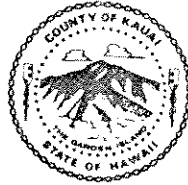


TONY T. KUNIMURA
MAYOR



AVERY H. YOUN
PLANNING DIRECTOR

TOM H. SHIGEMOTO
DEPUTY PLANNING DIRECTOR

TELEPHONE (808) 245-3919

COUNTY OF KAUAI
PLANNING DEPARTMENT
4280 RICE STREET
LIHUE, KAUAI, HAWAII 96766

June 1, 1983

C
O
P
Y

Mr. Perry J. White, Senior Planner
Belt, Collins & Associates, Ltd.
606 Coral Street
Honolulu, Hawaii 96813

Subject: PDC Phase II Environmental Impact Statement

Pursuant to Section 1:72 of the Environmental Quality Commission - Environmental Impact Statement Regulations, this is to acknowledge the Planning Department's acceptance of the PDC Phase II Environmental Impact Statement, as revised, on the basis that it has addressed the pertinent impacts and issues of the proposed development.

A handwritten signature in cursive script, appearing to read "Avery H. Youn".

AVERY H. YOUN
Planning Director

cc: ✓ Roy R. Takemoto, OEQC
Michael Y.M. Loo, Princeville Dev. Corp.

FILE COPY

REVISED



Princeville Phase Two

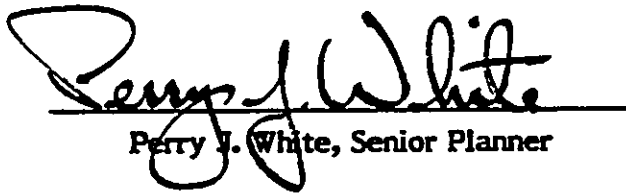
Environmental Impact Statement

REVISED
ENVIRONMENTAL IMPACT STATEMENT
FOR THE PROPOSED
PRINCEVILLE PHASE TWO DEVELOPMENT

For Submission To: Kaua'i County Planning Department

Prepared For: Princeville Development Corporation

By: Belt, Collins & Associates


Perry J. White, Senior Planner

May 1983

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Princeville Phase Two

Environmental Impact Statement

CHAPTER I

SUMMARY

1.1 PROJECT DESCRIPTION

Princeville Development Corporation (PDC) holds title to approximately 10,140 acres in the Hanalei District on Kaua'i's north coast. Its holdings extend about five miles along the coast from Kalihiwai Bay to Hanalei Bay and approximately eight miles inland into the Halele'a Forest Reserve. The plateau lands makai of Kuhio Highway have been master planned for a resort-residential community, "Princeville at Hanalei," and Phase One of this resort-residential community has been largely developed. The current proposal is for Phase Two, which involves most of the remainder of PDC lands below the highway.

PDC is a land developer that sells improved land to other developers who construct the actual residential and condominium buildings. To date, PDC has improved and subdivided most of the approximately 1,050 acres comprising Phase One. As of June 1982, PDC or purchasers of its Phase One lands had constructed a 27-hole golf course; a 27,000-square foot commercial center; 1,180 multi-family units; and 200 single-family units. Most of the housing is used for vacation rentals, although Phase One does have a full-time resident population estimated at 750, plus an unknown number of part-time residents. Under the PDC master plan, the various landowners can someday construct another 1,000 multi-family units; 550 single-family units; 48,000 square feet of commercial space (although some of the commercial might go in Phase Two); and 700 hotel units distributed over two sites. It is anticipated that recreational demand generated by these hotels will also require construction of another 18-hole golf course. This would be physically intertwined with Phase Two lands but is not part of the proposed Phase Two development for which a General Plan amendment has been requested and with which this environmental impact statement is concerned.

The proposed Phase Two project lies east of the existing Phase One development. Total land area in Phase Two is 1,185 acres, of which approximately 421 acres would be developed for residential, resort, recreational, and public use. These 421 acres are located on three highland plateaus; access to the new development would be from Kuhio Highway. About 80 developable acres remain unplanned and are not included in the General Plan amendment request; these are located along Anini Road, both mauka and east of Kalihikai Beach. The remaining 680 acres would be devoted to permanent open space or the previously mentioned second Princeville golf course.

Phase Two lands are currently under short-term lease to the Princeville Cattle Company. The acreage, together with a larger area mauka of Kuhio Highway, is used for cattle grazing. Grazing on the mauka lands would continue following development of Phase Two.

As in Phase One, the final product marketed by PDC would be developed land, and the purchasers would carry out any actual construction of buildings. Phase Two differs from Phase One in its relatively greater emphasis on single-family houselots. Of the 421 proposed Phase Two acres, more than 75 percent would be improved and subdivided into 1,240 single-family houselots of varying sizes. Only two sites are designated for resort condominium construction (total 420 units). It is

expected that one of these would be operated as a condominium hotel and the other as a conventional residential or vacation rental condominium. A five-acre site bordered by Kuhio Highway and Ka Haku Road would be available for public use (probably including a community library) and possibly some retail space. In addition, lands for a public park would be dedicated somewhere on the Phase Two property, possibly in the unplanned Kalihikai Beach area or on one of the plateaus.

Some of the Phase One improvements, such as the sewage treatment plant, are expected to serve Phase Two as well. All infrastructure improvements such as water lines, sewer lines, and collector roads for Phase Two would be built and financed by the developer.

1.2 MARKET DEMAND ASSESSMENT

The economic consulting firm of Peat, Marwick, Mitchell & Co. (PMM) conducted separate market analyses for the three different types of units proposed for Phase Two -- condominium-hotel, multi-family condominium, and resort-residential houselots.

Based on projected Kaua'i visitor arrivals and demand for different types of accommodations, PMM concluded that Princeville Resort's share of the Kaua'i visitor market will support a new condominium hotel and also a new visitor-oriented condominium by the late 1980s. While not tied to visitor arrivals, the market for resort-residential lots would also start to support these Phase Two products by the late 1980s, according to PMM. Because the necessary land use approvals, construction of improvements, and land sale process could consume a goodly portion of the rest of this decade, the PMM analysis suggests PDC should begin now to seek the development approvals needed for Phase Two.

1.3 SOCIO-ECONOMIC IMPACTS

PMM also analyzed population, employment, and other economic impacts of the proposed Phase Two project. Community Resources (a division of SMS Research) addressed social implications of the PMM findings, and Community Resources also examined additional social impacts of the project. Both companies concluded that short-term socio-economic impacts of Phase Two would be slight because actual construction of homes or buildings is expected to take place very gradually over the next several decades. Ultimate impacts -- when both Phase One and Phase Two are completely built out sometime in the 21st century -- may be more substantial, although they are also much more difficult to assess because of the uncertain time frame. Most analysis therefore concentrates on the period between now and the late 1990s.

1.3.1 Employment Impacts

The number of construction jobs in Phase Two would be fairly stable over the next decade, as work progresses on site improvements and single-family units. Phase Two is projected to generate from 20 to 50 such jobs each year for the next decade, with the exception of two peak years when the condominium projects require substantially more workers for construction. When these have been built, it is projected that Phase Two would provide about 300 direct operational jobs during the 1990s. Most of these would be in the service and laborer categories. Total new employment (including indirectly generated jobs) would be about 500 jobs by 1995. There is some question as to whether the available North Shore labor supply can fill

these jobs without a good deal of in-migration. However, historic high unemployment rates in Kapa'a and Wailua indicate that Phase Two jobs could help solve a regional unemployment problem.

1.3.2 Other Economic Impacts

By the early 1990s, direct and indirect Phase Two visitor expenditures are projected to contribute nearly \$30 million to the Kaua'i economy each year. Household income from Phase Two would be nearly \$10 million by 1995, and state and local taxes generated that year by Phase Two would be \$1.6 million.

1.3.3 Population Impacts

While the projected ultimate Phase Two resident population (2,380) would slightly exceed the ultimate Phase One population (2,290), Phase Two population is expected to be low in the initial years -- 95 in the year 1990 and 325 in 1995. If North Shore communities outside Princeville continue to grow at their 20-year historic rate of 2.5 percent per year, the projected additional Phase One and Phase Two populations could be accommodated by the County's proposed overall North Shore resident growth rate of 3.9 percent per year.

Census data show that the 1970s were a time of dramatic population change on the North Shore, both in terms of growth and demographic composition. Princeville Phase One residents typified new residents in all parts of the North Shore -- predominantly Caucasian, in the young-adult to early middle-age years, somewhat unlikely to have children -- except that they were probably more affluent on average. Phase Two residents are expected to be the same type of people, although some of the smaller houselots could eventually attract more middle-income residents.

1.3.4 Off-Site Real Estate Costs

A concern sometimes expressed about resort-residential projects involves the possibility of undesired increases in the cost of nearby land or housing. Based on historical experience with Phase One, North Shore realtors believe that Princeville land values have not had much "spillover" effect on nearby residential or agricultural land values. While these land values have risen in recent years, realtors report that the investor and second-home market for Hanalei or Kilauea property consists of different types of people who are looking for different types of land characteristics. Since Phase Two is like Phase One, (i.e., houselots or condominium units in a self-contained community with numerous landscaping and architectural restrictions), it is unlikely that the Phase Two development would affect the situation.

1.3.5 Other Social Impacts

Continued growth in the Princeville population (both Phase One and Phase Two) would eventually give Princeville residents more political power in relation to other North Shore communities. Otherwise, Phase Two is not expected to affect current patterns of social interaction between residents of Princeville and other North Shore communities, which have been characterized as amiable if not particularly intimate.

Longtime North Shore residents are sometimes disturbed by the rapid changes which have been affecting their communities, but there is a tendency to feel that Princeville residents and visitors are (relatively) not responsible for these changes

because "they keep to themselves." Indications are that Phase Two residents and visitors would be similarly contained. Despite the rapid pace of change and the development of Phase One, there has been minimal evidence of social pathology on the North Shore (i.e., child abuse, family breakdown, or violent crime) in the past few years, and there is no strong reason to believe that Phase Two would trigger any such problems.

Perhaps the greatest social impact which Phase Two would bring about in the immediate future is a visual and psychological one: the conversion of a large portion of "country" to a resort-residential landscape. The significance of this change would vary from person to person and cannot be measured at present.

1.4 PHYSICAL IMPACTS

1.4.1 Geologic, Physiographic, and Pedologic

The predominant soil found on the proposed site is Makapili silty clay. The Soil Conservation Service and the Land Study Bureau (LSB) both rate the fertility of Makapili silty clay as low or average, but the State Board of Agriculture classifies the proposed site as Prime Agricultural Land. The significance of converting these lands to urban uses thus may be debated, although the LSB system (the only one with a firm legal basis) would suggest a minimal impact. The engineering features of the soils on the site are highly favorable. Physiographic disturbances would be minimal as the land is quite well suited to its proposed purpose.

1.4.2 Traffic

Analyses conducted for this study indicate that several segments of Kuhio Highway will reach capacity in the next decade or two, with or without Phase Two. Vehicle trips related to Phase Two would have only marginal impact.

Within the Princeville resort-residential complex, existing Phase One and planned Phase Two collector roads are generally more than adequate to handle projected traffic. Phase One/Phase Two population growth could eventually require improvements to the Kuhio Highway-Ka Haku Road intersection.

1.4.3 Hydrologic

The proposed development would not affect the basic drainage pattern of the area under consideration but would result in a slight increase in mean annual runoff. The resulting increase in peak runoff rates is unlikely to cause flooding in the project area, however, because the gullies that serve as natural drainageways are deep. The increase in impermeable areas may cause a very slight decrease in the base flow of Anini Stream.

The groundwater structure is two-layered: an unconfined surface aquifer is separated from a deep confined aquifer by a relatively impermeable barrier of weathered lava. Drinking water is and will be drawn from the confined aquifer. The drawing of approximately 700,000 additional gallons of water per day from this aquifer to serve Phase Two (at ultimate development, assuming 100 percent occupancy) is not expected to have a significant effect on water resources.

1.4.4 Sonic

While ongoing development at Phase One will generate measurable increases in traffic noise, addition of traffic from Phase Two -- even at ultimate build-out -- would produce an undetectable increase in traffic noise. Construction noise during site preparation would be substantial, but the land will be uninhabited at this time. An analysis of future aircraft noise from takeoffs and landings at Princeville Airport indicates most of Phase Two would be little affected.

One strip of the proposed residential houselot area on the eastern plateau, however, could encounter essentially urban noise levels from the combined effects of the highway and airport. This could be mitigated by setbacks, walls, or other noise control measures. In this instance Phase Two is not the source of the noise; rather, it is subject to noise generated by other uses.

1.4.5 Biological

Existing pasture grasses would be replaced by landscape plants, leading to a reduction in population for the few bird species which use the pasture area for foraging. However, the gullies provide the habitat for most plant and bird species in the area, and these will remain relatively undisturbed. Nevertheless, increases in both feral and domestic dogs and cats would affect even this habitat for some types of birds. A few individuals of one endangered species, the koloa, or Hawaiian duck, have been sighted in the area. But they do not appear to use it frequently or to be dependent upon it for habitat.

No significant impacts are anticipated on either the Anini Stream ecological quality (which is already considered poor) or on the nearshore reef ecosystem. An extensive survey of marine biota off the Princeville coasts established that levels of coral, algae and fish offshore of Phase One appear identical or higher than levels found off the yet-undeveloped Phase Two lands.

1.4.6 Visual Character

The overall visual character of the project site would be transformed from pasture to a carefully landscaped resort-residential appearance. Houselot purchasers would be required to plant from two to five trees on each lot. For the passerby on Kuhio Highway, the urban appearance would be buffered for about half of the highway's two-mile stretch along the Phase Two lands by the proposed golf course. Much of the remaining stretch would probably be screened by plantings. There are currently only a few panoramic views of the ocean along this stretch of Kuhio Highway. Some view planes to the ocean would be partially blocked by buildings or landscaping. Within Phase One, views from homes backing on or cars driving along Ka Haku Road would be affected by the transformation from pasture to more urban uses.

From the Kalihikai Beach perspective, setbacks and landscaping can virtually eliminate any sense of visual intrusion which might be caused by construction of single-family homes along the ridgeline behind the beach. At Anini Beach, which may someday also be visually affected by development of a Phase One hotel site, the Phase Two resort condominiums would probably be visible; however, these impacts can be minimized with careful attention to setbacks and landscaping.

1.4.7 Archaeological

A survey by Bishop Museum archaeologists found no evidence of significant archaeological sites in the Phase Two development areas.

1.4.8 Air Quality

The primary air quality effect of the project would stem from increased vehicular traffic. An analysis conducted for this study using a methodology developed by the U.S. Environmental Protection Agency, indicated that traffic associated with the Phase Two project would be a relatively minor contributor of air pollutants. It also showed that existing State and Federal ambient air quality standards would be met along the free flowing portions of Kuhio Highway and the internal road network. Projected ambient concentrations of pollutants in the vicinity of intersections would be considerably higher than those along the open road, however. A "worst-case" analysis indicated that concentrations of carbon monoxide, the pollutant of greatest concern, would be well below the National Ambient Air Quality standard of 40 micrograms per cubic meter. At the same time, it indicated that, under extreme atmospheric and traffic conditions, concentrations could exceed the State standard for carbon monoxide of 10 micrograms per cubic meter.

The projected levels are well below the concentrations currently experienced near busy intersections throughout the state, and, according to the U.S. Environmental Protection Agency and other recognized scientific sources, do not constitute a health hazard. The model used to predict concentrations is very conservative (i.e., tends to produce estimates higher than those actually experienced), and the frequency with which the assumed atmospheric conditions occur is extremely low. In view of the foregoing, no significant adverse impact on air quality is expected as a result of the Phase Two project.

1.4.9 Utilities and Solid Waste Disposal

Ultimate water demand generated by Phase Two would be 0.7 million gallons per day (mgd), compared to an ultimate demand of 1.4 mgd from Phase One. Princeville Water Systems, Inc., would add additional well capacity and a 0.7 mg storage tank.

The sewage collection and treatment system currently serving Phase One has adequate capacity to serve Phase Two as well. Similarly, public utility companies have indicated that current or planned facilities are adequate for electrical power and telephone service needs generated by Phase Two.

Solid waste generated by Phase Two would probably be collected by private refuse haulers. The County Department of Public Works' (DPW) plans for disposal of solid waste from the North Shore area are being reevaluated. Previously a transfer station was planned to replace the existing landfill on Phase Two lands. Since the recommended location for the island's major landfill is at Kekaha, the haul from the North Shore is now considered prohibitively expensive. There are two basic alternatives, and several possible options under each, for solid waste disposal for the area. This issue is discussed in detail in Section 4.11.4. It should be mentioned here that PDC is working with the DPW to resolve this issue before the Phase Two project is implemented.

1.4.10 Recreational Activities and Facilities

Planned improvements already included in the State Recreation Plan Technical Reference Document are designed to accommodate the level of recreational activity projected for the district with the Phase Two project. Some North Shore community sources, however, have expressed concern about potential congestion of, and competition for, ocean-based recreational facilities. The County's Park Dedication Ordinance would require the Princeville Development Corporation to dedicate land for park use, and this could help to alleviate such concerns.

1.4.11 Other Public Services

Current services or planned improvements in police, fire, medical and educational facilities indicate that the low initial Phase Two population will cause no strain in these areas. Over time, increasing numbers of Phase Two residents would require some expansion of such services, but the gradual rate of population growth will allow ample time for planning.

1.4.12 Employee Housing

Temporary housing for Phase Two construction workers would be a matter of concern only during the period when the condominium and hotel condominium projects are being built. The availability of housing would depend on how many of the workers were Kauai residents and/or the amount of other projects under construction at the time.

For the permanent Phase Two operational employees, the economic consulting firm of Peat, Marwick, Mitchell & Co. estimates a Phase Two employee demand for 75 on-site (i.e., within Princeville itself) housing units by 1985 and 130 units at ultimate built-out. Princeville Development Corporation intends to continue its past programs of making houselots available to employees at a discounted rate. It is questionable whether all the employees who would like to live on-site will be able to afford to buy lots and build on them. Therefore, Princeville Development Corporation is exploring possibilities for expanding its supply of employee rental units on Phase One lands. At the moment, however, the tourism slump has made many condominium units available for long-term rentals at relatively low cost, and so there is no immediate demand for an employee rental housing program.

1.4.13 Safety Hazards

The Phase Two project appears relatively immune from natural disasters. The development area is substantially above tsunami and flooding zones, and is not located in an earthquake-prone area. With no construction planned for slopes greater than 20 percent, the potential for landslides is minimized. Because phone and electric lines will be underground, hurricane or high wind conditions would produce little danger of snapped lines.

Phase Two contains two known cattle burial sites from 1890 and 1917 anthrax epidemics. One site would be undisturbed and incorporated into the golf course. The other, in the single-family area on the western plateau, would either be fenced off or else soil from the site would be reburied to suffocate any spores. Federal health authorities believe the risks of disturbing these sites are, at any rate, minimal.

1.5 CONSISTENCY WITH PUBLIC PLANS, POLICIES, AND CONTROLS

The proposed Phase Two development of the Princeville Resort is generally consistent with policy plans such as the Hawai'i State Plan and the State Functional Plans. The regulations of the Coastal Zone Management program and the Special Management Area rules would be adhered to by the project. The Phase Two development plan is not in conformance with any of the geographically specific land use plans. However, the Kaua'i General Plan (existing and proposed update) and the proposed North Shore Development Plan Update indicate urban development on the western and central plateaus. The 1972 North Shore Development Plan, which had a time horizon of 1982, shows only limited urban facilities (no residential uses) on a portion of the western plateau. The State Land Use designation for the entire Phase Two property is agriculture, while County Zoning is Agriculture and Open.

1.6 ALTERNATIVES

The Proposed Phase Two project is part of the overall master plan for the Princeville Resort. The density of development within it is lower than that in the existing Phase One area, and representatives of the Princeville Development Corporation have stated that the project as now configured represents the lowest level of development that would generate a reasonable rate of return on their investment in land and infrastructure. They have indicated that a significant further reduction in the allowed number of units would make the project financially infeasible. If completion of the resort is prevented by a failure to obtain the necessary governmental approvals, the company has stated that it will be forced to terminate its activities and sell its remaining land holdings.

In view of the foregoing, three alternatives were examined as part of this analysis:

- (1) development of only the central and western plateaus, but with the same total number of units as are now proposed for Phase Two;
- (2) subdivision of the land into large ("Agricultural") lots and sale to individual buyers; and
- (3) "no-action", i.e., continued use for cattle grazing.

Insofar as it involves the same mixture and overall amount of uses as are proposed for Phase Two under the current plan, exclusion of the eastern plateau from development plans would not alter the socio-economic or many of the physical effects of the project. It would allow continued grazing on the eastern plateau, but the difference in total land area is too limited to have a significant effect on the magnitude or economic viability of the cattle operation. Some traffic and aircraft noise would be avoided as a result of increased separation between residential development and the airport and highway. The increased density would probably result in greater visual impact on persons passing the resort along Kuhio Highway and on the current residents of the Phase One area. The move to a higher proportion of multi-family units would lead to a higher visitor:resident ratio than would be the case with the current proposal. This, in turn, would lead to increased employment, resident population, and competition for housing.

The remaining two alternatives involve little (in the case of large-lot subdivision) or no (for no-action) increase in population. As a result, all of the many effects, both beneficial and negative, which result from population growth would be avoided. There would be little economic stimulus or employment growth. The physical impacts that would result from these alternatives depend upon the kinds of agricultural activities (crops, cultivation techniques, range management practices, etc.) that occur there. These cannot be predicted at this time. The impacts could range from virtually nothing to substantial.



Princeville Phase Two

Environmental Impact Statement

CHAPTER II

PROJECT DESCRIPTION

2.1 INTRODUCTION

Princeville Development Corporation (PDC) is the master developer of the Princeville resort. Its primary activities include master planning of the resort, subdivision of land, construction of the roads and utilities necessary to service the subdivided lots, and sale of the improved lots to individual homeowners or developers. PDC, its subsidiary companies, and/or its parent company also build and manage key resort facilities such as the golf courses, Princeville Airport, Princeville Center (commercial), employee housing, and the potable water source. PDC is seeking a boundary amendment to the Kaua'i County General Plan, North Shore Development Plan, and the Kaua'i County Comprehensive Zoning Code to allow it to expand the resort in Phase Two of development. Chapter V contains maps showing the existing land use designations on the Phase Two lands and discussions of the project's relationship to government policy and land use plans. This environmental impact statement has been prepared in conjunction with PDC's General Plan amendment request.

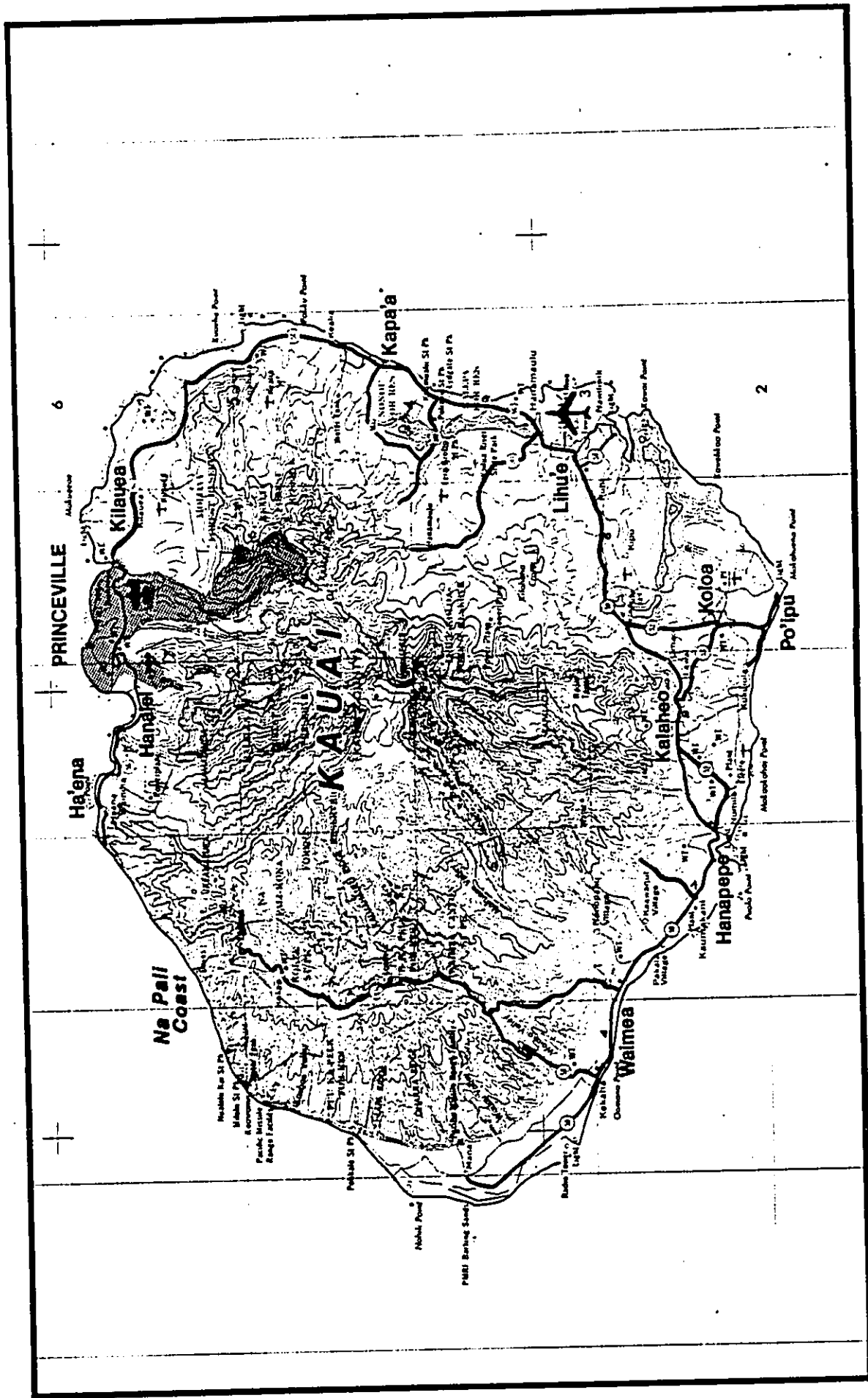
2.1.1 Location of Princeville Lands

The Princeville lands, comprising approximately 10,140 acres, are located in the Hanalei District on Kaua'i's north coast (see Figure II-1). Some of these lands are owned by PDC, and the rest have been sold to other developers or owners. The lands extend about five miles along the coast from Kalihiwai Bay to Hanalei Bay and approximately eight miles inland into the Halele'a Forest Reserve. Princeville Center, the existing commercial area, is 27 miles from Lihu'e and eight miles from Ha'ena, which is the entrance to the Na Pali coast.

