixed use/multi-family residences covering approximately 13 acres. Affordable housing (to address the shortfall in West Maui), along with market housing, will be provided for those who want to live and work in West Maui. Sites for an elementary school, West Maui acute care facility, and a church/day care center are also proposed within the southern community. Other amenities include a community park, village square, community garden, and open space.

***b. Lower East Honokowai***

Lower East Honokowai is located mauka of the existing Kaanapali residential resort community and will be similar in character to the already constructed projects on adjacent lands. Its approximately 288 acres includes a golf course, open space/buffer areas and approximately 173 single-family units covering approximately 110 acres and approximately 172 multi-family units covering approximately 25 acres.

***c. Lower North Honokowai***

Lower North Honokowai is located in the northern portion of Lower Honokowai and encompasses an area of approximately 395 acres. At its northwestern end, a Hawaiian cultural center will form a distinct entry feature into the development. A transit station for the existing train will be located adjacent to the cultural center. A commercial area covering approximately three (3) acres is planned to the north. Further upslope will be the community's commercial center which includes a "main street" with shops, art galleries, coffee shops, restaurants and other retail establishments. A wellness center, a golf clubhouse, park, and a mix of

single- and multi-family residences are also planned. Based on the principles of Smart Growth, the community’s commercial center will be pedestrian friendly with a mix of housing types. Overall, approximately 334 single-family units covering approximately 114 acres, approximately 206 multi-family residential units covering approximately 25 acres and approximately 230 mixed use/multi-family residential units covering approximately 22 acres are planned.







3. ***Middle Honokowai***

Located east (mauka) of the proposed Lahaina Bypass is Middle Honokowai. See Figure 13. This portion of the Project Area covers an area of approximately 241 acres. It will have a lower average density than Lower Honokowai. The community center will include a commercial area at the entrance and a mix of single-family and multi-family residential neighborhoods. A total of approximately 400 single-family and approximately 310 multi-family residential units are planned. A breakdown of the Middle Honokowai land uses is presented in Table 3.

**Table 3**

<b><i>MIDDLE HONOKOWAI LAND USE BREAKDOWN</i></b>		
<b><i>Land Use Category</i></b>	<b><i>Gross Area (Acres)</i></b>	<b><i>No. of Units</i></b>
Single-Family Residential	150	400
Multi-Family Residential	40	310
Commercial	7	
Park	18	
Open Space	7	
Roads/Utilities	19	
<b>TOTAL</b>	<b>241</b>	<b>710</b>

**Legend**

-  Single Family Residential
-  Multi-Family Residential
-  Commercial
-  Golf Club House/Maintenance Facility
-  Gulches/Parks
-  Pedestrian/ Equestrian Trail

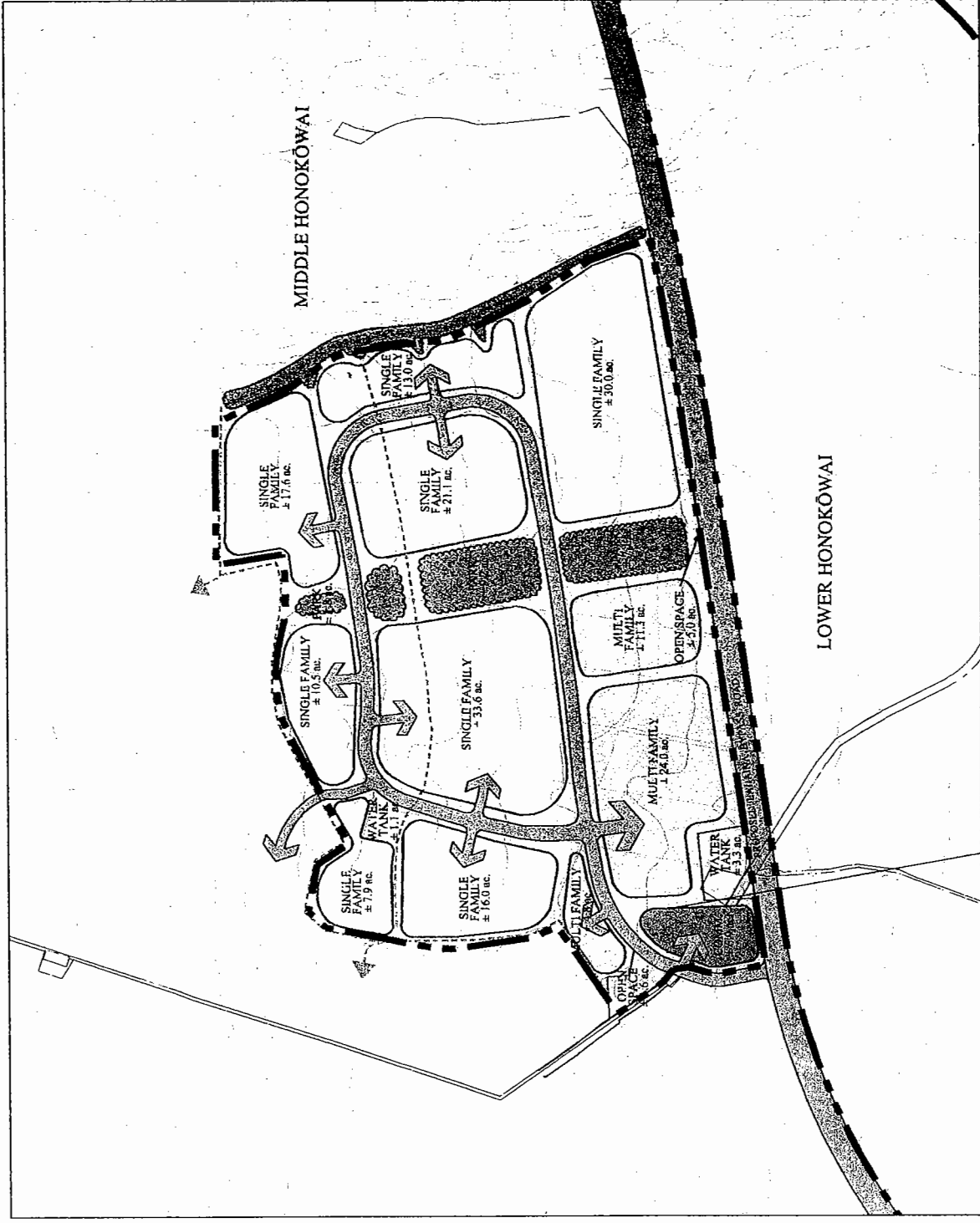


Figure 13  
Middle Honokowai  
**Kaanapali 2020**  
HAWAIIAN LAND COMPANY

4. ***Summary***

In summary, the Kaanapali 2020 Plan reflects the vision of the West Maui community for the future uses of the approximately 1,158.6 acres. This vision includes a mix of residential, recreational, park, open space, golf course, public/quasi-public and commercial uses. A total of approximately 2,810 residential units comprised of approximately 1,257 single-family, approximately 1,163 multi-family residential units and approximately 390 mixed use/multi-family residential units in mixed use areas are planned. A total land use breakdown is presented in Table 4.

**Table 4**

<i>KAANAPALI 2020 PLAN LAND USE BREAKDOWN</i>		
<i>Land Use Category</i>	<i>Gross Area (Acres)*</i>	<i>No. of Units</i>
Single-Family Residential	440	1,257
Multi-Family Residential	144	1,163
Mixed Use/Multi-Family	38	390
Commercial	10	
Golf Course/Open Space	319	
Park	49	
West Maui Acute Care Facility	15	
Public/Quasi-Public (Cemetery)	14	
Schools and Churches	14	
Open Space/Buffer	42	
Roads/Utilities	73.6	
<b>TOTAL</b>	<b>1,158.6</b>	<b>2,810</b>
* Approximate land areas		

***F. CONCEPTUAL IMPLEMENTATION PHASING PLAN***

The Kaanapali 2020 Plan will be implemented in phases over an approximately 20-year build out period. During the preparation of the Draft EIS, project implementation and phasing will be assessed. The resulting conceptual implementation and phasing plan will be included in the Draft EIS document.



## **II. Description of the Existing Environment**

## ***II. DESCRIPTION OF THE EXISTING ENVIRONMENT***

### ***A. PHYSICAL SETTING***

#### ***1. Surrounding Uses***

All of the land in the Project Area were formerly cultivated in sugarcane and coffee. Presently, approximately 1,000 acres are set aside for seed corn (with 300 acres planted at a time). The remaining agricultural lands are presently fallow. Lands surrounding the Project Area include: (a) to the northeast, approximately 633 acres of the Applicant's agricultural lands; (b) to the north, approximately 225 acres of vacant land owned by the Department of Hawaiian Home Lands, as well as other existing agricultural and open space designated lands, and the West Maui Wastewater Reclamation Facility; (c) to the east, large acreages of former and now fallow agricultural lands, the West Maui Forest Reserve and conservation designated lands; (d) to the south, agricultural lands, the Lahaina Civic and Recreation Center (with a gymnasium, court house and the Fire and Police Stations), the Housing and Community Development Corporation of Hawaii (HCDCH) Villages of Lealii project area, and agricultural designated land uses; and (e) to the west, the already constructed Kaanapali Resort development composed of hotel, single- and multi-family residential land uses, parks, golf courses, and light industrial, business, public/quasi-public and open space uses, with the Pacific Ocean beyond. The Honoapiilani Highway is the western boundary of the Project Area for Lower North Honokowai and Lower South Honokowai.

#### ***2. Climate***

Like most areas of Hawaii, West 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. Variations in climate among different regions are largely dependent on local terrain.

August is historically the warmest month in Lahaina with an average high temperature of 88 degrees Fahrenheit and average low temperature of 70 degrees Fahrenheit. January is normally the coolest month of the year with an average high temperature of 80 degrees Fahrenheit and an average low of 62 degrees Fahrenheit.

Rainfall in Lahaina is highly seasonal. Most precipitation occurs from November to April when winter storms hit the area. Precipitation data for 2003 shows that, on average, January was the wettest month, with 3.21 inches of rainfall, while June was the driest month with 0.08 inch of rainfall. Total precipitation at Lahaina for 2003 was 14.62 inches (Maui County Data Book, 2003).

The winds in the region are also seasonal. The northeasterly tradewind occurs 90 percent of the time during the summer, and just 50 percent of the time in the winter with average wind speeds of approximately 10 miles per hour. However, wind patterns vary on a daily basis, with tradewinds generally being stronger in the afternoon. During the day, winds blow onshore toward the warmer land mass. In the evening, the reverse occurs, as breezes blow toward the relatively warmer ocean.

3. **Topography and Soils**

The Project Area slopes in a westerly direction, ranging from an elevation of approximately 400 feet above mean sea level (MSL) in its eastern portion, to an elevation of approximately 40 feet MSL at its western boundary (in the vicinity of Honoapiilani Highway). The topography in Lower Honokowai is characterized by gently westward sloping lands with slopes averaging approximately 10 percent. The elevation for Lower Honokowai ranges from 40 feet MSL in the west to approximately 300 feet MSL in the east (in the vicinity of the proposed Lahaina Bypass right-of-way). Middle Honokowai is

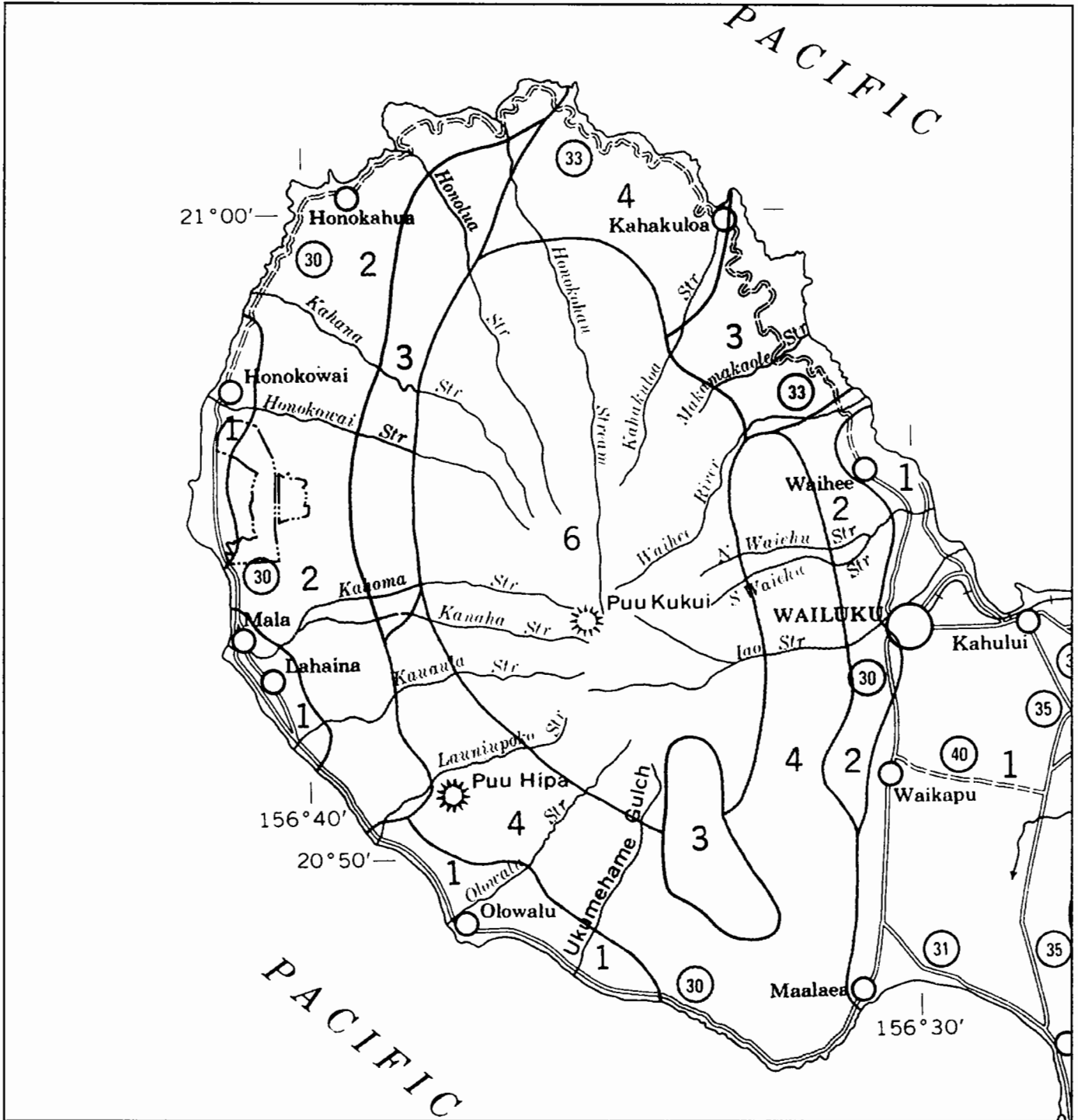
characterized by slightly steeper slopes averaging approximately 15 percent with elevations ranging from 300 feet to 400 feet MSL.

