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GOVERNOR
STATE OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

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95 DEC -4 10:25

OFC. OF ENVIRONMENTAL
QUALITY CONTROL

Mr. Gary Gill Director, Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

SUBJECT: Final environmental Assessment (EA)
Puukapu Farm Lots Subdivision
TMK: 6-4-4:por. & 29 and 6-4-8:6, 11, 26, 35, & 46
Puukapu, South Kohala District, Island of Hawaii

The State of Hawaii Department of Hawaiian Home Lands (DHHL) did not receive any comments during the 30-day public comment period which began on March 23, 1995. We have determined that this project will not have significant adverse environment effects and have therefore issued a negative declaration. Please publish this notice in the next OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the Final Environmental Assessment. Please contact Mr. Patrick Young of my staff at 586-3818 if you have any questions.

Yours truly,

A handwritten signature in black ink, appearing to read "Mike Crozier".

Mike Crozier, Administrator
Land Development Division

169

1995-12-23-HI-PEA-Puukapu Farm Lots
Subdivision

DEC 23 1995

FILE COPY

Final Environmental Assessment

**PUUKAPU FARM LOTS
SUBDIVISION**

Puukapu, South Kohala District, Hawaii

Prepared for:
Department of Hawaiian Home Lands

Prepared by:
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Land Use Consultant
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Hilo, HI 96721

In association with:
Imata & Associates, Inc.

November 11, 1995

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FINAL EA: PUUKAPU FARM LOTS SUBDIVISION

1.0 INTRODUCTION

1.1 Proposing Agency

The proposing agency, the Department of Hawaiian Home Lands ("DHHL"), proposes to construct subdivision improvements for agricultural farm lots. The use of State land and/or funds triggers the environmental review requirements under *Hawaii Revised Statutes* Chapter 343.¹

1.2 Agencies Consulted

The following agencies and organizations were consulted during the process of preparing this environmental assessment or during the public review period of the Draft Environmental Assessment:

- Federal
 - U.S. Army Corps of Engineers
 - U.S. Department of Agriculture, Soil Conservation Service
 - U.S. Department of the Interior, Fish and Wildlife Services
- State
 - Department of Accounting and General Services
 - Department of Agriculture
 - Department of Health
 - Department of Land and Natural Resources
 - Chairman
 - Division of Historic Preservation
 - Division of Water and Land Development
 - Office Of Hawaiian Affairs
 - Office of State Planning

1. *Hawaii Revised Statutes* section 343-5(n)(1) (Supp. 1992).

DESCRIPTION OF PROPOSED ACTION

Department of Transportation
Highways Division
Airports Division

- County
Planning Department
Department of Public Works
Department of Water Supply
Fire Department
Police Department

2.0 DESCRIPTION OF PROPOSED ACTION

2.1 Location and Ownership

The location of the proposed subdivision is near Waimea town in Puukapu, South Kohala District, island and county of Hawaii (see Figure 1, "Location Map," on page 3). The DHHL-owned site consists of seven parcels (TMK 6-4-4:9 por. & 29; 6-4-8:6, 11, 26, 35, 46) totaling 409.673 acres ("Site") (see Figure 2, "Tax Map (overall)," on page 4; Figure 3, "Tax Map (6-4-4)," on page 5; and Figure 4, "Tax Map (6-4-8)," on page 6).

2.2 Existing Uses

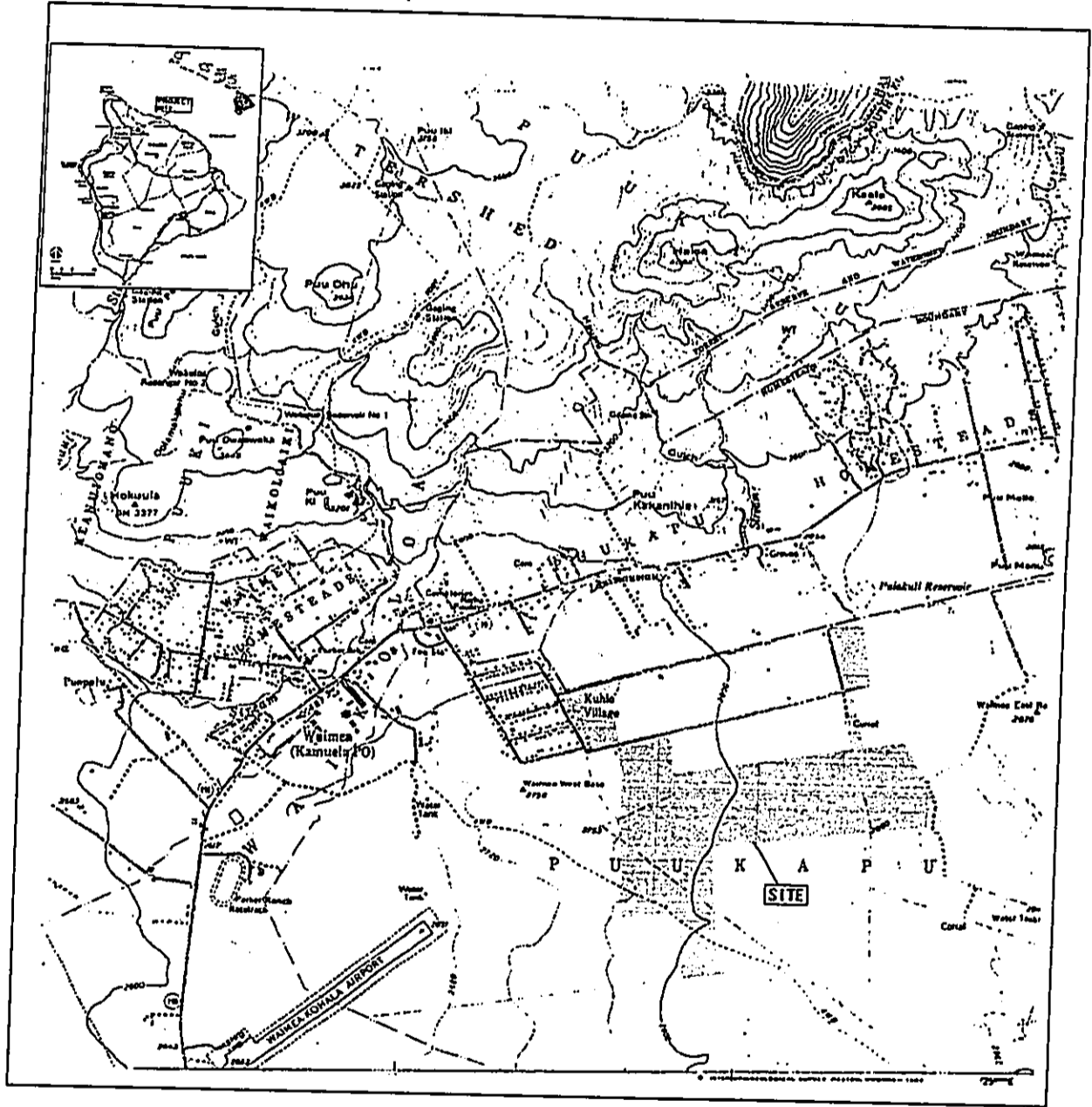
Site. Most of the Site is used by Hawaiian homesteaders for pasture (see Figure 5, "Aerial Photograph of Site," on page 7).

Surrounding Areas. DHHL owns or leases the surrounding land (refer to Figure 2, "Tax Map (overall)," on page 4):

- North: North of the Site is Puukapu Homesteads (Hawaiian Homestead Lands);
- East (towards Honokaa): East of the Site is Puukapu Pasture Lots (Hawaiian Homestead Lands);
- South: The Site extends south almost to the Waikoloa-Puukapu boundary, which is also the boundary between DHHL lands and Parker Ranch lands.
- West (towards Kawaihae): West of the Site is Kuhio Village, a residential Hawaiian Homesteads subdivision. Further to the west beyond Kuhio Village is the existing civic center where the police and fire stations are located; the proposed Parker Ranch town center would also be in this general area. Southwest of the Site about 5000' feet from the nearest Site boundary is the Waimea-Kohala Airport.