2.1.2 Overall Development Concept

In 1969 a master plan was prepared to guide development of Princeville lands. This plan envisioned the development of a major new destination resort and second home complex. The plan included the following elements:

- o Golf courses
- o A community commercial center (Princeville Center)
- o A major resort area with single-family dwellings, hotel rooms, and condominium units
- o Continuation of taro farming at increased levels
- o Continuation of cattle ranching and horseback riding
- o Provision of low-density agricultural lands
- o Preservation of forest reserve lands



II-1 Island of Kauai

Princeville Lands

Kapa'a Major Town

Commercial Airport

Private Airport



NORTH

PRINCEVILLE
PHASE TWO

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PDC's master plan for Princeville calls for resort development on their plateau lands makai of Kuhio Highway in two phases as shown in Figure II-2. Their lands within the forest reserve would be preserved. The remainder of their lands are currently planned for continued agricultural use. Most of these agricultural lands are mauka of Kuhio Highway.

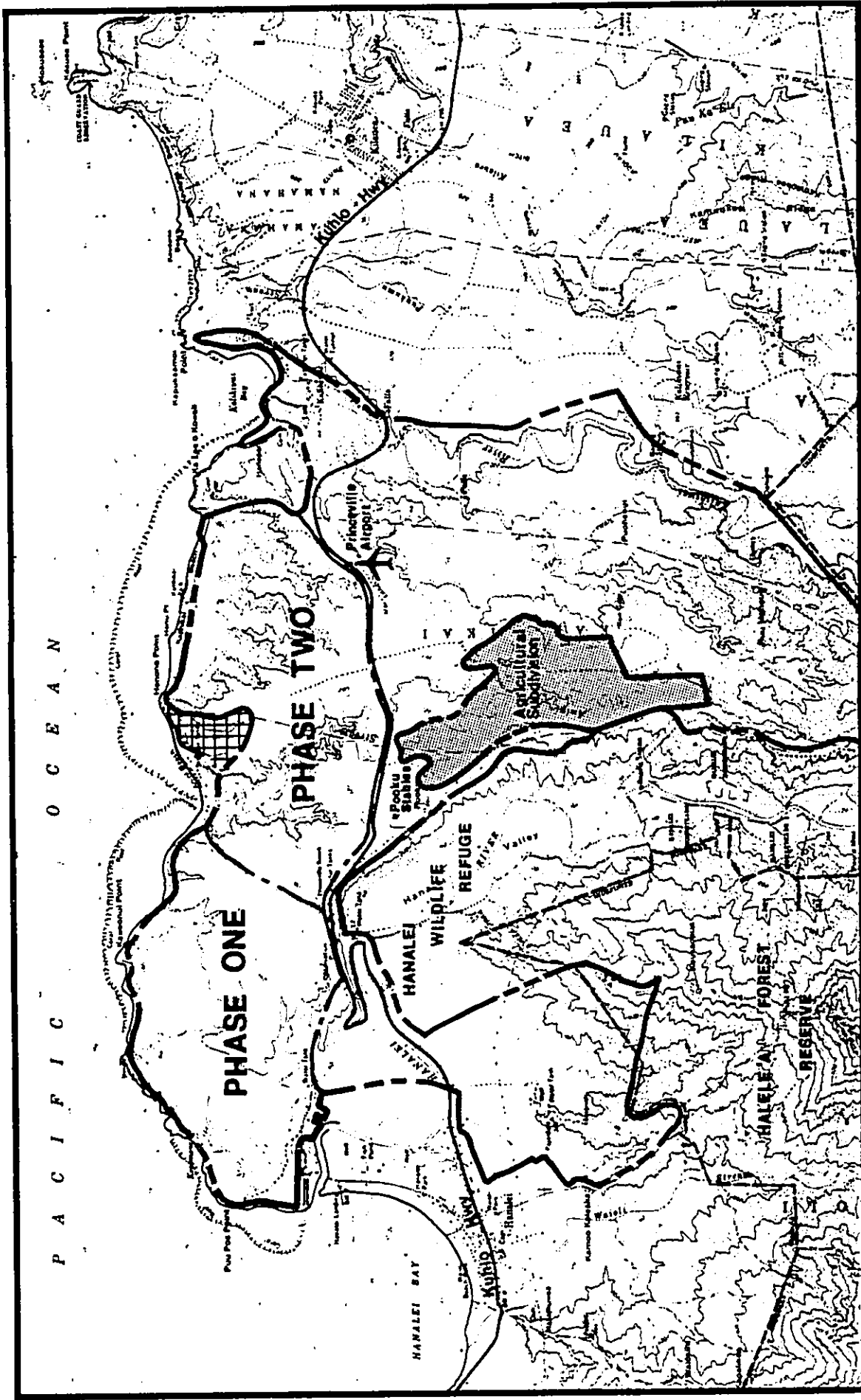
2.1.3 Development to Date

Phase One. As mentioned previously, PDC is a land developer that sells improved land to other developers who construct the actual residential and condominium buildings. To date PDC has improved and subdivided most of the approximately 1,050 acres comprising Phase One. Figure II-3 shows the approximate location of completed projects, sold but vacant land, and unsold land (still owned by PDC). It should be noted that for the single-family parcels which are shown as "Sold, But Not Yet Built," approximately 200 lots, or about 33 percent, do have houses on them. Table II-1 outlines the status of development in Phase One by land use category. Not included in Table II-1 or Figure II-3 is the second golf course to be developed in conjunction with the Phase One hotel. This 18-hole course is physically intertwined with Phase Two lands, but it is intended to satisfy recreational demand associated with Phase One.

Phase Two. At present, approximately 500 acres of plateau land contained in the Phase Two area of Princeville are presently used for cattle grazing under a license with Princeville Cattle Company (no relation to PDC). Under the terms of the license, PDC may withdraw any portion of the Phase Two land with 45 days notice. PDC plans for this Phase Two area are the subject of this environmental impact statement.

Halele'a Forest Reserve. Approximately 4,000 acres of Princeville land are in Halele'a Forest Reserve. This acreage is accessible only by jeep, horseback, or foot.

Other Land. The remaining 3,910 acres of Princeville land are located either near Hanalei, mauka of Kuhio Highway, or around Kalihiwai Bay. The land near Hanalei is currently being used for taro farming and cattle grazing. The taro farms are on five-year leases, and the terms of the Princeville Cattle Company license are the same as for the Phase Two land. The area around Kalihiwai Bay is used for a small agricultural settlement and open space. The large parcel of land mauka of Kuhio Highway is used mostly for cattle grazing, but it also contains a 22-lot agricultural subdivision, Princeville Airport, and Po'oku Stables. Princeville Cattle Company holds a lease on the cattle grazing lands mauka of Kuhio Highway until December 31, 2003. Under the terms of the lease, PDC may withdraw land only for urban development purposes and with 90 days notice. Because PCC now has a long-term lease on Princeville lands mauka of Kuhio Highway, it is feasible for them to make pasture improvements there. PCC regards the Phase Two acreage they use as "medium grade pasture." They will be able to increase the carrying capacity of the mauka pastures to at least partially offset the withdrawal of the Phase Two acreage (Collins; July 25, 1979). Thus, this withdrawal will not result in the demise of the cattle company's operations.



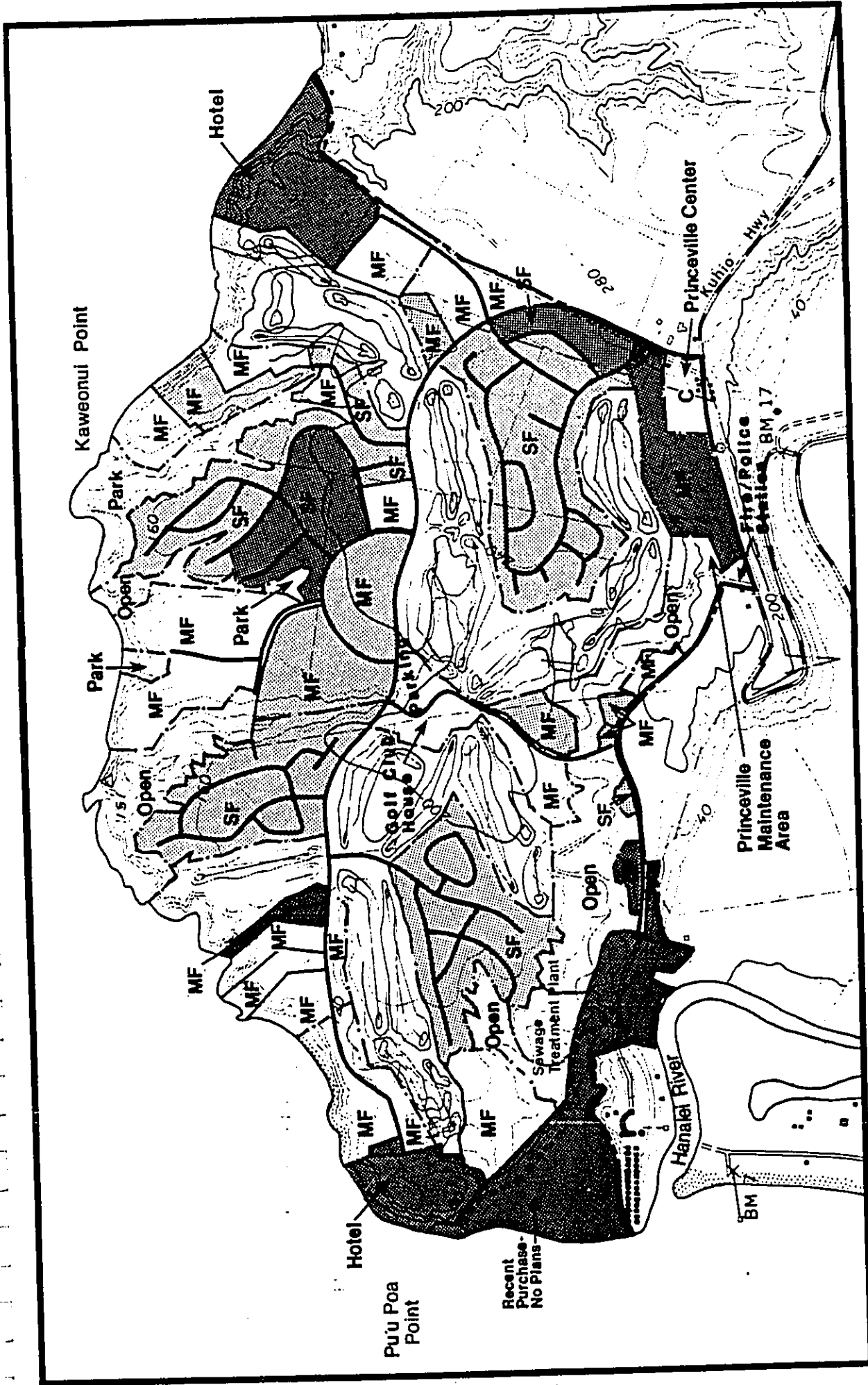
II-2 Princeville Lands

- Perimeter of Princeville Lands (Excluding 4001 Ac. of Forest Reserve)
- Phase Boundaries
- Forest Reserve Boundary
- Joint Ownership with Amfac




0' 2000' 4000' NORTH

PRINCEVILLE
PHASE TWO

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II-3 Phase One Development Status

-  Completed
-  Sold, But Not Yet Built
-  Unsold

- SF Single Family
- MF Multi Family
- C Commercial
- Boundary of Phase One

0' 685' 1370'

NORTH

PRINCEVILLE
PHASE TWO

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Table II-1. Development of Phase One Lands as of June 1982.

Use	Total Master Planned	Constructed by Others or PDC	Potential Development	
			On Land Sold by PDC	On Land Still Owned by PDC
Golf Course	27 holes	27 holes	---	---
Commercial	75,000 s.f. ¹	27,000 s.f.	---	40,000 s.f.
Hotel Rooms	700	---	---	700
Multi-Family Units	2,280	1,180 ²	760 ³	340 ⁴
Single-Family Units	750	200 ²	410	140 ⁵

¹ This square footage is gross leasable area and may occur in either Phase One or Phase Two or both.

² Includes existing employee housing.

³ Number derived from allowable zoning densities on the following parcels: Kamahana II, Ka Eo Kai III, Luana, Sandpiper II, Pukana La, and Lot 21.

⁴ Includes Lots 2 and 15B plus rough estimate for the recently acquired, 53-acre Moody property. This property was purchased to assure beach access for the hotel site, and there are no firm plans for it at present.

⁵ Includes Lots 8 and 23 plus 62 subdivided lots.

Source: Belt, Collins & Associates and Princeville Development Corporation.

2.2 PROJECT SITE

The land proposed for the Phase Two expansion of the Princeville resort lies east of the existing Phase One resort development and makai of Kuhio Highway, the main State highway extending from Ha'ena to Lihu'e (refer to Figure II-2). Access to the ocean side of the site is provided by the County's Anini Road. The Tax Map Keys for this land are Fourth Division, 5-3-06:1, 3, 13, 14 and 17; and 5-3-04:5. Parcels 13, 14, 17 and 5 are owned by PDC and contain 1,135 acres. Parcels 1 and 3, containing 50 acres, are jointly owned by PDC and Lihu'e Plantation Company, a division of Amfac, Inc. The total land area in Phase Two, therefore, is 1,185 acres, of which approximately 421 acres would be developed for resort, residential, recreational, and public use. About 80 developable acres remain unplanned and are not included in the General Plan amendment request. The remaining acreage (approximately 680 acres) would be devoted to permanent open space or the second Princeville golf course.

The Phase Two lands range in elevation from sea level to slightly more than 350 feet. The development area is confined to the plateau land and is separated from the series of small beaches below by 200-foot cliffs. Deep gullies cut by Anini and several other streams divide the plateau into a number of smaller sub-areas (refer to Figure II-4). The sub-area names are used throughout this report in describing location and are referred to as the western, central, and eastern plateaus.

2.3 OBJECTIVES OF THE PHASE TWO PROJECT

PDC is seeking to achieve two primary objectives with its proposed Phase Two project. The first is to expand the existing resort and related development to the point where Princeville will constitute a self-sustaining community. A second, and related, objective is to ensure a reasonable financial return on the original investment in the land and infrastructure made by PDC and its parent company, Consolidated Oil and Gas, Inc.

2.4 PHYSICAL DESCRIPTION OF PHASE TWO

2.4.1 Land Use

PDC's general development program for Phase Two calls for the improvement and subdivision of land for both resort units and single-family homes; it also provides for the construction of parks and improved sites for public facilities such as a library. These would all be located on the relatively flat plateau. The steep slopes and valleys would be preserved as permanent open space. The exact location and densities of the various uses have not yet been determined, but preliminary estimates are shown in Table II-2. A tentative site plan is presented in Figure II-4. Figure II-4 also shows a possible layout for the proposed second golf course. This second course is to be constructed in conjunction with the continuing development of Phase One and in particular with the proposed Princeville Phase One hotel. The second golf course has not been considered in this Environmental Impact Statement (EIS), although it lies on Phase Two land, because a special Use Permit for it has already been issued by the State Land Use Commission and the Kaua'i County Planning Commission. Therefore it is not part of the General Plan Amendment request that this EIS addresses. The proposed uses of the Phase Two project are described below.



II-8

II-4 Phase Two Master Plan

RES Resort
 SF Single Family
 P Public

- - - - Phase Two Boundary
 Developable Areas

0' 625' 1250' NORTH
 PRINCETONVILLE
 PHASE TWO
 Environmental Impact Statement
 By: Bell, Collins & Associates

Table II-2. Proposed Phase Two Land Use.¹

Uses ²	Western Plateau		Central Plateau		Eastern Plateau		Other Areas		Total	
	Acreage	Units	Acreage	Units	Acreage	Units	Acreage	Units	Acreage	Units
Single-Family	117	540	150	480	68	220	--	--	335	1,240
Resort Condo	19	120	41	300	--	--	--	--	60	420
Public	5	---	--	--	--	--	--	--	5	--
Collector Roads	10	---	6	---	5	---	--	--	21	---
Golf Course ³	---	---	---	---	---	---	300	---	300	---
Permanent Open Space	---	---	---	---	---	---	386	---	386	---
Unplanned (Kalihikai Beach Area)	---	---	---	---	---	---	78	---	78	---
TOTAL	151	660	197	780	73	220	764	1,185	1,660	1,660

¹ See Figure II-4 for generalized site plan. All acreage figures are based on preliminary plans and are approximate.

² Land for a community park would also be provided, but its location and acreage have not yet been determined by PDC and the County.

³ The second Princeville golf course is being developed in conjunction with the Phase One hotel, even though it is physically located on Phase Two lands.

Source: Belt, Collins & Associates site plan dated November 27, 1981.

Resort Condominiums. There are two proposed resort condominium sites, one each at the makai ends of the western and central plateaus. Based on market analysis, the western plateau condominium is expected to be occupied by a mixture of owners, long-term renters and vacation renters. The resort condominium proposed for the central plateau is expected to be operated as a hotel with a 24-hour front desk and restaurants. Ideally both sites would offer a range of services and facilities to guests such as maid service, tennis courts, swimming pools, etc.

Residential. A total of 1,240 single-family lots are envisioned, with lot sizes ranging from 7,000 to 20,000 square feet. Such a range of lot sizes was chosen to provide housing opportunities for households with a range of different incomes.

As part of the residential acreage, privately-owned recreation centers are envisioned for each plateau. Although specific locations have not yet been determined, in general these recreation areas would be centrally located and up to three acres in size. Facilities would be designed primarily to serve the second-home and resort orientation of the development and might include swimming pools, tennis courts, tot lots and meeting rooms.

Public. The area bordered by Kuhio Highway and Ka Haku Road across from Princeville Center is best suited for small-scale public uses as well as retail stores or offices. The Department of Education has indicated a desire for a 1½-acre community library site in Phase Two, which is proposed as part of this five-acre site (Hawai'i State Department of Education; May 25, 1982). The remaining 3½ acres would be maintained as open space until a need for additional public or retail facilities has been identified.

Park. As mentioned above, private recreation areas are planned for each plateau. Since only 50 percent of the park dedication ordinance requirement may be met by private parks, land for a public park would be provided to meet the remainder of the requirement. The location of the lands to be provided is an issue that is not yet resolved. While there has been no official agreement by the County, Princeville Development Corporation proposes to provide land for a community park across the road from the portion of Kalihikai Beach where Anini Beach Park is located. The park facilities could be designed for active recreation such as softball, baseball, and other field games. In addition, a community center could be added. This site would be dedicated to Kaua'i County, and the final choice of facilities would be determined by the appropriate County agencies.

Unplanned. A 78-acre area, designated the Kalihikai Beach area, includes most of the land owned by Princeville Development Corporation makai of the 20-foot elevation. While potentially developable, special design measures and review would be involved for any development in this flood-zone area. No uses are proposed by PDC for this area at present, except for park use discussed above.

2.4.2 Internal Circulation

The main transportation artery through Princeville lands is Kuhio Highway (Kaua'i Belt Road). Ka Haku Road is the privately owned, main entrance road to Phase One. To preserve the special sense of entry along Ka Haku Road, development in Phase Two would be set back at least fifty feet from the road's right-of-way. As shown in Figure II-4, the western plateau of Phase Two would have two major access

points—one from Kuhio Highway serving the eastern side of the plateau and the other from Ka Haku Road serving the western portion of the plateau. The central and eastern plateaus would each have one major access road off Kuhio Highway.

These major access roads would have 56-foot rights-of-way and would function as collector streets within each plateau area; local streets with right-of-ways of 40 or 44 feet would intersect them. Where possible, lots would front on local streets rather than the major access road to maintain a more efficient flow of traffic.

PDC would construct all internal streets in conformance with the County Subdivision Ordinance and other pertinent regulations. To meet non-vehicular circulation needs, a system of walking and bike paths would be developed and would connect to the Phase One facilities. Maintenance of the internal roads and paths after they are built would be financed through maintenance fees levied on lot owners in Phase Two by a community association that would be created for Phase Two.

2.4.3 Water System

Princeville Water Systems, Inc. (PWS), a wholly owned subsidiary of PDC, owns and operates the potable water source and transmission mains that service the Princeville community. The source currently consists of two 1,500-gallon-per-minute (gpm) capacity wells situated above the Princeville Airport at an elevation of approximately 400 feet. Storage for the system is provided by a 1.5-million-gallon (mg) capacity reservoir located near the wells. The distribution system within Phase One is owned and operated by the Kaua'i County Public Improvements Corporation (KCPIC), a non-profit organization.

It is estimated that the Phase Two project would consume approximately 0.7 million gallons per day (mgd) of potable water on an average day with 100 percent occupancy at final build-out. The derivation of this estimate is shown in Table II-3. The Princeville water system's pumping capacity would be increased to meet demand, when necessary. As discussed in Section 4.11.1, the present system is estimated to be able to supply the needs of both Phases One and Two at full development but, to meet back-up requirements, additional capacity would have to be provided. The system's storage capacity would be increased by adding a 700,000-gallon reservoir near the existing 1.5-mg reservoir. The locations of the existing and proposed facilities are shown on Figure II-5.

The existing 24-inch PWS transmission line that links the wells and reservoirs with the resort has sufficient excess capacity to accommodate Phase Two without modification. Hence, the only change to the water distribution system would involve the construction of new 8-inch and 12-inch water mains within the Phase Two project area.

PDC would install the underground water mains as the roads serving the project are built. The additional well capacity and storage tank would be constructed in time to meet the growing needs of the project. It is not yet resolved who will operate and maintain the distribution system in Phase Two. The Kaua'i County Public Improvements Corporation (KCPIC) now operates the Phase One system but is obligated to offer it to the County in March 1984. If the County declines, KCPIC would continue to operate the system unless it transferred its responsibilities to another agency or group. This issue will be resolved before occupancy of any Phase Two units. In any case, the Phase Two water distribution network could be operated independently of the Phase One system. Individual property owners would be assessed a waterline tap fee to provide initial hook-up, and monthly water use fees thereafter.

Table II-3. Ultimate Phase Two Water and Sewer Demands.

Use	Planned Amount	Daily Potable Water Design Rate ¹	Potable Water Average Flow (MGD)	Dry Month Irrigation (MGD) ²	Average Daily Sewage Flow ⁴ (MGD)
Resort Condo	420 units	350 gal./unit	0.15	0.04 ³	0.10
Single-Family	1,240 units	400 gal./unit	0.50	--	0.35
Public	5 acres	2,000 gal./acre	0.01	--	0.01
Parks	10.5 acres	2,000 gal./acre	0.02	0.02	0.02
TOTAL			0.68	0.06	0.48

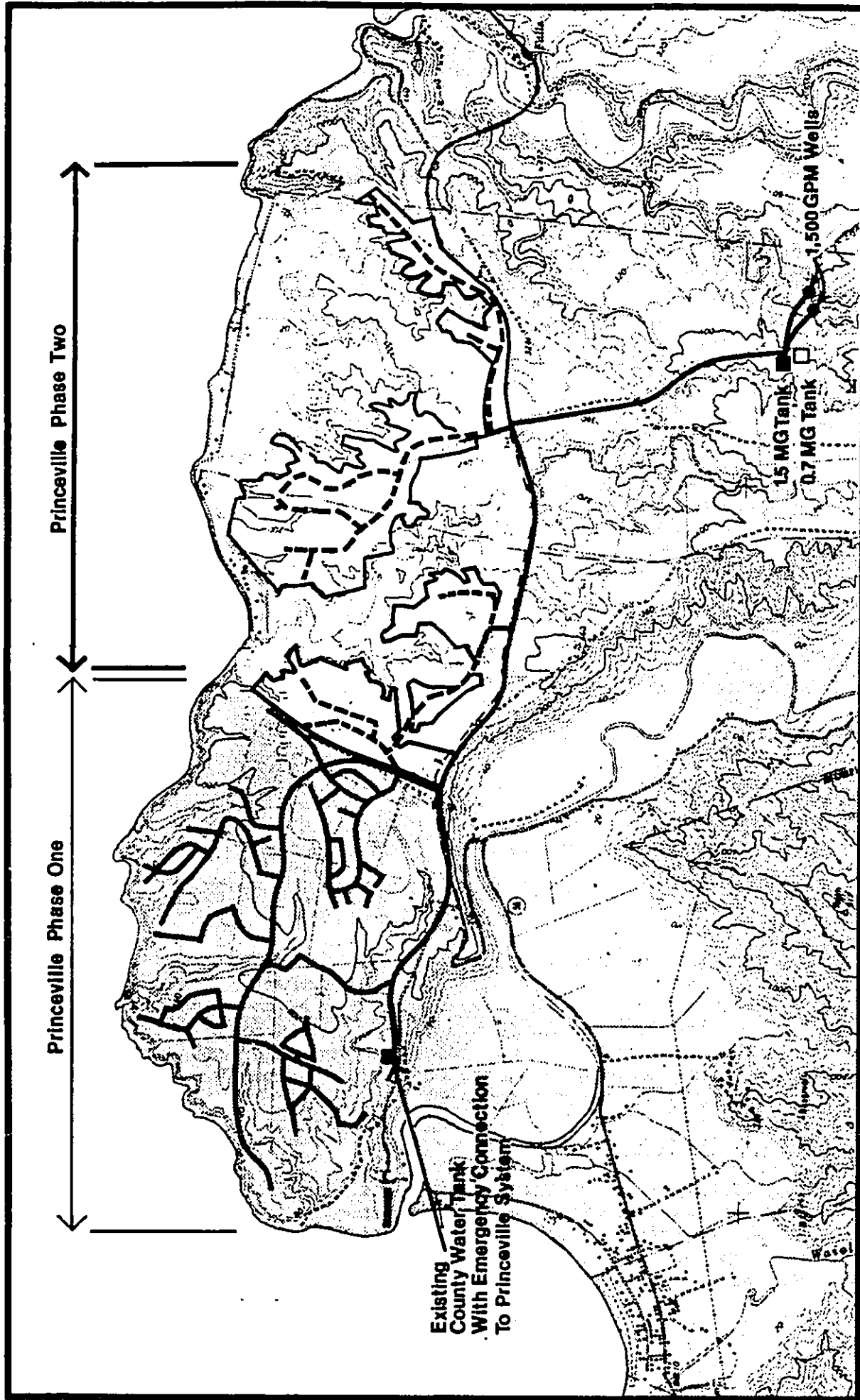
¹ Based on Kaua'i County Water Department's planning estimates (Kaua'i County Water Department, August 11, 1982).