Underlying the proposed Kaanapali 2020 Project Development Area are soils of the Pulehu-Ewa-Jaucas and Waiakoa-Keahua-Molokai Associations. See Figure 14. The Pulehu-Ewa-Jaucas Association consists of deep, nearly level to moderate sloping, well-drained and excessively drained soils that have a moderately fine textured to coarse-textured subsoils or underlying material. The Waiakoa-Keahua-Molokai Association consists of moderately deep to deep, nearly level to moderately steep, well-drained soils that have a moderately fine textured subsoil on low uplands. The specific soil types are as follows:

- a. Molokai silty clay loam (MuA, MuB, and MuC) with slopes ranging from 0 to 3 percent, 3 to 7 percent, and 7 to 15 percent, respectively;
- b. Wahikuli silty clay (WbB) with slopes ranging from 3 to 7 percent;
- c. Wahikuli stony silty clay (WcB and WcC) with slopes ranging from 3 to 7 percent and 7 to 15 percent, respectively;
- d. Wahikuli very stony silty clay (WdB) with slopes ranging from 3 to 7 percent;
- e. Lahaina silty clay (LaB and LaC) with slopes ranging from 3 to 7 percent and 7 to 15 percent, respectively; and
- f. Rough broken and stony land (rRS).

See Figure 15.

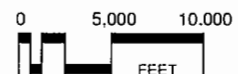
In 1977, the State Department of Agriculture established a classification system to identify Agricultural Lands of Importance to the State of Hawaii (ALISH), based primarily, but not exclusively, on their soil characteristics. The three (3) classes of ALISH lands are: "prime", "unique", and "other" with the remaining, non-classified lands placed into the "unclassified" category. 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



**LEGEND**

- 1 Pulehu-Ewa-Jaucas Association
- 2 Waiakoa-Keahua-Molokai Association
- 3 Honolua-Oleio Association
- 4 Rock Land - Rough Mountainous Land Association
- 5 Puu Pa-Kula-Pane Association
- 6 Hydrandepta-Tropaquods Association
- 7 Hana-Makaalae-Kailua Association
- 8 Pauwela-Haiku Association
- 9 Laumela-Kaipoi-Olinda Association
- 10 Keawakapu-Makana Association
- 11 Kamaole-Oanapuka Association

Figure 14  
Soils Association Map  
**Kaanapali 2020**



Island of Maui

Source: USDA Soil Conservation Service

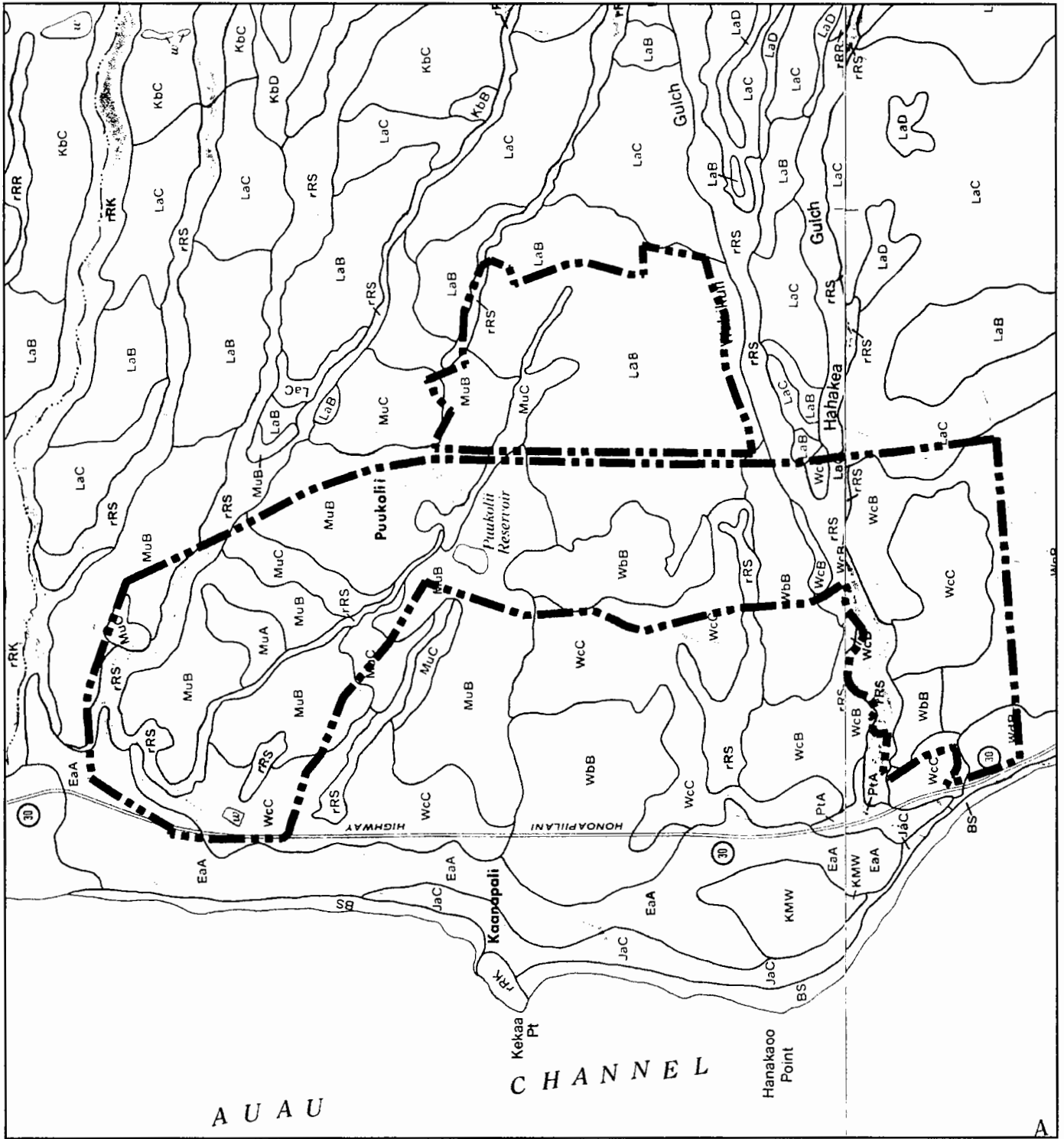
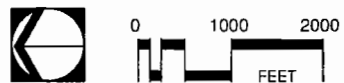


Figure 15  
Soil Classification Map  
**Kaanapali 2020**



Island of Maui

Source: USDA Soil Conservation Service, in Munekiyo & Hiraga, 2002, p.29

quality, location, growing season, and moisture supply to produce sustained high yields of a specific crop. "Other Important Agricultural Land" includes those which have not been rated "prime" or "unique". As reflected by the ALISH map for the Lahaina area, the Project Area includes lands which have primarily been classified in the "prime" agricultural land category. See Figure 16. Further analysis will be undertaken to assess the potential impacts resulting from agricultural land use changes from a local and regional socio-economic perspective. These findings will be included in the Draft EIS document.

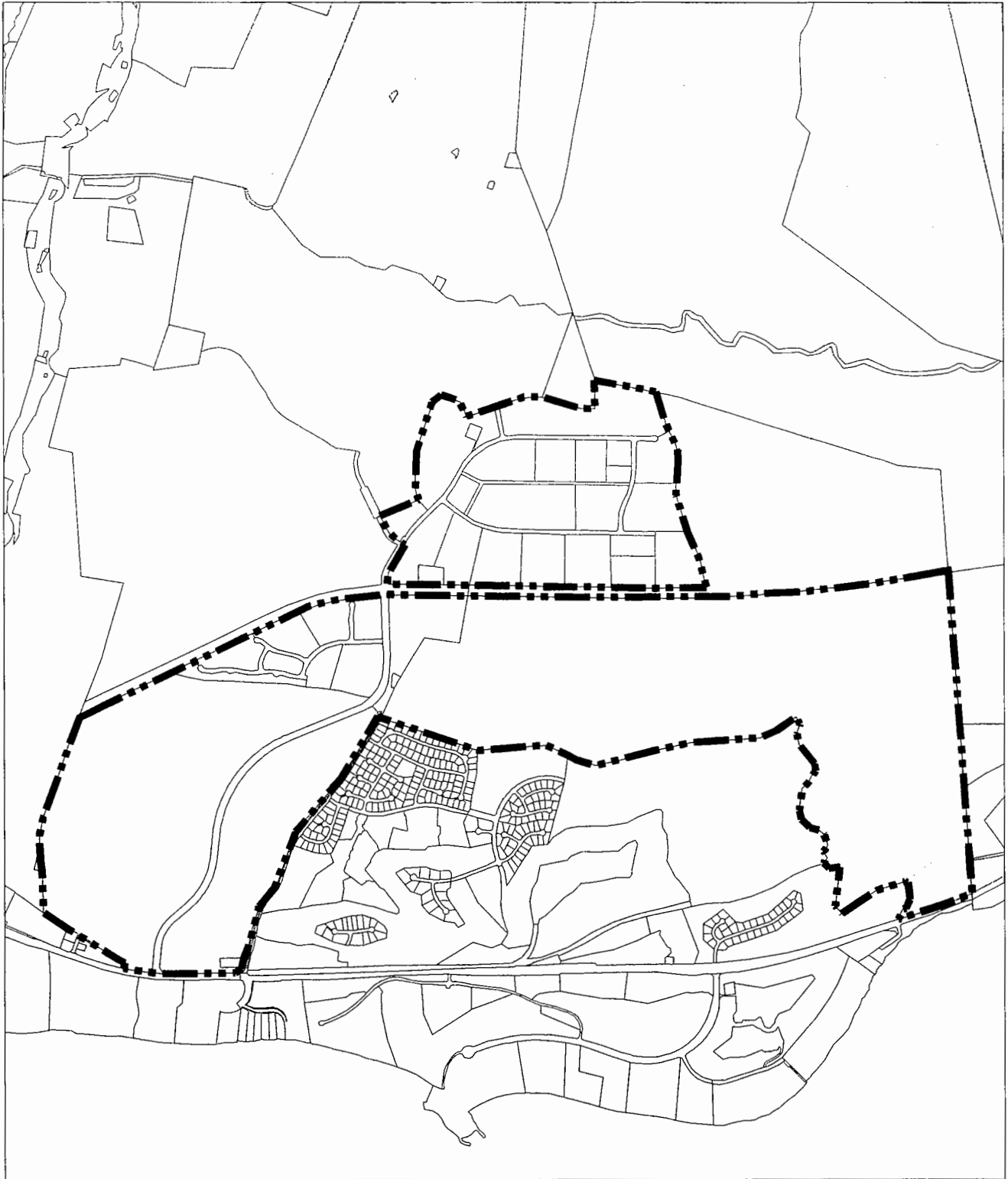
4. **Flood and Tsunami Hazard**

As indicated by the Flood Insurance Rate Map (FIRM) for the Lahaina area, the Project Area is primarily located in Zone C, denoting areas of minimal flooding (FIRM Community Panel No. 150003/0153B, November 2000). However, a southwestern portion of Lower North Honokowai in Hahakea Gulch is located within Zones A4, A17 and B as areas of 100 year floods with base flood elevations ranging from 18 to 37 feet (FIRM Community Panel No. 150003/0161B, November 2000). See Figure 17.




5. **Flora, Fauna and Wetlands Habitat**

A large portion of the lands surrounding and within the Project Area was utilized for sugarcane and coffee cultivation until Pioneer Mill Company, Ltd. terminated its sugar operations in September, 1999, and its coffee operations in 2001. A portion of the Project Area is currently used to cultivate sweet corn. Introduced species of grasses, weeds, shrubs, and trees have occupied the former sugar lands. Strips of vegetation, including haole koa brush and kiawe trees, border the Hanakaoo, Wahikuli and Hahakea Gulches.