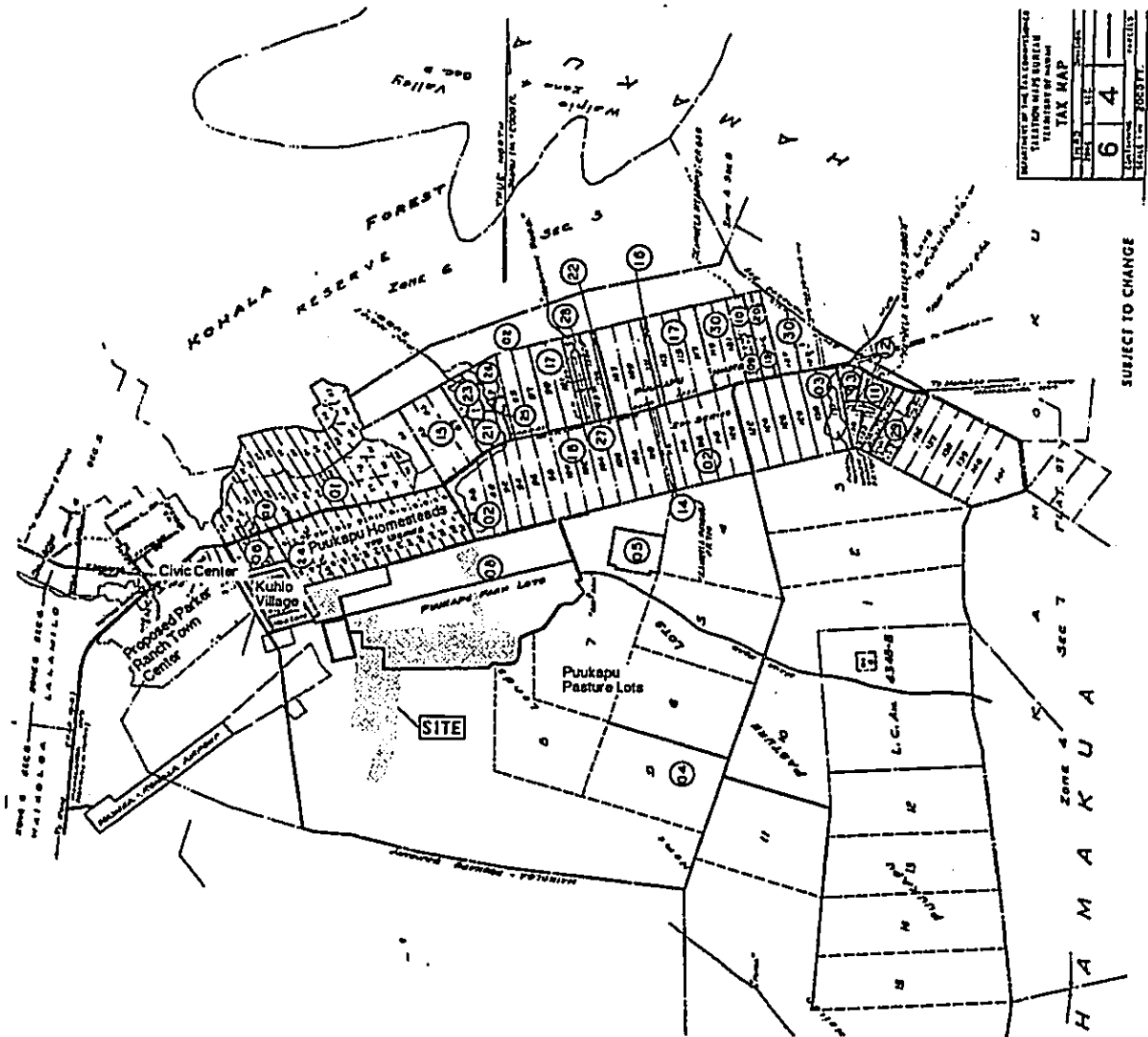
DESCRIPTION OF PROPOSED ACTION

FIGURE 1. Location Map



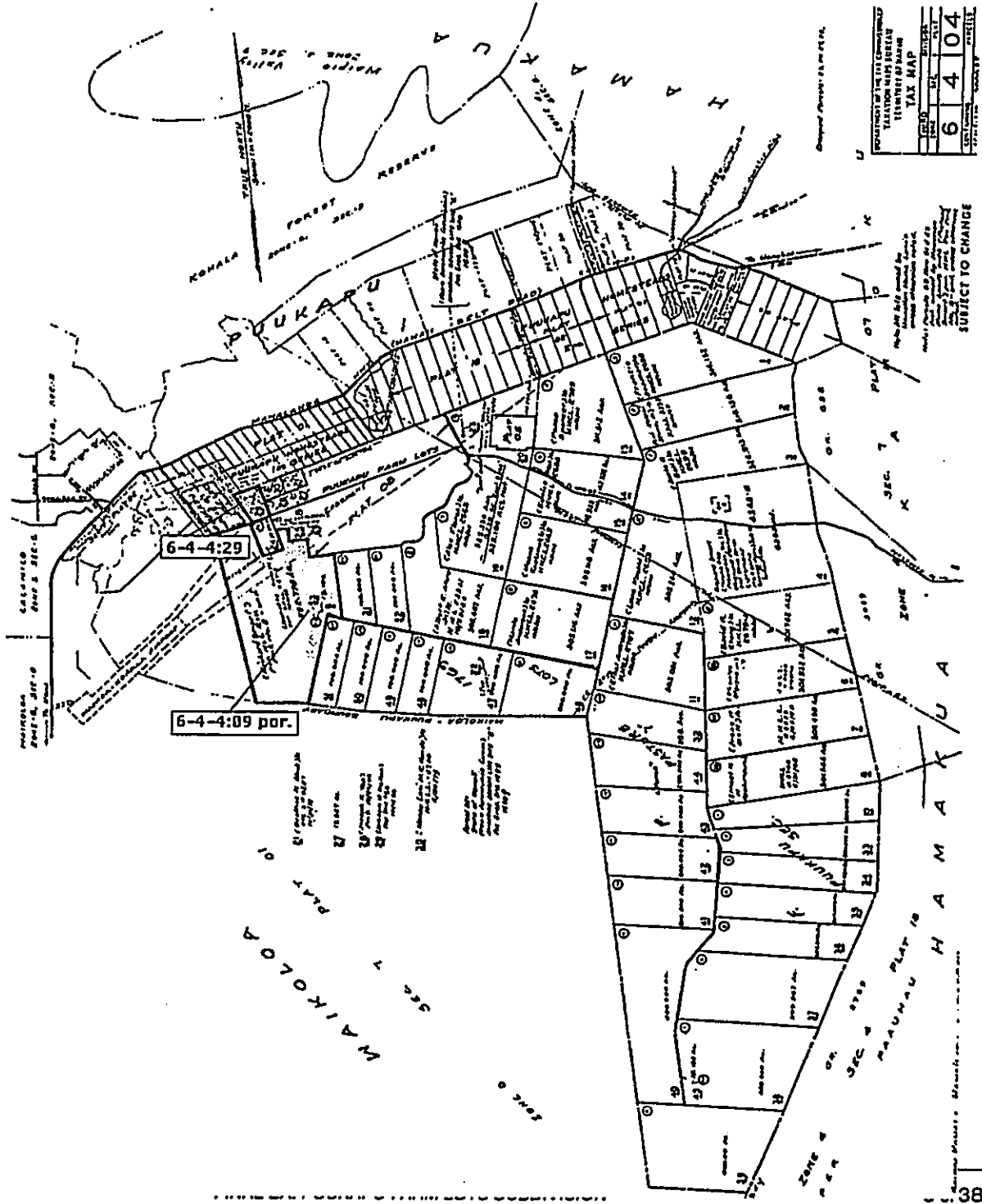
DESCRIPTION OF PROPOSED ACTION

FIGURE 2. Tax Map (overall)



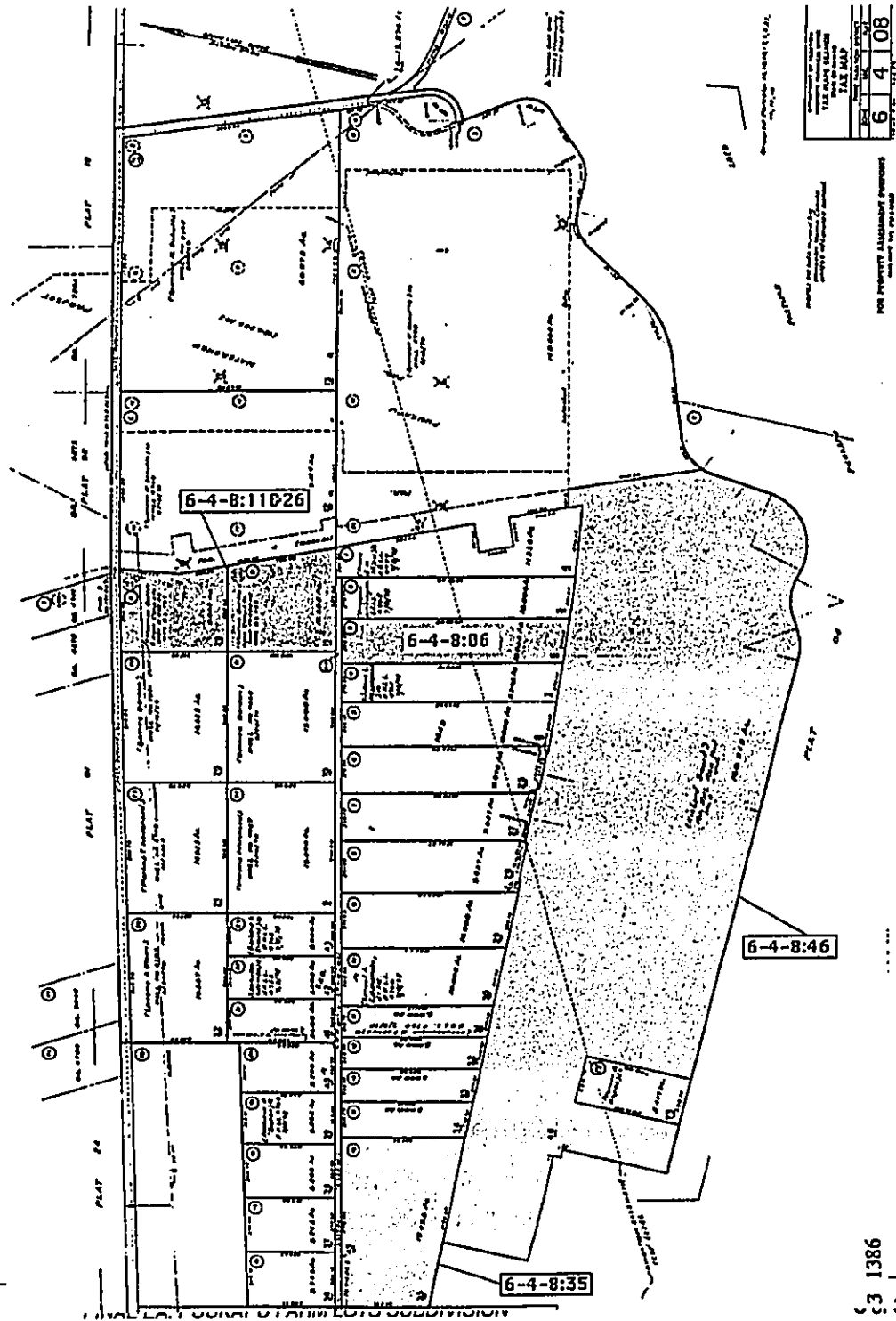
DESCRIPTION OF PROPOSED ACTION

FIGURE 3. Tax Map (6-4-4)



DESCRIPTION OF PROPOSED ACTION

FIGURE 4. Tax Map (6-4-8)



DESCRIPTION OF PROPOSED ACTION

FIGURE 5. Aerial Photograph of Site



DESCRIPTION OF PROPOSED ACTION

2.3 Project Description

2.3.1 Site Plan

DHHL subdivided the Site in 1985 and issued leases. Since DHHL is not subject to County requirements, subdivision could occur without meeting County standards for infrastructure improvements. DHHL restricted the lessees from residing on the lots, however, until the improvements were provided. The proposed subdivision improvements are for the purpose of providing the promised improvements to County standards that would enable the lessees to build dwellings and reside on the lots.