² Based on 50 years of rainfall records, the driest month is September with an average of 4.6 inches. With a desired level of 6 inches of water per month, a maximum of 1.4 inches per month (0.047 inches per day) is required for irrigation.

³ The unit rate of water consumption usually covers site irrigation needs in urban areas. However, with the large acreage beyond the immediate hotel site on the central plateau, additional irrigation is needed. Assumed 20 acres of 41-acre site need additional irrigation.

⁴ Based on 70% of water consumption.

Source: Belt, Collins & Associates.



II-13

II-5 Water System

—	Existing Water Line	□	Proposed Tank	0'	1350'	2750'		NORTH	
■	Existing Tank	-----	Proposed Water Line [only 8" and larger shown]						PRINCEVILLE
●	Existing Wells	▤	Phase Two Land						PHASE TWO
		▭	Development Areas						Environmental Impact Statement
									By: Bell, Collins & Associates

If the proposed location of the community park is accepted, it would hook up to the County's Anini Water System, which currently obtains its water from Princeville Water Systems, Inc. (Kaua'i County Water Department; August 12, 1982).

2.4.4 Sewage System

The sewage treatment system currently serving Phase One is operated and maintained by the Kaua'i County Public Improvement Corporation (KCPIC). As mentioned above, KCPIC must offer the system to Kaua'i County in March 1984, when the revenue bonds that were issued by the County to pay for the systems will be fully redeemed. It is not yet resolved what organization will be operating the system after that date, but it is expected that Phase Two would be allowed to hook into it as the collection lines and treatment plant were designed to accommodate the project. See further discussion of this unresolved issue in Section 7.1.2. Figure II-6 shows the existing Phase One and proposed Phase Two sewer system layout. As indicated by that figure, sewage generated by the Phase Two development would be collected by a system of gravity mains connected to pump stations at the low point of each increment and then pumped back up to a line paralleling Kuhio Highway to the point where it would flow into the existing Phase One system. Phase Two property owners would pay a sewer connection charge and monthly use fees.

The sewage would undergo primary and secondary treatment by the conventional activated sludge process in the existing sewage treatment plant in Phase One. The effluent of the secondary treatment process would then be used for golf course irrigation, an accepted method of tertiary treatment. The back-up effluent disposal system, for the times the effluent production surpasses the demand for irrigation water, is still an unresolved issue--see Section 7.1.2. Sludge would continue to be disposed of in the Princeville nursery.

The amount of sewage expected from Phase Two, as shown in Table II-3, is ultimately 0.5 million gallons per day, assuming 100 percent occupancy. This amount of flow, even added to the expected flows from Phase One at full development (see Section 4.11.2) is below the 1.5 mgd design capacity of the sewage treatment plant. However, it is probable that the County will require expansion of the plant, so that it could handle the flows, not only of Phases One and Two, but also of other development in the region.

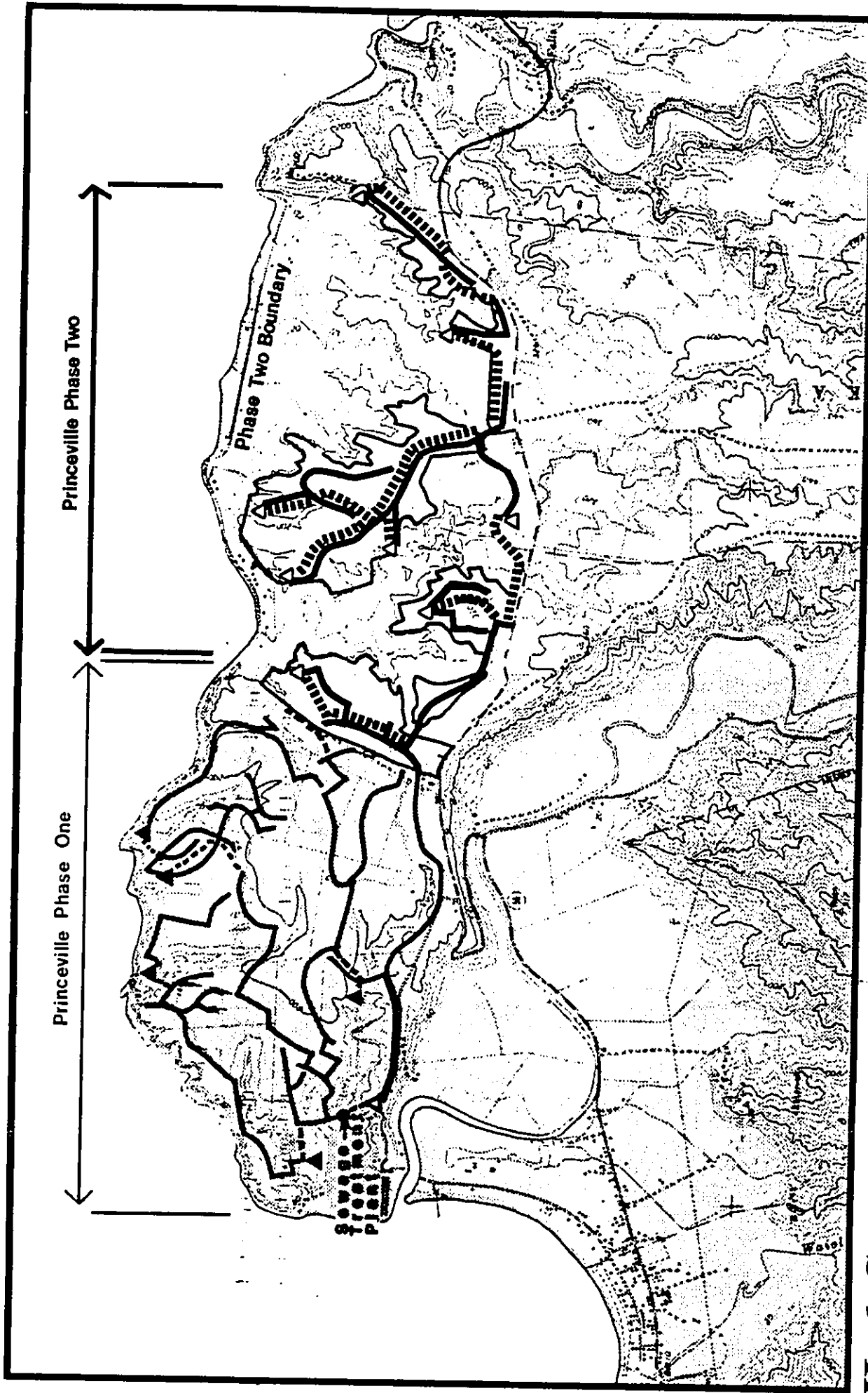
2.4.5 Storm Drainage

The storm drainage system would be designed in conjunction with the road system to minimize disturbances to the natural drainage pattern. The north-south roads would be located on the ridge lines (the dividing lines between drainage basins) to minimize the requirements for drainage structures. The few inlets to be located along the road would thus service little more than the area of the roadway itself. The east-west collector roads that move across the slopes would be equipped with culverts that preserve the natural pattern of drainage.

2.4.6 Power and Communications

The peak generating demand increase that would be required by the ultimate development of Phase Two is shown in Table II-4 and is approximately 4,000 KW. It is anticipated that the Kaua'i Electric Division of Citizens Utilities Company would supply all electric energy for the Phase Two development as it does for the existing Phase One development.

Electrical distribution within the Phase Two site would be underground. A telephone and cablevision underground duct system would also be provided.



II-6 Sewage System

- Existing Sewer
 - - - Existing Force Main
 - ▲ Existing Pump Station
 - Proposed Sewer
 - ▤ Proposed Force Main
 - ▲ Proposed Pump Station
 - ▤ Phase Two Land
 - ▭ Development Areas
- 0' 1350' 2750'
- NORTH
- PRINCEVILLE
PHASE TWO
- Environmental Impact Statement
By: Bell, Collins & Associates
- Only Major Lines Are Shown.

Table II-4. Phase Two Electric Peak Generating Demand.

<u>Use</u>	<u>Projection Factor</u>	<u>Rate¹</u>	<u>Maximum Demand</u>
Resort Condo	420 units	2 KW/Unit	840 KW
Single-Family	1,240 units	2.5 KW/Unit	3,100 KW
Public	8,500 s.f.	0.7 KW/100 s.f.	<u>60 KW</u>
		or	or
		0.3 KW/100 s.f.	<u>25 KW</u>
		TOTAL	4,000 KW or 3,965 KW

¹ Rates for single-family and public uses provided by the Kauai Electric Division of Citizens Utilities Company letter of September 30, 1982. The two different rates for the Public category represent airconditioned building demand rate versus non-airconditioned building demand rate. The demand rate for resort condominiums was estimated to be 80 percent of that for single-family units.

Source: Belt, Collins & Associates.

2.4.7 Solid Waste Collection and Disposal

The existing Hanalei sanitary landfill adjacent to Anini Stream serves the entire North Shore. The landfill was scheduled to be replaced by a County transfer station to be located mauka of the central plateau (Kaua'i County Department of Public Works, May 18, 1982). Since the recommended location for the island's major landfill is at Kekaha, the haul from a transfer station on the North Shore is now considered prohibitively expensive (Ibid.; May 5, 1983). Therefore, Princeville Development Corporation is working with the Department of Public Works in efforts to resolve the issue of solid waste disposal for the whole North Shore area. See further discussion in Section 4.11.4. Table II-5 shows the projected amount of solid waste which Phase Two would generate. Ultimately, this would total 6.6 tons a day. Solid waste collection in Phase Two, like Phase One, is expected to be curbside pickup by a private refuse collection company. Their trucks would then transfer the solid waste to the nearest available County facility.

2.5 PROJECT RATIONALE: MARKET DEMAND

The economic consulting firm of Peat, Marwick, Mitchell & Co. (PMM) has conducted market analyses for Princeville Development Corporation (PDC). Based on a review of historic trends, especially in regards to Phase One, PMM concluded that there is adequate market support for the proposed Phase Two project. Their assumptions and findings are summarized below. The discussion is organized into three subsections, according to the three different types of units to be built in Phase Two, condominium-hotel market, multi-family condominium market, and resort residential lot market.

2.5.1 Projected Condominium Hotel Market

The 300-room condominium on the central plateau is expected to be operated as a hotel, with a 24-hour front desk and maid service, as well as other amenities. Since it would function primarily as visitor accommodations, PMM's analyses focused on historical visitor arrivals data to project visitor accommodations demand, and then compared this to the projected visitor accommodations inventory to assess the market for this component of the Phase Two project.

2.5.1.1 Historical State and Kaua'i Visitor Arrivals

Overnight visitors to the State of Hawai'i increased an average of about 13 percent annually over the past two decades. However, in 1980 total visitors decreased from the preceding year and remained virtually unchanged in 1981. The two-year decline is attributed to several events beginning in 1979. These include the United Airlines strike, the grounding of DC-10s, increased fuel and air fare costs, and recent bad publicity on crime in Hawai'i.

Westbound visitor arrivals to Kaua'i (those arriving from North America) have increased an average of 5.4 percent annually since 1970 and 0.9 percent annually since 1976. The proportion of westbound visitors to the state who stay overnight or longer on Kaua'i declined from 31 percent in 1970 to 25 percent in 1981. This decline has resulted primarily from the rapid development of visitor facilities on the other neighbor islands combined with the limited expansion of visitor accommodations on Kaua'i.

In addition to these westbound travellers, Kaua'i also attracts a sizable number of eastbound visitors (those traveling from Asia and the Pacific to Hawai'i). These persons typically visit Kaua'i for a day only and do not stay overnight.

Table II-5. Phase Two Solid Waste Production.

<u>User</u>	<u>Ultimate Population</u>	<u>Solid Waste Rate (lbs/day)</u>	<u>Total Solid Waste (lbs/day)</u>
Resident	2,380 ¹	4.0 ⁴	9,520
Overnight Visitors	830 ²	4.0 ⁴	3,320
Non-Resident Employees	280 ³	1.3	<u>360</u>
TOTAL			13,200

¹ From Peat, Marwick, Mitchell & Co. (October 1982: Exhibit I-G).

² From Peat, Marwick, Mitchell & Co. (October 1982: Exhibit I-I).

³ Resort operations employment from Peat, Marwick, Mitchell & Co. (October 1982: Exhibit I-M) minus 30 employees expected to build houses in Phase Two (Peat, Marwick, Mitchell & Co., October 1982: Exhibit I-D).

⁴ Based on Fukunaga & Associates, Inc. (1980), "Hanalei Refuse Transfer Station Site Feasibility and Selection Study Map."

Source: Belt, Collins & Associates from sources noted above.

2.5.1.2 Projected Visitor Arrivals to the State and Kaua'i

Given present economic conditions, it is extremely difficult to project the future growth of travel to Hawai'i. The state is currently facing a series of challenges including increased competition from Mexico and the Caribbean area, and overflights between the Far East and the mainland United States. However, many of the factors that led to increasing travel to the state over the past decade continue to exist. This suggests that the number of overnight visitors to Hawai'i may be expected to continue to grow, albeit at slower than historical rates.

In 1979, the State Department of Planning and Economic Development projected that visitor arrivals to the State would increase about five percent annually from 1980 to 1985 and four percent annually from 1985 to 1990. These projections were optimistic in light of the 1980 and 1981 visitor counts. Peat, Marwick, Mitchell & Co. estimated a 2.4 percent increase in arrivals for 1982, increasing to 4.5 percent in 1985, and declining to an increase of about three percent per year after 1990.

Visitor arrivals to Kaua'i were projected based on the assumption that, as the visitor industry on Kaua'i matures, the historical proportion of State visitors traveling to Kaua'i will increase until 1990. After 1990 this percentage is expected to remain relatively constant as no major expansion of visitor facilities there is projected.

A summary of the historical and projected visitor arrival trends through 1995 is presented in Table II-6.

2.5.1.3 Demand for Visitor Accommodations

Using the preceding projections of visitor arrivals plus assumptions on the length of stay of the westbound visitor to Kaua'i and on the projected visitor accommodations inventory, market support for the proposed 300-room condominium hotel was determined.

The average length of stay on Kaua'i of westbound visitors is currently 3.4 days (Hawai'i Visitors Bureau, 1980), and is assumed to increase to about 4.0 days by 1997. This increase reflects the maturation of Kaua'i's visitor facilities and greater numbers of repeat visitors. As a result of increasing visitor arrivals and longer average stays, the demand for accommodations is expected to increase as follows:

<u>Year</u>	<u>Projected Daily Visitor Accommodations Demand</u>
1987	4,950
1992	6,700
1997	8,010

2.5.1.4 Demand by Type of Accommodation

Three types of accommodations are commonly available to visitors--hotel room, units in condominium hotels, and units in conventional condominium projects. The condominium hotel is distinguished from a conventional resort condominium project by having a 24-hour front desk and maid service. In PPM's analyses condominium hotels and hotels were considered together, since they offer similar amenities, in contrast to conventional resort condominium projects.

Table II-6. Historical and Projected Visitors to State and Kaua'i.

	<u>Total State Visitors</u>		<u>Total Kaua'i Visitors</u>		
	<u>Number</u>	<u>Annual Percent Change</u>	<u>Number</u>	<u>Annual Percent Change</u>	<u>Percent of State Visitors</u>
<u>Historical</u> ¹					
1970	1,565,901	--%	N.A.	--%	--%
1971	1,728,753	10.4	N.A.	--	--
1972	2,227,443	28.8	N.A.	--	--
1973	2,629,667	18.1	N.A.	--	--
1974	2,781,366	5.1	N.A.	--	--
1975	2,829,105	2.4	848,820	--	30.0
1976	3,220,151	13.8	953,600	12.3	29.6
1977	3,433,667	6.6	971,940	1.9	28.3
1978	3,670,309	6.9	1,096,680	12.8	29.9
1979	3,960,531	7.9	1,104,930	0.8	27.9
1980	3,934,504	(0.7)	1,033,350	(6.5)	26.3
<u>Projected</u> ²					
1985	4,460,000	4.5	1,311,000	7.0	29.4
1990	5,420,000	4.0	1,838,000	7.0	33.9
1995	6,290,000	3.0	2,131,000	3.0	33.9

¹ From Hawai'i Visitors Bureau's Annual and Monthly Reports and Japanese Visitors Opinion Survey (1975 to 1980).

² From Peat, Marwick, Mitchell & Co.

Source: Data compiled by Peat, Marwick, Mitchell & Co.

Currently hotels and condominium hotels account for 76 to 80 percent of the total demand for visitor accommodations. This is projected by PMM to decrease to 75 percent by 1987 and 70 percent by 1997 as the visitor mix includes greater numbers of repeat visitor and as resort condominium projects establish their reputation. PMM's projections for occupied hotel and condominium hotel units are as follows:

<u>Year</u>	<u>Projected Daily Occupied Hotel and Condominium Hotel Units</u>
1987	3,710
1992	4,860
1997	5,610

2.5.1.5 Projected Hotel/Condominium Hotel Unit Requirements

A higher number of units than listed above would be supported, depending on the desired occupancy level. This level was estimated by PMM to range from 75 to 80 percent. The number of units required at the occupancy levels of 75, 80, and 85 percent are given below:

Number of Hotel and Condominium Hotel Units Required

<u>Year</u>	<u>Desired Occupancy Level</u>		
	<u>75%</u>	<u>80%</u>	<u>85%</u>
1987	4,950	4,640	4,360
1992	6,480	6,070	5,720
1997	7,480	7,010	6,600

2.5.1.6 Projected Hotel Room Inventory

About 3,390 hotel rooms exist on Kaua'i. An additional 1,294 units are proposed for completion from 1983 to 1988. By 1987 the total inventory would be about 4,500 units; an additional 180 units would be completed by 1988. The projected hotel room inventory is estimated by PMM as follows:

<u>Year</u>	<u>Projected Hotel Room Inventory</u>
1987	4,500
1992	4,680
1997	4,680

2.5.1.7 Estimated Need for Hotel/Condominium Hotel Rooms

The hotel/condominium hotel room "need" is the difference between the projected demand and supply. It is estimated presuming all proposed projects are completed as scheduled and no additional hotels are completed, as follows:

Hotel/Condominium Hotel Room Need/(Surplus)

Year	Desired Occupancy Level		
	<u>75%</u>	<u>80%</u>	<u>85%</u>
1987	450	140	(140)
1992	1,800	1,390	1,040
1997	2,800	2,330	1,920

2.5.1.8 Market Support for Condominium Hotel Development at Princeville

By 1987 the need for hotel/condominium hotel rooms is projected to range from a surplus of 140 units at 85 percent occupancy to a shortage of 450 units at 75 percent occupancy. Thus, by as early as 1987, the market requirements could support a 300-unit resort condominium hotel project at Princeville. These units are expected to fill a demand for a full-service facility which could offer food and beverage service, meeting space and some retail shopping areas. If hotel units are not available, excess demand is likely to be serviced by the resort condominium units as historically has occurred on Kaua'i.

2.5.2 Projected Market Support for Proposed Condominium Units

2.5.2.1 Potential Purchaser Markets

A 120-unit condominium is planned for the western plateau; this building or complex is not expected to offer hotel-like amenities. Peat, Marwick, Mitchell & Co.'s market analyses indicate that the potential purchaser markets for these Phase Two condominium units are primarily the investor and vacation home buyers. The investor is generally purchasing the unit for potential appreciation and, to a lesser extent, annual tax benefits resulting from the ownership of the real property and annual income generated by the rental of these units. Thus, the continued growth of this market segment is related to perceived appreciation potential and the strength of the visitor rental market. Further, this market segment is also related to general economic conditions and the availability of investment financing.

The vacation home market represents individuals who purchase units primarily for use as a second home or a future retirement home. These individuals are also interested in unit value appreciation and the potential of rental income during periods of nonusage. Generally, these individuals seek quality units that are near or within a recreation community such as Princeville or a visitor area. The continued growth of this market segment is related to the overall perceived visitor attractiveness of an area and the presence of visitor facilities and activities. In this regard, Princeville, one of Kaua'i's foremost visitor destination complexes, appears well positioned to cater to this market.

The owner-occupancy market represents residents of Kaua'i and persons intending to reside on Kaua'i. Currently this market is estimated to represent less than five percent of the total market for condominium units. This market is not expected to represent a significant demand for resort condominium units on Kaua'i in the near future for two reasons. First, the Hawai'i resident market generally seeks single-family detached homes rather than multi-family units, particularly on the neighbor islands. Secondly, the price of resort units is generally greater than for single-family homes in residential communities.

2.5.2.2 Projected Kaua'i Condominium Absorption Rate

Peat, Marwick, Mitchell & Co.'s research showed that annual sales of new condominium units increased an average of almost 30 percent since 1972 and amounted to an average of about 330 annual sales. The average annual sales from 1976 to 1981 amounted to 470 units. Despite the decline in the visitor industry, 960 units sold in 1980, and 550 units sold in 1981. About 700 of these units were in Princeville.

Annual sales of condominium units on Kaua'i are estimated by Peat, Marwick, Mitchell & Co. to decline to about 350 units in 1982 and to increase about ten percent annually to 560 units in 1987, 900 units in 1992 and 1,500 units by 1997. These estimates are conservative based on historical and current sales.

The lower growth rate in units reflects the expected decline in the rate of growth of visitors to the State and Kaua'i and the fact that few quality sites for condominium development are readily available. Further, the estimated growth in the condominium absorption rate reflects the current philosophy of the County of more moderate economic growth.

Annual fluctuations in the projected absorption rate could be expected based on economic and monetary conditions during each year. Note that the estimated absorption rate is the potential demand for new units rather than the actual sales and reflects closed sales of new units.

2.5.2.3 Projected Princeville Condominium Absorption Rate

The projected absorption rate for resort condominium development at Princeville has been based on the relative market position of new condominium sales at the resort in relation to the overall market performance of new condominium units on Kaua'i. Historically, PMM's research shows that sales of new condominium units at Princeville have accounted for 28 to 35 percent of total new condominium sales on Kaua'i, between 1975 and 1980.

For the next 15-year period, PMM projects that new condominium sales at Princeville will account for 30 percent of all new condominium sales on Kaua'i. Based on this estimated market position, average annual new condominium sales at Princeville could be about 105 units in 1982, increasing to 170 units by 1987, 270 units by 1992 and 450 units by 1997.

2.5.2.4 Princeville Condominium Development Assessment

About 1100 additional condominium units are planned at Phase One of Princeville. Based on the projected condominium demand at Princeville, these units could be completed and sold by 1989. Hence, the expected market support for condominium units at Princeville Phase One over the next five-year period, coupled

with condominium development on other parts of Kaua'i, particularly Poipu, limit the market support for condominium development in Princeville Phase Two during the next five-year period. However, according to Peat, Marwick, Mitchell & Co., a sufficient demand could exist to develop and market the proposed 120 units around 1987.

2.5.3 Projected Market Support for Resort Single-Family Lot Development

The projected market support for resort residential lot development at Princeville Phase Two was analyzed by Peat, Marwick, Mitchell & Co. They projected the demand and supply of such lots on Kaua'i and then assessed Princeville's share of the market for resort lots.

2.5.3.1 Projected Demand for Resort Residential Lots

Unlike the demand for hotel condominium and resort condominium units, Peat, Marwick, Mitchell & Co. considers the demand for resort residential lots to be influenced by general economic conditions and the real estate market in Hawai'i, rather than tied to visitor arrivals. Lot sales on Kaua'i are estimated by Peat, Marwick, Mitchell & Co. to average about 75 lots per year over the next five years. About 65 lot sales are projected in 1983. By 1987 lot sales are expected to reach the 1972 to 1980 annual average of 85 lots, and continue to increase an average of seven percent annually, or less than one-half of the 15.5 percent increase in cumulative lot sales during the last six years from 1976 to 1982. This reduced growth rate reflects an increase in the base of resort lot sales and a decline in the quality of the resort residential lot sites which are potentially developable. The cumulative demand is projected to reach about 3,000 lots by 2000, as shown in Table II-7. Investors are expected to account for a relatively high proportion of the sales.