The region's avifauna include a host of introduced species, including the Japanese White-eye, Zebra Dove, Cardinal, Spotted Dove, and Common Myna. The Golden Plover (*Kolea*), Black Crowned Night Heron (*'auku'u*), and the



**LEGEND**

-  Prime Lands
-  Other Lands
-  Non-ALISH Lands

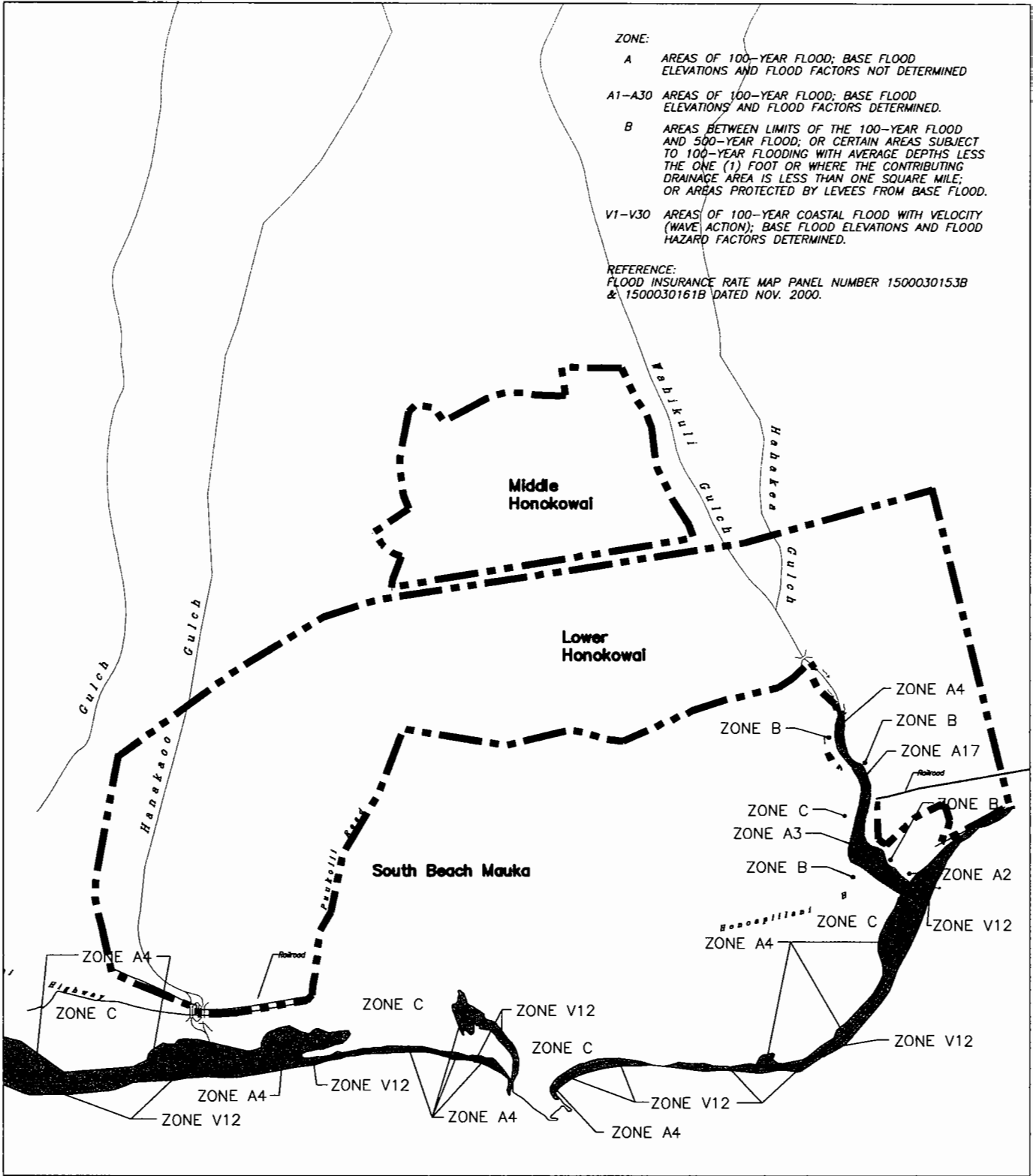
Source:  
 -State Department of Agriculture  
 -State Office of Planning

Figure 16  
 Agricultural Lands of  
 Significant Importance in Hawaii Map  
**Kaanapali 2020**



Island of Maui





**LEGEND**



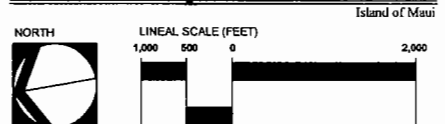
-  AREAS OF 100 YEAR FLOOD
-  AREAS BETWEEN 100 YEAR FLOOD & 500 YEAR FLOOD

Figure 17  
 Flood Insurance Rate Map  
**Kaanapali 2020**



Hawaiian Owl (*pueo*) are also found within the vicinity of the Project Area. These latter species are considered indigenous but not endangered. Other mammals common to the Project Area include rats, mice, and mongoose.

The only known plant or animal species listed or proposed by the Federal government as endangered or threatened that are near the Project Area are the Hawaiian green sea turtle (*Chelonia mydas*) and the Humpback whale (*Megaptera novaeangliae*).

According to local residents, Hawaiian green sea turtles are frequently sighted along the Kaanapali coastline. A resource in the intertidal habitat on lands makai of the Project Area is the locally developed stands of alga *Pterocladia capillacea*, an important forage food for the threatened turtle.

Endangered Humpback whales are seasonally present from approximately December through May. Calf rearing and reproductive activities often occur in proximity to the reefs fronting Kaanapali Beach.

The area within or near the Project Area has not been designated as a critical habitat for any listed, proposed, or candidate species.

There are no wetlands located within or in close proximity to the Project Area as indicated by the U.S. Department of the Interior's National Wetlands Inventory Map.

Further flora and fauna studies will be undertaken to assess the potential impacts resulting from the proposed project. These findings will be included in the Draft EIS document.

6. *Nearshore Reef Ecosystems*

Results of earlier biological marine surveys reveal diverse coral bottom and fish assemblages along Kaanapali Beach (Brock 1986, 1992a, 1992b, and 2001a). This biotope of diverse high coral cover is located in a narrow band adjacent to the shoreline. The reefs are typical of leeward coastal exposures in the Hawaiian Islands.

*Porities lobata* is the dominant reef building coral at depths to about 21 feet. At depths of 33 to 40 feet, *Porities compressa* is the dominant coral. Beyond the 40 feet depth, the reef is replaced by a sand or sand-rubble substratum which extends offshore to greater depths. The top of the reef is relatively flat at shallow depths. The reef drops off from 20 to 40 feet at its edge. The coral cover and diversity of coral, other invertebrates, and fish are greatest along the shelf drop-off.

During the Draft Environmental Impact Statement (EIS) phase, the shoreline and marine flora and fauna will be investigated. An assessment of marine water quality will also be made to determine existing baseline conditions and aid in assessing potential impacts to near shore reef ecosystems resulting from the proposed project.

7. *Mineral Resources*

There are no identified mineral resources within the Project Area.

8. *Archaeological Resources*

An archaeological inventory survey by Xamanek Researches is currently underway to identify archaeological resources within the Project Area. Phase I of the inventory survey has already been completed.

Xamanek Researches conducted the Phase I inventory survey by making a

surface walkover of the Project Area during the late summer and early fall of 2001. Phase I of the archaeological inventory survey focused on the location of cultural resources within the Project Area.

The results of the Phase I survey are as follows: A total of 68 previously unrecorded sites were located during the Phase I study. The cultural resources include both pre-European contact (i.e. pre-1778) and post-contact sites. Representative indigenous site types include temporary and probable permanent habitation areas, single and multi-component agricultural complexes, rock overhang shelter, 1 portable ceremonial site, 4 possible burial sites, and 7 petroglyph sites. The majority of these sites are in gulch areas that have remained relatively undisturbed by sugar cultivation. The sites have been given temporary identification numbers.

Upon conclusion of the currently on-going Phase II fieldwork of the inventory survey, the sites will be assigned permanent State Inventory of Historic Places (SIHP) numbers.

**9. Air Quality**

The Kaanapali area is not exposed to adverse air quality conditions. There are no point sources of airborne emissions in the immediate vicinity. The air quality in the vicinity of the proposed project is considered good. Motor vehicles are the primary source of indirect emissions in the region.

**10. Water Quality**

Sediment discharge from stormwater runoff and its effect on marine water quality and the coastal environment at its entry points into the ocean, will be investigated and the findings will be included in the Draft EIS document. Historical information and new field investigation data will be used to evaluate possible impacts of the floodwater runoff on coastal water quality and marine

flora and fauna. Impacts to coastal water quality will be evaluated. The resulting findings in turn will be used to assess potential impacts of the discharge on water quality and marine life.

**11. Noise Characteristics**

There are no significant fixed noise generators in the vicinity of the Project Area. Existing background noise in the Project Area is attributable to vehicles travelling along Honoapiilani Highway and aircraft noise from the West Maui Airport operations.

**12. Scenic Resources**

The West Maui Mountains are visible to the east of the Project Area. The Kaanapali Resort's hotels, single- and multi-family residential areas, commercial centers, golf courses, the Pacific Ocean, and the offshore islands of Lanai and Molokai, are visible to the west of the Project Area.

**B. SOCIO-ECONOMIC SETTING**

**1. Land Use and Community Character**

The vast majority of lands in West Maui are either State designated "Conservation" or "Agricultural". Generally, "Conservation" lands occupy the higher elevations, while the "Agricultural" district spans the middle land areas. Major exceptions to the agricultural lands are the Honolua Stream and Pohakupule Gulch areas where the "Conservation" district extends down to sea level.

"Urban" designated lands are located in the lower elevations along the coast. Kapalua and Kaanapali contain Community Plan designations reflective of their resort nature. The communities of Kahana and Napili contain a mixture of resort, residential and business uses. Lahaina, meanwhile, encompasses a diverse mix of land uses, including residential, business, light industrial,

recreational and agricultural uses.

The town of Lahaina is the commercial center for West Maui. The town contains several shopping centers and retail business areas, and serves as a hub for the region's residential housing.

West Maui's attraction can be attributed to its year-round dry and warm climate, complemented by a number of white-sand beaches and scenic landscapes. Visitor accommodations are located in Lahaina and the resort communities of Kaanapali, Kahana, Napili, and Kapalua. The State of Hawaii's Kapalua-West Maui Airport at Mahinahina links the region to Oahu and other neighbor islands.

Pineapple fields and diversified agriculture such as corn, bananas, melons and papayas occupy some of the land in the West Maui region. Pioneer Mill Company uses approximately 1,000 acres of their agricultural lands in Kaanapali to grow seed corn. Maui Land & Pineapple Company's fields span along the slopes of the West Maui Mountains north of Lahaina. Maui Land & Pineapple Company has announced its intention to discontinue the cultivation of pineapple on the vast majority of its West Maui lands.

## 2. **Population**

In 2000, the population of the island of Maui was 120,038, with 17,748 residents (15 percent) of the island's population living in West Maui. Since 1970, West Maui has seen an increase in population, with the population growing from about 5,500 persons in 1970, to approximately 10,300 persons in 1980, and about 14,600 in 1990.

West Maui's annual average population growth over the last three (3) decades has kept pace with that of Maui County. The year 2000 County population was 128,241, compared to a 1990 population of 100,374.

3. Demography

The overall West Maui population in 2000 differed from the entire County in terms of age and ethnic distribution as reflected in Table 5.

**Table 5**

<i>AGE AND ETHNICITY</i>		
<i>Population</i>	<i>Maui County</i>	<i>West Maui</i>
		128,094
<i>Age</i>		
Under 5	7 percent	7 percent
5 to 19	21 percent	17 percent
20 to 44	37 percent	42 percent
45 to 64	24 percent	24 percent
65 and older	11 percent	10 percent
Median age	36.8 years	39.3 years
<i>Ethnicity</i>		
Caucasian	34 percent	55 percent
Japanese	10 percent	5 percent
Hawaiian	9 percent	6 percent
Filipino	17 percent	13 percent
All Others	30 percent	21 percent
Source: U.S. Census Bureau, 2000.		

As noted in the Table 5, 66 percent of West Maui’s population is in the labor force ages of 20 to 64 years, while County-wide, 61 percent of the population is in this age category. West Maui has a slightly higher median age of 39.3 years, when compared to the County-wide median of 36.8 years.

4. **Household and Family Characteristics**

In 2000, West Maui contained 5,951 households, accounting for 14 percent of all of Maui County's 43,507 households. The average household sizes in Maui County and West Maui were 2.91 and 2.79 persons, respectively.

In terms of the proportion of family households to total households, 69 percent of Maui County's households in the year 2000 are family households. In West Maui, families comprised 67 percent of the total households. Based on 1990 household income information, West Maui's poverty rate of 3 percent was one-half the County-wide rate.

5. **Housing**

West Maui's 2000 housing stock of 10,314 units had a vacancy rate of 52 percent, which was higher than the County-wide rate of 23 percent. West Maui's housing vacancy rate stems from units reserved for visitor use and secondary homes of absentee owners.

County-wide, owners lived in 58 percent of the occupied homes. Owner occupancy tended to be slightly higher in West Maui, with 60 percent of the units being owner-occupied.

Housing values in West Maui are noticeably higher than those of the County-wide housing supply. Whereas the median single-family home valuation in Maui County in 2004 was \$515,000.00, Kaanapali's median was \$1,235,000.00. In 2001, West Maui region's median monthly rent of \$776.00 was \$118.00 above the County median of \$658.00. Updated rental information will be provided in the DEIS, if available, from the County of Maui.

A comprehensive housing survey will be included in the Draft EIS to assess housing needs for those employed in the resort businesses of Kaanapali. The results of the survey will help define an appropriate affordable housing program



for the proposed project. The survey findings will be incorporated in the Draft EIS document.

**6. Labor Force**

As of December 2004, the seasonally adjusted unemployment rate for Maui County stood at 2.6 percent. The State unemployment in December 2004 stood at 2.7 percent (State Department of Labor and Industrial Relations, February 2005).