The subdivision consists of six separate subdivision applications totaling 79 farm lots ranging in size from 3.649 to 6.070 acres (excluding a remnant lot of 1.609 acres that will be consolidated with the adjacent lot in the future) (see Table 1 below and Figure 6 on page 9).

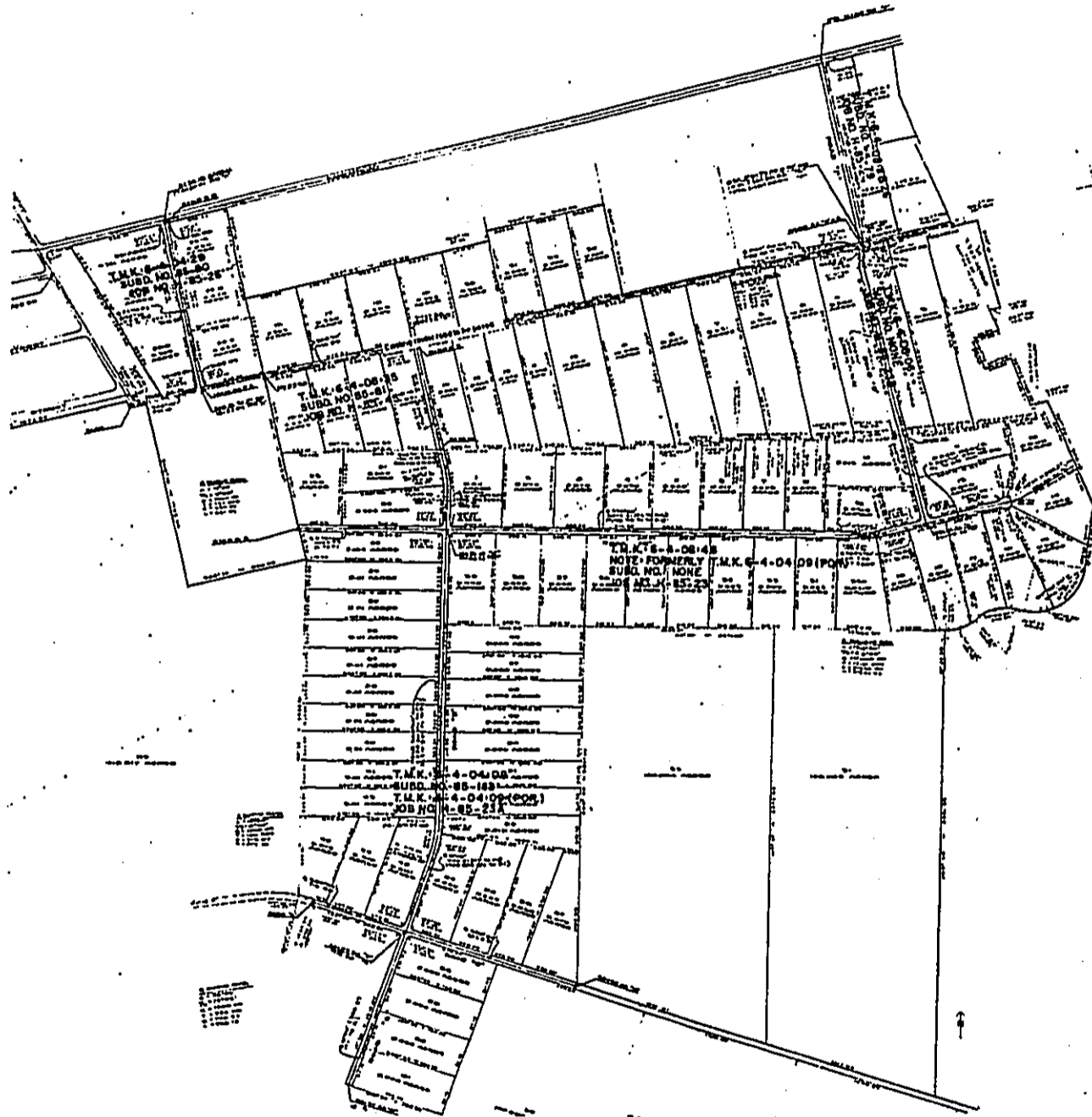
TABLE 1. Puukapu Farm Lots Subdivision

Parcel Identification		Number of Lots		Area (acres)	
TMK	File Plan/Lot No.	Farm Lots	Roadway Lots	Range of Farm Lot Size	Total
6-4-8:6	1548/3	3	1	1.609 - 3.649	10.655
6-4-8:11 & 26	Puukapu Farm Lots A & B	4	0	4.190-5.361	19.762
6-4-8:35	1548/15	4	1	4.631	19.496
6-4-8:46	1769/23	31	1	5.003 - 5.611	166.386
6-4-4: por. 9	1769/23	31	2	5.000-6.070	163.861
6-4-4:29	___/33	6	1	4.628 - 4.702	29.513
<i>Total</i>		<i>79</i>			<i>409.673</i>

DESCRIPTION OF PROPOSED ACTION

FIGURE 6.

Site Plan



2.3.2 Infrastructure

Access. Access to the Site from Mamalahoa Highway will be from the existing Kamamalu and Mana Streets to Kahilu Road. From Kahilu Road, DHHL will construct new internal roads to County dedicable standards.² DHHL will also pave the existing 40' right-of-way cinder street that runs parallel to and south of Kahilu Road.

Wastewater. The lessees will be responsible to construct their own cesspool.

Water. DHHL will provide internal distribution lines and appurtenances to connect to the County water system. DHHL will also extend the existing State Waimea irrigation system to serve the proposed lots.

Drainage. Roadside swales, as required, will direct stormwater flow to new drywells located within the street right-of-way.

Electrical. DHHL will install poles and overhead lines to connect to HELCO's system.

2.4 Need and Objectives for the Proposed Facilities

The substandard roads and lack of water prevents the lessees from residing on the lots. The objective for the proposed improvements is to provide minimum improvements to meet health and safety standards, as well as providing sufficient irrigation water to promote agriculture.

2.5 Timetable and Cost

Construction plans have already been completed. DHHL intends to bid the project and complete the required improvements as soon as possible. Once completed, DHHL will permit the lessees to reside on the lot. The estimated construction cost is \$6 million to be funded by State funds allotted to DHHL.

2. The proposed roads will be to the standards for a minor street without sidewalks-- i.e., 50' right-of-way with 20' pavement width. However, the shoulder and swale portion will not be paved to maintain the agricultural character.

3.0 ENVIRONMENTAL SETTING, IMPACTS, & MITIGATION MEASURES

3.1 Physical Characteristics

3.1.1 Climate

Setting

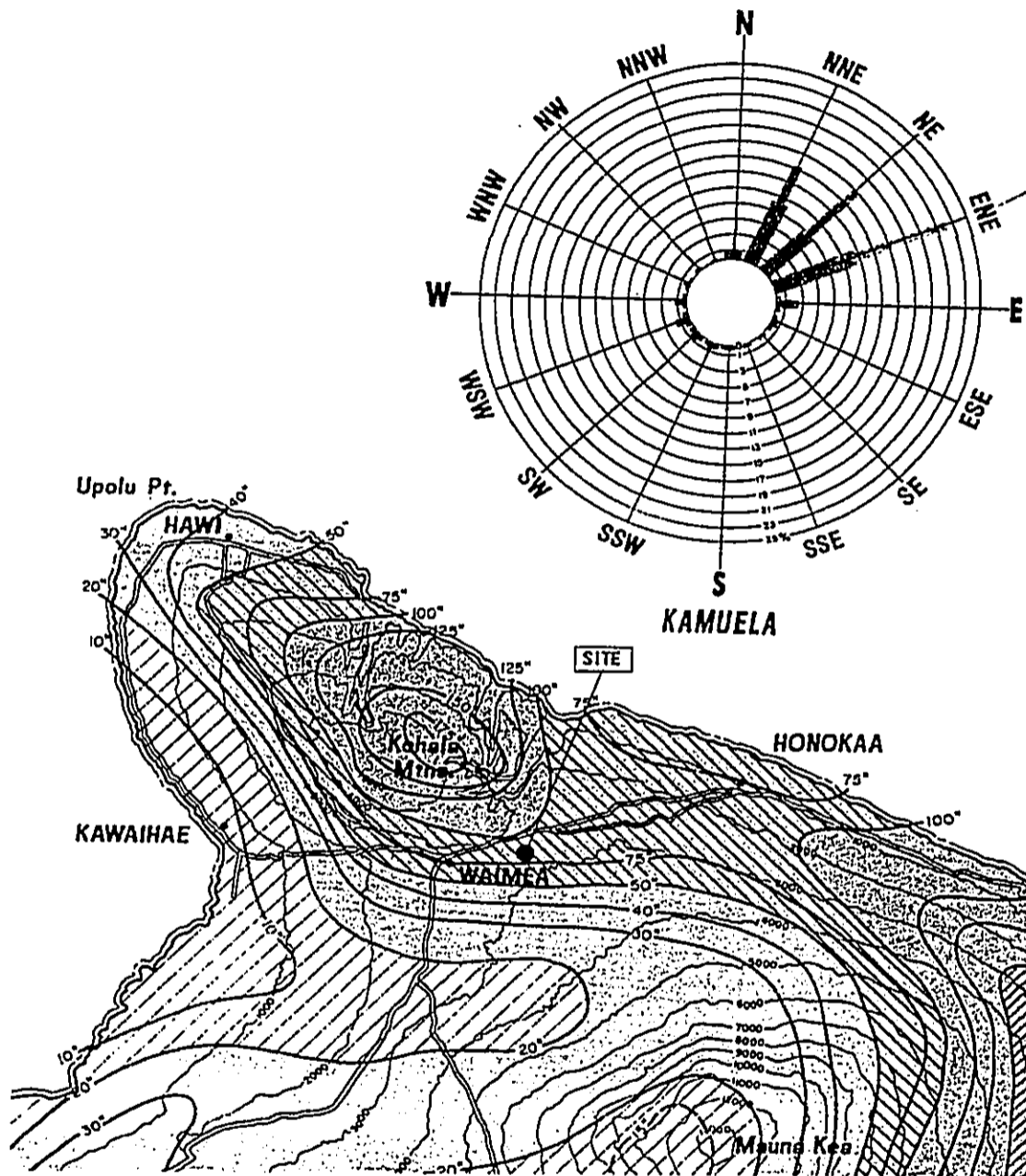
The Site is at an elevation approximately 2800' above mean sea level. At this elevation temperatures are relatively cool-- average monthly maximum temperatures are in the lower to mid-70's degrees Fahrenheit, and the average monthly minimum temperatures are in the mid-50's degrees Fahrenheit, which is about 10° F. cooler than Hilo. Mean annual rainfall ranges from 50 - 75" in the vicinity of the Site; the average monthly rainfall is fairly even throughout the year at slightly less than 5" per month. Located in the saddle of Mauna Kea and the Kohala Mountains, the tradewinds funnel through the mountain masses predominantly from the northeasterly direction (see Figure 7 on page 12).³

Impacts and Mitigation Measures

The windiness in the area may require the farmers to plant windbreaks. The cooler temperatures makes the Waimea area ideal for the cultivation of certain vegetables and flowers (e.g., head cabbage, cauliflower, protea).