2.5.3.2 Projected Resort Residential Lot Inventory

As of 1982, 857 resort residential lots have been developed on Kaua'i. The projected inventory of lots is uncertain due to current financial and economic conditions and the relatively soft real estate market. It is known that 75 more lots are planned to be developed at Princeville Phase One. Peat, Marwick, Mitchell & Co. has estimated that 25 percent of the total 1,010 potential mixture of multi-family and single-family units planned at Kiahuna would be developed as resort residential lots. Furthermore, they have added 210 lots (annual average increase of 10 lots) to their calculations (see Table II-7) as a contingency for unknown completions. This contingency number was added because as the real estate market experiences its periodic strong cycles, other developers may develop additional resort lots to meet this demand.

Presuming all lots are completed, the resort residential lot inventory on Kaua'i is projected to increase from 857 lots in 1982 to almost 1,300 lots by 1993, as shown in Table II-7.

2.5.3.3 Projected Resort Residential Lot Supply and Demand Relationship

Although Peat, Marwick, Mitchell & Co.'s analyses of the projected supply and demand for resort residential lots on Kaua'i show an excess supply of residential lots through 1986, by 1987 demand for resort lots is estimated to equal the supply of new lots offered. The cumulative demand for resort lots would exceed supply by 505 lots in 1993, 1,242 lots in 1998 and 2,295 lots in 2003, as shown in Table II-7.

Table II-7. Projected Demand and Supply for New Resort Residential Lots on Kauai¹.

Year	Lot Demand		Lot Inventory			Net Cumulative Lot Demand/ (Excess)
	Annual Increase	Cumulative	Princeville Phase One	Kiahuna	Contingency ¹	
Historical To 1982		771				(86)
Projected:						
1983	65	836	18	30	10	(79)
1984	70	906	52	30	10	(101)
1985	74	980	5	30	10	(72)
1986	80	1,060	--	30	10	(32)
1987	85	1,145	--	30	10	13
1988	91	1,236	--	30	10	64
1989	98	1,334	--	30	10	122
1990	104	1,438	--	30	10	186
1991	112	1,550	--	10	10	278
1992	119	1,669	--	--	10	387
1993	128	1,797	--	--	10	505
1994	137	1,934	--	--	10	632
1995	146	2,080	--	--	10	768
1996	157	2,237	--	--	10	915
1997	168	2,405	--	--	10	1,072
1998	179	2,584	--	--	10	1,242
1999	192	2,776	--	--	10	1,424
2000	205	2,981	--	--	10	1,619
2001	220	3,201	--	--	10	1,829
2002	235	3,436	--	--	10	2,054
2003	252	3,688	--	--	10	2,295
			<u>75</u>	<u>250</u>	<u>210</u>	
						<u>857</u>

¹ Contingency for unplanned future completions.

² Cumulative Lot Demand column minus Cumulative Lot Inventory column.

Source: Peat, Marwick, Mitchell & Co.

While a shortage of resort lots is projected from 1987, individual resort projects may remain unsold over several years if they are not competitively priced and actively marketed. Also, projects which do not have ocean views or golf course and ocean frontage and an established image may not be as attractive to resort lot purchasers and will therefore experience a lower rate of sales.

2.5.3.4 Princeville Phase Two Resort Residential Lot Market Assessment

The 1,240 resort residential lots proposed for Phase Two are planned to range from 7,500 to 20,000 square feet and be of similar quality to the existing Phase One lots. Based on the Phase One experience, about 45 percent of all purchasers will reside in Hawai'i and half of these on Kaua'i.

Peat, Marwick, Mitchell & Co.'s analyses indicate that the primary demand for resort residential lots at Phase Two would be the investor and vacation home markets and, to a lesser extent, the owner-occupant market.

The investor market is interested in the potential appreciation in the value of the land and the relatively minimal capital requirements and annual holding costs required. The vacation home market primarily represents mainland residents who are interested in owning property in Hawai'i. These individuals generally are interested in purchasing a lot with the intent to build a home within a short period or a retirement home at a later time. These individuals, primarily residents of California, are attracted by the image and reputation of a leisure-oriented community.

Local and mainland contractors are also expected to purchase lots to construct homes for their profit potential upon resale. These contractors are expected to buy several lots at once in prime scenic locations.

The potential absorption period for residential development at Phase Two is estimated based on the expected market position of Princeville in relation to the projected overall demand for resort residential lots on Kaua'i. Princeville should continue to attract a majority of the residential lot demand over the next 10- to 15-year period. Princeville, unlike the Kiahuna and Poipu Kai resorts, is an established resort with numerous resort amenities and a well-known reputation. The Phase One condominium projects currently under construction should double the visitor population at Princeville, providing for increased visitor visibility of the lots. Also, the current water supply conditions in the Poipu area may delay the completion of several projects.

Peat, Marwick, Mitchell & Co. has conservatively estimated the demand for new resort lots at Princeville to be between 70 percent and 80 percent of the total Kaua'i resort lot demand. As shown in Table II-8, the cumulative demand for additional resort lots at Princeville is estimated to amount to about 350 to 400 lots in 1993, 870 to 990 lots in 1998 and 1,600 to 1,840 lots in 2003.

Thus, cumulative demand for resort residential lots at Princeville could support all 1,240 Phase Two lots by about the year 2000, with a substantial average number of sales expected for each year beginning in the late 1980's. This of course assumes that lots are competitively priced; reasonable financing is provided; and marketing efforts are effective.

Table II-8. Cumulative Estimated Market Share for Phase Two Resort Residential Lot Development.

	Projected Net Cumulative Resort Lot Demand/(Excess) on Kaua'i(1)	Cumulative Estimated Market Share for Princeville Phase Two(2)		
		70%	75%	80%
<u>Historical</u>				
To 1982	(86)	--	--	--
<u>Projected</u>				
1983	(79)	(55)	(59)	(63)
1984	(101)	(71)	(76)	(81)
1985	(72)	(50)	(54)	(58)
1986	(32)	(23)	(24)	(26)
1987	13	9	10	10
1988	64	45	48	51
1989	122	85	91	97
1990	186	130	139	149
1991	278	194	208	222
1992	387	271	290	310
1993	505	353	379	404
1994	632	442	474	505
1995	768	538	576	615
1996	915	640	686	732
1997	1,072	751	804	858
1998	1,242	869	931	993
1999	1,424	997	1,068	1,139
2000	1,619	1,133	1,214	1,295
2001	1,829	1,280	1,371	1,463
2002	2,054	1,438	1,540	1,643
2003	2,295	1,607	1,721	1,836

(1) From Table II-7.

(2) Reported in number of lots sold at different assumed capture rates.

Source: Peat, Marwick, Mitchell & Co.

2.5.4 Phase Two Development Sequencing

The foregoing market analysis suggests a demand for the proposed Phase Two products (resort lots, condominium and condominium hotel units) will be present in the late 1980's. Given the time needed to secure land use approvals and develop infrastructure (roads, sewer and waterlines, etc.), this would probably be the earliest that the Princeville Development Corporation could have Phase Two land improved and sold.

The condominium hotel on the central plateau is proposed to be completed around 1988. The other condominium units, those planned for the western plateau, could be built as early as 1987.

The resort residential lots are proposed to be developed and sold at an average of 90 units per year, starting in 1987. Geographical sequencing for infrastructure improvements has not yet been finalized; however, it seems probable that the eastern plateau would be developed last.



Princeville Phase Two

Environmental Impact Statement

CHAPTER III

SOCIO-ECONOMIC IMPACTS OF THE PROPOSED PHASE TWO PROJECT

3.1 INTRODUCTION

Because of its size, both in terms of the physical area which it would occupy and the number of additional resort and residential units which it would permit, the proposed Phase Two project has the potential to generate significant social and economic effects. The nature and extent of these impacts was the subject of two separate but integrated studies by firms specializing in these areas. In conjunction with its market analyses for Phase Two, Peat, Marwick, Mitchell & Co. also studied the economic implications of the project. In a related effort, Community Resources (a division of SMS Research) focused its investigation on the social aspects of the proposed development. Both studies drew on information developed by the same firms in 1979 and 1980 during an earlier assessment of the project. The material which follows is based almost entirely on the results of their studies.

Because many of the social effects of the proposed project would stem from its impact on employment and population growth, the economic impact analysis is presented first. However, economic and social concerns are so interrelated that there are necessarily many overlaps in the presentation.

3.2 GENERAL ECONOMIC CONSIDERATIONS

Over the past several decades, numerous studies have been made of the economic costs and benefits of tourism and the related hotel industry in Hawai'i. Among the more widely distributed of these are: Mathematica's two-part study The Visitor Industry and Hawaii's Economy, a Cost/Benefit Analysis and The Island-Specific Analysis of the Hawaii Visitor Industry, both published in 1970; the 1972 Hawaii Tourism Impact Plan by the Hawai'i State Department of Planning and Economic Development (DPED); First Hawaiian Bank's Hawaii Business Outlook, 1973; DPED's State Tourism Study, 1978; and most recently DPED's Tourism and Hawaii's Economy: An Input-Output Analysis, 1980. For the most part, all studies have concluded that tourism's benefits outweigh costs and that tourism does substantially contribute to Hawai'i's economic well-being and growth. In fact, tourism is the only primary industry in Hawai'i which is currently generating significant new employment opportunities. During a period in which the sugar and pineapple industries have been cutting back on their work forces, this alone makes it a critical sector of the economy.

The growth of tourism can necessitate a number of different types of public expenditures. Examples of some of the more important types of costs include:

- o Capital improvements used by and public services rendered to visitors, including parks, roads, airports, police and fire protection, waste disposal, and medical services.
- o Services for the labor force serving visitors. This includes services such as vocational training, public transportation, education, and housing assistance for employees and their dependents.

- o Services to the secondary employment force not directly serving the visitor, but serving the employees and families of those who are so employed.
- o Planning, promotion, control, regulation, and other administrative services related to the tourism industry.

These public economic costs are offset by both personal and public benefits from tourist spending. The principal benefits of tourism are in the form of added public and personal income such as:

- o Increased direct employment income generated by jobs which serve the visitor industry directly such as the service and construction industries.
- o Increased indirect employment income generated by increased spending of those directly employed to serve the visitor industry.
- o Increased retail sales tax revenues and profits from visitor spending.
- o State and County income derived from gross income taxes paid by businesses serving tourists directly and indirectly.
- o Increased real property tax revenues.
- o Increased income tax revenues paid by employees in tourist-related jobs.

3.3 REGIONAL ECONOMIC SETTING

Both the existing Princeville development (i.e., Phase One) and the proposed Phase Two project site lie within the Hanalei Census Tract (CT 401). The boundaries of this census tract are essentially identical to those of the Hanalei Judicial District. In addition to Princeville, Census Tract 401 includes the towns of Hanalei and Kilauea. The 1980 Census reported that the resident population of Census Tract 401 on April 1, 1980 was 2,668. According to the census results, these persons resided in 902 different housing units.

3.3.1 Primary Economic Activities

The primary economic activities in the Hanalei District include tourism, agriculture, construction, and, to a lesser extent, retailing.

The Hanalei area has a long history of serving visitors. This tradition began with the development there of individual vacation homes by residents of Kaua'i and O'ahu. These were followed by the Hanalei Bay Hotel, the Club Mediterranee, and, finally, the Princeville Resort. With ongoing development at Princeville and the closing of the 170-room Club Mediterranee in 1979, Princeville is now the center of tourism activity in the Hanalei District. As of mid-1982, the Princeville Resort contained approximately 1,180 residential condominium units, 200 single-family homes, a 27-hole golf course, and a 27,000-square-foot commercial center. The 1980 census reported a resident population of 500 at Princeville. Peat, Marwick, Mitchell & Co. (October 1982) estimated that the various resort condominium projects attract approximately 90,000 visitors per year.

The Hanalei District was once known for the cultivation of taro, rice, and sugarcane. Rice cultivation has ceased, but taro continues to be cultivated along the Hanalei River. In recent years, the sugar plantation has closed, and it has been only partially replaced with guava, papaya, and prawns.

C. Brewer's Kilauea Agronomics subsidiary was the biggest producer of guava in the state in 1981. The 1982 crop from its 330-acre orchard is estimated at four million pounds, or twice the amount that was grown in 1981.

Papayas are grown by the Moloa'a Farmers' Cooperative, and 1981 was expected to mark the beginning of a prosperous decade for that industry. However, California's import restrictions on the EDB-treated fruit hurt sales in that market, and the subsequent outbreak of phytophthora fungus destroyed about 75% of the year's crop. As a result, crop sales have been severely curtailed.

Prawn growers in the Hanalei District have met with mixed results. Unfavorable weather conditions were cited by C. Brewer in 1980 as the reason for closing its 100-acre Kilauea prawn farm. However, Prawns of Hawaii, Inc. started prawn cultivation at about the same time on a site close to Brewer's property and is doing well in production and marketing. At present, it is unable to fully meet the demand for its products and plans to bring an additional ten acres of ponds into production. The prawns are sold to buyers on Kaua'i and elsewhere in the state.

The commercial complex situated at the entrance to the Princeville Phase One area is the largest retailing facility in the Hanalei District. Approximately 27,000 square feet of space are now available, 17,000 of which are for retail uses. Construction of a 40,000-square-foot addition to that complex is now underway, with completion slated for Spring, 1983. Foodland, Princeville Development Corporation, and various other retail and office tenants are expected to occupy the new structure when it is completed. Other retail facilities in the district include the 23,000-square-foot Ching Young Shopping Village and the much smaller Hanalei Kauhale Shopping Center with 4,000 square feet. Despite the increased commercial floor area planned for Hanalei, most residents are expected to continue to rely heavily on stores elsewhere on the island for their larger purchases.

The development of numerous new visitor and commercial facilities made construction an important economic activity in the Hanalei District over the past few years. In 1980, for example, over 500 construction workers were employed at Princeville alone. However, the recent economic downturn has led developers to delay many of their planned projects, and construction employment is now far below the level it reached just a short while ago.

3.3.2 Employment Patterns

A survey conducted in 1980 by Public Affairs Advisory Services, Inc. provides insights into the employment characteristics of persons residing in the Hanalei District at that time (see Table III-1). Data collected in the survey indicate that there was a remarkably even split between the first four "employment" categories. These categories--construction, "other business," retired, and housewife--each accounted for 12 to 13 percent of the total sample population. Construction workers were a very significant component of total employment, accounting for about 12 percent of the Hanalei District total. In comparison, construction employment accounted for only four percent of the Kaua'i-wide employment total. Approximately one-quarter of the respondents worked at Princeville. Of those who replied, a little

Table III-1. Hanalei District Employment Characteristics 1980.

	<u>Kilauea Subarea</u>	<u>Princeville Subarea</u>	<u>Hanalei Subarea</u>	<u>Total Area</u>
<u>Type of Employment</u>				
Other Business	11.5%	13.3%	15.0%	13.2%
Housewife	15.2	12.2	10.3	12.7
Retired	16.5	11.2	9.5	12.7
Construction	11.5	12.2	13.2	12.3
Tourism	10.8	8.6	11.9	10.6
Agriculture	12.9	1.6	7.2	7.9
Government	6.5	10.2	5.5	7.1
Student	1.5	---	6.8	2.9
General Retail Sales	0.7	5.5	2.9	2.7
Other and No Reply	<u>12.9</u>	<u>25.2</u>	<u>17.7</u>	<u>17.9</u>
TOTAL	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>
<u>Place of Employment</u>				
Kilauea	22.4	9.9	4.6	12.9
Princeville	18.0	31.3	15.9	20.7
Hanalei	<u>2.2</u>	<u>6.0</u>	<u>27.9</u>	<u>12.1</u>
North Shore Subtotal	42.6	47.2	48.4	45.7
Lihue	9.3	14.1	4.7	9.0
Kapaa	5.7	1.3	5.4	4.5
Other	12.9	10.7	20.3	14.9
No Reply	<u>29.5</u>	<u>26.7</u>	<u>21.2</u>	<u>25.9</u>
TOTAL	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

Source: Public Affairs Advisory Services, Inc. (1980).

over one-half of the workers living at Princeville were employed within the Hanalei District; and over a third of the respondents residing at Princeville worked within the resort itself. Relatively few Princeville residents worked elsewhere in the North Shore. Those that held jobs outside the region most often commuted to Lihue.

3.3.3 Income Levels

According to preliminary 1980 Census data, as analyzed by local government statisticians (Hawai'i, State of, Department of Planning and Economic Development; n.d.), median 1979 family income for the Hanalei District (Census Tract 401) was \$17,777, compared to a countywide figure of \$20,882.

At the time this study was conducted, 1980 Census data were not yet available on income variation within the Hanalei District. However, the Public Affairs Advisory Services 1980 survey conducted for the Kaua'i County Planning Department did gather data on average incomes for different parts of the North Shore (see Table III-2). These data should be viewed with some caution, since they are based on a sample survey and since respondents included some temporary residents. The estimated area-wide average income in that study was only \$15,450, and the median figure which would be derived from Table III-2 would be only \$12,580. Nevertheless, the results do indicate considerable income variation on the North Shore, with Princeville-area residents having a substantially higher average income.

3.4 RESIDENT POPULATION GROWTH

3.4.1 Projected Resident Population Growth

Regardless of whether or not the Phase Two project is implemented, the resident population of Kaua'i in general and the Hanalei District (Census Tract 401) in particular is expected to grow over the coming years. This will result from natural increase among the existing population (i.e., the excess of births over deaths) and from continued in-migration, including persons moving into the existing Phase One area as residential units are constructed on currently vacant (but already improved) land.

Between 1960 and 1980, resident population growth averaged of CT 401 approximately 3.6 percent per year, compounded annually (see Table III-3). This took it from 1,312 residents in 1960 to 2,668 residents in 1980. The Kaua'i County Planning Department (July 16, 1982) has tentatively projected that it will be a slightly higher, 3.9 percent per year, over the next decade and that the resulting 1990 resident population will be about 3,900. Assuming this rate continues, the 1995 population would be over 4,700.

3.4.2 Population Growth With Phase Two

On the basis of its market analyses, Peat, Marwick, Mitchell & Co. projects that about half of the parcels in Phase One will have units on them by 1995. Houses on the remaining single-family lots will slowly be developed by their individual owners in following years.

The Phase Two project involves the creation of improved parcels only, not the construction of homes or multi-family units. These lots would then be sold to multi-family project developers and to individual owners who would be responsible for the construction of the actual housing units. The first units that would be constructed on parcels created by the Phase Two project are not expected to be available for

Table III-2. Annual Family Income in Hanalei District: 1980.

<u>Annual Family Income</u>	<u>Kilauea Subarea</u>	<u>Princeville Subarea</u>	<u>Hanalei Subarea</u>	<u>Total Area</u>
Less than \$5,000	17.1%	4.9%	22.1%	15.8%
\$5,000 to \$9,999	15.3	29.3	21.8	21.4
\$10,000 to \$14,999	29.1	11.2	29.7	24.8
\$15,000 to \$19,999	17.9	16.4	9.2	14.3
\$20,000 to \$29,999	11.2	9.7	12.9	11.4
\$30,000 to \$39,999	3.5	16.6	1.7	6.1
\$40,000 or more	<u>5.9</u>	<u>11.9</u>	<u>2.6</u>	<u>6.2</u>
TOTAL ¹	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>
Average Family Income ²	<u>\$15,150</u>	<u>\$19,700</u>	<u>\$12,900</u>	<u>\$15,450</u>

¹ Adjusted for nonrespondents.

² Calculated on the basis of midpoints of income ranges.

Source: Public Affairs Advisory Services, Inc. (1980).

Table III-3. Resident Population of the Hanalei Census Tract.

	Resident Population ¹		
	Hanalei (Census Tract 401)	County of Kauai	Percent of Hanalei Census Tract to Kauai
<u>Historical²</u>			
1960	1,312	28,176	4.7%
1970	1,182	29,761	4.0
1980	2,668	39,082	6.8
<u>Projected</u>			
1985 ⁴	3,230	43,788	7.4
1990 ³	3,910	48,821	8.0
1995 ⁴	4,736	55,700	8.5
<u>Compound Annual Rate of Growth</u>			
1960 - 1980	3.6%	1.6%	
1980 - 1985	3.9	2.3	
1985 - 1990	3.9	2.3	
1990 - 1995	3.9	2.3	

¹ Defined as persons whose usual place of residence is the subject area.

² U.S. Bureau of the Census, Census of Population, 1960, 1970 and 1980.

³ Population projections as given in the addendum to the Kauai General Plan Update (Kaua'i County Planning Department; July 16, 1982).

⁴ Estimated by Peat, Marwick, Mitchell & Co. based on a 3.9% compound annual growth rate for Hanalei Census Tract and 2.3% compound annual growth rate for Kaua'i. (Growth rates derived from 1990 projections.)

Source: Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-C).

occupancy until after 1985. House construction would continue at a moderate rate thereafter. Because of this, housing construction would lag well behind lot sales.

Table III-4 presents an estimate of the number of units of different types that would actually be available at the end of each five-year period between 1980 and full occupancy of Phase Two. A careful review of the figures shows that most of the single-family homes expected in Phase Two would not be constructed until after 1995. This is due to the fact that many would be bought for investment and/or retirement purposes by individuals having no immediate need to develop. In contrast, multi-family lot purchasers normally proceed with construction as expeditiously as possible because of the high financing cost associated with carrying vacant (and non-income producing) land; hence, it is expected that all of the multi-family units proposed for Phase Two would be completed by 1995.

Future population estimates for Princeville were prepared by Peat, Marwick, Mitchell & Co. for the with- and without-Phase Two conditions. Their analysis depended on the results of surveys of occupants of existing units at Princeville conducted in mid-1980 and a tabulation of PDC's records in 1982 (see Table III-5). These data were used to develop the per-unit occupancy factors shown in Table III-6. Finally, these factors were combined with projections of completed units from Table III-4 to arrive at the resident population estimates shown in Table III-7. To check on the validity of the estimation technique, resident population projections derived using it were compared with data from the 1980 U.S. Census. The Census reported only 500 persons residing at Princeville as of April 1, 1980, or about 250 less than the estimate shown in Table III-7. However, when the 650 additional condominium units that were completed in the last nine months of 1980 and that are included in the Table III-7 calculations are taken into account, the two population figures are remarkably close to one another.

As shown in Table III-7, the Phase Two resident population is expected to be only 329 by 1995 but to reach 2,380 by the time homes have been constructed on all lots. To put this into perspective, figures showing the expected population in the Phase Two area relative to the population projected elsewhere in the Hanalei District are presented in Table III-8. By 1995, Phase Two would contain about seven percent of the district's resident population. The percentage would increase over the following years as owners of vacant residential parcels construct homes on their property. However, the factor to note is that the Phase Two project does not create a growth rate higher than the 3.9 percent rate that has been estimated by the County Planning Department, if the growth rate in the North Shore outside of Princeville continues at its historical rate.

3.5 VISITOR POPULATION GROWTH

3.5.1 Projected Average Daily Visitor Population WITHOUT Phase Two

At present, the vast majority of the visitors staying overnight in the Hanalei District stay at Princeville. There are a few condominium units at Ha'ena that are used for this purpose, and there is a new luxury condominium project now under construction on the site of the old Club Mediteranee; nevertheless, Princeville accounts for the bulk of the beds that are available. Based on PDC's development schedule and annual average visitors per unit ratios, Peat, Marwick, Mitchell & Co. has prepared estimates of the average visitor population expected at Princeville Phase One between now and 1995. These estimates are presented in Table III-9 and indicate that the figure will jump from about 1,900 in 1985 to approximately 3,300 when Phase One is completely occupied.

Table III-4. Historical and Projected Facility Development at Princeville Phases One and Two: 1980 to Completion.

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>Completion</u>
Phase One					
Residential homes built ¹	144	205	255	305	710
Condominium units built and sold	1,018	1,500	1,826	2,260	2,260
Hotel units ²	---	300	700	700	700
Employee homes ⁴	25	35	40	40	40
Employee apartment units	<u>20</u>	<u>20</u>	<u>20</u>	<u>20</u>	<u>20</u>
TOTAL UNITS	<u>1,207</u>	<u>2,060</u>	<u>2,841</u>	<u>3,325</u>	<u>3,730</u>
Phase Two					
Residential homes built ¹	---	---	20	120	1,210
Condominium units built and sold	---	---	120	120	120
Hotels and condominium hotel ³	---	---	300	300	300
Employee homes ⁴	---	---	<u>5</u>	<u>20</u>	<u>30</u>
TOTAL UNITS	<u>---</u>	<u>---</u>	<u>445</u>	<u>560</u>	<u>1,660</u>
Phases One and Two					
Residential homes built	144	205	275	425	1,920
Condominium units built and sold	1,018	1,500	1,946	2,380	2,380
Hotels and condominium hotels	---	300	1,000	1,000	1,000
Employee homes	25	35	45	60	70
Employee apartment units	<u>20</u>	<u>20</u>	<u>20</u>	<u>20</u>	<u>20</u>
TOTAL UNITS	<u>1,207</u>	<u>2,060</u>	<u>3,286</u>	<u>3,885</u>	<u>5,390</u>

¹ Projected home completions are based on historical completions adjusted for expected housing completion trends.

² Represents the 300-room hotel planned for completion in 1985 and a 400-room hotel (Lot 25) estimated to be completed by 1987.

³ Represents a 300-unit condominium hotel planned for completion in 1988.

⁴ Includes lots purchased by employees for use as their primary residence only. Projected home completions are based on home completions in Phase One.

Note: Based on projected dates of completion of the respective projects as estimated by Princeville Development Corporation and the probable sales absorption of condominium units. This schedule represents approximate completion dates which are subject to change.

Source: Prepared by Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-D).

Table III-5. Historical and Projected Residential Unit Occupancy Characteristics.