In terms of the profile of employed persons, West Maui generally follows the County-wide trends for the labor force characteristics shown in Table 6.

**Table 6**

<i>LABOR FORCE CHARACTERISTICS 2000</i>		
<i>Occupational Category</i>	<i>Maui County</i>	<i>West Maui</i>
Agriculture	3.1 percent	2.0 percent
Manufacturing	2.8 percent	0.7 percent
Construction	4.3 percent	5.5 percent
Trans, Com., Utilities	7.2 percent	3.5 percent
Trade	15.6 percent	28.5 percent
Banking/Finance	4.8 percent	5.4 percent
Hotel/Restaurant Service	29.5 percent	35.0 percent
Other Services	20.1 percent	15.3 percent
Government	12.6 percent	4.6 percent
Source: SMS, June 14, 2002.		

However, more West Maui workers were employed in the hotel/restaurant service and trade sectors (63.5 percent) than the County-wide profile (45.1 percent). Because of West Maui's emphasis on service jobs in these sectors, all other job sectors exhibited slightly lower distribution rates.

7. **Economy**

The economy of Maui is heavily dependent upon the visitor industry. The dependency on the visitor industry is especially evident in West Maui, one of the State's major resort destination areas. As such, a community of tourism service sector workers has developed in the area. This group includes former sugar workers and their families, younger mobile workers, and immigrants from Asia and other Pacific Islands.

Agriculture was once a vital component of the West Maui economy. Until the closure of sugarcane cultivation in September 1999, Pioneer Mill cultivated most of its approximately 6,700 acres of fee simple and leased lands. The Applicant is currently in the process of utilizing portions of its lands to grow seed corn and coffee. Maui Land & Pineapple's fields are an important component of the region's agricultural base, but the closure of most of its fields has been announced.

8. **Police and Fire Protection**

The Project Area is within the Lahaina Police Station service area, which includes the entire Lahaina district. The Lahaina Station is located in the Lahaina Civic Center complex at Wahikuli, and was built in the early 1970's. The Lahaina patrol includes 54 full-time personnel, consisting of one (1) captain, one (1) lieutenant, seven (7) sergeants, and 39 police officers. The remaining six (6) personnel consist of public safety aides and administrative support staff.

Fire prevention, suppression and protection services for the Lahaina District is provided by the Lahaina Fire Station, also located in the Lahaina Civic Center, and the Napili Fire Station, located about 6 miles to the north of the Project Area. The Lahaina Fire Station includes an engine and a ladder company, and is staffed by 30 full-time personnel. The Napili Fire Station consists of an engine company with 15 full-time firefighting personnel.

9. **Medical Facilities**

The only major medical facility on the island is Maui Memorial Medical Center, located midway between Wailuku and Kahului. The 196-bed facility provides general, acute and emergency care services.

Private medical offices are found in West Maui. For example, regular hours are offered by the Maui Medical Group, Lahaina Physicians, West Maui Healthcare Center and Kaiser Permanente Lahaina Clinic.

10. **Recreational Facilities**

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

Recreational facilities in Lahaina Town include the Lahaina Aquatic Center, the West Maui Youth Center and the Lahaina Recreation Center. The Lahaina Aquatic Center contains an Olympic-size swimming pool, a children's wading pool, a paved parking lot and office and storage space, as well as shower, restroom and changing room facilities. The 15 acre Wainee Park expansion donated to the County by an affiliate of the Applicant includes new fields, parking and washroom facilities. The West Maui Youth Center has a building for youth activities, as well as paved parking, an outdoor playground and a basketball court. The Lahaina Recreation Center includes baseball, soccer and football fields, as well as restrooms and paved parking facilities.

The clear ocean waters and well-developed reef system along the Lahaina and Kaanapali coastline offer many recreational opportunities for residents and

visitors. Many tourism-based businesses also rely on the ocean and reef system for their operations.

Shoreline and boat fishing are practiced in the ocean waters near Lahaina Town, Kaanapali Beach, Hanakaoo Point and Honokowai Point. Edible seaweed collecting, octopus fishing and spearfishing occur on the adjacent reef flat fronting Kaanapali. During periods of wave activity, the area is a good location for surfing, with several instructors using it on a daily basis to teach the sport.

An inventory of Maui's coral reefs, published by the Corps of Engineers, documents the extensive coral cover and excellent visibility of the deeper waters off Kaanapali Beach. This water quality characteristic is important to residents and visitors, as well as commercial diving charter and glass-bottom boats operating out of Lahaina Harbor.

**11. Educational Facilities**

The State of Hawaii's Department of Education operates four (4) public schools in West Maui: Lahainaluna High School; Lahaina Intermediate School; King Kamehameha III Elementary School; and Princess Nahienaena Elementary School. All of the public schools are located within the Lahaina Town area.

The region is also served by privately operated pre-elementary and elementary schools.

**C. INFRASTRUCTURE**

**1. Roadways**

Honoapiilani Highway (State Highway 30), an arterial roadway in West Maui, provides north-south mobility and access to communities in the region. For most of its length, Honoapiilani Highway operates as a two-lane arterial roadway with median left-turn lanes provided at major intersections. From Lahaina Town

(just south of Dickenson Street) to the Honokowai Stream Bridge, Honoapiilani Highway functions as a four-lane arterial roadway. In the vicinity of the Project Area, Honoapiilani Highway has a posted speed limit of 45 mph.

Mauka access in the vicinity of the Project Area includes Puukolii Road, a two-lane Collector County roadway. The intersection of Puukolii Road and Honoapiilani Highway is signalized. The South Beach Mauka area of Kaanapali, which borders the Lower Honokowai portion of the Project Area, has its own system of internal roadways servicing its various residential projects. These South Beach mauka roadways do not extend to the Project Area.

Aside from Puukolii Road, there are no improved roadways within the Project Area. However, there are unimproved former cane haul roads used to access agricultural fields and utility structures.

2. **Lahaina Bypass**

The environmental impact statement review for the proposed Lahaina Bypass State Highway from Launiupoko in the south to Honokowai in the north has received Federal and State approval. This project will be developed in phases with the Phase IA improvements scheduled to begin in 2005. It is expected that the Bypass will traverse the Project Area between the approximately 240 foot and 300 foot MSL elevation and will be located approximately 4,000 to 5,000 feet mauka (east) from Honoapiilani Highway forming the boundary between the Lower and Middle Honokowai portions of the Project Areas. The roadway would initially consist of two (2) travel lanes. Its planned right-of-way will allow for the expansion of two (2) additional lanes.

The present Bypass plans provides for two (2) connectors, linking Honoapiilani Highway to the Bypass in the Project Area. The Kaanapali Connector is located in the vicinity of Lower South Honokowai and the Puukolii Connector is in the

vicinity of Lower North Honokowai. The final alignment of the connector accesses through the Project Area will be coordinated with the State Department of Transportation.

3. **Sugar Cane Train**

The other transportation feature near the Project Area is the Sugar Cane Train railroad track located just mauka of Honoapiilani Highway. The track, owned by Railroad of Hawaii/Lahaina-Kaanapali & Pacific Railroad on land owned by the Applicant and other third parties, starts from the Lahaina train station and runs north to a looped end located about 2,000 feet north of Puukolii Road where another train station is located. The train is operated pursuant to the terms of license agreements between the railroad and landowners. Typically, the train makes about six (6) round trips per day, seven days a week. Flashing red lights and warning sounds are used to stop traffic at the railroad crossing while the train crosses Puukolii Road (Wilson Okamoto & Associates, March 2001).

4. **Water**

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

The source of water for Lahaina are four (4) deepwells located above Alaeloa and referred to as Napili Wells 1, 2, and 3 and Honokohau Well A. These wells are supplemented by water treatment plants above Honokowai and Lahainaluna High School that draws surface water from the Honolua Ditch and Kanaha Valley. Several miles of 12- and 16-inch lines and two (2) in-line booster stations convey water from these sources to consumers in Lahaina.

Storage is provided by a 1.5 million gallon (MG) storage tank above Wahikuli

and a 1.0 MG tank on Lahainaluna Road.

In addition to the County system, the West Maui region is served by private water systems, including the Hawaii Water Service Company (HWSC), which services portions of the Kaanapali Resort and other nearby developments, and the Kapalua Water Company, which provides water service to the Kapalua Resort.

The HWSC water system service area extends from Puukoolii Road southward to the Hyatt Regency Maui Resort and almost one-mile inland (eastward) from the coast. The system provides potable, fire protection, and irrigation water for developed areas, except for irrigation water for the golf courses and agricultural fields. Irrigation water requirements for the golf courses and agricultural fields are met by separate water systems using the R-1 effluent from the County of Maui's Lahaina Wastewater Reclamation Facility.

Potable water for the HWSC system is presently supplied by the basal groundwater obtained from seven deepwells. The wells range from 650 feet to 1,090 feet in depth and have the capacity to produce up to a total of 4.9 million gallons per day (Wilson Okamoto & Associates, March 2001).

5. **Wastewater Systems**

The County's wastewater collection and transmission system and the Lahaina Wastewater Reclamation Facility (LWRF) accommodate the region's wastewater needs. The LWRF, located along Honoapiilani Highway just north of Kaanapali Resort, has a design capacity of 9.0 MGD. A portion of the treatment system provides R-1 effluent used to irrigate the Kaanapali golf courses and highway landscaping.

The collection system for the LWRF consists of a series of gravity and force

main systems and pump stations.

6. **Solid Waste**

Residential refuse collection is provided by the County's Solid Waste Division. Private refuse collectors provide solid waste disposal services for commercial and institutional users. With the exception of the Hana region, residential and commercial solid waste from the island is transported to the Central Maui Landfill at Puunene.

A refuse transfer station located at Olowalu accepts household and green wastes, as well as used oil, for transport to the Central Maui Landfill in Puunene. The disposal of commercial and institutional refuse is not permitted at the Olowalu transfer station.

7. **Drainage**

The Project Area is located on the lower west slopes of the West Maui Mountains. Stormwater runoff sheet flows in a westerly direction from the upland slopes towards the ocean.

There are two major natural drainages within the Project Area. Hanakaoo Gulch drains the northern portion of the Project Area and Hahakea Gulch drains the southern portion. The U.S. Geological Survey topographic map (Lahaina) shows an intermittent stream in Hahakea Gulch. The stream in Hanakaoo Gulch is not identified on the U.S. Geological Survey topographic map.

Flows from Hanakaoo Gulch are conveyed to the large trapezoidal channel by three 24-inch pipes and three 5-foot by 2-foot box culverts under Honoapiilani Highway. Since no outlets or other improvements were constructed to convey flows, the trapezoidal channel is essentially a large retention basin.



Flows from Hahakea Gulch are carried to the ocean by a box culvert crossing Honoapiilani Highway. The existing Hahakea Gulch ocean outlet is located just south of the Hyatt Regency Maui parking lot (Wilson Okamoto & Associates, Inc., March 2001).

8. **Electrical, Telephone and CATV Service**

Electrical, telephone and cable television (CATV) services for the West Maui region are provided by Maui Electric Company, Ltd., Verizon Hawaii, and Hawaiian Cablevision Company, respectively.

The Kaanapali area is currently serviced by a 69 KVA, overhead transmission powerlines which run from the existing Maui Electric Company plant in Lahaina to the Puukolii substation just mauka of Puukolii Road. The substation steps down the power for distribution to the Kaanapali area. The overhead primary lines are diverted underground within the existing subdivisions and resort areas (Wilson Okamoto & Associates, Inc., March 2001).

### **III. Potential Impacts and Mitigation Measures**

### ***III. POTENTIAL IMPACTS AND MITIGATION MEASURES***

#### ***A. IMPACTS TO THE PHYSICAL ENVIRONMENT***

##### ***1. Land Use***

The 1,158.6-acre Project Area of the Kaanapali 2020 Plan will be implemented in the context of a comprehensive master land use plan. It will provide for approximately 2,810 residential units, three (3) community areas, a golf course, a school site, a community center, a cultural heritage center, a wellness center, a hospital, parks, open space and related infrastructure. Transportation corridors will be integrated with the existing and planned highways and arterial roadways. It will include uses similar to the existing Kaanapali Resort and golf course community and the adjacent single- and multi-family residential developments. It will also include new community centers reminiscent of historical plantation settlements. As a master-planned development, the implementation will be carried out in a comprehensive manner with impacts to surrounding land uses mitigated by infrastructure development, retention of open spaces, and the provision of community facilities and services. Further investigation of potential impacts to surrounding land uses will be assessed and the results, findings, and possible mitigation measures included in the Draft EIS document.

##### ***2. Flora and Fauna***

A faunal (bird and mammal) survey of six (6) sites covering the original Kaanapali 2020 conceptual plan area of 4,325 will be performed during the Draft EIS phase of work. This field work will focus on recording those species of birds and mammals found on the various parcels of the Project Area and beyond. Particular emphasis will be placed on native and migratory species. Any unusual or unique habitat resources important to native (endangered or threatened) species will be noted. Findings from this field work and pertinent information on fauna in this region will be included in the Draft EIS document.

3. *Nearshore Reef Ecosystems*

The Project Area lies inland from other lands fronting approximately 3.7 miles of Kaanapali's coastline. The potential for stormwater runoff impacts emanating from land-based activities will be greatest to those marine communities closest to the source. Therefore, field investigations will be carried out in the marine communities in close proximity to the shoreline to establish baseline conditions of the nearshore reef ecosystem. A quantitative delineation of marine communities will be carried out to define zones or biotopes present in the study area. Beside the quantitative measures, a qualitative reconnaissance will be made to identify a species list and abundance estimates. Field work will also be undertaken to assess water quality and surface discharge resulting from the proposed project. Potential impacts to marine communities and water quality will be identified. Possible mitigation measures to prevent or minimize degradation to the marine environment from the proposed project will also be identified. These findings will be included in the Draft EIS document.