3. Department of Land and Natural Resources, State of Hawaii. An Inventory of Basic Water Resources Data: Island of Hawaii, Report R34, 1970 (temperature data; mean annual rainfall data; wind data); University of Hawaii, Department of Geography, Atlas of Hawaii (2d. ed.). Honolulu: University of Hawaii Press, 1983, p. 66 (mean monthly rainfall data).

FIGURE 7. Rainfall Map and Windrose



3.1.2 Topography & Soils

Setting

The topography of this Site undulates, but there are no steep slopes that exceed 20%. The average slopes vary from 0-3% to 3-12%.

According to the *Soil Survey of the Island of Hawaii*⁴, the soil on the proposed site is classified as Kikoni very fine sandy loam (KfA and KXC) formed in volcanic ash (see Figure 8 on page 14). In a representative profile, the surface layer is dark brown very fine sandy loam about 6" thick. The subsoil is about 44" thick overlying the substratum of fragmental aa lava. The surface is extremely stony in places. Permeability is moderately rapid, runoff is slow, and erosion hazard is slight to moderate. These soils have low shrink-swell potential.

The agricultural suitability ratings for this soil are as follows:

- *Land Study Bureau*: The Land Study Bureau rated the Kikoni soil Class B (good) in a scale ranging from A (very good) to E (very poor) (see Figure 9, "Agricultural Suitability (Land Study Bureau)," on page 15). The State Land Use Law (*Hawaii Revised Statutes* Chapter 205) considers Class A and B to be prime agricultural lands.
- *Agricultural Lands of Importance to the State of Hawaii (ALISH)*: The State Department of Agriculture's rating system has three categories-- prime, unique, and other important agricultural land. The area corresponding to the Kikoni soil 0-3% (KfA) rated as "Prime"; the area corresponding to the Kikoni soil 3-12% (KXC) rated as "Other".
- *Soil Survey*: The U.S. Soil Conservation Service rated the Kikoni soil 0-3% (KfA) in Class I (irrigated) or II (nonirrigated), and the Kikoni soil 3-12% (KXC) in Class III (irrigated or nonirrigated) on a scale ranging from I (few limitations) through VIII (extreme limitations).

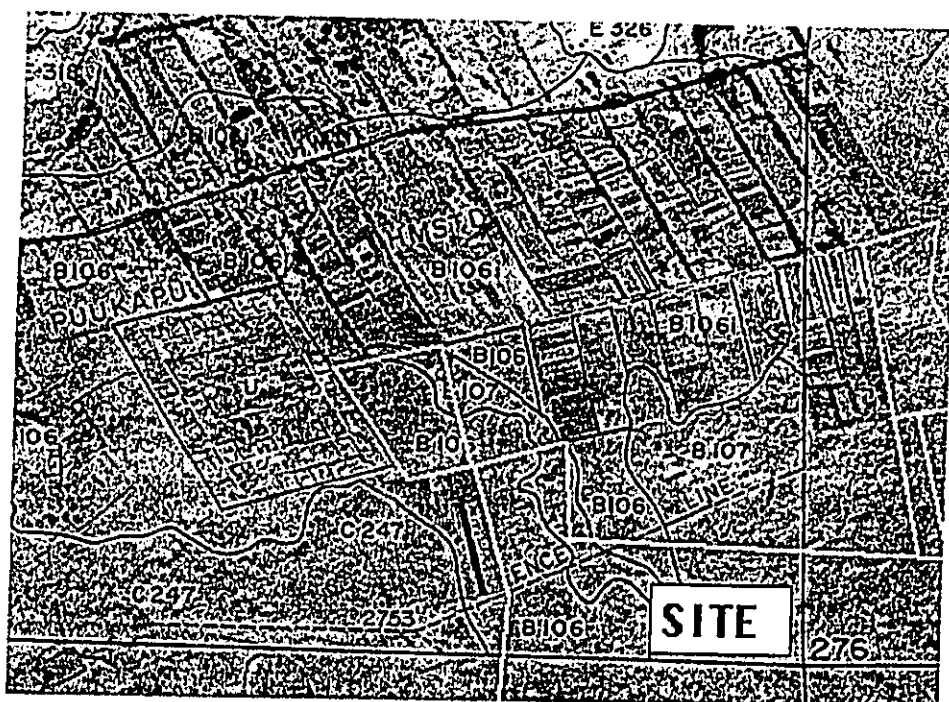
4. U.S. Department of Agriculture, Soil Conservation Service. *Soil Survey of Island of Hawaii*. State of Hawaii, 1973, Map 19 (hereinafter cited as *Soil Survey*).

FIGURE 8.

Soil Survey Map



FIGURE 9. Agricultural Suitability (Land Study Bureau)



Impacts and Mitigation Measures

Erosion. The *Soil Survey* advises to take precautions against erosion from rain and wind when using this soil for terraces, diversions, or grassed waterways.⁵ During construction or agricultural activity, vegetative cover should be encouraged as soon as possible and/or other erosion control measures implemented in accordance with erosion control plans prepared pursuant to the requirements of the County's grading permit requirements or the Soil and Water Conservation District.⁶ In addition, the Department of Health's NPDES Permit will require the use of best management practices to control nonpoint source pollution from erosion and sedimentation during construction.

5. *Soil Survey*, see footnote 4 on page 13, at p. 88-89.

6. Agricultural operations are excluded from the requirements of the County's grading permit requirements, provided the applicable Soil and Water Conservation District director approves a soil conservation program (Hawaii County Code §10-3(5) (1983)). Construction grading activity would be subject to the requirements if DHHL chooses to be subject to County requirements.

ENVIRONMENTAL SETTING, IMPACTS, & MITIGATION MEASURES

Foundations. The *Soil Survey* does not indicate any problems for low buildings-- the soil has moderate bearing capacity and moderate compressibility.⁷ Typical soil engineering studies will evaluate and recommend proper foundations for the given soil conditions if required for pavement areas. The County will verify the adequacy of building foundations through the Building Permit.

3.1.3 Natural Hazards

Setting

Flooding. According to the Flood Insurance Rate Maps, the site is located in Zone X (outside the 500 year flood plain).⁸

Volcanic Hazards. The volcanic lava flow hazard zone is Zone 8 on a scale of 1 through 9 (Zone 1 has the most severe hazard).⁹

Impacts and Mitigation Measures

None-- the proposed project is not located within any hazardous zone.

3.1.4 Flora/Fauna

Setting

The Site is nearly entirely used as pasture. The open grassland vegetation is dominated by kikuyu grass (*Pennisetum clandestinum*) which form dense mats that crowd out other species. Two native species have been known to occur in areas of sparse kikuyu cover: blue-seeded portulaca (*Portulaca cyanosperma*) and hard-stemmed lovegrass (*Eragrostis atripoides*); neither of these endemic species is considered rare or endangered.¹⁰ Tree cover is limited to a few planted stands and windbreak alignments, primarily of *Eucalyptus* species, but also ironwood (*Casuarina equisetifolia*) and cedar/cypress (*Taxodiaceae* spp.).

The short-eared owl, or Pueo, has been observed to forage in these open fields. Although not observed, the endangered Hawaiian Hawk might also fly over these areas but would not likely nest due to the sparseness of trees. The indigenous migratory Pacific Golden Plover has been observed in this type of area.

7. *Soil Survey*, see footnote 4 on page 13, at p. 88-89.

8. Federal Emergency Management Agency. Flood Insurance Rate Map, Panel 169, September 16, 1988.

9. Heliker, C. Volcanic and Seismic Hazards on the Island of Hawaii, U.S. Geological Survey, 1991.

10. Earthwatch, "Survey of Flora and Fauna for Parker Ranch Lands: Land Use Change Petition," March 1985, in Belt Collins & Associates, *Environmental Assessment: Planned Improvements and Expansion of Waimea Town Center and Vicinity*, April 1986.

The plover prefers well-grazed grass land, lawns, and other short grass fields where visibility of approaching danger is good. Although the Hawaiian Hoary bat has been sighted in the area,¹¹ it does not likely roost in this area due to the scarcity of trees.¹²

Impacts and Mitigation Measures

None-- the site is not a known habitat for endangered or threatened species.

3.1.5 Historic/Archaeological Resources

Setting

Intensive archaeological investigations were conducted in the vicinity of the Site for the proposed Waimea By-Pass highway.¹³ Most of the archaeological sites are clustered to the west of the Site. Three sites are located within or near the Site (sites 8815, 8816, 8817) (see Figure 10, "Archaeological Sites Map," on page 19). These sites, which are not listed nor eligible for listing on the National or State Register of Historic Places, are currently planted in vegetables and represent farm lots where the lessees have found artifacts as a result of plowing (e.g., pieces of poi pounders, partially ground waterworn cobble, scattered small patches of ash, charcoal, fire-reddened soil, fire-cracked rocks, clusters of old *Cellana* shells). Based on excavations, the archaeologists concluded:

While the artifacts collected by the lessee suggest a traditional Hawaiian lifestyle, they do not necessarily indicate a prehistoric age. In fact, the apparent late date of human activity is not surprising given the difficulties of clearing with stone adzes and fire, what may well have been climax upland forest.¹⁴

The archaeological study for the By-Pass highway hypothesized a settlement pattern for the Waimea-Kawaihae area. The beginnings of human activity in this upland area may lie as far back as the 13th through 15th centuries. This initial occupation was likely for short-term visits to exploit the upland forest resources. In later years (16th through 18th centuries), longer term occupation was established (or seasonal), although permanent occupation cannot be ruled out. Earth ovens, fireplaces, structures, a small range of artifacts, a broad range of food items of limited quantities, and differential activity areas mark this phase of activity. Some form of cultivation occurred, rather than merely exploi-

11. Townscape, Inc., Northwest Hawaii Open Space and Community Development Plan, prepared for the County of Hawaii Planning Department, November 1992 (draft), at p. 50.