	Type of Occupant	1980 ⁴		1982 Actual Usage ⁵	Projected Usage ⁶
		Community Resources Survey	Peat Marwick Survey		
Residential Homes					
Full-time residence ¹	Residents	68.2%	67.2%	72.0%	70.0% ⁷
Vacation home/ long-term rentals ²	Visitors	22.0	22.1	22.4	23.0
Visitor units ³	Visitors	9.8	10.7	5.6	7.0
		<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>
TOTAL					
Residential condominiums					
Full-time residence ¹	Residents	15.6	12.3	--- ⁸	15.0
Vacation home/ long-term rentals ²	Visitors	8.6 ⁹	18.0	--- ⁸	20.0
Visitor units ³	Visitors	75.8 ⁹	69.7	--- ⁸	65.0
		<u>100.0%</u>	<u>100.0%</u>	<u>---%</u>	<u>100.0%</u>
TOTAL					

¹ Represents owner-occupants residing in unit for more than four months per year and occupants residing in the unit under a long-term lease whose usual place of residence is Princeville.

² Represents owner-occupants residing in units for less than four months per year and other occupants residing in the unit on a month-to-month basis whose usual place of residence is not Princeville.

³ Represents units rented on a daily or weekly basis by visitors.

⁴ Source: Based on independent surveys of occupants and building managers conducted by Community Resources and Peat, Marwick, Mitchell & Co., March and May 1980.

⁵ Based on actual use of residential homes in 1982, tabulated from Princeville Development Corporation's records for 188 homes, adjusted for units for sale or of unknown use.

⁶ Projected by Peat, Marwick, Mitchell & Co. based on historical usage and trends.

⁷ Includes renters from the Princeville survey whose primary residence is Princeville.

⁸ Not surveyed.

⁹ Includes 23 unoccupied units, or four percent of total surveyed units.

Source: Peat, Marwick, Mitchell & Co. (October 1982: Exhibit I-E).

Table III-6. Princeville Population Assumptions.

	Residential Population			Visitor Population		
	Usage of Units	Occupancy Rate	Occupants per Unit	Usage of Units	Occupancy Rate	Occupants per Unit
<u>Residential Homes (nonemployees)</u>						
Full-time residence	70%	95%	2.8			
Vacation home/long-term rental						1.86
Visitor units				23%	25%	2.8
<u>Residential condominiums</u>				7%	50%	2.8
Full-time residence	15%	95%	2.5			
Vacation home/long-term rental						0.36
Visitor units				20%	25%	2.6
<u>Hotels & Condominium Hotels</u>				65%	50%	2.5
<u>Employee Housing</u>				100%	75%	1.8
Single-family	100%	95%	3.0			
Apartment	100%	95%	2.5			2.85
						2.38

1 From Table III-5.

2 Estimated by Peat, Marwick, Mitchell & Co. based on occupancy statistics from the Hawai'i State Department of Health, Hawai'i Health Surveillance Program records and on Hawai'i Visitors Bureau, 1980 and 1981 Annual Research Reports.

3 Estimated by Peat, Marwick, Mitchell & Co. based on average household or guest per room statistics from Anderson, Robert N. et al., Visitors Bureau (July 1980: 9); memo from Mike Loo to Malcolm J. Tom dated February 12, 1982 regarding average guests per room; and the Hawai'i

4 Occupancy rate times persons per unit, weighted by usage.

Source: Peat, Marwick, Mitchell & Co. (October 1982: Exhibit I-F).

Table III-7. Princeville Phases One and Two Estimated Resident Population: 1980 to Completion.

	Projected Average Occupants per Unit ¹	Estimated Resident Population ²				Completion
		1980	1985	1990	1995	
<u>Phase One</u>						
Residential Homes	1.86	270	380	475	570	1,320
Residential condominiums	0.36	360	530	650	805	805
Employee single-family homes	2.85	70	100	115	115	115
Employee apartment units	2.38	50	50	50	50	50
Total Phase One resident population		<u>750</u>	<u>1,060</u>	<u>1,290</u>	<u>1,540</u>	<u>2,290</u>
<u>Phase Two</u>						
Residential homes	1.86	---	---	35	225	2,250
Residential condominiums	0.36	---	---	45	45	45
Employee single-family homes	2.85	---	---	15	55	85
Total Phase Two resident population		<u>---</u>	<u>---</u>	<u>95</u>	<u>325</u>	<u>2,380</u>
<u>Phases One and Two</u>						
Residential homes	1.86	270	380	510	795	3,570
Residential condominiums	0.36	360	530	695	850	850
Employee single-family homes	2.85	70	100	130	170	200
Employee apartments	2.38	50	50	50	50	50
Total Phases One & Two resident population		<u>750</u>	<u>1,060</u>	<u>1,385</u>	<u>1,865</u>	<u>4,670</u>
Compound annual percentage change 1980 to 1995:						
Phase One						4.9%
Phases One and Two						6.3%

¹ From Table III-6.

² Based on the estimated units developed, as shown in Table III-4, multiplied by the projected average residents per unit.

Source: Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-G).

Table III-8. Estimated Hanalei District Resident Population by Sub-Areas 1980 to 1995.

	<u>(1980)</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>
Hanalei District excluding Princeville CDP ¹	2,170	2,455	2,780	3,140
Princeville Phase One ²	<u>750</u>	<u>1,060</u>	<u>1,290</u>	<u>1,540</u>
SUBTOTAL	2,920	3,515	4,070	4,680
Princeville Phase Two ²	<u>---</u>	<u>---</u>	<u>95</u>	<u>325</u>
TOTAL	2,920	3,515	4,165	5,005
Average annual percentage change:				
Hanalei District with Phase One	---	3.8%	3.0%	2.8%
Hanalei District with Phases One and Two	---	---	<u>3.5%</u>	<u>3.7%</u>
DIFFERENCE			0.5%	0.9%

¹ Census data for 1980; projections based on 1960-1980 historical growth rate (2.5%).

² From Table III-7.

Source: Based on Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-H).

Table III-9. Princeville Phases One and Two Estimated Average Daily Visitor Population: 1980 to Completion.

Phase	Projected Annual Average Visitors per Unit ¹	Estimated Visitor Population ²				Completion
		1980	1985	1990	1995	
<u>Phase One</u>						
Residential Homes	0.26	40	50	70	80	180
Residential condominiums	0.94	960	1,420	1,720	2,130	2,130
Hotels	1.35	---	400	940	940	950
Total Phase One visitor population		<u>1,000</u>	<u>1,870</u>	<u>2,730</u>	<u>3,150</u>	<u>3,260</u>
<u>Phase Two</u>						
Residential homes	0.26	---	---	10	30	310
Residential condominiums	0.94	---	---	110	110	110
Hotels	1.35	---	---	400	410	410
Total Phase Two visitor population		<u>---</u>	<u>---</u>	<u>520</u>	<u>550</u>	<u>830</u>
<u>Phases One and Two</u>						
Residential homes	0.26	40	50	80	110	500
Residential condominiums	0.94	960	1,420	1,830	2,240	2,240
Hotels	1.35	---	400	1,340	1,350	1,350
Total Phases One and Two resident population		<u>1,000</u>	<u>1,870</u>	<u>3,250</u>	<u>3,700</u>	<u>4,090</u>

¹ From Table III-6.

² Includes persons whose usual place of residence is other than Princeville including visitors and those in vacation homes who are residing in Princeville only temporarily. Calculated based on the estimated units developed, as shown in Table III-4, multiplied by the projected average residents per unit.

Source: Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-1).

3.5.2 Projected Average Daily Visitor Population in Phase Two

Phase Two is much more residentially oriented than is the Phase One area. As a result, the effect that its development would have on the average daily visitor population will be limited. As shown in Table III-9, the Phase Two portion of Princeville is expected to house an average of 550 visitors in 1995 and just over 800 visitors upon completion. Overall, Phase Two would account for only 20 percent of the 4,100 visitors expected to be present at Princeville on an average day following completion of both phases of the development. It is also worth noting that a substantial portion of the Phase Two visitor population consists of persons staying in single-family homes. These are likely to be groups and families on relatively long-term visits to the island, and they could have a somewhat different impact than the shorter-term visitors who are typical of the area at present.

3.6 PROJECTED DE FACTO POPULATION

The de facto population is defined as the total number of persons present in the defined area as of a specified time. It includes permanent residents, vacation home occupants, and temporary visitors staying in hotel and resort condominiums. The projected average de facto population of the Princeville Resort is shown in Table III-10 for the years 1980 through the completion of the Phase Two development.

In addition to the resident and visitor population at Princeville, the de facto population of the Hanalei District includes the residents of the remainder of the North Shore District, principally residents of the Ha'ena and Kilauea subareas. The following tabulation combines the figures for Princeville with numbers for the remainder of the Hanalei District.

Projected Hanalei District Daily De Facto
Population WITHOUT Princeville Phase Two: 1980-1995

	<u>Projected Resident Population¹</u>			<u>Projected Visitor Population²</u>	<u>Total de facto Population</u>	<u>Compound Annual Percentage Change</u>
	<u>Princeville Phase One</u>	<u>Other Hanalei District</u>	<u>Total Hanalei District</u>			
1980	750	2,170	2,920	1,000	3,920	---%
1985	1,060	2,455	3,515	1,870	5,385	6.6
1990	1,290	2,780	4,070	2,730	6,800	4.8
1995	1,540	3,140	4,680	3,150	7,830	2.9
1980-1995						4.7

¹From Table III-8.

²From Table III-9.

Source: Based on Peat, Marwick, Mitchell & Co. (October 1982: p. I-8).

Projected Hanalei District Daily De Facto
Population WITH Princeville Phases One AND Two: 1980-1995

	<u>Projected Resident Population</u>			<u>Projected Visitor Population²</u>	<u>Total de facto Population</u>	<u>Compound Annual Percentage Change</u>
	<u>Princeville Phases One and Two¹</u>	<u>Other Hanalei, District²</u>	<u>Total Hanalei, District²</u>			
1980	750	2,170	2,920	1,000	3,920	---
1985	1,060	2,455	3,515	1,870	5,385	6.6
1990	1,385	2,780	4,165	3,250	7,415	6.6
1995	1,865	3,140	5,005	3,700	8,705	3.3
1980-1995						5.5

¹From Table III-7.

²From Table III-8.

³From Table III-9.

Source: Based on Peat, Marwick, Mitchell & Co. (October 1982: p. I-8).

3.7 PROJECTED EMPLOYMENT IMPACTS

The Princeville Resort is already the single most important employer in the region. Continued development in the Phase One area will increase its relative importance, as will implementation of the plans for Phase Two. The remainder of this section presents estimates of the number and types of jobs that would be created by the Princeville Resort.

3.7.1 Employment Generation Factors

Increased employment generated by both Phase One and Phase Two of Princeville has been estimated by Peat, Marwick, Mitchell & Co. using a number of different land use/employment ratios derived from information on existing relationships. These factors are summarized below:

Construction Employment. Estimates were made on the basis of the person-year per unit factors which follow:

- o 0.7 person-years per condominium unit
- o 0.5 person-years per hotel unit
- o 1.5 person-years per single-family residence
- o 0.6 person-years per 100 square feet of commercial space

In addition, it is estimated that civil improvements (i.e., sitework and infrastructure improvements) would require about 36 person-years for each of the three plateaus, or a total of about 100 person-years for the entire Phase Two project. It is also

Table III-10. Princeville Phases One and Two Estimated Average Daily De Facto Population: 1980 to Completion.

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>Completion</u>
<u>Phase One</u>					
Residents ¹	750	1,060	1,290	1,540	2,290
Visitors ²	<u>1,000</u>	<u>1,870</u>	<u>2,730</u>	<u>3,150</u>	<u>3,260</u>
Total Phase One <u>de facto</u> population	<u>1,750</u>	<u>2,930</u>	<u>4,020</u>	<u>4,690</u>	<u>5,550</u>
<u>Phase Two</u>					
Residents ¹	---	---	95	325	2,380
Visitors ²	---	---	<u>520</u>	<u>550</u>	<u>830</u>
Total Phase One <u>de facto</u> population	---	---	<u>615</u>	<u>875</u>	<u>3,210</u>
<u>Phases One and Two</u>					
Residents ¹	750	1,060	1,385	1,865	4,670
Visitors ²	<u>1,000</u>	<u>1,870</u>	<u>3,250</u>	<u>3,700</u>	<u>4,090</u>
Total Phases One and Two average daily <u>de facto</u> population	<u>1,750</u>	<u>2,930</u>	<u>4,635</u>	<u>5,565</u>	<u>8,760</u>

¹ From Table III-7. Includes persons whose usual place of residence is Princeville.

² From Table III-9. Includes persons whose usual place of residence is other than Princeville including visitors and those in vacation homes who are residing in Princeville only temporarily.

Source: Peat, Marwick, Mitchell & Co. (October 1980:Exhibit I-3).

estimated that approximately 50 person-years of employment would be entailed in the construction of the second golf course and clubhouse.

Resort Management and Operations. Employment estimates were made by Peat, Marwick, Mitchell & Co. using the following assumptions and data sources:

- o An increase of 70 jobs in the resort management and operations category are anticipated to handle the additional facilities of Phase Two.
- o Fifty additional positions would be generated by the second golf course and clubhouse operations.
- o An employment ratio of 0.20 jobs per condominium unit was estimated based on Phase One data and adjusted for projected occupancy levels. This figure is conservative in comparison to the 0.25 jobs per apartment figure in the State Tourism Plan (Hawai'i, State of, Department of Planning and Economic Development; October 1981:139).
- o 0.7 jobs per hotel room as estimated in the State Tourism Plan, (Hawai'i, State of, Department of Planning and Economic Development; October 1981:139).
- o 1.0 jobs per 200 square feet of commercial space as estimated in the State Tourism Plan, (Hawai'i, State of, Department of Planning and Economic Development; October 1981:139).

3.7.2 Projected Employment

As shown in Table III-11, construction employment in the Phase One portion of Princeville is expected to fluctuate until about 1987 and after that to maintain a steady level of about 75 jobs through 1995. Major multi-family and hotel projects will have been completed by 1988, and the construction employment generated by Phase One will decline to the level needed to support ongoing development of previously purchased single-family lots.

Operational employment in Phase One will rise sharply through 1987 or thereabouts as additional resort-oriented facilities come on-line. From 1988 onwards it will increase only slightly.

Construction of the Phase Two project would not begin in earnest until 1983/84, and even then it would be limited primarily to roads and other infrastructure. Through 1995 Phase Two would create only a modest number of construction jobs, except when the condominiums are built in 1987 and 1988. Because Phase Two consists primarily of single-family residential units, operational employment generated there would be limited, compared to Phase One. As shown in Table III-11, it is expected to reach 310 in the late 1980s and remain steady thereafter. This does not account for the work required to maintain individual single-family homes (e.g., periodic painting, landscape maintenance, re-roofing, minor repairs, etc.).

Table III-11. Estimates of Annual Employment for Princeville Phases One and Two: 1983 to 1995.

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Phase One¹													
Construction-Related Employment:													
Single-family units ²	20	20	20	20	20	20	15	15	15	15	15	15	15
Multi-family units ³	130	185	100	220	75	60	60	60	60	60	60	60	60
Hotels ⁴	65	130	10	100	200	---	---	---	---	---	---	---	---
Commercial facilities ⁵	15	---	---	---	---	---	---	---	---	---	---	---	---
Golf course and clubhouse ¹⁰	20	25	5	---	---	---	---	---	---	---	---	---	---
Subtotal	<u>230</u>	<u>380</u>	<u>135</u>	<u>340</u>	<u>295</u>	<u>80</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>
Resort Operations-Related Employment:													
Resort management and operations ⁶	170	170	220	220	220	220	220	220	220	220	220	220	220
Vacation rental operations ⁷	240	295	295	350	370	380	390	400	410	425	430	445	455
Hotel operations ⁸	---	---	210	210	490	490	490	490	490	490	490	490	490
Retail facility operations ⁹	200	200	200	200	200	200	200	200	200	200	200	200	200
Subtotal	<u>610</u>	<u>665</u>	<u>925</u>	<u>980</u>	<u>1,280</u>	<u>1,290</u>	<u>1,300</u>	<u>1,310</u>	<u>1,320</u>	<u>1,335</u>	<u>1,340</u>	<u>1,355</u>	<u>1,365</u>
Total Phase One employment	<u>860</u>	<u>1,045</u>	<u>1,060</u>	<u>1,320</u>	<u>1,575</u>	<u>1,370</u>	<u>1,375</u>	<u>1,385</u>	<u>1,395</u>	<u>1,410</u>	<u>1,415</u>	<u>1,430</u>	<u>1,440</u>
Phase Two¹													
Construction-Related Employment:													
Single-family units ²	---	---	---	---	---	5	15	20	20	20	45	30	55
Multi-family units ³	---	---	---	---	80	45	---	---	---	---	---	---	---
Hotel/condominium hotel ⁴	---	---	---	---	75	150	---	---	---	---	---	---	---
Resort infrastructure ⁵	20	10	20	20	20	10	10	5	---	---	---	---	---
Subtotal	<u>20</u>	<u>10</u>	<u>20</u>	<u>20</u>	<u>175</u>	<u>210</u>	<u>25</u>	<u>25</u>	<u>20</u>	<u>20</u>	<u>45</u>	<u>30</u>	<u>55</u>
Resort Operations-Related Employment:													
Resort management and operations ⁶	20	40	50	60	70	70	70	70	70	70	70	70	70
Vacation rental operations ⁷	---	---	---	---	30	30	30	30	30	30	30	30	30
Hotel operations ⁸	---	---	---	---	---	200	210	210	210	210	210	210	210
Subtotal	<u>20</u>	<u>40</u>	<u>50</u>	<u>60</u>	<u>100</u>	<u>300</u>	<u>310</u>	<u>310</u>	<u>310</u>	<u>310</u>	<u>310</u>	<u>310</u>	<u>310</u>
Total Phase Two employment	<u>40</u>	<u>50</u>	<u>70</u>	<u>80</u>	<u>275</u>	<u>310</u>	<u>335</u>	<u>335</u>	<u>330</u>	<u>330</u>	<u>355</u>	<u>340</u>	<u>365</u>
Phases One and Two													
Construction Employment	270	390	155	360	470	290	100	100	95	95	120	105	130
Resort Operations-Related Employment	630	705	975	1,040	1,380	1,390	1,610	1,620	1,630	1,645	1,650	1,665	1,675
Total Phases One and Two employment	<u>900</u>	<u>1,095</u>	<u>1,130</u>	<u>1,400</u>	<u>1,850</u>	<u>1,880</u>	<u>1,710</u>	<u>1,720</u>	<u>1,725</u>	<u>1,740</u>	<u>1,770</u>	<u>1,770</u>	<u>1,805</u>

1 Represents full-time equivalent employment based on estimated facility development as shown in Table III-4 and employment assumptions as footnoted.
 2 Based on 1.5 person years per single-family dwelling as estimated by Belt, Collins & Associates.
 3 Based on 0.7 person years per multi-family unit as estimated by Belt, Collins & Associates.
 4 Based on 0.5 person years per hotel unit as estimated by Belt, Collins & Associates.
 5 Based on 0.6 person years per 100 square feet of commercial space as estimated by Belt, Collins & Associates.
 6 As estimated by Princeville Development Corp.
 7 Estimated at 0.20 jobs per condominium unit based on the current level of condominium employment, adjusted for projected occupancy levels.
 8 Based on 0.7 jobs per room as estimated by the DPED's State Tourism Plan, October 1981, p. 139.
 9 Based on one job per 200 square feet of leasable area as estimated by DPED's State Tourism Plan, October 1981, p. 139.
 10 Based on 10 persons employed for one year for clubhouse construction and 30 persons employed for a year and one-half for golf course construction as estimated by Belt, Collins & Associates.

Source: Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-L and I-M).

3.7.3 Employment by Occupation

Peat, Marwick, Mitchell & Co. prepared estimates of the employment opportunities and work force requirements that would be generated by the proposed Phase Two project. These are presented in Table III-12. The estimates were based on the following employment composition data:

Construction-Related Employment. The composition of the construction work force was based on a 1976 study conducted by McDonald & Smart, Inc. entitled An Analysis of the Economic, Social, and Environmental Impacts of the Kiahuna Golf Village.

<u>Job Classification</u>	<u>Percent of Work Force</u>
Managers	2.0%
Foremen/Supervisors	8.5%
Building Tradesmen	57.0%
Laborers	32.5%

Resort Management and Operations Employment. This component of employment was estimated by the Princeville Development Corporation on the basis of the present staffing level for Phase One and the additional facilities in Phase Two.

<u>Job Classification</u>	<u>No. of Employees Expected in Phase Two</u>
Supervisory/Professional	10
Clerical/Secretarial	9
Buildings and Grounds Maintenance	34
Food Service	<u>17</u>
Total Additional Employees	70

Vacation Rental Operation Employment. The number of persons involved in the rental operations of units in Phase Two was estimated on the basis of the staffing level of existing resort operations at Princeville as reported by PDC.

<u>Job Classification</u>	<u>Percent of Work Force</u>
Supervisory	5.0%
Clerical/Secretarial	30.0%
Service	65.0%

Hotel Operations Employment. The projected breakdown of employment by job classification for workers involved in hotel operations is drawn from a 1978 survey of hotel employment conducted by the Hawai'i State Department of Planning and Economic Development for the State Tourism Study. The percentage distribution is as follows:

<u>Job Classification</u>	<u>Percent of Work Force</u>
Managerial/Supervisory	8.0%
Clerical/Secretarial	16.0%
Semiskilled	6.0%
Service and Laborers	70.0%

Table III-12. Projected Employment Composition for Phase Two: 1985 to 1995.

	<u>1985</u>	<u>1988</u>	<u>1990</u>	<u>1995</u>
<u>Construction-Related Employment</u>¹				
Managers	1	4	1	1
Foreman/supervisors	2	18	2	5
Building tradesmen	11	120	14	31
Laborers	<u>6</u>	<u>68</u>	<u>8</u>	<u>18</u>
TOTAL	<u>20</u>	<u>210</u>	<u>25</u>	<u>55</u>
<u>Resort Operations-Related Employment</u>²				
Resort Management and Operations:				
Supervisors/professionals	7	10	10	10
Clerical/secretarial	6	9	9	9
Building and Grounds Maintenance	24	34	34	34
Food Service	13	17	17	17
Vacation Rental Operations: ²				
Supervisors	---	2	2	2
Clerical/secretarial	---	9	9	9
Service	---	19	19	19
Hotel Operations: ³				
Managerial/supervisory	---	16	17	17
Clerical/secretarial	---	32	34	34
Semiskilled	---	12	12	12
Service and laborers	---	<u>140</u>	<u>147</u>	<u>147</u>
TOTAL	<u>50</u>	<u>300</u>	<u>310</u>	<u>310</u>
TOTAL PHASE TWO EMPLOYMENT	<u>70</u>	<u>510</u>	<u>335</u>	<u>365</u>

¹ Based on construction employment composition as estimated by McDonald & Smart, Inc. (1976); An Analysis of the Economic, Social and Environmental Impacts of Kiahuna Golf Village.

² Based on current staffing composition at Princeville Phase One adjusted for the additional facilities at Phase Two.

³ Based on DPED (1978), State Tourism Study.

Note: Figures based on estimated annual employment as shown in Table III-11 and composition ratios as footnoted above.

Source: Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-N).

Based on the preceding, it is estimated that by 1995 when it would be fully operational, there would be 365 persons working in the Phase Two portion of Princeville.

3.7.4 Projected Phase Two Employment Income

The projected employment income generated by the proposed Phase Two project is shown in Table III-13. The estimates are for the year 1995 (by which time operational employment will have stabilized) and are stated in terms of 1982 dollars. They are based on the employment composition estimates presented in Table III-12 and average wage levels by job classification as shown. The average annual wage levels were estimated by Peat, Marwick, Mitchell & Co. based on data developed by McDonald & Smart (1976), the Hawaii State Department of Planning and Economic Development (1978), the Hawaii Employers' Council (September 1981), and the Princeville Development Corporation (see the footnotes to Table III-13).

3.8 PROJECTED VISITOR EXPENDITURES

Visitor expenditures are a major source of income for Kauai, accounting for \$181.4 million in revenues in 1980 according to the Bank of Hawaii. The Princeville Resort is expected to have a significant economic impact on the level of expenditures in Hanalei and the island of Kauai. This section estimates the average daily expenditure of visitors to Princeville and the annual visitor expenditures from 1980 to 1995.

3.8.1 Daily Visitor Expenditures

The average daily expenditure was \$71.24 for all westbound visitors in 1980 according to the Hawaii Visitors Bureau. However, average visitor expenditures vary according to visitor origin and the type of lodging accommodations used by the visitor. For example, westbound visitors to Oahu spent an average of \$69.24 while neighbor island visitors spent \$71.25. Japanese visitors spent an average of \$185.00 per day mainly due to their high gift expenditures and their shorter length of stay. Visitors who stayed in condominiums spent an average of \$62.00/day compared to \$76.87/day per hotel visitor. The higher hotel visitor expenditures were attributed to higher lodging, food and beverage outlays by the typical hotel guest.

3.8.2 Projected Princeville Resort Visitor Expenditures

Projected visitor expenditures at the Princeville Resort are based on the estimated visitors to the resort and their average daily expenditures. Average expenditures have been based on the Hawaii Visitors Bureau's 1980 Visitor Expenditure Survey which estimated typical daily spendings of \$76.87 per hotel visitor and \$62.00 per condominium visitors. Visitors who rent single-family homes for lodging were assumed to have expenditure patterns similar to those of condominium visitors.

Based on these assumptions, total visitor expenditures by guests staying at Princeville Phase One are estimated to have amounted to \$22.6 million in 1980, as shown in Table III-14. This amount represents about 12 percent of the \$181.4 million spent by visitors to Kauai in that year, as reported by the Bank of Hawaii.

Table III-13. Projected Employment Income Generated by Phase Two in 1995.