4. *Archaeological Resources*

Phase II of the archaeological inventory survey field work includes evaluation, documentation and recordation, and when necessary, limited subsurface investigation of the recently recorded sites. Laboratory analysis of certain cultural artifacts will follow the Phase II fieldwork. In addition, after consultation with State Historic Preservation Division's main office, an approximate 20- to 25-acre portion of Honokowai Gulch will undergo an archaeological inventory survey. This area is presently being restored with Native Hawaiian plants under the stewardship of the Kaanapali 2020 Multi-Cultural Overlay Committee. The findings of the Phase I and II archaeological inventory, including the Honokowai gulch area, will be presented in the Draft EIS document.

5. *Cultural Impact Assessment*

a. *Settlement Context*

The Project Area is located in the *moku* or district of Lahaina and Kaanapali, in the *ahupua'as* of Honokowai, Hanakaoo, Kahua, Kapunakea and Wahikuli (predominantly Hanakaoo). The Lahaina District was considered to be a favored place of high chiefs because of its natural resource qualities and its proximity to Lanai and Molokai (Rosendahl, 1994). The majority of those lands up to approximately the 700-foot elevation comprised a nearly continuous band of agricultural and related habitation features. Initial development of the field systems likely occurred between 1200 to 1400 AD. Seasonal dryland agricultural practices eventually evolved to year-round cultivation as water diversion and distribution improvements were implemented.

Oral accounts tell of noble families who lived at Kaanapali and Lahaina after the 1100's. In Hawaiian, the words Ka'Ana Pali mean "the rolling cliffs" in reference to the wide sloping ridges mauka of Kaanapali Beach that rise to Puu Kukui, the highest peak in the West Maui Mountains (Belknap, 1981). Historical accounts document Lahaina as an important population center. Such accounts also note the continued presence of agriculture through the early 1800's. Crops included taro, potatoes, yams and sugarcane.

With the decline of the whaling industry, the sugar industry began to evolve. The sugar industry first began in the mid-1800's and over the next few years, further developed with the consolidation of several smaller mills into what is known today as Pioneer Mill Company, Ltd. As with other sugar plantation communities, the late 1800's and early 1900's saw the rapid expansion and growth of Pioneer Mill Company. In the early 20<sup>th</sup> century, Pioneer Mill controlled approximately 12,500

acres of land (Xamanek Researches, 2000). A 1919 map by W.E. Wall reveals that approximately 15,000 acres were under sugarcane cultivation by Pioneer Mill (Rosendahl, 1989.) Sugar cultivation areas extended from Ukumehame to Honokowai.

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

The historic significance of Lahaina Town itself is well documented. Lahaina was the home of Kahekili until his death in 1794 (Spenser Mason Architects/Austin Tsutsumi & Associates, Inc., 1988). It became the home of Kamehameha I and was designated the capital of the Hawaiian Kingdom until 1843. Evidence of this historic era is apparent today, and includes remnants of Kamehameha's Brick Palace built at Lahaina Harbor in 1803 (Belt Collins & Associates). Today, Lahaina is designated a National Historic Landmark.

***b. Cultural Impact Considerations***

A cultural impact assessment based on Kirch's (1985) model will be carried out. Kirch (1985) believed that initial settlement occurred much earlier than 600 AD. His culture-historical sequence model has four (4) phases: (i) Phase I Colonization Period (300-600 AD); (ii) Phase II Developmental Period (600-1100 AD); (iii) Phase III Expansion Period (1100-1650 AD); and (iv) Phase IV Proto-Historic Period (1650-1795 AD) (Kirch, 1985: 296-308; Kolb, 1991:205). The additional Early Historic Period (1795-1950 AD) and Modern Historic Period (Post 1950 AD) will be added to Kirch's model to capture more recent cultural

impact considerations.

The scope of the cultural impact assessment will include an ethnographic survey designed so that information from those interviewed would facilitate a determination of the impacts of the Proposed Project on cultural sites or practices. To this end, the following research categories or themes will be incorporated into the ethnographic survey: Consultant Background, Land Use and Resources, Water Use and Resources, Marine Resources, World War II influences, Heritage Resources and Anecdotal Stories. Except for the Consultant Background category, all the other research categories have sub-categories or sub-themes that will be developed based on the ethnographic data or responses of the interviewees. The responses or clusters of information will then become supporting evidence for any determinations on cultural impacts. The findings from this survey will be included in the Draft EIS document.

6. **Air Quality**

Air quality impacts attributed to the project will include dust generated by short-term construction-related activities. Site work such as clearing, grubbing and grading, and road work and construction for example, will generate air-borne particulates. Dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions.

All bare earth areas, including all diversion surfaces, will be vegetated to mitigate dust generated impacts. As developed, the proposed project is not expected to adversely impact local and regional ambient air quality conditions.

7. **Water Quality**

An ocean water quality baseline study will be carried out over 3.7 miles of coastline opposite the Project Area. The objectives of the ocean water quality

baseline study will be (1) to quantify the concentration of measure parameters in the marine environment seaward of the Project Area; and (2) to quantify any input of these parameters that may come from the Project Area. The parameters to be measured include nitrate+nitrite nitrogen, ammonia nitrogen, total dissolved nitrogen, orthophosphorus, total dissolved phosphorus, silica, nephelometric turbidity, chlorophyll-a, salinity, temperature, dissolved oxygen, and ph. Based on this data and analyses, potential impacts to water quality and mitigation measures will be identified and the findings will be included in the Draft EIS document.

8. Noise

Dominant noise sources in the Project Area include traffic on Honoapiilani Highway and aircraft noise from West Maui Airport to the north.

Ambient noise conditions will be temporarily impacted by construction activities. Heavy construction equipment, such as bulldozers, front-end loaders, and material-transport vehicles, will likely be the dominant source of noise during the construction period.

An acoustical study will be carried out to evaluate potential traffic and aircraft noise impacts associated with the project. Aircraft noise measurements and new aircraft noise contours will be used to describe the existing aircraft noise levels in the Project Area. Anticipated aircraft noise levels and contours for the year 2020 time frame will be provided using available aircraft operation forecasts. Aircraft noise attenuation, measures in the form of minimum exterior-to-interior noise reduction requirements, noise easements and noise disclosures will be discussed as required. Potential impacts from roadway traffic noise will be analyzed using available base year and year 2020 traffic data. Existing noise levels will be measured on roadways servicing the Project Area. Future traffic assignments with and without the proposed project will be used to predict 2020



traffic noise levels and potential noise impacts with and without the project. Possible noise mitigation measures for traffic and construction noise will be assessed and identified as required. The findings of the acoustical study will be included in the Draft EIS document.

9. **Visual Resources**

The proposed project proposes the long-term development of approximately 1,158.6 acres of land in a master-planned community context. The potential impacts on the area's visual resources will be assessed.

The Project Area will be located on the slopes above the Kaanapali Resort extending from 40 feet MSL to an elevation of approximately 400 feet MSL.

The proposed project's settlement densities and its urban characteristics will be focused on Lower South, East and North Honokowai and Middle Honokowai. The settlement pattern of Lower East Honokowai will be similar in character to the existing Kaanapali Resort community mauka of the Honoapiilani Highway (South Beach Mauka) with single- and multi-family residential developments integrated within a golf course setting and buffered by open spaces. To the north and south of Middle Honokowai will be agricultural lands similar to existing land uses. The lands in Honokowai Mauka, east of the Honokohau Ditch, will remain in agricultural or open space.

The Project Area will be developed within the context of a comprehensive master plan. Development guidelines will be adopted to maintain the urban design standards established by surrounding properties. Design standards will establish landscaping details within open space, roadways, and transportation corridors, public and semi-public areas. Approximately 77 percent of the overall 4,325 acres of Kaanapali 2020 lands will be maintained as agriculture and open space, thereby maintaining the surrounding community character.

The visual resources of the area will be further addressed in the preparation of the Draft EIS.

**B. SOCIO-ECONOMIC IMPACTS**

**1. Land Use and Community Character**

The Project Area is bordered: (a) on the north by public/quasi-public land, DHHL lands, and agricultural lands; (b) on the east agricultural lands, the West Maui Forest Reserve and conservation designated lands; (c) on the south by the Lahaina Community and Recreation Center, the HCDCH Villages of Lealii, and agricultural designated lands; and (d) on the west, by single and multi-family residences, a golf course and open space designated lands and the resort development of Kaanapali which includes hotel, commercial, and residential land uses.

The overall average low density of the Project Area will be complementary to adjacent residential and resort developed lands. In addition to land planning considerations, further research during the Draft EIS phase will include an identification of the population and housing trends and other information required to identify a social profile of the West Maui community. The baseline data will be expanded to identify major State and County policies that guide the development of West Maui, as well as major development proposals and public improvements within the Project Area, all to gain an understanding of the social context and community expectations. Potential social impacts will be identified in the context of resident and visitor population growth and the effects of the proposed project on the character of the region and its public goals, on specific community plan components, surrounding land uses and displacement impacts. The findings will be included in the Draft EIS document.

**2. Agricultural Land Use Impacts**

Assessment of the agricultural land use impacts will be carried out during the

Draft EIS phase. Historic and current agricultural uses of the lands will be documented. The agricultural variables, including but not necessarily limited to, conditions of the site, soil types, characteristics, and ratings, terrain, elevation, climatic conditions, and availability of irrigation water will be identified. Locational advantages and disadvantages for serving the West Maui, Maui, Honolulu, and mainland markets will be assessed. The impact of the proposed project on current agricultural activities at the Project Area and on nearby lands will be identified. In addition, consistency of the proposed project with State and County goals, objectives and policies relating to agriculture will be evaluated. The findings from the analyses and their assessment will be incorporated in the Draft EIS document.

3. **Population and Economy**

An economic impact assessment will be documented in the Draft EIS phase. This assessment will cover population projections, the current uses of the land and their associated economic activities. Further analysis on the impacts from construction will include projected job and payroll totals, secondary jobs generated, goods and services providers, and job-training and placement programs. A financial impact assessment will build on the data to quantify changes in the tax base, assess taxable family income and property values. The findings will be incorporated in the Draft EIS document.

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

A comprehensive assessment of the impacts to police, fire, and medical services, which includes a new hospital in the Project Area, will be carried out in the Draft EIS phase. The support facility needs will be assessed in relation to population generated demands, tax revenues generated from construction activities and business operations, and debt service on support facilities. Operating expenditures to support new residents and additional economic activity will be analyzed and net revenues or net deficits will be determined.

Findings will be included in the Draft EIS document.

5. **Recreational and Educational Facilities**

The Kaanapali 2020 Plan includes approximately 18 acres of park area in Middle Honokowai, comprised of community park/gardens, and approximately 31 acres of park lands in Lower Honokowai. An elementary school site is located in Lower South Honokowai. Further coordination will be undertaken with the Maui Department of Parks and Recreation and the Department of Education during the Draft EIS phase to determine fair-share funding requirements for recreational and educational facilities. Findings will be included in the Draft EIS document.

6. **Use of Chemicals and Fertilizers**

The use of herbicides will be generally limited to the initial planting periods for the subdivision landscaping and for the golf course. Pesticides are expected to be used only as a treatment and not as a preventative measure, with application being minimal and conducted only by a licensed commercial service provider.

Nitrogen/Phosphorus/Potash mixed-fertilizers are anticipated to be applied to landscaped areas and agricultural lands. By using proper irrigation management practices, leaching and runoff of fertilizers are expected to be minimized.

Marine water quality considerations will be addressed in the Draft EIS document.

7. **Traditional Beach and Mountain Access**

Possible impacts to traditional beach or mountain access will be evaluated as part of the Draft EIS.

C. IMPACTS TO INFRASTRUCTURE

1. Roadways

A traffic impact analysis report (TIAR) for the proposed project will be prepared. The TIAR will address the impacts of traffic generated from the proposed action and identify measures required to mitigate the impacts, as well as identify cumulative traffic impacts. In addition, a transportation plan is being formulated to address non-automobile modes of transportation. The transportation plan elements will serve to mitigate impacts of vehicle trips attributed to the proposed project. The TIAR and transportation plan will be included in the Draft EIS document.

2. Water

The estimated water demand for the Project Area based on the Water System Standards is presented in Table 7.

**Table 7**

<i>AVERAGE WATER DEMAND</i>	
<i>Area</i>	<i>Volume (Gallons Per Day)</i>
Lower Honokowai	1,800,000 gpd
Middle Honokowai	510,000 gpd
<b>Total Average Water Demand</b>	<b>2,310,000 gpd</b>
Source: Wilson Okamoto Corporation.	

It is anticipated that the water for Lower South and East Honokowai and Middle Honokowai will be supplied by the County water system while the water for Lower North Honokowai will be supplied by the Hawaii Water Service Company.

An infrastructure assessment report will be prepared to analyze the phasing of water system development to accommodate project development increments. The

results of the water system analysis will be provided in the Draft EIS.

3. **Wastewater**

The estimated wastewater flows for the Project Area based on the County of Maui design standards are presented in Table 8.

**Table 8**

<i>AVERAGE WASTEWATER FLOWS</i>	
<i>Area</i>	<i>Flow Gallons Per Day</i>
Lower Honokowai	1,380,000 gpd
Middle Honokowai	330,000 gpd
<b>TOTAL</b>	<b>1,710,000 gpd</b>
Source: Wilson Okamoto Corporation.	