12. Bruner, P., An Avifaunal and Feral Mammal Survey: Parker Ranch Lands, 1985, in Belt Collins & Associates, *Environmental Assessment: Planned Improvements and Expansion of Waimea Town Center and Vicinity*, April 1986.

13. Bishop Museum (J. Clark & P. Kirch, eds.), *Archaeological Investigations of the Mudlane-Waimea-Kawaihae Road Corridor*, Island of Hawaii, Report 83-1, prepared for the State of Hawaii Department of Transportation, February 1983.

14. *Ibid.*, at p. 287.

tation of wild forest resources, but cultivation on a smaller scale than that developed later with the large formal agricultural fields. The crops raised in these small garden plots in the upland forest were probably those better suited to the moist environment than the drier makai areas (e.g., bananas, unirrigated taro, 'olena, mamake, olona, 'awa, pia).

Over time, and with increased population, a more intensive agricultural system developed, and the residential sites came to be permanently occupied. This intensification of occupation took place in the late prehistoric to early historic period (early 18th to early 19th centuries). By this time, taro had become the principal crop. Initially raised as a dry form, supplemental irrigation was added to the system in its later stages of operation. Rock walls were eventually constructed to keep herding cattle away from the agricultural fields and residential areas.

The prehistoric settlement pattern in the Waimea region was one of dispersed residential complexes and associated agricultural fields clustered to the west of the Site. It was not until the historic period that permanent settlement farther east (in the vicinity of the Site) was established. The early settlers cleared and occupied areas that were the most comfortable and easiest. The denser forest, wetter climate, and colder temperatures in the eastern portion of Waimea inhibited occupation. The maintenance of buffer zones between districts may have also inhibited early occupation in the vicinity of the Site.

Impacts and Mitigation Measures

None-- however, the construction contract and lease agreements should contain a standard clause to require the contractor and lessee to stop and inform the Division of Historic Sites and/or the Planning Department in the event possible archaeological artifacts are uncovered during the course of construction or agricultural activity.

3.1.6 Water Resources

Setting

There are no wells located within 1000 feet of the Site. Because of Waimea's high elevation, there are no deep wells to tap the basal groundwater.¹⁵ There is a possibility of high-level perched groundwater in the Kohala Mountains area. The present sources of potable water are stream diversions (see Figure 11, "Potable Water Sources," on page 20). The Lanimaumau Stream flows from the Kohala Mountains approximately 500' from the nearest point of the northwest corner of the Site.

15. Megumi Kon, Inc. *Hawaii County Water Use and Development Plan*. Prepared for the Department of Water Supply, County of Hawaii, February 1992, at p. 7-8.

Based on the U.S. Fish and Wildlife Service wetlands maps, there are no known wetlands on or adjacent to the site.¹⁶

Impacts and Mitigation Measures

In terms of potential impact on groundwater quality, the project proposes two types of subsurface disposal-- cesspools and drywells. The State Department of Health (DOH) designated critical areas on the island where wastewater disposal by cesspools could cause potential pollution to the groundwater. The Site is in a non-critical area where cesspools are permitted (see Figure 12, "Cesspool Map," on page 22). However, the DOH rules do not permit individual wastewater systems (including cesspools) for developments with greater than 50 dwelling units.¹⁷ The impact on the groundwater by potential cesspool seepage does not seem significant due to the low density of the project (average 5-acre lot size) and the depth to the basal groundwater. DOH will evaluate the acceptability of cesspools through a variance request.¹⁸

Deep drywells will be used for stormwater disposal. The impacts of these drywells on the groundwater will be evaluated under DOH's underground injection control (UIC) permit program. Since the Site is located mauka of the UIC line, drywells are permitted but subject to review and approval by the Department of Health and requires public notice of the UIC application.¹⁹

3.1.7 Air Quality

Setting

The entire State of Hawaii is located within an attainment area (meets federal ambient air quality standards), as defined in the Clean Air Act, in accordance with the State Implementation Plan. The project is not exposed to any significant pollutant source such as a power plant, sugar mill, or major traffic thoroughfare.

Impacts and Mitigation Measures

None-- the project will not have any stationary sources of air pollution nor will it generate significant additional traffic to increase the automobile-related emissions (SO₂) in the vicinity.

16. Wetlands Inventory Map for the Kamaela quadrangle.

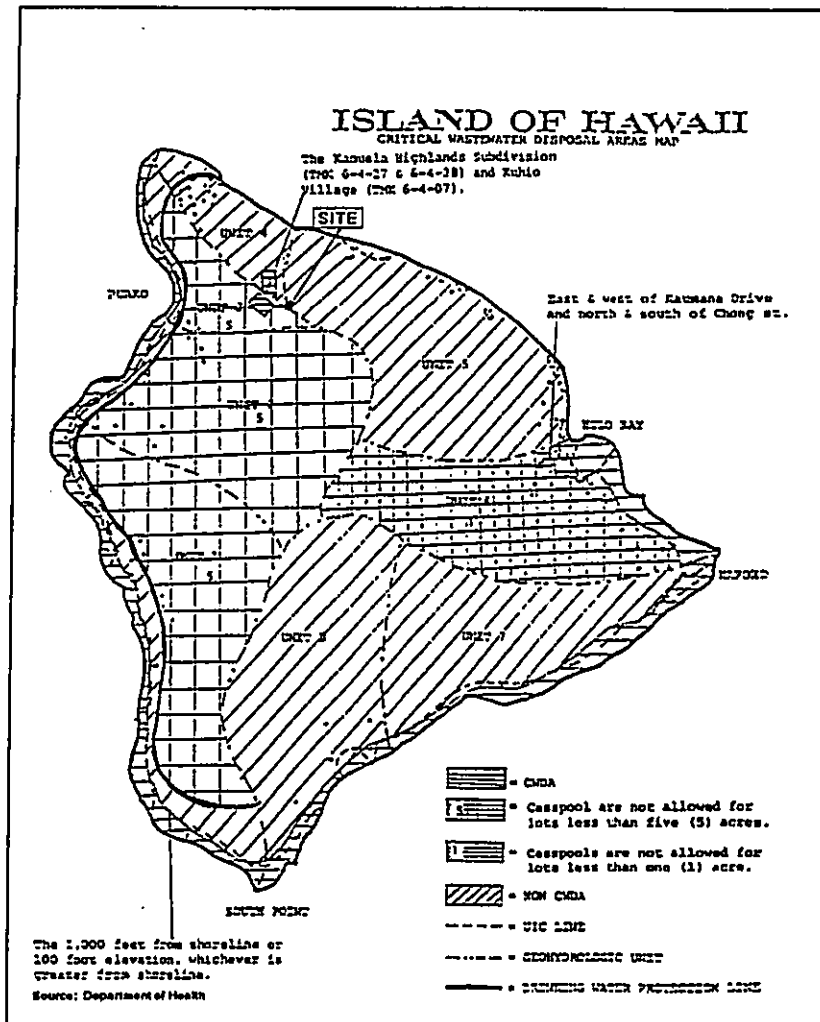
17. *Hawaii Administrative Rules* §11-62-31.1 (August 30, 1991) (Wastewater Systems).

18. DOI considers and processes variances to its wastewater disposal requirements pursuant to *Hawaii Administrative Rules* §11-62-41 (August 30, 1991).

19. *Hawaii Administrative Rules* Chapter 11-23 (Underground Injection Control) (September 28, 1992).

FIGURE 12.

Cesspool Map



3.1.8 Airport-Related Impacts

Setting

The Waimea-Kohala Airport is located approximately 5000' west of the Site. An aviation easement traverses the western portion of the Site (see Figure 13, "Avigation Easement," on page 24). This easement restricts the height of any structures determined by an approach slope of 50:1 relative to the elevation at the edge of the runway.²⁰

ENVIRONMENTAL SETTING, IMPACTS, & MITIGATION MEASURES

The County General Plan supports the continued use of the airport for inter-island travel to serve North Kohala, South Kohala, and Hamakua:

The State Department of Transportation should continue the use of the Waimca-Kohala airport as an inter-island facility serving North and South Kohala and Hamakua and should improve existing facilities to handle inter-island aircraft at maximum load capacity.²¹

The State Department of Transportation plans to update the 1970 master plan for this airport; the updated study will include a noise analysis.²²

Impacts and Mitigation Measures

The potential impacts relating to the airport include the restrictions on land use imposed by the aviation easements and the noise impact of aircraft on the Site's residents.

Aviation Easement. The elevation at the edge of the existing runway is 2671'. Since the permitted height of a structure within the aviation easement is measured relative to the runway elevation at a slope of 50:1, the permitted height would depend on the ground level elevation of the particular site. At a distance of 5,000' from the runway, a structure could be no higher than 100' above the runway elevation, or 2,771'. The ground elevation at this distance in the vicinity of the Site is approximately 2,760'. The permitted height, therefore, would be only 11'. The permitted height would be less than the zoning height limits within the Agricultural district of 45 feet.²³ The engineer should confirm with the Department of Transportation the permitted heights for structures (e.g., utility poles) within the aviation easement based on the finished grades.