	Number Employed ¹	Average Annual Compensation ²	Total Employment Income ²
<u>Construction-Related Employment</u>			
Managerial	1	\$39,000	\$ 39,000
Supervisory	5	22,500	112,500
Skilled	31	21,000	651,000
Laborers	<u>18</u>	<u>16,000</u>	<u>288,000</u>
Total Construction-Related Employment	<u>55</u>	<u>\$19,800</u>	<u>\$ 1,090,500</u>
<u>Resort Operations-Related Employment</u>			
Resort Management and Operations:			
Supervisory/professional	10	27,000	270,000
Clerical/secretarial	9	14,500	130,500
Buildings and ground maintenance	34	13,000	442,000
Food Service	17	10,500	178,500
Vacation Rental Operations:			
Supervisory	2	16,500	33,000
Clerical/secretarial	9	12,000	108,000
Service	19	11,000	209,000
Hotel Operations:			
Managerial/supervisory	17	19,000	323,000
Clerical/secretarial	33	12,000	396,000
Semiskilled	13	13,000	169,000
Service and laborers	<u>147</u>	<u>11,000</u>	<u>1,617,000</u>
Total Resort Operations-Related Employment	<u>310</u>	<u>\$12,500</u>	<u>\$ 3,876,000</u>
TOTAL PHASE TWO	<u>365</u>	<u>\$13,600</u>	<u>\$ 4,966,500</u>

¹From Table III-12.

²In 1982 dollars.

Note: Based on wage information adjusted for inflation as presented in McDonald & Smart, Inc. (1976) for construction workers; Hawai'i, State of, Department of Planning & Economic Development (1978) for hotel and retail workers; and Hawai'i Employers' Council (September 1981) and current pay levels at Princeville for other workers.

Source: Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-O).

Table III-14. Princeville Resort Projected Annual Direct Visitor Expenditures: 1980 to 1995.

	Phase One			Phase Two			Phases One and Two			Compound Annual Percentage Increase
	Annual Visitor Days ¹	Average Daily Expenditures ²	Annual Visitor Expenditures (millions)	Annual Visitor Days ¹	Average Daily Expenditures ²	Annual Visitor Expenditures	Annual Visitor Days ¹	Average Daily Expenditures ²	Annual Visitor Expenditures (millions)	
1980:										
Hotel	---	\$ ---	---	---	\$ ---	---	---	\$ ---	---	
Single-family/ multi-family ³	363,800	62.00	22.6	---	---	---	363,800	62.00	22.6	
TOTAL	363,800	\$ 62.00	22.6	---	---	---	363,800	\$ 62.00	22.6	
1985:										
Hotel	147,800	76.87	11.4	---	---	---	147,800	76.87	11.4	
Single-family/ multi-family ³	535,300	62.00	33.2	---	---	---	535,300	62.00	33.2	
TOTAL	683,100	\$ 65.22	44.6	---	\$ ---	---	683,100	\$ 65.22	44.6	14.6%
1990:										
Hotel	344,900	76.87	26.6	147,800	76.87	11.3	492,700	76.87	37.9	
Single-family/ multi-family ³	652,200	62.00	40.4	43,100	62.00	2.7	695,300	62.00	44.1	
TOTAL	997,100	\$ 67.14	67.0	190,900	\$ 73.51	14.0	1,188,000	\$ 68.17	81.0	12.7%
1995:										
Hotel	344,900	76.87	26.5	147,800	76.87	11.4	492,700	76.87	37.9	
Single-family/ multi-family ³	806,300	62.00	50.0	52,600	62.00	3.2	858,900	62.00	53.2	
TOTAL	1,151,200	\$ 66.46	76.5	200,400	\$ 72.97	14.6	1,351,600	\$ 67.42	91.1	2.4%

1 Daily visitor population as presented in Table III-9 multiplied by 365.

2 Hawaii Visitors Bureau (January 1982), 1980 Visitor Expenditure Survey.

3 Occupants of single-family visitor units are assumed to have similar spending patterns to condominium residents.

Note: All figures in 1980 dollars.

Source: Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-Q).

With the opening of the 300-room hotel in Phase One and the development of the first single-family units in Phase Two in 1985, the combined visitor expenditures are projected to increase by 14.6 percent annually to \$44.6 million. In 1990 the opening of the 400-room hotel in Phase One and the 300-unit condominium hotel in Phase Two along with other planned condominium completions are expected to contribute to a 12.7 percent average annual increase in visitor expenditures to \$81.0 million. In 1995 Princeville visitor expenditures are expected to stabilize at \$91.1 million. By 1995 Phase Two is expected to contribute \$14.6 million, or 16 percent of the total Princeville-generated visitor expenditures.

3.9 INDIRECT ECONOMIC IMPACTS

Indirect economic impacts resulting from increased visitor spending and employment income (direct economic impacts) at Princeville include the multiplier effect of visitor expenditures and resident earnings, the creation of further employment and the generation of tax revenues.

3.9.1 Expenditure Impact

The expenditure impact of visitor spending is defined as the sales revenues of all industries of an area resulting from an increase or decrease in visitor expenditures. This impact takes into account the direct effect in the change of sales when visitors purchase goods and services, the indirect effect when companies re-spend visitor dollars for additional goods and services and when employers and employees spend their income earned from the visitor spending. Thus, when visitors spend money in an area, the expenditures "multiply" themselves during the re-spending process.

The multiplier factor for Kaua'i has been estimated to be 2.37 for expenditures in hotels, 2.02 for tourist gift expenditures and 2.30 for tourist transportation services, according to the Kauai Socioeconomic Profile, (Anderson, Robert N. et al.; 1975). The input-output model developed by the Hawai'i State Department of Planning and Economic Development (1980) estimated that the multiplier for tourism and visitor expenditures for the State to be \$2.01 which includes the \$1.00 spent directly by the visitor plus an additional \$1.01 which results from the indirect and induced effects.

The estimated total output generated by visitor expenditures, using a 2.01 multiplier, for Princeville Phases One and Two from 1980 to 1995 is presented in Table III-15. By 1995 total visitor expenditures from Phases One and Two would be about \$91 million in 1980 dollars. These sales are projected to generate total sales on Kaua'i of about \$183 million. From Phase Two, the estimated visitor expenditures of \$14.0 million in 1990 and \$14.6 million in 1995 are estimated to generate total expenditures of \$28.2 million and \$29.4 million, respectively.

3.9.2 Household Income Impact

The impact of visitor expenditures on household income can also be classified by the direct, indirect and induced effects on household income resulting from a change in visitor spending. According to the Hawai'i State Department of Planning and Economic Development (April 1980) report entitled Tourism and Hawaii's Economy: An Input-Output Analysis, the ratio of total household income to visitor spending is 0.6654, indicating that each dollar spent by visitors generates almost \$0.67 of household income.

Table III-15. Estimated Direct and Indirect Visitor Expenditure Impact: 1980 to 1995.

Year	Phase One		Phase Two		Phases One and Two	
	Annual Direct Visitor Expenditures ¹	Total Direct and Indirect Expenditures ²	Annual Direct Visitor Expenditures ¹	Total Direct and Indirect Expenditures ²	Annual Direct Visitor Expenditures ¹	Total Direct and Indirect Expenditures ²
1980	\$22.6	45.3	---	---	22.6	45.3
1985	44.6	89.6	---	---	44.6	89.6
1990	67.0	134.6	14.0	28.2	81.0	162.8
1995	76.5	153.8	14.6	29.4	91.1	183.2

¹ From Table III-14.

² Based on an output multiplier of 2.01, as estimated by the Hawai'i State Department of Planning and Economic Development (April 1980), Tourism and Hawaii's Economy: An Input-Output Analysis.

Note: All figures in millions of 1980 dollars.

Source: Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-R).

Table III-16 presents the estimated household income generated by Princeville Phases One and Two from 1980 to 1995. By 1995 total visitor expenditures of \$91.1 million are estimated to generate \$60.6 million of household income. Phase Two visitor expenditures of \$14.0 million and \$14.6 million are estimated to generate household incomes of \$9.3 million and \$9.7 million in 1990 and 1995, respectively.

3.9.3 Employment Impact

In addition to the direct employment that will result from the construction and operation of Phase Two, other jobs will be created indirectly or will be induced by the development of Phase Two. While direct employment is on-site at the Princeville Resort, indirect employment is off-site and equates to jobs created to support the Phase Two project. Examples of indirect employment opportunities which may be created are jobs in tour companies, textiles, transportation, and architecture and engineering firms. Induced employment results from the creation of jobs to support the needs of direct and indirect employees to the resort. Induced employment results in a wide diversity of employment opportunities such as those in eating and drinking establishments, health and professional services, and retail trade.

To assess the total impact of visitor spending on the generation of employment, economists commonly apply an employment multiplier. An employment multiplier is defined as the change in total employment in the economy resulting from a one-unit change in employment within a particular sector. Various multipliers have been derived to project the amount of additional or indirect employment within the tourism industry. DPED estimates that the multiplier factor for employment is 1.5599 for hotel jobs, 1.3979 for eating and drinking establishments and 1.3429 for retail trade. As these industries represent the majority of visitor receipts, an employment multiplier representing an average of these multipliers has been assumed as 1.433. For construction employment, a multiplier factor of 1.41 has been assumed as developed in McDonald & Smart, Inc. (1976).

Table III-17 presents the estimated total employment generated by Phases One and Two from 1985 to 1995. Total employment generated by Phases One and Two is estimated to amount to 1,620 jobs by 1985; 2,470 jobs by 1990; and 2,590 jobs by 1995. For Phase Two, total employment generated is estimated to be 100 jobs in 1985; 480 jobs in 1990 and 520 jobs in 1995.

3.9.4 State and Local Tax Revenue Impact

Visitor expenditures generate state and local tax collections in terms of increased real property taxes, excise taxes, and personal and corporate income taxes. In 1978, the latest year for which complete data were available, state local taxes attributed to tourism were estimated to represent about 10.7 percent of total visitor expenditures, according to Tourism and Hawaii's Economy: Input-Output Analysis, (Hawaii, State of, Department of Planning and Economic Development; April 1980).

Using this relationship, state and county taxes are estimated based on direct visitor expenditures for Phase One to have been \$2.4 million in 1980. For Phases One and Two taxes would increase to \$4.8 million in 1985, \$8.7 million in 1990 and \$9.8 million in 1995, as shown in Table III-18. Phase Two-generated state and local taxes are projected to be \$1.5 million in 1990 and \$1.6 million in 1995.

Table III-16. Estimated Household Income Impact: 1980 to 1995.

Year	Phase One		Phase Two		Phases One and Two	
	Annual Direct Visitor Expenditures ¹	Total Direct and Indirect Expenditures ²	Annual Direct Visitor Expenditures ¹	Total Direct and Indirect Expenditures ²	Annual Direct Visitor Expenditures ¹	Total Direct and Indirect Expenditures ²
1980	\$22.6	15.0	---	---	22.6	15.0
1985	44.6	29.6	---	---	44.6	29.6
1990	67.0	44.6	14.0	9.3	81.0	53.9
1995	76.5	50.9	14.6	9.7	91.1	60.6

¹ From Table III-14.

² Based on a factor of .6654, as estimated by Department of Planning and Economic Development (April 1980), Tourism and Hawaii's Economy: An Input-Output Analysis.

Note: All figures in millions of 1980 dollars.

Source: Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-S).

Table III-17. Estimated Direct and Indirect Employment Impacts 1985 to 1995.

Year	Phase One			Phase Two			Phases One and Two		
	Construction Employment ¹	Resort Employment ²	Total Employment Generated	Construction Employment ¹	Resort Employment ²	Total Employment Generated	Construction Employment ¹	Resort Employment ²	Total Employment Generated
1985	190	1,330	1,520	30	70	100	220	1,400	1,620
1990	110	1,880	1,990	40	440	480	150	2,320	2,470
1995	110	1,960	2,070	80	440	520	190	2,400	2,590

¹ Based on an employment multiplier of 1.61 as estimated by McDonald & Smart, Inc. (1976), An Analysis of the Economic Social and Environmental Impacts of Kiahuna Golf Village, times direct employment, as shown in Table III-11.

² Based on an employment multiplier of 1.633 derived from the Hawai'i State Department of Planning and Economic Development (April 1980), Tourism and Hawaii's Economy: An Input-Output Analysis, times direct employment, as shown in Table III-11.

Source: Peat, Marwick, Mitchell & Co. (October 1982; Exhibit I-T).

Table III-18. State and Local Tax Revenues Impact of the Princeville Resort: 1980 to 1995.

Year	Phase One		Phase Two		Phases One and Two	
	Annual Direct Visitor Expenditure ¹	Estimated State and Local Taxes Generated ²	Annual Direct Visitor Expenditure ¹	Estimated State and Local Taxes Generated ²	Annual Direct Visitor Expenditure ¹	Estimated State and Local Taxes Generated ²
1980	\$ 22.6	2.4	---	---	22.6	2.4
1985	44.6	4.8	---	---	44.6	4.8
1990	67.0	7.2	14.0	1.5	81.0	8.7
1995	76.5	8.2	14.6	1.6	91.1	9.8

¹ From Table III-14.

² Based on 10.7% of annual direct visitor expenditures as estimated in the Hawaii State Department of Planning and Economic Development (April 1980), Tourism and Hawaii's Economy: An Input-Output Analysis.

Note: All figures in millions of 1980 dollars.

Source: Peat, Marwick, Mitchell & Co. (October 1982:Exhibit I-U).

3.10 SOCIAL IMPACTS

3.10.1 Introductory Comments

The remainder of this chapter presents an assessment by Community Resources (a division of SMS Research) of the likely social impacts of the proposed development. It explores both the social implications of some previously discussed economic and demographic impacts, and also more purely social and psychological phenomena such as values and lifestyles.

Much of the original work underlying this social impact assessment was carried out in 1980, when a lengthy social impact report was prepared for PDC. The current section draws heavily on that longer previous social impact report (now somewhat outdated by changes in the proposed nature of the Phase Two development), but is supplemented by (1) more current statistics, particularly the 1980 U.S. Census data, portions of which are now available, and (2) additional qualitative descriptions and personal interviews resulting from two field trips made by Community Resources personnel to the North Shore of Kaua'i in 1982.

3.10.2 Overview of Social Impact Assessment Findings

The analysis to follow indicates that the North Shore of Kaua'i has for some years been undergoing major social change in the wake of dramatically shifting population levels and composition. Such change has been brought on, in part, by the initial development of Princeville Phase One, but also by a number of independent causes -- the decline of a traditional agriculture-based economy; statewide influx of new immigrants and absentee-investor real estate purchasers; growth in tourism; national inflationary trends; etc. Although the rate of change may slow somewhat in the next decade, the basic forces underlying this change are expected to continue, with or without Phase Two.

In such a context, Phase Two is likely to have comparatively limited effects, of either positive or negative nature. It would somewhat augment existing trends toward more employment, more amenities, more of a "Mainland" and less of a traditional rural Hawaiian lifestyle, a larger visitor and resident population, a higher cost/standard of living, and possible periods of social and personal stress to be expected from any rapid social change.

To the extent that Phase Two does have unique social impact, most of this will spring from its changes in the visual landscape and from the new resident population to be housed there. Even this number is not expected to be large in the near future. Certain other important potential social consequences will be discussed, but most of these are subject to management and are not inevitable results.

3.10.3 Methods and Procedures

Forecasting social impacts is as much an art as a science. It involves scientific analysis of facts and figures, but it also requires a process of judgments, assumptions, and logic like that of detective work or investigative journalism. The conclusions, therefore, must be more tentative than conclusions about physical or some demographic impacts. They should be viewed as informed hypotheses rather than firm predictions.

The process of social impact assessment can be aided by evaluating the impact of comparable developments in similar locales, and (where applicable) carefully analyzing the subject area itself and the social changes resulting from earlier phases of the development under consideration. The present social impact assessment relies far more on the second strategy than on the first. That is because Princeville is a relatively unique type of Hawaii resort project (i.e., principally a resort condominium and improved lot development, rather than hotel operation and completed house subdivision). Also, the simple fact that information is available about recent past effects of the existing Princeville development argues for reliance on that data rather than data from other, and necessarily different, settings.

The basic method for forecasting social change is to identify existing trends for change, and then evaluate likely changes in these trends in the context of: (1) forces for change within the Princeville Phase One area which will probably continue with or without Phase Two; (2) forces for change on Kauai and the North Shore outside Princeville expected to continue with or without Phase Two; and (3) specific characteristics of the Phase Two development which have their own implications for change.

Three procedures were used to aid this forecasting strategy:

- o Secondary Data Analysis -- This involved scrutiny of existing facts and statistics available on the North Shore, in Lihu'e, or in Honolulu. Much of this was published data, but analysis of raw employment and housing files kept by the Princeville Development Corporation was also valuable. One generally useful data source was the set of two North Shore resident opinion surveys commissioned by the County of Kauai as part of the North Shore Plan Update (Public Affairs Advisory Services, 1979a and 1980a). However, it should be noted that the distribution method of these surveys was not, technically, a representative random sample survey. Also, some of the questions most pertinent to future Princeville development were based on assumptions about the nature of Phase Two which are now outmoded.
- o Primary Data Generation -- When no satisfactory published information was found about important social variables, attempts were made to generate original data through "mini-surveys" of knowledgeable individuals. It was possible to conduct four such mini-surveys in 1980, focusing on the following groups: (1) brokers in charge of realty firms active on the North Shore; (2) property managers of Princeville condominiums; (3) foremen of primary contractors for construction of condominiums currently underway in Phase One; and (4) representatives of Kauai contracting firms.
- o Field Work -- This included systematic observation of social interaction patterns on the North Shore; structured interviews with key informants (usually community leaders or respected individuals within the area); conversations with a variety of individuals encountered during planned trips to popular gathering places on the North Shore. A key objective of this work was to identify recurring issues of social concern in order to confirm the data research and determine the extent of relationship with development at Princeville.

Key informants were identified by a chain technique -- that is, each informant was asked for suggestions about other knowledgeable individuals in the community. Not all of the identified opinion leaders and/or organization spokesmen could be contacted, but a majority were. To the extent possible, interviews were conducted by a Community Resources team member of similar culture and background. About 50 informants or interviewees were contacted in 1980, and a dozen or so were contacted or re-interviewed in 1982 as well. Because anonymity was promised these informants, no individual names will be given. However, some of the organizations represented by these people are located in Table III-19.

3.10.4 The Social Setting: Current Situation and Trends

In the later discussion of likely social impacts, Phase Two will be discussed separately for different social variables -- population, recreation, lifestyles, etc. First, however, it is useful to have an integrated overview of the general social setting on the North Shore. This overview is organized into three sub-sections: (1) a description of North Shore communities, (2) a statistical view of the major social changes and trends affecting the North Shore in the last decade, and (3) a qualitative discussion of the "social atmosphere" on the North Shore, particularly as this relates to Princeville.

3.10.4.1 The Communities of the North Shore

For purposes of this discussion, the term "North Shore" or "communities of the North Shore" will refer to the geographical region on the Island of Kauai designated as Census Tract 401 by the U.S. Bureau of the Census. This is essentially the same as the Hanalei District, and the two terms are used interchangeably in this discussion.

Kilauea, the easternmost of the North Shore communities, is a former sugar plantation town which survived the social trauma of the shutdown of the C. Brewer plantation in 1971. In conjunction with the ILWU, C. Brewer & Co. made considerable effort to provide for those former workers who elected to remain in the town by providing low-cost housing on fee simple lots. Much of the old town was torn down and replaced with new homes in the early 1970s. Although many people believed Kilauea would wither and die, the town has remained stable and has seen several small spurts of growth in recent years. These growth spurts have added a number of haoles (Caucasians) to a population which was predominantly Japanese, Filipino, Portuguese, and Hawaiian during the plantation years. The surrounding former plantation land was turned into agricultural subdivision property (although only a relatively small portion is actually now in active agriculture) after the plantation shutdown.

The small adjacent oceanfront settlements of Kalihiwai and Anini (once known as Wanini) are sometimes considered as adjuncts of the Princeville area, which they also border. Socially, however, these communities orient to Kilauea, to which their roads lead and with which they share a common school district. Many (perhaps most) of the scattered houses in Anini are part-time vacation homes or vacation rentals rather than full-time residences.

The Princeville resort-residential development began operations in the early 1970s. By the April 1980 U.S. Census, there were 500 year-round Princeville residents -- and a construction surge that year provided homes for an estimated additional 250 residents by the end of 1980 (see Table III-7). In addition to these residents, an estimated 1,000 visitors and part-time residents swelled the average

Table III-19. Organizations Contacted During Social Assessment Field Work.

<u>State of Hawai'i</u>	<u>Community Organizations</u>
-- Department of Education (Hanalei and Kilauea Elementary Schools; Student Demography)	-- Aloha School
-- Department of Health (Kauai District Health Officer; Mental Health Division; Research and Statistics Office)	-- Alu Like
-- Department of Judiciary (Family Court, Fifth Circuit)	-- Hanalei Canoe Club
-- Department of Labor and Industrial Relations (Employment Service Division; Kauai Unemployment Office; Research and Statistics Office)	-- Hawaiian Civic Club
-- Department of Land and Natural Resources (Fish & Game Division; State Parks Outdoor Recreation & Historic Sites Division)	-- Kauai Economic Opportunity Office
-- Department of Social Services and Housing (Hawai'i Housing Authority; Research and Statistics Offices; various Kauai case-workers)	-- Kauai Taro Growers Association
-- Department of Transportation (Kauai District Engineer)	-- Kilauea Citizens Advisory Committee
-- University of Hawai'i Agricultural Extension Service (County Extension Agent)	-- Kilauea Community Outreach Program
	-- Kilauea Neighborhood Center
	-- Kilauea Pre-School
	-- Kilauea Senior Citizens
	-- North Shore Citizens Advisory Committee
	-- North Shore Improvement Association
	-- North Shore Ohana
	-- Princeville at Hanalei Community Association
<u>County of Kauai</u>	<u>Others</u>
-- County Council members	-- Bank of Hawai'i (Princeville branch)
-- Fire Department (North Shore)	-- Hawai'i Visitors Bureau (Kauai office)
-- Liquor Control Commission	-- Radio stations KIVM and KAUI
-- Mayor's Office	-- International Longshoremen's and Warehousemen's Union (Kauai Division)
-- Office of Economic Development	-- Wilson, Okamoto & Associates, Inc.; Public Affairs Advisory Services, Inc. (consultants for North Shore Plan Update)
-- Office of Elderly Affairs	-- Princeville Development Corporation (management and employees in various division and subsidiaries)
-- Parks and Recreation Department	-- Various North Shore merchants, shopkeepers
-- Planning Department	
-- Police Department (Lihue, North Shore)	
-- Public Works Department	

Source: Community Resources

daily de facto population of Princeville to 1,750 by the latter part of 1980. With the closing of the old Club Mediterranee adjacent to Princeville, there were few other visitor accommodations on the North Shore, so that the great majority of the North Shore tourist population was lodged at Princeville. (However, North Shore scenic attractions are visited each day by tourists staying in many other parts of Kaua'i.)

Since 1980, a serious, although probably temporary, tourism slump may well have dropped the average daily Princeville visitor population below the 1,000 level. This slump has also produced some important, although unmeasured, changes in the size and composition of the Princeville resident population. Because of the reduced demand for visitor accommodations, many of the condominium units formerly rented to tourists have been made available for residential rentals at affordable prices. As a result, a number of younger renters have moved from the Hanalei area to Princeville, and some welfare rental subsidies have even been funneled to Princeville. Unfortunately, exact figures on these changes are not currently available. The extent to which such housing units will remain permanently available for relatively low rents is a topic which will be discussed later.

The mauka portions of Hanalei Valley contain a number of old taro farms and pastures, but the bulk of the population in Hanalei resides in a strip of new houses and older cottages between Kuhio Highway and the ocean. Several small subdivisions have been developed in the past few years, and the population has increased markedly. Caucasians are now the majority ethnic group. The smaller farming population includes a number of Japanese families, but the county extension agent for the University of Hawai'i Agricultural Extension Service reports there are several other ethnic groups represented among these small farming operations. An aging one-lane bridge (one of a series of such bridges from Hanalei to Ha'ena) straddles the Hanalei River on the borderland between Hanalei and Princeville, denying entry to tour buses and creating a sort of psychological barrier to Hanalei not unlike the security guard and barricade at the entrances to Princeville.

Beyond Hanalei is the rural valley of Wainiha and the Ha'ena coastal strip. For decades, these have been sparsely-populated ranch and family farm lands. In the late 1960s, a hui of longtime lessees and residents of the area obtained parcels of State land for residential use makai of Kuhio Highway. Otherwise, however, the roadway today is a sort of de facto geographical boundary between the homes of longtime residents on the mauka side and the usually expensive new residences or part-time vacation homes belonging to newcomers on the makai side.

Kuhio Highway ends at Ha'ena. Beyond lie the steep cliffs and occasional valleys of the Na Pali Coast -- accessible only to hikers, boaters, or (more recently) helicopter passengers. This land is public domain and, hence, technically an ecological and recreational resource for all residents of the United States. However, until the dramatic increase of tourism in the 1970s the Na Pali Coast was, practically speaking, the "property" of Kaua'i residents -- and particularly of North Shore residents -- who valued the area as a source of food and recreation.

3.10.4.2 Direction of Recent Social Change -- Kaua'i, North Shore, and Princeville

Although a number of economic and social forces have shaped change on Kaua'i in recent years, three things have been particularly important:

- (1) Decline of sugar plantations -- and, particularly for the North Shore of Kaua'i, the Kilauea plantation closure and consequent total transformation of the economic base in the 1970s.
- (2) Growth of the tourism industry -- and, particularly for the North Shore, the partial development of the Princeville Resort in the 1970s and into the 1980s.
- (3) Immigration of Mainland Caucasians. Although there is controversy about the extent to which such immigration might itself be a product of tourism, it is also clear that factors such as statehood, generally falling real transportation costs, and positive social values about mobility have independently fostered both tourism and immigration.