As with water system requirements, the infrastructure assessment will analyze wastewater collection and treatment implementation needs to accommodate the Project Area. The results of the assessment will be presented in the Draft EIS.

4. **Solid Waste**

Solid waste generated from the construction of the proposed project will not be disposed at the County's Central Maui Landfill. Instead, alternative sites, such as the Maui Demolition and Construction Landfill and the Pohakulepo Concrete Recycling Facility, will be utilized. Upon completion, the single-family residential properties will be served by the County's solid waste disposal facilities. Further coordination will be carried out with the Maui Department of Public Works and Environmental Management during the Draft EIS to identify project implications to solid waste facilities. The findings will be incorporated in the Draft EIS document.

5. **Drainage**

The drainage calculations and proposed improvements for the proposed project will be developed in conformance with applicable County standards. The calculations and proposed improvements will also be developed in conformance with the conditions relating to drainage contained in Section D of the Settlement Agreement, dated September 29, 1998, that was executed in connection with the development of North Beach Makai. The 18-hole golf course proposed in Lower Honokowai and adjacent open spaces will be designed to serve as the Project Area retention system for the storm water runoff. Overflows from the retention systems will be diverted into the natural streams or gulches or existing retention basins. If required, other options such as retention basins within the Project Area and underground infiltration piping (subdrain) system will be considered. Findings from the drainage assessment will be incorporated in the Draft EIS document.

6. **Electrical, Telephone and CATV Service**

Electrical, telephone, and CATV services for the proposed project will be coordinated with Maui Electric Company, Verizon Hawaii and Hawaiian Cablevision. Since the implementation of the development will be phased over a long-term period, it is anticipated that service capacity will be available for the proposed development and will not have an adverse impact on service providers. Coordination will also be carried out with Maui Electric Company regarding the possible inclusion of the 0.5-acre substation site into the Project Area and the possible relocation of the existing substation to a new location mauka (east) of the proposed Lahaina Bypass. Results of this coordination will be incorporated in the Draft EIS document.

**D. CUMULATIVE AND SECONDARY IMPACTS**

A cumulative impact is defined as an impact to the environment which results from the incremental impact of an action when added to other past, present, and reasonably

foreseeable future actions regardless of what agency or person undertakes such other actions.

As the proposed implementation of the proposed project will impact infrastructure and public service systems and facilities, cumulative and secondary impacts will be further considered in the preparation of the Draft EIS document. In this context, impacts of the proposed project, as well as impacts associated with the conceptual land use plan for the North Beach Makai development and agricultural land uses in the Pioneer Farms Subdivision adjacent to Middle Honokowai and in Mauka Honokowai will be cumulatively assessed.



## **IV. Relationship to Land Use Plans, Policies and Controls**

#### ***IV. RELATIONSHIP TO LAND USE PLANS, POLICIES AND CONTROLS***

##### ***A. STATE LAND USE DISTRICTS***

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, established four (4) land use districts for all lands in the State of Hawaii. These districts are "Urban", "Rural", "Agricultural", and "Conservation". The Project Area is within the State "Agricultural" and "Urban" District. Refer to Figure 4.

A State Land Use District Boundary Amendment for an area covering 849.8 acres from the Agricultural District to the Urban District will be requested as part of the entitlement application to bring consistency between the State Land Use District Boundaries and the Project Area. Criteria considered in the reclassification of lands are set forth in the State Land Use Commission Rules (Chapter 15-15, Hawaii Administrative Rules). Further coordination with State agencies will be carried out in the Draft EIS phase and the proposed reclassification will be analyzed with respect to the appropriate district use criteria.

##### ***B. HAWAII STATE PLAN***

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

1. Section 226-7, Objectives and policies for the economy-agriculture. To achieve this objective it shall be the States policy to:
  - a. Facilitate the transition of agriculture lands in economically nonfeasible agricultural production to economically viable agricultural uses.
2. Section 226-12, Objective and policies for the physical environment-scenic beauty, natural beauty, and historic resources. To achieve this objective it shall be the State policy to:

- a. Promote the preservation and restoration of significant natural and historic resources.
  - b. Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.
3. Section 226-17, Objectives and policies for facility systems-transportation. To achieve the transportation objectives it shall be the policy of the State to:
- a. Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties.
  - b. Encourage transportation systems that serve to accommodate present and future development needs of communities.
4. Section 226-19, Objectives and policies for socio-cultural advancement-housing. To achieve the housing objectives, it shall be the policy of the State to:
- a. Effectively accommodate the housing needs of Hawaii's people.
  - b. Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.
  - c. Increase home ownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.

**C. SESSION LAWS OF HAWAII, ACT 15, 1988**

The Puukolii Village project, covering an approximate area of 299 acres, was approved by the Housing Finance and Development Corporation (HFDC) pursuant to Act 15, 1988 Session Laws of Hawaii. The Act 15 area consists of two (2) noncontiguous parcels separated by the proposed Lahaina Bypass right-of-way. The smaller portion (Puukolii Triangle) is approximately 59 acres and is situated makai of the proposed Bypass right-of-way. This parcel is located in the area designated as Lower Honokowai in the Kaanapali 2020 Plan. The larger portion (Puukolii Mauka) is approximately 240 acres and is situated mauka of the proposed Bypass right-of-way. Puukolii Mauka is virtually identical to the area designated as Middle Honokowai in the Kaanapali 2020 Plan. In May, 1993, the State Land Use Commission approved the petition of Amfac Property Investment Corporation and the Housing Finance and Development Corporation of the State of Hawaii to amend the Agricultural District Boundary covering the Puukolii Village project from Agricultural District to Urban District. Applicant plans to seek the approval of the State Land Use Commission to bring

conformance between the Act 15 Urban District lands and the uses proposed by the proposed project.

***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 stated in the Maui County Charter (2003),

"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 facilities locations, water and sewage systems, visitor destinations, urban design, and other matters related to development".

The proposed project is in keeping with the following General Plan objectives and policies:

***Objectives:***

1. To use the land within the County for the social and economic benefit of all the County's residents.
2. To preserve and protect the County's unique and fragile environmental resources.
3. To provide a choice of attractive, sanitary and affordable homes for all our residents.
4. To see that all developments are well designed and in harmony with their surroundings.
5. To develop a program for anticipating and enlarging the local street and highway systems in a timely response to planned growth.
6. To develop a Maui County transportation system linked to land use planning that is less dependent on the automobile as its primary mode of moving people.

**Policies:**

1. 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.
2. Encourage land use methods that will provide a continuous balanced inventory of housing types in all price ranges.
3. Preserve scenic vistas and natural features.
4. Provide or require adequate physical infrastructure to meet the demands of present and planned future affordable housing needs.
5. Encourage the construction of housing in a variety of price ranges and geographic locations.
6. Ensure that transportation facilities are anticipated and programmed for construction in order to support planned growth.
7. Support and expand programs to reduce automobile dependent employee commuting for hotel, commercial and industrial projects.

**E. WEST MAUI COMMUNITY PLAN**

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

The proposed project falls within the jurisdiction of the West Maui Community Plan adopted in 1996. The existing land use designations for the Project Area under the West Maui Community Plan are set forth by the West Maui Land Use Map. Refer to Figure 5.

The proposed project is in keeping with, among others, the following goals, objectives, and policies of the West Maui Community Plan.

**Goals:**

1. An attractive, well-planned community with a mixture of compatible land uses in appropriate areas to accommodate the future needs of residents and visitors in a manner that provides for the stable social and economic well-being of residents and the preservation and enhancement of the region's open space areas and natural environmental resources.
2. A sufficient supply and choice of attractive, sanitary and affordable housing accommodations for a broad cross section of residents.
3. An attractive and functionally integrated urban environment enhances neighborhood character, promotes quality design at the resort destinations of Kaanapali and Kapalua, 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:**

1. Preserve and enhance the mountain and coastal scenic vistas and the open space areas of the region.
2. Ensure that appropriate lands are available to support the region's present and future agricultural activities.
3. Establish an appropriate supply of urban land within the region to meet the needs of the community over the next 20 years. The Community Plan and its map shall define the urban growth limits for the region and all zoning requests and/or proposed land uses and developments shall be consistent with the West Maui Community Plan and its land use map.
4. Accommodate the 20-year housing needs of the planning region.
5. Integrate stream channels and gulches into the region's space system for the purposes of safety, open space greenways for public use and visual separation.
6. Enhance the appearance of major public roads and highways of the region.
7. Maintain a high level of design quality for West Maui destination areas.
8. Improve pedestrian and bicycle access within the region.

A 310-acre parcel located within the proposed Lower North Honokowai is designated

Project District 3 in the West Maui Community Plan. As stated, the objective of Project District 3 is as follows.

This project district is intended to provide, within the context of the Kaanapali Resort, a mixture of resident and visitor-oriented residential, commercial and recreational areas. ... The project district's 1200 residential units will be characterized by a variety of single-family and multi-family product types. Amenities such as parks, gardens, golf activities, and other recreational activities or attractions will be included to provide open space with the project district. (West Maui Community Plan, pages 53 and 54.)

Applicant proposes to amend the West Maui Community Plan to bring consistency between its land use designations and the uses proposed by the proposed project.

***F. COUNTY ZONING***

The lands underlying the Project Area are zoned Agricultural and R-3, Residential and Interim by Maui County Zoning. Applicant proposes to amend these zoning designations to bring consistency between the uses for the proposed project and County zoning.

***G. COASTAL ZONE MANAGEMENT/SPECIAL MANAGEMENT AREA***

The Hawaii Coastal Zone Management Program (HCZMP), as formalized in Chapter 205A, HRS, establishes objectives and policies for the preservation, protection, and restoration of natural resources of Hawaii's coastal zone. It is noted that approximately 17.48 acres of the Project Area in the western portion of Lower South Honokowai is within the County of Maui's Special Management Area. Therefore, consideration of County coastal zone objectives and policies will be included in the draft EIS.

As set forth in Chapter 205A, HRS, and the rules of the Maui Planning Commission, this section preliminarily addresses the project's relationship to applicable coastal zone management considerations. The responses provided herein will be updated and further detailed as results of the various technical studies being conducted for the Draft EIS are

made available.

(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, and county authorities; and crediting such dedication against the requirements of Section 46-6, HRS.



**Response:** Recreational area needs of the proposed project will be addressed through the allocation of approximately 49 acres of parks designated within the master planned area. The Draft EIS will further address recreational resources impacts.

(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:** An archaeological inventory survey will be carried out in preparation of the Draft EIS document in order to identify, protect and preserve historic resources.

(3) **Scenic and Open Space Resources**

**Objectives:**

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

**Policies:**

- (A) Identify valued scenic resources in the coastal zone management area;
- (B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural 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 Project Area is located along the lower slopes of the West Maui Mountains above Honoapiilani Highway and Kaanapali Resort from 40 feet MSL rising to approximately 400 feet MSL. The urban forms established by the proposed project will be buffered with large landscaped areas to mitigate the impact on visual resources.

(4) **Coastal Ecosystems**

**Objective:**

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

**Policies:**

- (A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- (B) Improve the technical basis for natural resource management;
- (C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- (D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- (E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

**Response:** The condition and characteristics of the existing coastal environment will be studied. The results of the study will be incorporated in the Draft EIS document.

(5) **Economic Uses**

**Objectives:**

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 economic impacts of the proposed project will be studied and addressed in the Draft EIS document.

(6) **Coastal Hazards**

**Objectives:**

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

**Policies:**

- (A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and 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; and
- (D) Prevent coastal flooding from inland projects.

**Response:** The proposed project will not be located within environmentally sensitive areas that are subject to natural hazards. Appropriate technical measures will be designed and implemented to address stormwater management

requirements for the proposed project. Technical design measures will be addressed in the Draft EIS document.

(7) **Managing Development**

**Objectives:**

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:** A number of community and committee public informational meetings have been incorporated into the Kaanapali 2020 planning process over the past several years. Further opportunities for public understanding of the proposed project are provided for in accordance with Chapter 343, HRS, notice and public review provisions. Opportunity for public review and participation will also be provided pursuant to State Land Use Commission procedures for the State Land Use district boundary amendment and pursuant to the Maui County ordinances and the Maui Planning Commission rules applicable to the change of zoning and community plan amendments.

(8) **Public Participation**

**Objectives:**

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

**Policies:**

- (A) Promote public involvement in coastal zone management processes;

- (B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal 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 mentioned, public informational meetings and community participation have been incorporated into the Kaanapali 2020 planning process. The Draft EIS document will be processed in accordance with Chapter 343, HRS, and opportunity for comment by agencies and the public will be provided. Earlier comments received during the review period when the EISPN was filed on September 8, 2002 will also be incorporated in the Draft EIS. Additionally, public input opportunities will be provided through the various land use entitlement processes.

(9) **Beach Protection**

**Objectives:**

Protect beaches for public use and recreation.

**Policies:**

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

**Response:** In broad objective terms, the proposed project will provide appropriate Best Management Practices in the upland region to manage overall drainage in the Project Area. In the long term, upland drainage improvements will help protect beach resources from flood damage and reduce any potential adverse impact to recreation caused by "red tide" from upland sedimentation in

stormwater runoff. Further water quality and coastal processes assessment will be carried out.

(10) **Marine Resources**

**Objectives:**

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

**Policies:**

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

**Response:** As part of the Draft EIS document preparation, marine studies will be carried out along Kaanapali Beach to increase the body of knowledge regarding the understanding of ocean processes, marine life and marine inventory information in the West Maui region. These findings will be applied to assess potential adverse impacts to marine resources and identification of mitigative measures to protect the marine resources and to assure their sustainability.