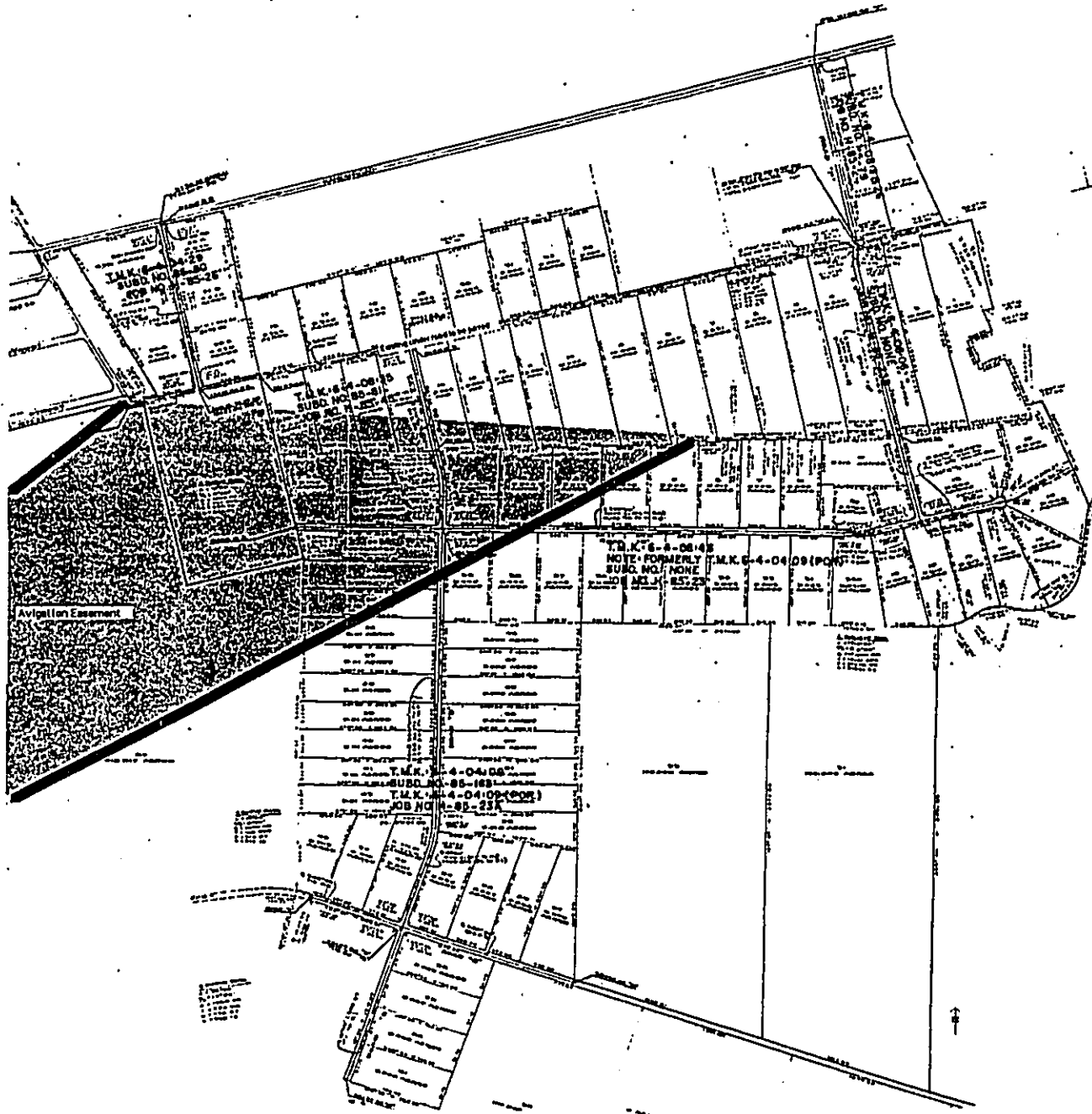
20. Telephone conversation with the Department of Transportation, Airports Division, planning section, on September 16, 1994.

21. County of Hawaii General Plan §5.F.(7)(b)(Courses of Action for South Kohala).

22. Telephone conversation with Airports Division, planning section, on September 7, 1994.

23. Hawaii County Code §25-153 (1991).

FIGURE 13. Avigation Easement



Aircraft Noise. A previous study measured noise levels at Kuhio Village and analyzed the noise impacts of the Waimea-Kohala airport.²⁴ Ambient noise levels were 35 to 40 dBA in the morning and evenings. The maximum noise level of a small jet aircraft that climbed straight out from the runway was 60 dBA. For an aircraft that made a sharp right turn near the end of the runway, the maximum noise level was 66 dBA. The cumulative effect of many noise events occurring over a period of time is measured by the day-night sound level (L_{dn}). The acceptable standard for the protection of public health and welfare is 55 to 60 L_{dn} . Approximately 250 daily departures of small jet aircraft would be required to reach the 55 L_{dn} noise level. For propeller aircraft, the comparable number of daily departures is approximately 790. The expected future use of the airport will be significantly lower than these threshold levels. Therefore, the noise impact of the airport on the residents' health and welfare should not be significant.

3.1.9 Scenic Resources

The project will not impact upon any natural beauty areas identified in the General Plan.²⁵ There are no cinder cone puu's within the Site, which the Northwest Hawaii Open Space and Community Development Plan identified as significant scenic resources for the Kohala area.²⁶ The proposed agricultural use will preserve the open space character of the expansive farming and pasture fields distinctive of the Waimea area.

3.2 Socioeconomic Characteristics

The target population who will benefit from this project are the Hawaiian homesteaders who have or will receive a lease for one of the lots within the Site. The lease rent will pay for the lessees' fair share for road maintenance upon dedication of the roads to the County; provided, however, that the DHHL and County agree to a reimbursement plan. The County Council exempted Hawaiian homestead lessees from payment of real property taxes apportioned to the land; taxes must still be paid on the value of any buildings.²⁷

24. Darby & Associates, "Aircraft Noise Impact Evaluation for Proposed Parker Ranch Development Due to Operations from the Waimea-Kohala Airport, Hawaii" in Belt Collins & Associates, *Environmental Assessment: Planned Improvements and Expansion of Waimea Town Center and Vicinity*, April 1986.

25. Hawaii County General Plan, November 1989, p. 35 (list of natural beauty areas for South Kohala).

26. Townscape, Inc., see footnote 11 on page 17, at p. 54.

27. Ordinance No. 92-129 which amended Hawaii County Code §19-89.

3.3 Public Facilities, Utilities, and Services

3.3.1 Roads

DHHL will fund the improvement of the internal roadways, including an existing 40' right-of-way that is currently unpaved. No offsite improvements to roads or intersections would be required due to the relatively insignificant impact of the project on the Mamalahoa Highway traffic.

The major impact of the project is on the planning of the Waimea By-Pass Highway. This highway, which has been in the planning stages for over 10 years, would relieve Waimea town traffic congestion by directing the traffic around the town from Mudlane and connecting to Kawaihae. Three alternative alignments have been proposed for the segment of the highway in the vicinity of the Site--all three alternatives would pass through the Site. The exact location of the alternative alignments will be available in a report to be released by the State Department of Transportation by the end of this year. DHHL is opposed to all three alternatives because of the direct impact on the Site's residents in terms of noise and loss of rural character. This Puukapu Farm Lots Subdivision project does not accommodate any future alignment of the by-pass highway. Since the layout of the lots was basically determined in 1985, any resubdivision to accommodate an alignment would require substantial planning and coordination among the State, DHHL, and the affected lessees. Proceeding with this project to provide improvements would further solidify the commitment to the current lot layout.

3.3.2 Water System

Domestic Water System. The project will connect to the County's Waimea-Puukapu-Nienie water system. The present capacity of this system is 3.0 mgd; however, dry weather can considerably reduce the system's capacity due to the dependence on surface water sources. Current withdrawals vary from about 1.6 to 2.0 mgd. Most of the 1.0 to 1.4 mgd available for future development is committed to projects including the DHHL Puukapu projects.²⁸ In conjunction with the Parker 2020 Plan, Parker Ranch will develop new water sources to accommodate other future projects.

Irrigation Water System. The State-maintained Waimea Irrigation System serves the farmers at Lalamilo and Puukapu, including the Hawaiian Home lands farm lots. The State is renovating and improving the Upper Hamakua Ditch to eliminate the losses that have compounded the occasional drought con-

28. Megumi Kon, Inc. *Hawaii County Water Use and Development Plan*. Prepared for the Department of Water Supply, County of Hawaii, February 1992, at p. 7-6.

ditions which occur in this area. Because of the recurring droughts, additional storage would be required to serve any additional load on the present system.²⁹ Federal and State agencies are developing plans to expand the Waimea Irrigation System under the Waimea-Paauilo Watershed Program. The plan would provide a 133 MG reservoir and the necessary pipelines to supply 363 acres of cropland and 22,800 acres of pasture land (sufficient for 8,200 head of livestock). Completion of this project is timed to enable the hook-up of this Puukapu Farm Lots irrigation system to the Waimea Irrigation System.

3.3.3 Wastewater System

Since there is no County sewerage system in the area, the project will not have any impact on any public wastewater system.

3.3.4 Drainage System

Since there is no regional drainage system in the area, the project will not impact on any publicly-maintained drainage system. The project will include drywells and swales in accordance with County standards to mitigate flooding risks within and outside the Site.

3.3.5 Solid Waste

The project residents would use the Waimea Transfer Station to dispose their solid waste. This transfer station has two chutes. The loaded trailers are hauled to Puuanahulu landfill. These compaction trailers have a capacity of 70 cubic yards (approximately 18 net tons at full capacity). Based on a standard of 4.9 pounds per capita per day, the 79 lots (assuming 3.0 persons per lot) would generate approximately 1.5% of the capacity of a two-chute transfer station. Since the trailers are hauled daily, and the trailers are frequently not completely full, the increased solid waste generated by the project will not increase the frequency of hauls.

3.3.6 Electrical/Telephone

DHHL will construct the necessary overhead facilities to enable each resident to connect to HELCO's and GTE Hawaiian Telephone's systems.

3.3.7 Police & Fire Protection

The police and fire stations are located within a 10-minute response time. The paved roads and hydrants will facilitate prompt and effective service.

²⁹ Ibid., at p. 7-7.

RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

3.3.8 Health Services

The proposed new North Hawaii Community Hospital to be located at the Lucy Henriques Medical Center in the vicinity of the civic center would be very convenient to the project's residents.

3.3.9 Recreation

The Imiola-Mana Trail passes to the east of the Site (see Figure 14, "Trails Map," on page 29). The project will not affect access to this trail.