The combined effects of these three major forces are examined separately in the remainder of this chapter. However, an overview of their impacts in the last decade can be obtained by examining Census figures from the last few decennial censuses. Tables III-20a, III-21a, and III-22a present raw Census figures for, respectively, population characteristics, household characteristics, and housing information. Tables III-20b, c, d; III-21b, c, d; and III-22b, c, d show various ways in which these raw numbers can be converted to percentages. Table III-23 presents 1970 and 1980 Census data for Kaua'i and the North Shore on income-related variables -- although, unlike the preceding tables, no information is provided for specific North Shore communities since 1980 Census data on income are currently not available at the level. And 1980 Census data are not even available for the North Shore as a whole for the various social variables presented in Table III-24 (mobility, education, and income) but the 1970 figures in that table provide a view of how the North Shore used to compare with the overall county.

These tables present a picture of dramatic social change on the North Shore between 1970 and 1980 -- change far in excess of that which characterized the county as a whole.

In the 1960s, the County of Kaua'i gained only a little population, although the composition of that population was already changing in a way which reflected the beginnings of increased Caucasian immigration. Meanwhile, the North Shore actually lost population, principally in the Hanalei area.

In the 1970s, Kaua'i's population increased by nearly one-third. The Caucasian immigration continued, but the economic opportunities provided by tourism allowed growth in other ethnic components as well, so that Caucasians formed proportionately little more of the countywide population in 1980 than in 1970.

But during the same period, the North Shore's population more than doubled. Its ten-year growth rate of 125 percent was the highest of any census tract on the island, three times as great as the second-most rapidly growing census tract (Koloa-Poipu-Kalaheo, 43 percent). Because of falling average household sizes, the North Shore's 1970-80 increase in occupied housing units was even greater -- 172 percent. And in terms of year-round housing units (which, by Census definitions, include condominium units available for visitor rentals), the North Shore's proportionate growth of 242 percent was four times the countywide growth rate of 61 percent.

Table III-20a. Census Data on Population Demographics - Original Numbers

	Kauai County		North Shore Total (census tract 401)		Kilauea Village		Hanalei Village		Princeville*		Remainder of North Shore							
	1960	1970	1970	1980	1960	1970	1980	1960	1970	1980	1960	1970	1980					
TOTAL POPULATION	28,176	29,761	39,082	1,312	1,182	2,668	665	671	895	370	153	483	-	-	500	277	358	790
ETHNIC/RACIAL GROUPS																		
White	5,102	7,733	11,147	111	216	1,386	NA	90	267	NA	24	247	-	-	401	NA	102	471
Haw'n/part Haw'n	4,234	3,011	5,704	NA	226	471	NA	NA	120	NA	NA	82	-	-	50	NA	NA	219
Filipino	7,066	8,135	10,237	NA	437	388	NA	NA	324	NA	NA	29	-	-	12	NA	NA	23
Japanese	11,188	9,780	9,775	NA	256	291	NA	NA	153	NA	NA	91	-	-	16	NA	NA	31
Chinese	418	538	520	NA	37	36	NA	NA	6	NA	NA	11	-	-	5	NA	NA	14
all else	168	564	1,699	NA	10	96	NA	NA	25	NA	NA	23	-	-	16	NA	NA	32
SEX - ALL AGES																		
male	15,398	15,556	20,052	769	654	1,433	NA	384	495	NA	79	255	-	-	268	NA	191	415
female	12,778	14,205	19,030	543	528	1,235	NA	287	400	NA	74	228	-	-	232	NA	167	375
SEX - 18-34 AGE RANGE																		
male	2,284**	NA	5,607	(100)**	NA	538	NA	NA	135	NA	NA	112	-	-	100	NA	NA	191
female	2,508**	NA	5,284	(92)**	NA	436	NA	NA	127	NA	NA	81	-	-	74	NA	NA	154
AGE																		
under 5 years	3,204	2,629	3,461	138	125	263	NA	74	94	NA	12	40	-	-	30	NA	39	99
5 to 17 years	8,030**	8,311	8,470	364**	322	498	NA	180	193	NA	44	88	-	-	73	NA	98	144
18 to 64 years	14,940**	16,097	22,812	697**	622	1,694	NA	354	572	NA	79	312	-	-	357	NA	189	513
(18 to 34 years)	(4,792)**	(NA)	(10,891)	(192)**	(NA)	(974)	(NA)	(NA)	(262)	(NA)	(NA)	(193)	-	-	(174)	(NA)	(NA)	(345)
65 years and over	2,002	2,724	4,339	113	113	213	NA	63	96	NA	18	43	-	-	40	NA	32	34

* Princeville area newly created for 1980 Census

** Calculated, estimated, or interpolated from data for 15-34 age ranges and data on percent less than 18 years

NOTE: 1980 Census question wording on race differed from wording in the previous censuses. Some of the apparent rises in White and "all else" populations could be due to this wording change. However, this effect is thought to be minor for Whites in areas like Kauai.

Table III-20b. Census Data on Population Demographics - As Percentages of Total

	Kauai County		North Shore Total (Census tract 401)		Kilauea Village		Hanalei Village		Princeville		Remainder of North Shore	
	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970
TOTAL POPULATION	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
ETHNIC/RACIAL GROUPS												
White	18.1%	26.0%	8.5%	18.3%	13.4%	29.8%	15.7%	51.1%	-	-	80.2%	28.5%
Haw'n/part Haw'n	15.0	10.1	NA	19.1	NA	13.4	NA	17.0	-	-	10.0	NA
Filipino	25.1	27.3	NA	37.0	NA	36.2	NA	6.0	-	-	2.4	NA
Japanese	39.7	32.9	NA	21.7	NA	17.1	NA	18.8	-	-	3.2	NA
Chinese	1.5	1.8	NA	3.1	NA	0.6	NA	2.3	-	-	1.0	NA
all else	0.6	1.9	NA	0.8	NA	2.8	NA	4.8	-	-	3.2	NA
SEX - ALL AGES												
male	54.6%	52.3%	58.6%	55.3%	57.2%	55.3%	51.6%	52.8%	-	-	53.6%	53.4%
female	45.4	47.7	41.3	44.7	42.8	44.7	48.4	47.2	-	-	46.4	46.6
SEX - 18-34 AGE RANGE												
male	47.7%	NA	52.1%	NA	NA	51.5%	NA	58.0%	-	-	57.5%	NA
female	52.3	NA	47.9	NA	NA	48.5	NA	42.0	-	-	42.5	NA
AGE												
under 5 years	11.4%	8.8%	10.5%	10.5%	11.0%	10.5%	7.8%	8.3%	-	-	6.0%	10.9%
5 to 17 years	28.5	27.9	27.7	27.2	26.8	21.6	28.8	18.2	-	-	14.6	27.4
18 to 64 years	53.0	54.1	53.1	52.6	52.8	57.2	51.6	64.6	-	-	71.4	52.8
65 years and over	7.1	9.2	8.6	9.6	9.4	10.7	11.8	8.9	-	-	8.0	8.9
18-34 (% tot pop)	17.0%	NA	14.6%	NA	NA	29.3%	NA	40.0%	-	-	34.8%	NA
18-34 (% adult pop)	28.3	NA	23.7	NA	NA	43.1	NA	54.4	-	-	43.8	NA
Median age	NA	29.7yr	NA	29.1yr	NA	28.8yr	NA	28.8yr	-	-	32.4yr	NA

Table III-20c. Census Data on Population Demographics - Ten Year Growth Rate

	Kauai County		North Shore Total (census tract 401)			Kilauea Village			Hanalei Village			Remainder* (excluding Princeville)	
	1960- 1970	1970- 1980	1960- 1970	1970- 1980	1960- 1970	1970- 1980	1960- 1970	1970- 1980	1960- 1970	1970- 1980	1960- 1970	1970- 1980	
TOTAL POPULATION	+5.6%	+31.3%	-9.7%	+125.7%	+0.9%	+33.4%	-58.6%	+215.7%	+29.2%	+120.7%			
Ethnic/Racial Groups													
White	+51.6%	+44.1%	+9.6%	+511.7%	NA	+196.7%	NA	+929.2%	NA	+161.8%			
Haw'n/part Haw'n	-28.7	+89.4	NA	+108.4	NA	NA	NA	NA	NA	NA			
Filipino	+15.1	+25.8	NA	-11.2	NA	NA	NA	NA	NA	NA			
Japanese	-12.6	-0*	NA	+13.7	NA	NA	NA	NA	NA	NA			
Chinese	+28.7	-3.3	NA	-2.7	NA	NA	NA	NA	NA	NA			
all else	+235.7	+201.2	NA	+860.0	NA	NA	NA	NA	NA	NA			
SEX - ALL AGES													
male	+1.0%	+28.9%	-15.0%	+119.1%	NA	+28.9	NA	+222.8%	NA	+117.3%			
female	+11.2	+34.0	-2.8	+133.9	NA	+39.4	NA	+208.1	NA	+124.6			
AGE													
under 5 years	-17.9%	+31.8%	-9.4%	+110.4%	NA	+27.0	NA	+233.3%	NA	+153.8%			
5 to 17 years	+3.5	+1.9	-11.5	+54.7	NA	+7.2	NA	+100.0	NA	+46.9			
18 to 64 years	+7.7	+11.7	-10.8	+172.3	NA	+44.6	NA	+294.9	NA	+171.4			
65 years and over	+36.1	+59.3	0.0	+88.5	NA	+52.4	NA	+138.9	NA	+6.2			

* Assumes zero population for Princeville area in 1960 and 1970. (No figures for Princeville are given because any increase over zero is proportionately infinite.)

Table III-20d. Census Data on Population Demographics - Net Growth Components Analysis (1970 to 1980)

	Kauai County		North Shore Total (census tract 401)		Kilauea Village		Hanalei Village		Princeville*		Remainder of North Shore	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
TOTAL POPULATION	9,321	100.0%	1,486	100.0%	224	100.0%	330	100.0%	500	100.0%	432	100.0%
ETHNIC/RACIAL GROUPS												
White	3,414	36.6%	1,170	78.7%	177	79.0%	223	67.6%	401	80.2%	369	85.4%
Haw'n/part Haw'n	2,693	28.3	245	16.5	NA	NA	NA	NA	50	10.0	NA	NA
Filipino	2,102	22.6	-49	-3.3	NA	NA	NA	NA	12	2.4	NA	NA
Japanese	-5	-0.1	35	2.4	NA	NA	NA	NA	16	3.2	NA	NA
Chinese	-18	-0.2	-1	-0.1	NA	NA	NA	NA	5	1.0	NA	NA
all else	1,135	12.2	86	5.8	NA	NA	NA	NA	16	3.2	NA	NA
SEX - ALL AGES												
male	4,496	48.2%	779	52.4%	111	49.6%	176	53.3%	268	53.6%	224	51.9%
female	4,825	51.8	707	47.6	113	50.4	154	46.7	232	46.4	208	48.1
AGE												
under 5 years	832	8.9%	138	9.3%	20	8.9%	28	8.5%	30	6.0%	60	13.9%
5 to 17 years	159	1.7	176	11.8	13	5.8	44	13.3	73	14.6	46	10.6
18 to 64 years	6,715	72.0	1,072	72.1	158	70.5	233	70.6	357	71.4	324	75.0
65 years and over	1,615	17.3	100	6.7	33	14.7	25	7.6	40	8.0	2	4.6
GEOGRAPHICAL AREAS												
North Shore Total	1,486	15.9%	-	-	-	-	-	-	-	-	-	-
Kilauea	224	2.4%	224	15.1%	-	-	-	-	-	-	-	-
Hanalei	330	3.5	500	33.6	-	-	-	-	-	-	-	-
Princeville	500	5.4	500	33.6	-	-	-	-	-	-	-	-
Remainder (estimated)	432	4.6	432	29.1	-	-	-	-	-	-	-	-

* Assumes zero population in Princeville in 1970.

Table III-21a. Census Data on Households - Original Numbers

	Kauai County		North Shore Total (census tract 401)		Kilauea Village		Hanalei Village		Princeville		Remainder of North Shore	
	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980
TOTAL YEAR-ROUND OCCUPIED HOUSING UNITS	8,282	12,020	332	902	182	262	42	171	—	186	108	283
TENURE												
owner-occupied	3,788	6,429	75	479	5	211	21	67	—	96	49	105
renter-occupied	4,494	5,591	257	423	177	51	21	104	—	90	59	178
HOUSEHOLD TYPE												
single-person	NA	1,837	NA	162	NA	35	NA	40	—	25	NA	62
multi-person/family	6,902	9,475	260	622	147	212	32	105	—	132	81	173
multi-person/non-family	NA	708	NA	118	NA	15	NA	26	—	29	NA	48
RACE OF HOUSEHOLDERS												
white householder (white renter)	NA	3,939	NA	526	NA	93	NA	90	—	152	NA	191
nonwhite householder	NA	(2,100)	NA	(293)	NA	(23)	NA	(70)	—	70	NA	(130)
	NA	8,081	NA	376	NA	169	NA	81	—	34	NA	92
1.51 OR MORE PERSONS PER ROOM	452	660	24	64	11	14	4	10	—	7	9	33
PERSONS PER HOUSEHOLD (excluding persons in group quarters)	3.55	3.22	3.53	2.94	3.69	3.36	3.43	2.82	—	2.69	3.31	2.79

NOTE: 1960 Census data not available at less than islandwide level.

Table III-21b. Census Data on Households - As Percentages of Total

	Kauai County		North Shore Total (census tract 401)		Kilauea Village		Hanalei Village		Princeville		Remainder of North Shore	
	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980
TENURE												
owner-occupied	45.78	53.58	22.68	53.18	2.78	80.58	50.08	39.28	--	51.68	45.48	37.18
renter-occupied	54.3	46.5	77.4	46.9	97.3	19.5	50.0	60.8	--	41.2	54.6	62.1
HOUSEHOLD TYPE												
single-person	NA	15.38	NA	18.08	NA	13.68	NA	23.48	--	13.48	NA	21.98
multi-person/family	83.3	78.8	78.3	69.0	80.8	80.9	76.2	61.4	--	71.0	75.0	61.1
multi-person/non-family	NA	5.9	NA	13.1	NA	5.7	NA	15.2	--	15.6	NA	17.0
RACE OF HOUSEHOLDERS												
white householder	NA	32.88	NA	58.38	NA	35.58	NA	52.68	--	81.78	NA	67.58
nonwhite householder	NA	67.2	NA	41.7	NA	64.5	NA	47.4	--	18.3	NA	32.5
PERCENTAGE OF WHITE HOUSEHOLDERS WHO:												
are owner occupants	NA	46.78	NA	44.38	NA	75.38	NA	22.28	--	53.98	NA	31.98
are renter occupants	NA	53.3	NA	55.7	NA	24.7	NA	77.8	--	46.1	NA	68.1
1.51 OR MORE PERSONS PER ROOM												
	5.58	5.58	7.28	7.18	6.08	5.38	9.58	5.88	--	3.88	8.38	11.78

Table III-21c. Census Data on Households - Ten Year Growth Rates

	Kauai County 1970 to 1980	North Shore Total (Census tract 401) 1970 to 1980	Kilauea Village 1970 to 1980	Hanalei Village 1970 to 1980	Remainder of North Shore* 1970 to 1980
TOTAL YEAR-ROUND OCCUPIED HOUSING UNITS	+45.1%	+171.7%	+44.0%	+107.1%	+162.0%
TENURE					
owner-occupied	+69.7%	+538.7%	+4,120.0%	+219.0%	+114.3%
renter-occupied	+24.4%	+64.6%	-71.2%	+395.2%	+201.7%
HOUSEHOLD TYPE					
multi-person/family	+37.3%	+139.2%	+44.2%	+228.1%	+113.6%
1.51 OR MORE PERSONS PER ROOM	+46.0%	+166.7%	+27.3%	+150.0%	+266.7%
PERSONS PER HOUSEHOLD (excluding persons in group quarters)	-9.3%	-16.7%	-8.9%	-17.8%	-15.7%

* Assumes zero year-round occupied housing units for Princeville in 1970. (No figures for Princeville are given because any increase over zero is proportionately infinite.)

Table III-21d. Census Data on Households - Net Growth Components Analysis

	Kauai County		North Shore Total (census tract 401)		Kilauea Village		Hanalei Village		Princeville*		Remainder of North Shore	
	no.	pct.	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980
TOTAL YEAR-ROUND OCCUPIED HOUSING UNITS	3,738	100.0%	570	100.0%	80	100.0%	129	100.0%	186	100.0%	175	100.0%
TENURE												
owner-occupied	2,641	70.7%	404	70.9%	206	+157.5%	46	35.7%	96	51.6%	56	32.0%
renter-occupied	1,097	29.3	166	20.1	-126	-57.5	83	64.3	90	48.2	119	68.0
HOUSEHOLD TYPE												
multi-person/family	2,573	68.8%	362	63.5%	65	81.2%	73	56.6%	132	71.0%	92	52.6%
1.51 OR MORE PERSONS PER ROOM	208	5.6%	40	7.0%	3	3.8%	6	4.7%	7	3.8%	24	13.7%
GEOGRAPHICAL AREA												
North Shore Total	570	15.2%	--	--	--	--	--	--	--	--	--	--
Kilauea	80	2.1%	80	14.0%	--	--	--	--	--	--	--	--
Hanalei	129	3.5	129	22.6	--	--	--	--	--	--	--	--
Princeville	186	5.0	186	32.6	--	--	--	--	--	--	--	--
remainder (estimated)	175	4.7	175	30.7	--	--	--	--	--	--	--	--

* Assumes zero year-round occupied housing units for Princeville in 1970. (No figures for Princeville are given because any increase over zero is proportionately infinite.)

Table III-22a. Census Data on Housing Units - Original Numbers

	Kauai County		North Shore Total (census tract 401)		Kilauea Village		Hanalei Village		Princeville		Remainder of North Shore	
	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980
TOTAL YEAR-ROUND HOUSING UNITS	9,021	14,544	429	1,468	188	274	42	181	--	660	199	353
OCCUPANCY STATUS												
occupied	8,282	12,020	332	902	182	262	42	171	--	186	108	283
vacant	739	2,524	97	566	6	12	0	10	--	474	91	70
for sale	(NA)	(1,490)	(NA)	(366)	(NA)	(4)	(NA)	(2)	--	(353)	(NA)	(7)
for rent	(NA)	(98)	(NA)	(19)	(NA)	(0)	(NA)	(0)	--	(15)	(NA)	(4)
NUMBER OF UNITS AT ADDRESS												
1 unit	8,234	11,788	351	1,269	176	254	42	136	--	598	133	281
2-9 units	NA	1,823	NA	163	NA	20	0	41	--	36	NA	66
10+ units	NA	917	NA	29	NA	0	0	0	--	26	NA	3
mobile home/trailer	NA	16	NA	7	NA	0	0	4	--	0	NA	3
NUMBER LACKING SOME OR ALL PLUMBING	1,344	696	152	82	98	4	10	19	--	0	44	59
NUMBER CONDOMINIUM UNITS	NA	1,853	NA	467	NA	0	NA	0	--	462	NA	5
NUMBER OF OWNER-OCCUPIED NON-CONDOMINIUM HOUSING UNITS FOR WHICH VALUE DATA ARE AVAILABLE	**	5,489	**	402	**	193	**	50	--	78	**	81
under \$50,000	NA	678	NA	27	NA	19	NA	4	--	0	NA	4
over \$200,000	NA	436	NA	98	NA	4	NA	12	--	41	NA	41
median	\$26,200	\$90,800	\$36,400	\$105,100	\$20,000-	\$84,300	\$35,000	\$125,000	--	\$200,000+	NA	\$200,000+
NUMBER OF RENTER-OCCUPIED CASH RENTAL UNITS FOR WHICH RENTAL DATA ARE AVAILABLE	**	4,744	**	318	**	50	**	82	--	73	**	113
MONTHLY RENTS												
under \$200	NA	2,516	NA	75	NA	18	NA	22	--	1	NA	34
over \$500	NA	341	NA	86	NA	9	NA	17	--	47	NA	13
median	\$39	\$180	\$30	\$371	\$0-40	\$280	\$60-79	\$307	--	\$500+	NA	\$345

Note: Condominium for visitor use are counted as "housing units" by the Census.

Table III-22b. Census Data on Housing Units - As Percentages of Total

	Kauai County		North Shore Total (census tract 401)		Kilauea Village		Hanalei Village		Princeville		Remainder of North Shore	
	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980
OCCUPANCY STATUS												
Occupied	91.8%	82.6%	77.4%	61.4%	96.8%	95.6%	100.0%	94.5%	--	28.2%	54.3%	80.2%
Vacant	8.2	17.4	22.6	38.6	3.2	4.4	0.0	5.5	--	71.8	45.7	19.8
(for rent)	(NA)	(10.2)	(NA)	(24.9)	(NA)	(1.5)	(0.0)	(1.1)	--	(53.5)	(NA)	(2.0)
(for sale)	(NA)	(0.7)	(NA)	(1.3)	(NA)	(0.0)	(0.0)	(0.0)	--	(2.3)	(NA)	(1.1)
NUMBER OF UNITS AT ADDRESS												
1 unit	91.3%	81.1%	81.8%	86.4%	93.6%	92.7%	100.0%	75.1%	--	90.6%	66.8%	79.6%
2-9 units	NA	12.5	NA	11.1	NA	7.3	0.0	22.7	--	5.5	NA	18.7
10+ units	NA	6.3	NA	2.0	NA	0.0	0.0	0.0	--	3.9	NA	0.8
mobile home/trailer	NA	0.1	NA	0.5	NA	0.0	0.0	2.2	--	0.0	NA	0.8
LACKING SOME OR ALL PLUMBING	14.9%	4.8%	35.4%	5.6%	52.1%	1.5%	23.8%	10.5%	--	0.0	22.2%	16.7%
CONDOMINIUM UNITS	NA	12.7%	NA	31.8%	NA	0.0%	NA	0.0%	--	70.0%	NA	1.4%
PERCENTAGE OF OWNER-OCCUPIED NON-CONDOMINIUM HOUSING UNITS IN DIFFERENT VALUE CATEGORIES												
under \$50,000	NA	12.4%	NA	6.7%	NA	9.8%	NA	8.0%	--	0.0%	NA	4.9%
over \$200,000	NA	7.9	NA	24.4	NA	2.1	NA	24.0	--	52.6	NA	50.6
PERCENTAGE OF RENTER-OCCUPIED CASH RENTAL UNITS IN VARIOUS MONTHLY RENTAL DOLLAR CATEGORIES												
under \$200	NA	53.0%	NA	23.6%	NA	36.0%	NA	26.8%	--	1.4%	NA	30.1%
over \$500	NA	7.2	NA	27.0	NA	18.0	NA	20.7	--	64.4	NA	11.5

Table III-22c. Census Data on Housing Units - Ten Year Growth Rates

	Kauai County		North Shore Total (Census tract 401)		Hanalei Village		Remainder* (excluding Princeville) 1970 to 1980
	1970 to 1980	1970 to 1980	1970 to 1980	1970 to 1980	1970 to 1980	1970 to 1980	
TOTAL YEAR-ROUND HOUSING UNITS	+61.2%	+242.2%	+45.7%	+331.0%	+77.4%		
OCCUPANCY STATUS							
occupied	+45.1%	+171.7%	+44.0%	+307.1%	+162.0%		
vacant	+241.5%	+483.5%	+100.0%		-23.1%		
NUMBER OF UNITS AT ADDRESS							
1 unit	+43.2%	+261.5%	+44.3%	+223.8%	+111.3%		
2-9 units	NA	NA	NA	0.0	NA		
10 + units	NA	NA	NA		NA		
mobile home/trailer	NA	NA	NA		NA		
LACKING ALL OR SOME PLUMBING	-48.2%	-46.1%	-95.9%	+90.0%**	+34.1%		
MEDIAN VALUE OF OWNER-OCCUPIED NONCONDOMINIUM HOUSING UNITS (not adjusted for inflation)	+246.6%	+188.7%	+237.2%	+150.0%	NA		
MEDIAN MONTHLY CASH RENTAL (not adjusted for inflation)	+361.5%	+1,136.7%	at least +600.0%	+288.6%	NA		

* 1970 figures were zero, so any increase whatsoever would be proportionately infinite.

**Assumes zero year-round housing units for Princeville in 1970. (No figures for Princeville are given because any increase over zero is proportionately infinite.)

Table III-22d. Census Data on Housing Units - Net Growth Components Analysis

	Kauai County		North Shore Total (Census tract 401)		Kilauea Village		Hanalei Village		Princeville*		Remainder of North Shore	
	1970 no.	1980 pct.	1970 no.	1980 pct.	1970 no.	1980 pct.	1970 no.	1980 pct.	1970 no.	1980 pct.	1970 no.	1980 pct.
TOTAL YEAR-ROUND HOUSING UNITS	5,523	100.0%	1,039	100.0%	86	100.0%	139	100.0%	660	100.0%	154	100.0%
OCCUPANCY STATUS												
occupied	3,738	67.7%	570	54.9%	80	93.0%	129	92.0%	186	54.3%	175	113.6%
vacant	1,785	32.2%	469	45.1%	6	7.0%	10	7.2%	474	45.7%	-21	-13.6%
NUMBER OF UNITS AT ADDRESS												
1 unit	3,554	64.3%	918	88.4%	78	90.7%	94	67.6%	598	90.6%	148	96.1%
2-9 units	NA	NA	NA	NA	NA	NA	41	29.4%	36	5.5%	NA	NA
10+ units	NA	NA	NA	NA	NA	NA	0	0.0%	26	3.9%	NA	NA
mobile home/trailer	NA	NA	NA	NA	NA	NA	4	2.9%	0	0.0%	NA	NA
LACKING ALL OR SOME PLUMBING	-648	-11.7%	-70	-6.7%	-94	-109.3%	9	6.5%	0	0.0%	15	9.7%
GEOGRAPHICAL AREAS												
North Shore Total	1,039	18.8%	86	8.6%								
Kilauea	86	1.6%	139	13.4%								
Hanalei	139	2.5%	660	63.5%								
Princeville	660	12.0%	154	14.8%								
remainder (estimated)	154	2.8%										

* Assumes zero housing units in Princeville in 1970.