**H. OTHER APPROVALS**

Prior to the filing of the Draft EIS document, coordination will be undertaken with the U.S. Department of the Army regarding permitting requirements associated with the proposed work within the Project Area and surrounding environs. Similar coordination

with the State Department of Health and State Office of Planning will be conducted to determine the applicability of Section 401 Water Quality Certification and Coastal Zone Management Consistency approval requirements, respectively. Additionally, coordination with the State Land Use Commission will be undertaken to determine criteria and requirements for the Land Use District Boundary amendment.

The results of the foregoing coordination will be incorporated in the Draft EIS document.

## **V. Summary of Adverse Environmental Effects Which Cannot Be Avoided**



## ***V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED***

Assessment of construction-related impacts, noise and air quality impacts, and potential impact on the physical and socio-economic environment, as well as shoreline conditions, characteristics, and coastal processes, nearshore marine water quality biological investigations and assessments and an archaeological inventory and survey will be carried out to identify potential impacts resulting from the proposed project and to determine appropriate mitigation measures. More detailed assessment of these issues will be addressed by the Draft EIS document.

## **VI. Alternatives to the Proposed Action**

## ***VI. ALTERNATIVES TO THE PROPOSED ACTION***

### ***A. PREFERRED ALTERNATIVE***

The proposed project represents the preferred alternative. This alternative covering approximately 1,158.6 acres provides a comprehensive community based land use development plan that best responds to the community vision set for the Kaanapali 2020 lands. Background information relating to the formulation of the preferred plan is presented in Chapter X, Community Based Planning Process.

### ***B. ORIGINAL PLAN***

The original plan covering approximately 4,325 acres was presented at the first Kaanapali 2020 “Making It Pono” Reunion in 2000. Continued committee input and refinement brought about amendments to the original concept. Plan adjustments resulted in excluding North Beach makai lands, the conservation lands, Honokowai Mauka lands, agricultural lands in Middle Honokowai and portions of Honokowai Gulch from the Project Area since land entitlements were not required for these areas. Further refinements to the original plan involved relocating the Puukolii Village concept to the Lower South Honokowai area, with priority given to the establishment of affordable and employee housing early in the development phase. Other major changes involved reducing the golf course development from two (2) to one (1) eighteen hole course, and lowering the number of units from 3,515 to 2,810 units.

### ***C. ACT 15 PUUKOLII PLAN ALTERNATIVE***

This alternative involves the development of the 241-acre parcel located above the proposed Lahaina Bypass right-of-way (Puukolii Mauka) as a separate action from the land use entitlement process for the proposed development of lands below the Lahaina Bypass right-of-way (Lower Honokowai area in the Kaanapali 2020 Plan). The approved Act 15 Puukolii Village plan currently has entitlements for a State Land Use Urban district, various County zoning districts and West Maui Community Plan land use designations. The applicant would seek to amend the approved Puukolii Mauka

land use plan in a manner which would reflect the land uses proposed for Middle Honokowai as represented in the Kaanapali 2020 Plan. Implementation of this alternative would require an amendment to the conditions of approval established under Act 15 to bring conformance between the land uses approved for Puukolii Mauka and the land uses proposed for Middle Honokowai in the Kaanapali 2020 Plan.

The bifurcation of the Kaanapali 2020 Project Area into two (2) project areas: Puukolii Mauka and Lower Honokowai, under this alternative would allow the development of the lands above the Lahaina Bypass (Middle Honokowai) to proceed on a separate track from the entitlement process for the lands below the Lahaina Bypass right-of-way (Lower Honokowai).

If considered viable, details regarding this alternative will be further discussed in the Draft EIS.

***D. NO ACTION ALTERNATIVE***

The no action alternative would involve the continuation of the underutilized and unmaintained nature of the site. Apart from the approximately 1,000 acres planted in seed corn, the remaining portion of the land is fallow. The no action or no build alternative would involve the continuation of the underutilized nature of the Project Area. The no action alternative is not deemed appropriate given the changing land use context in the West Maui region, the closure of Pioneer Mill and the economic infeasibility of the traditional crops of sugar and pineapple. As such, the Applicant considered it essential to implement a community based planning process, mandated by the Maui Planning Commission as part of the condition of approval for the North Beach (makai) entitlement, and to respond appropriately to current market conditions and attendant infrastructure system upgrades.

## **VII. Irreversible and Irretrievable Commitments of Resources**

## ***VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES***

The development of the proposed project would involve the commitment of land and funds. In addition, substantial labor and material resources would be expended as part of the project's construction phase. Commitment of these resources are considered irreversible and irretrievable. This commitment, however, is considered appropriate in the context of providing a comprehensive long term Master Land Use Plan for the development area.

Addressing land use development issues and market needs from a community based, comprehensive master planning perspective provides an efficient and effective means of developing and implementing infrastructure and related service components. It is in this context that commitment of resources will be considered in the Draft EIS.

## **VIII. Findings and Conclusions**

## VIII. FINDINGS AND CONCLUSIONS

Every phase of the proposed project, its expected consequences, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action have been evaluated in accordance with the Significance Criteria of Section 11-200-12 of the Administrative Rules. Discussion of project conformance to the criteria is noted as follows:

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

A marine survey and assessment, as well as an archaeological inventory survey will be carried out to address issues relating to loss or destruction of natural or cultural resources.

In addition, the implementation of the proposed project will be assessed in the context of the area's land use history and surrounding existing developments. Additional informant interviews will be conducted to complete the project's cultural impact assessment. The findings will be used to assess potential impacts and identify mitigation measures to prevent the loss or destruction of any natural or cultural resources.

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

The proposed project is not anticipated to curtail the range of beneficial uses of the environment. There are no impacts attributed to the proposed project which will limit the use of surrounding lands. Similarly, environmental parameters such as air quality will not be adversely affected by the proposed project. Adverse effects on scenic views resulting from the proposed project can be mitigated by landscape screening buffer zones around development areas, and maintaining large tracts of open space. Assessment on water quality parameters will be investigated during the EIS preparation phase and the findings will be used to assess potential impacts and mitigation measures to ensure that the proposed project will not curtail the beneficial uses of the



environment.

3. **The Proposed Action Does Not Conflict With the State's Long-Term Environmental Policies or Goals or Guidelines as Expressed in Chapter 344, HRS**

The State Environmental Policy and Guidelines are set forth in Chapter 344, HRS. Upon completion of investigations for the EIS document, an assessment of the proposed project relative to the policies and guidelines will be undertaken.

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

The proposed project will directly benefit the local economy by providing construction and construction-related employment. In the long term, the project will support the local economy through the contribution of salaries, wages, benefits and taxes, as well as through the purchases of goods and services. In addition, certain components of the project will address other community needs relating to healthcare, education, cultural enrichment and recreation. An economic impact assessment for the proposed project will be undertaken with its results incorporated in the Draft EIS.

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

Preliminarily, no adverse impacts to the public's health and welfare are anticipated as a result of the proposed project. Further review of public health impacts will be carried out as part of the Draft EIS preparation process.

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

The proposed project will be a source of new population to the West Maui region. In this regard, the proposed project will impact public service in the region such as schools, police, and fire protection. Further coordination will be undertaken during the Draft EIS with State and County agencies to address services and facilities requirements for the Kaanapali 2020 Plan.

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

Construction excavation and grading activities will create temporary nuisances related to noise and dust. Appropriate dust control and noise mitigation measures will be implemented during construction to ensure that fugitive dust and noise generated in connection with construction is minimized.

Marine processes and marine water quality will be investigated as part of the EIS preparation phase and appropriate mitigation measures will be identified.

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

There are no additional development components associated with the proposed project. Accordingly, the impacts to be assessed in the EIS document will be based on the entire action.

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

A flora and fauna study will be carried out during the EIS preparation. A marine biological assessment will be conducted as an element of the EIS preparation phase. The potential impacts and mitigation will be identified through these studies to ensure that rare or threatened or endangered species or their habitats will not be adversely affected by the proposed action. The findings will be incorporated in the Draft EIS document.

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, and installation of dust screens will be implemented to minimize wind-blown emissions. Noise impacts will occur primarily from construction equipment. Equipment mufflers or other noise

attenuating equipment, as well as proper equipment and vehicle maintenance, will be used during construction activities. Construction noise impacts will be mitigated through compliance with the provisions of the State of Hawaii, Department of Health, Administrative Rules, Title 11, Chapter 46, "Community Noise Control". These rules require a noise permit if the noise levels from construction activities are expected to exceed the allowable levels set forth in the Chapter 46 rules.

Long-term impacts and mitigation on noise and water quality resulting from the proposed project will be studied and the findings will be incorporated into the Draft EIS document.

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 Area is not located within any environmentally sensitive areas. Coastal water quality assessment parameters will be addressed in the Draft EIS document.

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

Adverse effects to coastal scenic and open space resources and scenic view corridors resulting from the proposed project will be mitigated by landscaping, buffer zones around developed areas and maintaining large areas of open space.

13. ***The Proposed Project Will Not Require Substantial Energy Consumption***

The proposed project will involve the commitment of fuel for construction equipment, vehicles, and machinery during construction and maintenance activities.

In the context of the region's long-term energy consumption, the project's demand for energy will be phased in over several years. Coordination with Maui Electric Company will, therefore, be undertaken during the preparation of the Draft EIS to ensure that

appropriate planning is implemented to address energy supply issues.

The proposed project is considered to be a significant land use action covering 1,158.6 acres in the Kaanapali area. While the benefits of the project are deemed substantial, the Applicant and the Kaanapali 2020 Advisory Committees have jointly determined that the preparation of an EIS is appropriate to ensure thorough environmental analysis and public input.

## **IX. List of Permits and Approvals**

## ***IX. LIST OF PERMITS AND APPROVALS***

The following Federal, State and County permits and approvals may be required for project implementation:

### **Federal Permits**

1. Department of Army Permit (U.S. Army Corps of Engineers)

### **State of Hawaii**

1. Section 401 Water Quality Certification (Department of Health)
2. Coastal Zone Management Consistency Approval (State Office of Planning)
3. State Work-to-Perform Permit (Department of Transportation)
4. State Land Use Commission District Boundary Amendment
5. Amendment of existing Land Use Commission Decision and Order on Puukoolii Village
6. National Pollutant Discharge Elimination Permit (NPDES) (Department of Health)

### **County of Maui**

1. Community Plan Amendment
2. Project District Phase I, Phase II and Phase III approvals
3. Subdivision Approval
4. Change in Zoning
5. Special Area Management Use Permit
6. Construction Permits (includes without limitation grading and building permits)

Coordination with the appropriate administering agencies will be conducted during the preparation of the EIS document.

## **X. Community Based Planning Process**



## ***X. COMMUNITY BASED PLANNING PROCESS***

### ***A. BACKGROUND***

In July 1998, the Kaanapali North Beach Joint Venture, a partnership between Amfac Property Investment Corp. (Amfac) and Tobishima Pacific, Inc., was granted a Special Management Area Use Permit for its North Beach Kaanapali Ocean Resort project. As a condition of this approval, Amfac prepared a community-based master plan for the North Beach area comprised of approximately 96 acres. Though not required under the SMA condition, Amfac decided that the community-based master planning effort should encompass not only 96 acres at North Beach but the balance of Amfac's lands in Kaanapali/Honokowai, totaling approximately 4,325 acres.

In early 1999, ten (10) members were appointed to serve on a advisory/planning committee, and a facilitator and planning consultants were selected to assist with the community-based planning effort. Planning and preparation for a six-month period resulted in the sponsorship of "Kaanapali 2020: Making it Pono" (Future Search Conference). The conference was set with eight (8) stakeholder groups: (1) Amfac, (2) Business and Commerce, (3) Community Organizations, (4) Cultural Heritage, (5) Environment, (6) Government (County, State and Federal), (7) Social Services and (8) Organized Labor. Each stakeholder group had eight members. This began the process of creating a common vision for Amfac's Kaanapali/Honokowai lands for the year 2020.

The planning process involved the following steps.

#### ***1. Vision Statement***

More than sixty (60) individuals participated in the Future Search Conference on November 4 to 6, 1999. Personal, local and global perspectives were shared. Participants conceptualized ideas for the future, sought common ground for their vision, and chose themes and projects for reaching that common vision. Working Groups were formed to focus on key areas: (1) Agriculture and Soil



Stabilization, (2) Education, (3) Environment, (4) Health Facilities, (5) Multi-Cultural Overlay, (6) Recreation, (7) Transportation and (8) Water Resources. Community members who participated in the Conference and other interested individuals held meetings of the respective Working Groups between November 1999 and March 2000. The Working Groups submitted their findings and recommendations to the Land Planning and Economic Feasibility Group in February 2000.

2. **The Formulation of the Preliminary Land Plan (Kaanapali 2020)**

The Land Planning and Economic Feasibility Group met almost weekly from February through June 2000 and formulated a preliminary land plan. The land plan was divided into the following sections: (1) North Beach or Kekaa, (2) Lower Honokowai (3) Middle Honokowai, (4) Mauka Honokowai, (5) Conservation and (6) Gulch. Decisions on the preliminary land plan were based on 100% consensus and resulted in the following:

Table 9

<b>PRELIMINARY LAND PLAN SUMMARY</b>			
<b>Section</b>	<b>Size Acres</b>	<b>Open Space Acres</b>	<b>Maximum Units</b>
Kekaa/North Beach	96	29	1,950
Lower Honokowai	917	524	2,000
Middle Honokowai	1,050	595	1,500
Mauka Honokowai	775	698	102
Conservation	1,187	1,187	0
Gulch	300	300	0
<b>TOTAL</b>	<b>4,325</b>	<b>3,333</b>	<b>5,552</b>

3. **Review of the Preliminary Land Plan**

On July 14, 2000, a “reunion” conference was held with approximately fifty (50) individuals in attendance. The participants reviewed, discussed and approved

the reports of the Working Groups and the Preliminary Land Plan.