4.0 RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

4.1 State Plan

The project conforms with the following State Plan objectives and policies:

Objectives and policies for the economy-- agriculture. (a) Planning for the State's economy with regard to agriculture shall be directed towards the achievement of the following objectives:

(2)Continued growth and development of diversified agriculture throughout the State.

(b)To achieve the agricultural objectives, it shall be the policy of this State to:

(6)Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs..

(8).Expand Hawaii's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.³⁰

Objectives and policies for facility systems-- In general. (a) Planning for the State's facility systems in general shall be directed towards the achievement of the objective of water, transportation, waste disposal, and energy and telecommunications systems that support statewide social, economic, and physical objectives:

(b)To achieve the general facility systems objectives, it shall be the policy of this State to:

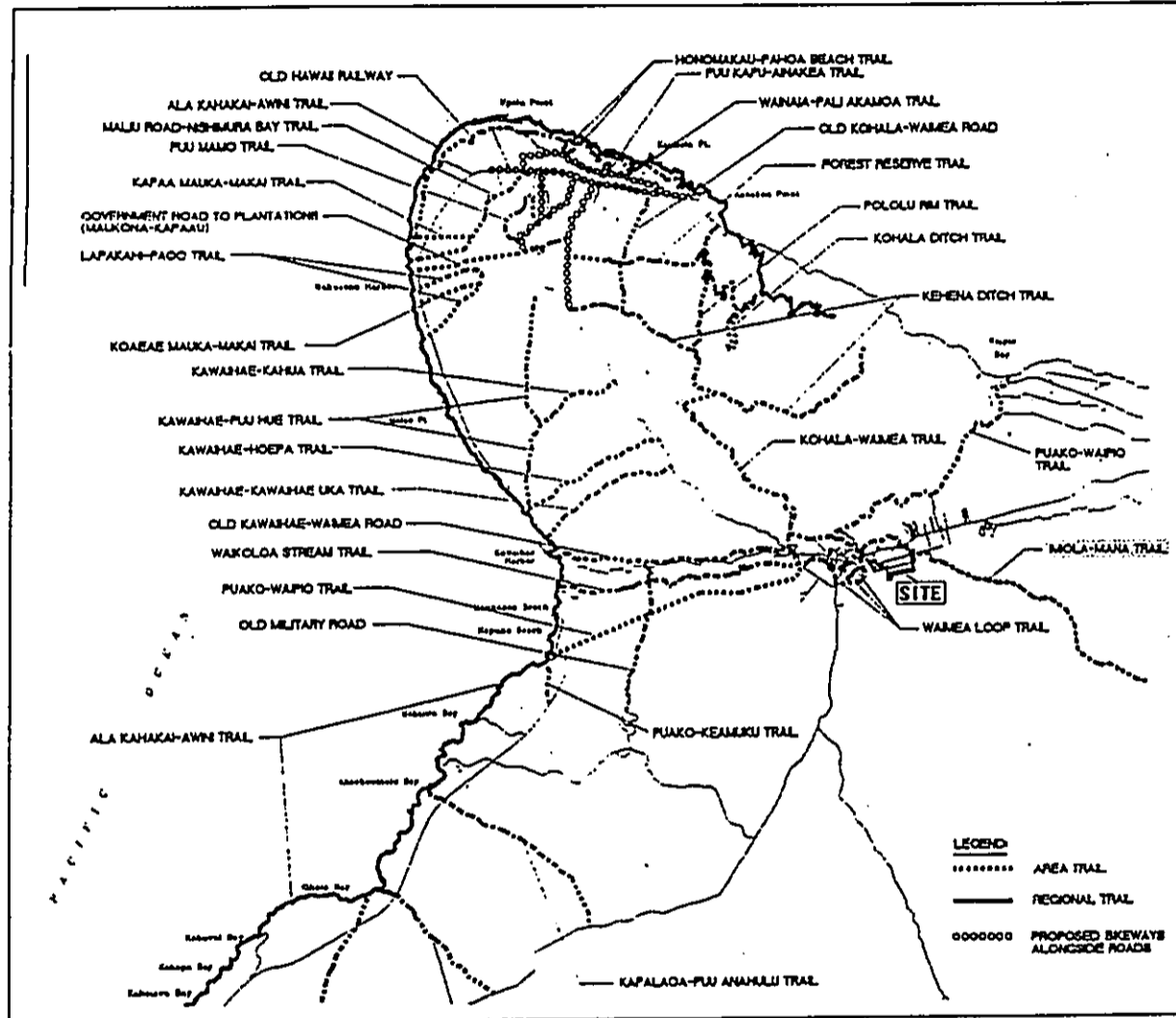
(1)Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.

(3)Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.³¹

30.Hawaii Revised Statutes §226-7 (Supp. 1992).

31.Hawaii Revised Statutes §226-14 (Supp. 1992).

FIGURE 14. Trails Map



(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:

- (1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.
- (2) Assist in providing adequate, reasonably priced water for agricultural activities.
- (3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agricultural and aquaculture.

(9)Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.³²

The proposed subdivision improvements will promote productive use of prime agricultural land. DHHL's requirement for agricultural activity will ensure that the land will be used for agriculture. The State's plans to improve the Waimea Irrigation System implements the policies of the State Plan in support of agriculture.

4.2 State Land Use Law

The State Land Use classification for the Site is Agriculture. The proposed farm lots are permitted uses in this district and also meet the minimum lot size of 1 acre required under the State Land Use Law.³³ DHHL leases for these farm lots require agricultural activity and permit one farm dwelling per lease.

4.3 West Hawaii Regional Plan

The Office of State Planning prepared the West Hawaii Regional Plan to coordinate State activities in the region. The planning region included North and South Kohala and North Kona. This plan promotes agriculture in the Lalamilo-Waimea-Puukapu area, "an important and especially productive temperate-climate agricultural area" where "crops suited to this area cannot be grown satisfactorily in other climatological regimes on the Island."³⁴ The plan supports DHHL's development plans for the area.³⁵

4.4 Hawaii County General Plan

The proposed use conforms with the General Plan LUPAG designation for the site which is Intensive Agriculture (see Figure 15 on page 31). This designation is intended for diversified agriculture and floriculture.³⁶

32. *Hawaii Revised Statutes* §226-103 (Supp. 1992).

33. *Hawaii Revised Statutes* §205-4.5 (permissible uses within the agricultural districts) and §205-5 (minimum lot size) (Supp. 1992).

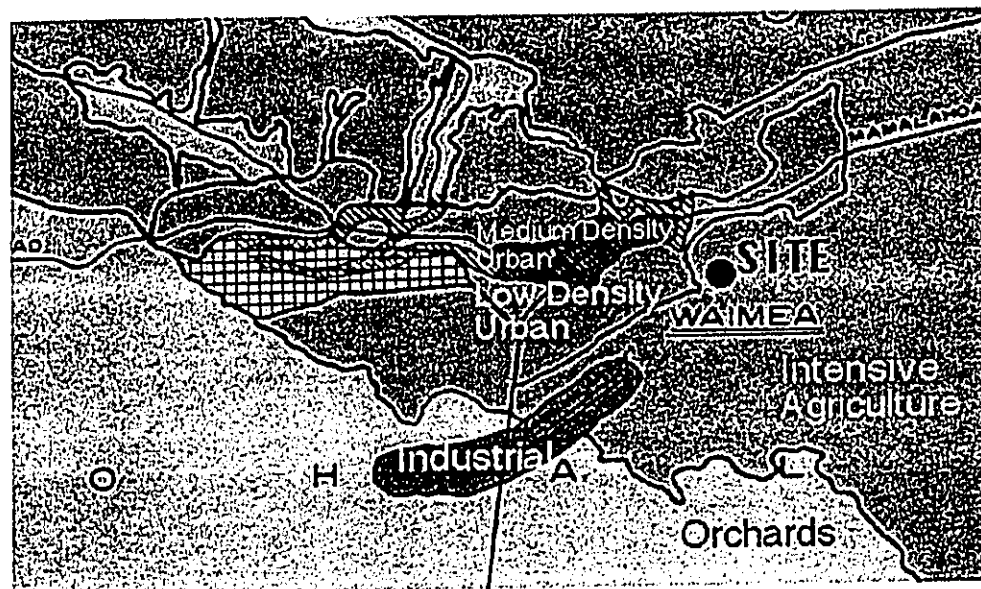
34. State of Hawaii, Office of State Planning, *West Hawaii Regional Plan*, 1988, at p. V-1.

35. *Ibid.*, p. V-21.

36. *General Plan Support Document*, November 1989, p. 80.

FIGURE 15.

General Plan LUPAG Map



The County's cooperation in accepting dedication of the road and water systems conforms with the General Plan's policies to encourage agriculture in cooperation with State and Federal agencies:

The County of Hawaii shall assist the expansion of the agricultural industry, especially diversified agriculture, through the protection of important agricultural lands, capital improvements and other programs, and continued cooperation with appropriate State and Federal agencies.³⁷

The County shall assist in the development of basic resources such as water, roads, transportation and distribution facilities for the agricultural industry.³⁸

The County shall assist the development of agriculture in South Kohala by protecting important agricultural land from urbanization, by providing or having provided the necessary capital improvements, such as water, and by working cooperatively with other agencies.³⁹

4.5 Northwest Hawaii Open Space and Community Development

37. General Plan §4.A (Economic goals and objectives).

38. General Plan, §4.M(1) (Land Use goals and objectives for agriculture).

39. General Plan, §5.F(1) (Economic courses of action for South Kohala)

Plan

When adopted, the Northwest Hawaii Open Space and Community Development Plan will replace the outdated Kohala Community Development Plan (December 1976). The draft plan designates the Site as productive pasture lands, which is consistent with the proposed use.⁴⁰

4.6 Hawaii County Zoning and Subdivision Codes

The Site is zoned A-40a (Agriculture with 40-acre minimum lot size), except for parcels 6-4-8:6, 11, 26, and a portion of 46 which are zoned A-5a (see Figure 16 on page 33). Not all of the lots in the A-5a district and none of the lots in the A-40a district meet the minimum lot size required under the zoning code. However, Hawaiian Home Lands are exempt from county regulations. For the given lot sizes, the lots meet the average width requirement of 120' for the first acre plus 20' for each additional acre (except for the remnant 1.609-acre lot in TMK 6-4-8:06).

DHHL issued leases to the lots without final subdivision approval from the County. The proposed improvements, however, will conform to County dedicable standards specified in the subdivision code.

4.7 Coastal Zone Management and Special Management Area

The project is located outside of the Special Management Area; therefore, a Special Management Area Permit is not applicable to the project. However, even if not located in the Special Management Area, all actions anywhere within the State must comply with the objectives and policies of the Coastal Zone Management Act.⁴¹ The project is consistent with the objectives relating to Economic Uses:

Provide public or private facilities and improvements important to the State's economy in suitable locations.⁴²

The other objectives and policies are not applicable since the project will not impact upon recreational resources, historic resources, scenic and open space resources, coastal ecosystems, coastal hazard areas, nor public shoreline access.

40. Townscape, Inc., footnote 11 on page 17, at p. viii (2005 Open Space & Land Use Plan).

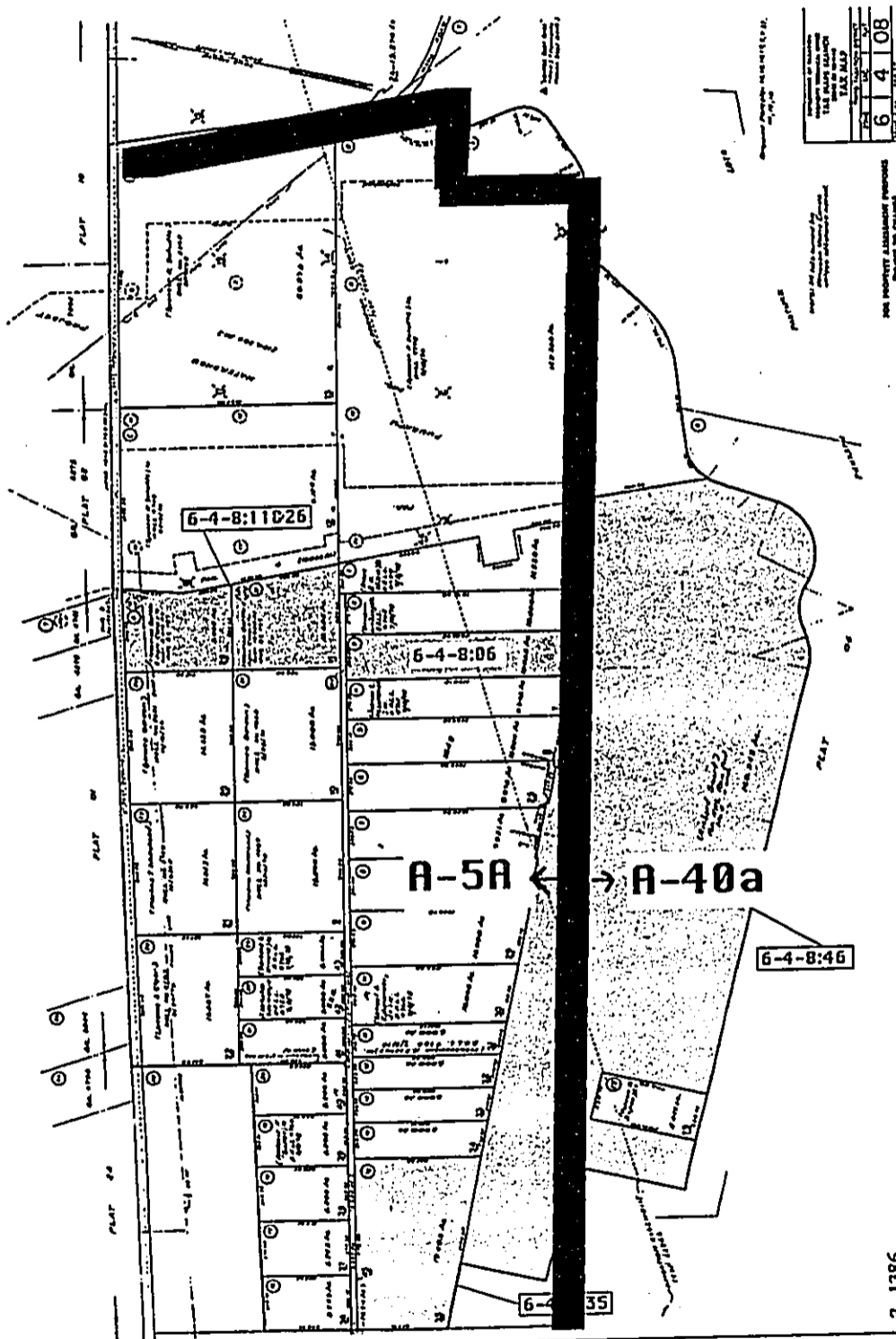
41. *Hawaii Revised Statutes* §205A-4(b) (Supp. 1992).

42. *Hawaii Revised Statutes* §205A-2(5)(A) (1985).

RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

FIGURE 16.

Zoning Map



ALTERNATIVES CONSIDERED

4.8 Other Permits and Approvals

Construction activity for the proposed improvements may require a grading permit. Agricultural activity is exempt from the grading permit. The drywells will require a UIC Permit from the Department of Health (DOH). DOH may also have to grant a variance to DHHL to permit cesspools for a development with more than 50 dwelling units. Subsequently, DOH would have to approve each lessee's cesspool. Each lessee may also require a building permit for dwelling or farm structures. Since the limits of grading for the subdivision improvements will involve greater than 5 acres, the non-point source controls under the NPDES Permit administered by DOH will likely apply to the project.

TABLE 2.

List of Permits and Approvals

Permit or Approval	Authority	Approving Agency
STATE OF HAWAII		
Underground Injection Control	HAR Chap. 11-23	Department of Health
Wastewater Systems Variance	HAR Chap. 11-62	Department of Health
Wastewater Systems (individual cesspools)	HAR Chap. 11-62	Department of Health
NPDES Permit	HAR Chap. 11-55	Department of Health
COUNTY OF HAWAII		
Subdivision construction plans approval	HCC Chapter 23	Planning Department
Grading Permit (possibly for subdivision improvements)	HCC Chap. 10	Department of Public Works
Building Permit (possibly for lessee's structures)	HCC Chap. 5	Department of Public Works

HAR= Hawaii Administrative Rules
HCC= Hawaii County Code

5.0 ALTERNATIVES CONSIDERED

Although DHHL explored several alternative alignments with the Department of Transportation for the Waimea By-Pass Road, none of the alternatives ade-

DETERMINATION WITH SUPPORTING FINDINGS AND REASONS

quately mitigated or compensated for the impacts upon the lessees. The fate of the Waimea By-Pass Road remains an unresolved issue.

The no-action alternative is not acceptable since the lessees will still have their lots but the infrastructure would remain substandard. The proposed road and water improvements would provide minimum health, safety, and welfare conditions and promote agriculture.

6.0 DETERMINATION WITH SUPPORTING FINDINGS AND REASONS

The proposed subdivision improvements are not expected to cause significant impacts to the environment, pursuant to the significance criteria established by the Environmental Council as discussed below;⁴³ therefore, the determination is to issue a negative declaration.

The proposed project will not involve an irrevocable commitment to loss or destruction to any natural or cultural resources. The Site is not an endangered species habitat. The project would encourage productive use of a significant agricultural resource.

The proposed project will not curtail the range of beneficial uses of the environment. The project would promote beneficial agricultural uses.

The proposed project will not conflict with the State's long-term environmental policies. The proposed project conforms with the State's policies to promote diversified agriculture.

The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities. The project is a low-density agricultural subdivision that will not cause growth-inducing secondary impacts.

The proposed project will not involve a substantial degradation of environmental quality. There will be no significant degradation of air, water, or noise quality.

The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat. The Site is not a known habitat for endangered or threatened flora or fauna species.

43. Hawaii Administrative Rules, §11-200-12.

The proposed project will not detrimentally affect air or water quality or ambient noise levels. The proposed project will not produce significant air emissions. Wastewater flows will be disposed by cesspools in a non-critical wastewater disposal area. Potential noise levels from the Waimea-Kohala Airport will not be at significant levels to affect the Site's residents. The drainage system will be designed in compliance with county and state regulations to protect the groundwater quality and not adversely impact downstream properties.

The proposed project is not located in an environmentally sensitive area (e.g., flood plain, tsunami zone, coastal area). The project is not located within the 100-year flood plain or other environmentally sensitive area.

Summary of Mitigation Measures

Design/Construction Phase (DHHL):

- Comply with UIC requirements for drywells.
- Confirm whether a wastewater variance from Department of Health is necessary since the project involves more than 50 units.
- Implement rainfall and wind erosion control measures due to the erodibility of the Kikoni soils.
- Include a standard clause in the construction contract for the contractor to stop work and inform the Division of Historic Sites in the event possible archaeological remains are uncovered.
- Coordinate hook-up of the irrigation system with the State's planned improvements to the Waimea Irrigation System.
- Continue discussion of alternative by-pass road alignments with the Department of Transportation.
- Agree to a reimbursement plan with the County for the fair share cost allocation to maintain the roadways.
- Confirm with the Airports Division the permitted height limits within the aviation easement based on the finished grades.

Operational Phase (Lessee):

- Comply with the lease requirements to use lot for agricultural activity.
- Comply with aviation easement restrictions, if applicable.
- Obtain approval from the Soil and Water Conservation District for an erosion control plan.
- Notify the Division of Historic Sites in the event possible archaeological remains are uncovered during agricultural operations.

REFERENCES

7.0 REFERENCES

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Hawaii Revised Statutes, Chapter 226 (State Plan) (Supp. 1992).

Hawaii Administrative Rules, Chapter 11-200, Department of Health, Environmental Impact Statement Rules.

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County of Hawaii, *General Plan*, Ordinance No. 89-142 (An Ordinance Adopting the

REFERENCES

County of Hawaii General Plan and Repealing Ordinance No. 439, as amended).

APPENDIX

COMMENTS AND RESPONSES TO THE DRAFT ENVIRONMENTAL ASSESSMENT

The 30-day public review period for the Draft Environmental Assessment commenced with the March 23, 1995 OEQC Bulletin publication date and ended on April 22, 1995. No comments were received.