At the “reunion”, additional committees were formed to make the “vision” a reality. A Steering Committee and an Entitlements Committee were formed.

4. **Refinement of the Preliminary Land Plan**

The Steering Committee and Entitlements Committee held meetings, separately and jointly, to continue the community’s efforts towards the common vision. The committees moved the plan forward and kept the community informed of the plans.

The committees selected consultants needed for the eventual entitlements processing, which includes the preparation of an Environmental Impact Statement. The emphasis was on refining a land plan for the primary sections of Lower Honokowai, Middle Honokowai, and Mauka Honokowai. The decision was made to prepare a Marketing Study. The study was used to prepare a more economically realistic land plan and an alternative land plan. These plans were reviewed in conjunction with the preparation of an Economic Feasibility Study.

5. **The Alternative Land Plan (Kaanapali 2020 Plan)**

The alternative land plan focuses on the Lower and Middle Honokowai. Representatives from the Steering Committee and Entitlements Committee have approved the alternative land plan which calls for the following:

Table 10

<i>KAANAPALI 2020 PLAN</i>		
<i>Section</i>	<i>Size Acres</i>	<i>Maximum Units</i>
Lower Honokowai	917.6	2,100
Middle Honokowai	241	710
<b>TOTAL</b>	<b>1,158.6</b>	<b>2,810</b>

The alternative land plan is referred to as the Kaanapali 2020 Plan.

A second “reunion” was held on August 14, 2002 to inform the wider participants of the community based planning process of the committees’ work. The committee representatives presented the Kaanapali 2020 Plan and the ensuing environmental impact statement process and the land entitlements required to implement the plan.

**XI. Agencies and Organizations to  
be Consulted in the Preparation  
of the Draft EIS**

***XI. AGENCIES AND ORGANIZATIONS TO BE CONSULTED IN  
THE PREPARATION OF THE DRAFT EIS***

An Environmental Impact Statement Preparation Notice (EISPN) for the Kaanapali 2020 Plan was previously published in The Environmental Notice on September 8, 2002. The County of Maui, Department of Planning was named as the accepting authority for the EISPN and the EIS. However, in preparation of the Draft EIS, it became evident that a number of triggers invoked Chapter 343, HRS, and the accepting authority could be one of a number of possible agencies. Refer to Chapter I, Section D. In accordance with the requirements of Chapter 343-5(d), Hawaii Revised Statutes, and Chapter-200-4(b), Hawaii Administrative Rules, the agencies resolved that the State Land Use Commission will be the accepting authority for the EIS. Consequently, the EISPN, filed on September 8, 2002 naming the Maui County Planning Department as the accepting authority, will be withdrawn and notice to this effect will be published in The Environmental Bulletin upon approval by the State Land Use Commission to be the accepting authority for the EISPN and EIS.

The following list of agencies, organizations and individuals will be consulted in the preparation of the Draft EIS. These agencies and organizations will receive copies of the EISPN.

Comments received during the former EISPN comment period (from September 8 to October 8, 2002) will be addressed in the Draft EIS, as well as additional comments received during the current EISPN review period.

1. George Young  
Department of the Army  
U.S. Army Engineer District, Hnl.  
Regulatory Branch  
Building 230  
Fort Shafter, Hawaii 96858-5440
2. Paul Henson, Ph.D.  
Field Supervisor  
U. S. Fish and Wildlife Service  
300 Ala Moana Blvd., Rm. 3-122  
Box 50088  
Honolulu, Hawaii 96813
3. Ted Liu, Director  
State of Hawaii  
Office of Planning  
Department of Business, Economic  
Development and Tourism  
P.O. Box 2359  
Honolulu, Hawaii 96804
4. Denis Lau, Chief  
Clean Water Branch  
State of Hawaii  
Department of Health  
919 Ala Moana Blvd., Room 300  
Honolulu, Hawaii 96814
5. Herbert Matsubayashi  
District Environmental Health  
Program Chief  
State of Hawaii  
Department of Health  
54 High Street  
Wailuku, Hawaii 96793
6. Micah A. Kane, Chair  
Department of Hawaiian Home Lands  
P.O. Box 1879  
Honolulu, Hawaii 96805
7. Peter Young, Chairperson  
State of Hawaii  
Department of Land and Natural  
Resources  
P. O. Box 621  
Honolulu, Hawaii 96809
8. Melanie Chinen, Administrator  
State of Hawaii  
Department of Land and Natural  
Resources  
State Historic Preservation Division  
601 Kamokila Blvd., Room 555  
Kapolei, Hawaii 96707
9. Rod Haraga, Director  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813  
(cc: Fred Cajigal)
10. Clyde Namu'o, Administrator  
Office of Hawaiian Affairs  
711 Kapiolani Boulevard, Suite 500  
Honolulu, Hawaii 96813
11. Carl Kaupololo, Chief  
County of Maui  
Department of Fire Control  
200 Dairy Road  
Kahului, Hawaii 96732
12. Alice Lee, Director  
County of Maui  
Department of Housing and  
Human Concerns  
200 S. High Street  
Wailuku, Hawaii 96793
13. Michael W. Foley, Director  
County of Maui  
Department of Planning  
250 S. High Street  
Wailuku, Hawaii 96793
14. Cultural Resources Commission  
c/o Maui Planning Department  
250 S. High Street  
Wailuku, Hawaii 96793

15. Glenn Correa, Director  
County of Maui  
Department of Parks and Recreation  
700 Halia Nakoia Street  
Wailuku, Hawaii 96793
16. Tom Phillips, Chief  
County of Maui  
Police Department  
55 Mahalani Street  
Wailuku, Hawaii 96793
17. Milton Arakawa, Director  
County of Maui  
Department of Public Works  
and Environmental Management  
200 South High Street  
Wailuku, Hawaii 96793
18. George Tengan, Director  
County of Maui  
Department of Water Supply  
200 South High Street  
Wailuku, Hawaii 96793
19. Maui Electric Company, Ltd.  
P.O. Box 398  
Kahului, Hawaii 96732
20. Verizon Hawaii  
60 S. Church Street  
Wailuku, Hawaii 96793
21. West Maui Taxpayers Association  
P.O. Box 10338  
Lahaina, Hawaii 96761
22. Councilmember JoAnne Johnson  
Maui County Council  
200 South High Street  
Wailuku, Hawaii 96793
23. Buddy Nobriga  
Chair, West Maui Soil and Water  
Conservation District  
P.O. Box 1170  
Wailuku, Hawaii 96793
24. Mr. Glenn Shishido  
State of Hawaii  
Division of Forestry and Wildlife  
54 South High Street  
Wailuku, Hawaii 96793
25. Lani Correa, Executive Director  
Maui Hotel Association  
1727 Wili Pa Loop  
Wailuku, Hawaii 96793
26. Lahaina Public Library  
680 Wharf Street  
Lahaina, Hawaii 96761
27. Patty Nishiyama  
Na Kapuna O Maui  
320 Kaeo Place  
Lahaina, Hawaii 96761
28. Akoni Akana  
Friends of Moku'ula  
505 Front Street  
Lahaina, Hawaii 96761
29. Peter McKenney  
West Maui Heritage Foundation  
P.O. Box 519  
Lahaina, Hawaii 96761
30. Sierra Club  
71 Baldwin Avenue, Unit C8  
Paia, Hawaii 96779
31. Lucienne DeNaie  
Maui Tomorrow  
P.O. Box 47  
Haiku, Hawaii 96708
32. Nature Conservancy  
81 Makawao Avenue, Suite 203A  
Makawao, Hawaii 96768
33. Theo Morrison  
LahainaTown Action Committee  
648 Wharf Street  
Lahaina, Hawaii 96761
34. Shelley Kekuna  
Kaanapali Operators Association  
2530 Kekaa Drive, Building B  
Kaanapali, Hawaii 96761

35. May Fujiwara  
Lahaina-Honolua Senior Citizens Club  
P.O. Box 1086  
Lahaina, Hawaii 96761
36. Lynne Woods, President  
Maui Chamber of Commerce  
250 Alamaha Street, Suite N16A  
Kahului, Hawaii 96732
37. Lloyd Akiona  
P.O. Box 13220  
Lahaina, Hawaii 96761
38. Dave Ferguson  
Kaanapali Hillsides AOA  
c/o Management Consultants  
727 Wainee Suite 106  
Lahaina, Hawaii 96761
39. George Freeland  
Lahaina Restoration Foundation  
120 Dickenson Street  
Lahaina, Hawaii 96761
40. Lynne A.S. Araki-Regan  
County of Maui  
Office of Economic Development  
200 South High Street  
Wailuku, Hawaii 96793
41. Mayor Alan Arakawa  
County of Maui  
Office of the Mayor  
200 South High Street  
Wailuku, Hawaii 96793
42. Stephanie Aveiro  
State of Hawaii  
Housing and Community Development  
Corporation of Hawaii  
677 Queen Street, Suite 300  
Honolulu, Hawaii 96813
43. Anthony Ching, Executive Officer  
State of Hawaii  
State Land Use Commission  
P.O. Box 2359  
Honolulu, Hawaii 96804



## **References**

## References

Belknap, Jody Parry, Kaanapali, Amfac Property Corporation, 1981.

Belt Collins & Associates, Design Study for Front Street Improvement Plan, Lahaina Historic District - Past and Present, Document C, prepared for Planning Department, County of Maui, December 1992.

Brock, R.E. An Inventory of the Nearshore Marine Communities Fronting the Kaanapali Airstrip, Maui. Prepared for AECOS, Inc., Kailua, Hawaii. 1986.

Brock, R.E. (Environmental Assessment Co.), A Quantitative Assessment of the Marine Communities and Water Quality Along the Kaanapali, Maui Coastline for the Puukolii and North Beach Developments. Prepared for AMFAC/JMB Hawaii, Inc. 1992a.

Brock, R.E. (Environmental Assessment Co.), A Quantitative Assessment of the Marine Communities and Water Quality in an Area Fronting the Development of the North Beach Project Site (former Kaanapali Airstrip), West Maui, Hawaii. Prepared for SVO Pacific Inc. 2001a.

Brock, R.E. (Environmental Assessment Co.), Status of the Green Turtle (*Chelonia mydas*) Population in the Vicinity of Honokowai and Mahinahina Streams, Kaanapali, West Maui. Prepared for Engineering Division, Department of Public Works, County of Maui. 1992b.

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

County of Maui, Maui County Data Book, 2003.

County of Maui, West Maui Community Plan, February 1996.

Munekiyo & Arakawa, Inc., Application for Housing Development Pursuant to Chapter 201E, Hawaii Revised Statutes - Waiale Road Affordable Rental Project, September 1995.

Munekiyo & Hiraga, Inc., Application for Housing Development Pursuant to Section 201E-210, HRS - Lanai City Housing Project, January 1996.

Munekiyo & Arakawa, Inc., Application for Special Management Area Use Permit, Kaanapali Ocean Resort, March 1997.

Munekiyo, Arakawa & Hiraga, Inc., Draft Environmental Assessment, Five-Lot Subdivision, Kaanapali (TMK 4-4-08:16), July 2000.

Munekiyo, Arakawa & Hiraga, Inc., Draft Environmental Assessment - Napili Villas, August 2000.

Munekiyo, Arakawa & Hiraga, Inc., Final Environmental Assessment - Honoapiilani Highway Widening (Kaanapali Parkway to Honokowai Stream), April 1998.

Munekiyo, Arakawa & Hiraga, Inc., Final Environmental Assessment - Kapalua Site 19, September 1999.

Munekiyo, Arakawa & Hiraga, Inc., Final Environmental Assessment - Wainee Office Building, July 1999.

Rosendahl, Paul H., Ph.D., Archaeological Inventory Survey Lahaina Bypass Highway New Connector Roads Project Area, prepared for Amfac/JMB Hawaii, Inc. and Munekiyo, Arakawa & Hiraga, Inc., January 1994.

Rosendahl, Paul H., Ph.D., Archaeological Inventory Survey, Lahaina Master Planned Project Site, Land of Wahikuli, Lahaina District, Island of Maui, prepared for Housing Finance and Development Corporation, October 1989.

Sato & Associates, Inc., Drainage Master Plan, Kaanapali North Beach (Mauka and Makai), prepared for Amfac Property Investment Corp., April 2000.

SMS, Maui County Community Plan Update Program: Socio-Economic Forecast, June 14, 2002.

Spenser Mason Architects, Historic Site Survey for Lahainaluna Road and Wainee Street Widening Projects, prepared for Austin, Tsutsumi & Associates, Inc., October 1988.

State Department of Labor and Industrial Relations, Local Area Unemployment Statistics, May 2004.

State Department of Labor and Industrial Relations, personal communication with Ray Domingo, June 6, 2000.

State Department of Transportation, personal communication with Athan Adachi, September 1, 2000.

University of Hawaii, Department of Geography, Atlas of Hawaii, Third Edition, 1999.

U.S. Department of Agriculture, Draft Watershed Plan and Environmental Assessment - Lahaina Watershed, February 1992.

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

Wilson Okamoto & Associates, Inc. Kaanapali 2020 Plan, Infrastructure Concept Development Plan, Part I - Existing Infrastructure, Prepared for Amfac/JMB Hawaii, March 2001.

Xamanek Researches, An Archaeological Inventory Survey of the West Side Resource Center (Ka Hale A Ke Ola), Lands of Ko'oka, Waine'e, Pua'a nui, Lahaina District, Maui Island (TMK 4-6-15:por. 1), prepared for Munekiyo, Arakawa & Hiraga, Inc., November 2000.