Table III-23. Selected 1970 and 1980 Census Income Data
(percentages only -- data not available for North Shore sub-areas)

	Kauai County		North Shore Total (census tract 401)	
	1969	1979	1969	1979
MEDIAN FAMILY INCOME	\$ 9,946	\$20,882 ¹	\$ 7,935	\$17,777 ¹
--North Shore figure as percent of County figure			79.8%	85.1%
PERCENT OF FAMILIES BELOW:				
--\$10,000 in 1969 ²	50.4%		88.0%	
--\$20,000 in 1979 ²		47.6%		NA
PERCENT OF FAMILIES ABOVE:				
--\$25,000 in 1969 ²	3.4%		0.0%	
--\$50,000 in 1979 ²		6.2%		NA
PERCENT OF FAMILIES BELOW NATIONAL POVERTY LEVEL	8.6%	6.9%	6.0%	8.8% ¹

¹ Sources for footnoted 1979 data were Hawaii, State of, Department of Planning and Economic Development (n.d.), "Household and Family Income of Counties, Islands and Census Tracts: 1980" and "Poverty Status of Families by Census Tracts: 1980." Source for unfootnoted 1979 data was U.S. Bureau of the Census (1982), 1980 Census of Population and Housing -- Supplementary Report -- Advance Estimates of Social, Economic, and Housing Characteristics -- Hawaii -- Counties and Places, PHC80-S2-13. Both publications represent preliminary analyses, and data are not perfectly compatible (e.g., in the second source, median family income for Kauai County was given as \$19,066, rather than the \$20,882 figure above).

Sources for 1969 data were U.S. Bureau of the Census, 1970 Census of Population and Housing, PHC (1)-88, Table P-2, and State of Hawaii, Department of Planning and Economic Development, Community Profiles for Hawaii, 1972.

² Because median family income on Kauai approximately doubled in the ten-year time period, the benchmark figures selected for 1979 in this comparison were twice the 1969 figures. (NOTE: Census questions regarding income always pertain to the previous year -- in this case, 1969 and 1979.)

Source: See footnote 1 above.

Table III-24. Selected 1970 and 1980 Census Social Profile Data
(percentages only — data not available for North Shore sub-areas)

	Kauai County		North Shore Total (census tract 401)	
	1970	1980	1970	1980
TOTAL POPULATION	100.0%	100.0%	100.0%	-----
RESIDENCE 5 YEARS PREVIOUS (people aged 5 years & older)				
same house	67.5%	57.3%	72.0%	NA
different house on Kauai	18.9	23.8	15.6	NA
different island in Hawaii	4.9	7.8	4.0	NA
different state	5.1	8.8	0.0	NA
abroad, foreign	3.6	2.4	8.4	NA
PLACE OF BIRTH				
born in Hawaii	74.9%	68.7%	63.8%	NA
born in other state	8.0	16.2	6.9	NA
abroad, foreign	17.1	15.1	29.3	NA
EDUCATION (people 25 years & older; selected categories)				
8 years or less completed	45.3%	27.3%	64.3%	NA
graduated high school	43.4	64.1	29.4	NA
4 years or more of college	7.2	15.7	4.1	NA
OCCUPATION (people employed, 16 years & older; selected categories)				
professional, technical, and kindred workers	11.3%	**** ¹	4.2%	NA ¹
managerial and administrative workers	7.2	**** ¹	3.5	NA ¹
laborers and farm workers	15.8	**** ¹	33.8	NA ¹
UNEMPLOYED (people in labor force, 16 years & older)	3.7%	3.0%	1.5%	NA

¹ Occupation data from 1980 Census are organized into different categories than were used in 1970 Census.

Source: Documents cited in footnote 1, Table III-23.

The change in the composition of the North Shore population and housing stock was as dramatic as the change in number. Between 1970 and 1980, Caucasians as an ethnic/racial group and young adults from 18 to 34 years as an age group became larger proportions of the population. Just 18 percent of the North Shore population in 1970, Caucasians comprised 52 percent of the 1980 population (and, because they have lower average household sizes and therefore require more housing units, an even larger proportion of the householders -- 58 percent). In terms of net population change, nearly eight out of every ten new North Shore residents from 1970 to 1980 was Caucasian.

Although proportionate growth in the 18-34 age range was heavy, the median age was little affected, due to the proportionate reduction of population in the under-18 age range. Published data for 1970 are not available, but in 1960 young adults ages 18-34 comprised only 24 percent of the North Shore's adult population, compared to 51 percent in 1980. This relative increase in young adults was also happening countywide, but to nowhere near the same extent.

Males have outnumbered females on Kauai for many decades, particularly in plantation towns such as Kilauea once was. This gap has been narrowing over time both for the county as a whole and for the North Shore in particular. However, the imbalance remains high (five males to four females) on the North Shore among young adults aged 18 to 34, a fact with some obvious implications for family formation and lifestyle. (Related to this is the fact that families constituted a smaller proportion of North Shore households in 1980 than in 1970.) In fact, in the 18-34 age group, the sex imbalance actually widened over the past two decades.

While 1979 median family income on the North Shore as a whole remained less than the countywide median, as had been the case in 1969, North Shore income was growing at a faster pace during the 1970s than was income for the county as a whole (see Table III-23). This indicates that general prosperity increased on the North Shore during that period and/or that newcomers were more affluent. At the same time, however, the percentage of North Shore families below national poverty levels increased slightly on the North Shore from 1969 to 1979, even as the countywide percentage was decreasing. (Preliminary 1980 Census figures indicate that all these "poverty" families were headed by persons under age 65; the North Shore poor do not include senior citizens.) Taken together, these facts suggest that the income spread on the North Shore somewhat increased during the 1970s, although the countywide income spread decreased. While 1980 Census income data are not yet available for individual North Shore communities, the 1980 Public Affairs Advisory Services survey results cited much earlier in this chapter (Table III-2) do indicate that Princeville residents are much more affluent on average than residents of other nearby areas.

The impression of an increasing rich-poor gap is easily reinforced by driving through the North Shore and visually contrasting the usually simple homes in Kilauea or Wainiha with the expensive new ones of Princeville, Hanalei, and parts of Ha'ena. Census data on housing (Tables III-22a through III-22d) also provide statistical evidence. The North Shore median rent -- lower than the county median in 1970 -- was twice the county median in 1980. Additionally, the median value of owner-occupied homes in 1980 was much greater than the county median in every part of the North Shore except Kilauea, where it was actually lower -- another indicator of the rich-poor gap. Yet another indicator of income disparity has to do with the proportion of renter-occupied housing units. The overall North Shore 1980 percentage was equal to the countywide rate, but this is because of the great number of lower-middle- to middle-income homeowners in Kilauea. Elsewhere on the North

Shore, including Princeville, the proportion of households which were renter-occupied exceeded the countywide proportion.

Although 1980 Census data are not yet available for the North Shore on other important population characteristics -- i.e., mobility, education, or occupation -- it is clear to any observer of the North Shore that these characteristics have also undergone important changes from the 1970 figures given in Table III-24. This is understandable given the previously discussed changes in population, household and housing unit characteristics. In 1970, the North Shore population -- as much or more than the countywide population -- consisted heavily of people who had lived in the same place for the past five years and who were born either in Hawai'i or in a foreign country such as the Philippines. Compared to the county as a whole, North Shore residents in 1970 were also less educated and less likely to hold professional or managerial jobs. Although Kaua'i as a whole now has relatively more newcomers and better educated persons than it did in 1970, it seems a safe bet that the North Shore population today is proportionately even more likely to consist of people who are recent arrivals, born on the Mainland, and/or relatively well educated. And of course the North Shore's switch from a basically agricultural and/or subsistence base to a service economy during the 1970s would have greatly affected the occupational structure of its work force as well (see Table III-1 for tentative 1980 survey data on occupational structure).

In summary, the recent direction of change on Kaua'i's North Shore, even more than for Kaua'i as a whole, has involved rapid population growth; a vast influx of Caucasians; relatively fewer children but more young adults (particularly young males); a great increase in the numbers of both homes and visitor condominium units; more wealthy persons and a widening income gap; and, of course, the almost total transformation from a predominantly plantation-based economy in 1970 to a predominantly tourism-based economy in the early 1980s. The extent to which the Princeville Resort has been a cause rather than a symptom of those changes will be the primary subject for analysis in the remainder of this assessment, since this will be a principal reason for projecting likely social impacts of Princeville's Phase Two. In this regard, the Census figures just summarized will occasionally be revisited.

3.10.4.3 Social Atmosphere; Role of Princeville

Evidence about social harmony or tensions on the North Shore is conflicting. As will be later discussed, the few available quantitative indicators (e.g., police data, social services caseload) suggest that the North Shore is not usually a problem area in comparison to other parts of Kaua'i or the State. However, our discussions with a wide variety of North Shore informants -- including leaders of formal and informal social networks -- suggested an extensive sense of disturbance over the rapid changes in population and land use which have affected the North Shore in the past ten years or so.

This sense of disturbance over social change was most marked among longtime local residents. Reactions varied from a sense of resignation and powerlessness, especially among older residents, to anger and hostility. A sense of invasion or intrusion by outsiders formed a common theme in remarks by all informants.

At least four different waves of "outsiders" have affected the North Shore in the past 10 or 12 years. The first consisted of young people of several different types from the Mainland, but the type which most alarmed local residents was the "hippie" who introduced drugs, nudity, and new philosophies in the area. A privately

owned compound known as "Taylor Camp" -- located at Ha'ena and consisting of a variety of sheds, tree houses, and tents -- became the symbol for such long-haired newcomers. Even today, long-haired younger haoles who have lived in the North Shore five or seven years may be referred to as "former Taylor Campers," whether or not they actually lived in the camp. Relationships between longtime residents and "Taylor Camp people" were extremely mixed with at least some episodes of violence and assault. The camp has been dismantled, but its social legacy remains.

The most recent wave of newcomers consists of affluent retired or part-time residents who have bought and built expensive beachfront homes from Kilauea to Ha'ena. Their actual numbers may in fact be relatively small, but their current impact is large in the minds of our informants. Many of these newcomers have blocked former unofficial access trails to fishing or surfing spots and posted "Keep Out" signs on the property for which they have paid hundreds of thousands of dollars. The greatest amount of anger and tension detected in our field work focused on this issue.

The two other principal waves of "outsiders" consist of tourists and of people who have come to live at Princeville. The most direct impact of increased tourism, other than its economic benefits, has been the increased traffic congestion. (It is difficult to say for certain how many of the tourists driving on the North Shore each day are guests at Princeville, but there are few rental car operations on the North Shore and most informants tend to believe that the great majority of tourists drive up from the southern parts of the island on a day trip.) Tourists are frequently the target of thefts on the North Shore, particularly from rented cars at beach park areas, but they do not seem to have provoked the violence which has sometimes been directed against them at beach parks in other parts of Kauai (e.g., Lydgate Park, which was closed to campers after several violent incidents).

According to our informants among the longtime local population, tourists and Princeville residents have not sparked the animosity which has been generated by young haole newcomers (especially of the "hippie" kind) or by the recent affluent purchasers of beachfront property. Frequently encountered comments were to the effect of "the tourists aren't the ones who want to change our lifestyles" and "at least the Princeville people keep to themselves." Clearly such remarks are not positive in nature and they represent the importance of context in evaluating social "harmony" or "disruption"; it is by comparison with others that the tourist and/or the Princeville resident is judged relatively benign.

The foregoing comments were made largely from the perspective of the longtime local resident. Somewhat different views emerged from our discussions with key informants among the newcomer Caucasian community (including a few Caucasians with long-established roots on Kauai and the North Shore). Many of these residents expressed cautious optimism that antagonisms dating back to the Taylor Camp days have begun to heal. There seems to be a desire for acceptance by longtime local residents, and many people who have lived on the North Shore between, say, three and ten years have developed some local speech mannerisms or adopted some other element of traditional lifestyles, such as participation in fishing or Hawaiian canoeing activities.

The newcomer group -- which may in fact now constitute a majority or near-majority of the North Shore population -- tends to speak with more disparagement of tourists, but in a condescending rather than an angry way. There is some resentment of the new affluent oceanfront homeowners for interference with de facto

access to the ocean, but equal or greater concern is focused on the influence which these people are having on the price of land and housing on the North Shore.

Because the newcomer haole population on the North Shore is of diverse nature, attitudes toward other newcomers are mixed. Informants report there is still a great deal of transiency among young people, and many new "residents" ultimately remain only a few months. For those who have resided in the area for some years and who have undergone some substantial adjustments and adaptation processes, there can be a reluctance to befriend others of apparently "similar background" who may decide to leave in a few weeks. The newcomer haole "community" is thus a somewhat fragmented set of people whose social alliances and interactions are determined by factors such as length of residence, jobs or other interests in common, and income levels.

Socially, Princeville is a community very different from those on either side. There are currently two entrances from Kuhio Highway to the Princeville Phase One area; of these, one is closed off after dark, and the other is manned by a guard in touch with private security patrols by radio.

Phase One is planned around its golf course, and the fairways are complemented by private house and condominium grounds for which landscaping standards are set forth in the covenants of the community association. The open space, precise yard maintenance, and plantings of pine and eucalyptus form a sharp visual contrast to the lush and sometimes jumbled appearance of the land and rural residences outside Princeville. Similarly, the profusion of glass and silverware in the Princeville restaurants contrasts with the informality and rough surroundings of the few plate lunch and hamburger windows which cater to local people in Kilauea and Hanalei.

For many who have moved to Princeville from the Mainland, the complex is a beautiful refuge from social and economic conflicts. Their attitude toward residents of nearby communities is generally an amiable one, but a desire for separation and security remains important. This sense of polite separation was reciprocated by many of our informants from the other communities. Younger people of all ethnicities are likely to work in Princeville but regard it as otherwise irrelevant to their goals and lifestyles. Older longtime local residents in many cases have never been inside Princeville or have not returned after a single visit. However, their comments to us indicated more of a simple sense of "disbelonging" to the Princeville ethos than of anger, disliking, or other more pronounced negative emotions. The older generation in particular was likely to express appreciation for the economic benefits of Princeville.

Among the different types of residents within Princeville itself, the more affluent owner-occupants have sometimes expressed concern over the recent influx of less affluent renters. According to North Shore police (personal interviews), certain elements among the renters have allegedly been involved in criminal activities, particularly drug dealing. The presence of new types of Princeville residents has not yet reached the level of a "social problem" -- and in the eyes of some may even comprise a social benefit because of the beginnings of a more typical income mix within Princeville. However, their presence clearly has produced some degree of social tension in the minds of the more traditional residents, who are anxious to protect their property values and somewhat sheltered lifestyles.

3.10.5 Likely Social Impacts of Phase Two

The social impacts of Phase Two are discussed by topic below. The focus is on topics which emerged during field work as these of most import to North Shore residents and/or government officials:

- o resident population growth and composition;
- o visitor and de facto population growth and composition;
- o political power;
- o distribution of employment opportunities and benefits;
- o local business opportunities;
- o social impacts associated with construction;
- o private-sector community support services;
- o housing and real estate;
- o recreation and food gathering;
- o lifestyles and social interaction among newcomers, oldtimers, and tourists;
- o social or personal disruption; and
- o community attitudes toward Phase Two.

3.10.5.1 Resident Population Growth and Composition

As shown in Table III-20d, Princeville's April 1, 1980 resident population was 500, which amounted to one-third of the total 1970-80 increase on the North Shore. However, it is not known for certain how many of these 500 had not been Kaua'i residents in 1970, nor is it known how many new residents outside Princeville on the North Shore were present in some fashion because of economic opportunities generated by Princeville. It appears likely that Princeville provided an economic base in the 1970s without which much of the newcomer and longtime local population could not have remained on the North Shore. Without Princeville, our discussions with younger informants indicate, many young newcomers would have come anyway but would not have been able to remain as long. (However, as will be discussed later, the majority of Princeville's direct work force consists of Kaua'i- or Hawai'i-born people.) It is the belief of most North Shore realtors (also to be discussed further later in this section) that Princeville has had only a modest effect, if any, in attracting affluent new residents (and/or investors) to North Shore lands outside Princeville itself. Thus, it appears that Princeville's overall impacts on North Shore population growth have been mixed and complex to date.

Phase One's eventual population impacts could be considerably greater. The population estimates previously given in Section 3.4 anticipate a 1995 Phase One resident population of 1,540 -- more than three times the April 1, 1980 population -- and an "ultimate build-out" resident population of almost 2,300. The projected visitor

population, with the addition of several conventional hotel sites in Phase One, is also expected to triple, from 1,000 in 1980 to 3,150 in 1995 (and 3,260 at build-out). Some North Shore realtors expect the hotel guests to be more interested in non-Princeville North Shore real estate than have been the previous Princeville visitors, so that continuing operation and development of Phase One could thus also have more impact on the size and/or type of non-Princeville North Shore population than in the past.

Projected Phase Two impacts on resident population were previously discussed in Section 3.4. Some of these impacts will here be briefly recalled and summarized, then viewed from a slightly different perspective than was earlier taken. In addition to this re-analysis of projected levels of population, there will also be consideration of possible changes in the demographic composition of the North Shore population due to Phase Two.

Within Princeville itself, the projected resident population of the entire complex would be raised by these levels (from Table III-7):

	1985	1990	1995	Ultimate Build-out
Phase One	1,060	1,290	1,540	2,290
Phase Two	--	95	325	2,380
Total	1,060	1,385	1,865	4,670
Percent Increase Over Phase One Alone	--	+7.4%	+21.1%	+104%

(NOTE: In both the foregoing and subsequent analyses of Phase Two's population impacts, the implicit assumption is that a future without Phase Two would continue to mean no population on the Phase Two lands. However, it should be recalled that existing zoning would permit agricultural subdivision of this land if permission is not received to develop the planned Phase Two. Thus, a "no Phase Two" future might nevertheless include some small population on the site. But because this potential population is so small, it has been ignored for comparison purposes.)

The probable effect of Phase Two on the resident population level of the North Shore as a whole was also discussed in Section 3.4. At that time, it was noted that projected Phase Two population would not cause the North Shore to exceed the County Planning Department's estimated annual compound growth rate of 3.9 percent, assuming that the North Shore population growth outside Princeville holds to its historical 20-year average of 2.5 percent.

Subsequent analyses in this section will take a slightly different (although not necessarily contradictory) approach to Phase Two impact in regard to the 3.9 percent growth rate. The origin of this 3.9 percent figure should first be mentioned. In response to Section 3.02 of the Recommended General Plan (GP) Ordinance (Planners Collaborative et al.; June 1982:65) the Kauai County Planning Department has prepared estimates of the 1990 population of the County by planning areas for review and discussion by the public and the County Council (Planners Collaborative; February 22, 1983). If the proposed GP Ordinance is adopted in its present form, then zoning permit restrictions would be used to match future growth to these estimates.

The proposed population estimate for the North Shore area is 3,910 in 1990 (Kauai, County of, Planning Department; n.d.), which is equivalent to an annual compound growth rate of 3.9 percent. (It is also equivalent to a ten-year increase of 47 percent -- less than the North Shore's 1970-80 growth rate of 52 percent, but still greater than any other Kauai district's 1970-80 growth rate. Thus, proposed County policy -- regardless of the fate of Phase Two -- would dampen, but hardly freeze, recent high historic growth rates on the North Shore.) By extending the 3.9 percent growth rate from the 1990 figure of 3,910, the district's 1995 population would be 4,740.

The different approach to be taken in this population discussion involves no assumption about continuation of historical growth rates outside Princeville, as was made previously. Rather, two scenarios for overall North Shore population growth are set forth. Both scenarios assume that growth will be up to the proposed population limits whether or not Phase Two is approved. Under Scenario A, it is assumed that the projected Phase Two population would be included in the proposed North Shore population target figures (3,190 in 1990; and 4,740 in 1995). The implication of the scenario is that any growth allowed in Phase Two would result in an equal restriction of growth in non-Princeville areas of the North Shore (e.g., Kilauea or Hanalei). Under "Scenario B," it is assumed that Phase Two growth would have to be in addition to the proposed target population figures. In other words, the North Shore population would be greater than the proposed figures by the amount of population expected to be found in Phase Two.

So for the overall North Shore, two scenarios of the projected resident population are examined in following sections. The numbers are summarized below:

	<u>1990</u>	<u>1995</u>
Population WITHOUT Phase Two	3,910	4,740
Population WITH Phase Two - <u>Scenario A</u>	3,910	4,740
Percent Increase from Phase Two	0%	0%
Population WITH Phase Two - <u>Scenario B</u>	4,005	5,065
Percent Increase from Phase Two	+2.4%	+6.9%

Thus, one possibility is that Phase Two will involve no violation at all of the proposed North Shore population targets for the 1990s, and the other possibility is that a proportionately very small extension of these limits would be involved.

The potential Phase Two impacts on type of North Shore resident are more complex. Again, historic impacts of Phase One provide a starting point for analysis. The 1980 Census population data in Table III-20b suggest, at first glance, that Princeville residents that year were very different than other North Shore residents -- much more likely to be Caucasian and older on average (though the latter is a statistical phenomenon, probably due to the relative absence of children in the Princeville population rather than to the increased presence of older adults). Further, Table III-21b indicates Princeville householders were more likely than other North Shore residents (except in Kilauea, with its history of family-oriented housing development in the 1970s) to be owners rather than renters and to be family rather

than non-family households. And Table III-22a suggests, from the median values of owner-occupied homes and/or monthly rentals, that Princeville residents in 1980 were much more affluent than others on the North Shore.

However, it must be remembered that the North Shore was changing rapidly between 1970 and 1980 and that our true purpose in this analysis is to examine the likely types of change in the 1980s and 1990s. Therefore, it is particularly important to examine the net growth components analyses in Tables III-20d, III-21d, and III-22d. These tables break down the net growth, i.e., the 1980 figures minus the comparable 1970 figures, by categories.

As seen in the following tabulation, the net growth components analyses show that the Princeville population in 1980 was nearly identical to the "new residents" (net change) in other North Shore areas in terms of ethnicity, sex, and age. In other words, along these dimensions, the people who settled in Princeville during the first decade of its existence were very similar to the newcomers settling in other parts of the North Shore during the same period. However, in regards to renting vs. owning, Princeville residents still emerged as more likely owners (except for Kilauea people) in the net growth components analysis. It is reasonable to infer, both from this and from simple observation, that Princeville residents were more likely on average than other North Shore newcomers to be comparatively affluent.

Percent Net Increase Between 1970 and 1980

	Princeville	North Shore Outside Princeville
In White Population	80%	78%
In Male Population	54%	52%
In Under 18 Population	21%	21%
In Over 65 Population	8%	6%
In Owner Households	52%	158% - Kilauea 36% - Hanalei 32% - Other
In Family Households	71%	81% - Kilauea 57% - Hanalei 53% - Other

In short, the people who settled in the Princeville Resort by 1980 were very similar to the other new North Shore population, except that they were a little more likely to have families and were much more likely to be living in very expensive (probably owner-occupied) housing.

Projecting these historic trends of the 1970s into the 1980s and beyond, it would appear that the composition of Princeville Phase Two would likely have the same slightly older, heavily Caucasian complexion which has characterized not only residents in Princeville Phase One but also the new residents in all other parts of the North Shore.

Eventual residents of Phase Two would probably also usually be as relatively affluent as Phase One residents, which might add somewhat to the earlier-mentioned tendency toward a greater gap between rich and poor on the North Shore. This statement is, however, subject to a few qualifications. First, the small expected initial Phase Two population would naturally have little immediate statistical impact on either income levels or income gaps. Second, as will be discussed later, there is evidence of substantial movements by affluent individuals into North Shore areas other than Princeville. Third, the proposed Phase Two contains an area with smaller houselots than predominate in Phase One, so that it is impossible some Phase Two property owners might not be as affluent.

Another factor may affect any forecast about income level and household composition on the North Shore, with or without Phase Two. The imposition of County population "ceilings" through issuance of zoning permits could well drive up the cost of land and housing throughout the North Shore, possibly even including Kilauea.

The Phase Two impacts may then be summarized: For the North Shore as a whole, the next 10 to 15 years are expected to witness continued high population growth and shifts in population composition with or without Phase Two. Continued building in Phase One would be one major reason for this ongoing change. However, there is evidence of population pressures independent of Princeville: (1) the ongoing influx of young Mainlanders who will probably continue to arrive (for at least a short stay) no matter what the economic conditions, and (2) the statewide phenomenon of residential property in beachfront and scenic areas being sold to affluent retirees, part-time residents, or investors from outside Hawai'i. Within the confines of Princeville itself, Phase Two would have a greater proportionate impact, increasing the expected resident population by about 20 percent in 1995 and doubling it by (the unspecified and distant date of) "ultimate build-out."

3.10.5.2 Visitor and De Facto Population Growth and Composition

The other type of population affected by Princeville Phase Two would be the visitor population. Visitor population plus resident population equals de facto population, and so the composition of this de facto population is equivalent to the breakdown into visitor and resident components.

A summary of the resident and visitor population projections for Princeville is presented in Table III-25 and combined with projections for the remainder of the North Shore. The "Residents outside Princeville" figures were calculated by considering the projections in Table III-3 for the Hanalei district resident population as limits that the County plans to control. In the "Without Phase Two Scenario" it is assumed that Princeville Phase One plus the "Residents outside Princeville" would equal the limits. In the "With Phase Two Scenarios," Princeville Phases One and Two plus the "remainder of the North Shore" could equal the limits (Scenario A), or as a worst-case scenario, Phase Two residents could be considered to represent additional growth above the presently proposed limits (Scenario B). Table III-26 converts the numbers in Table III-25 to meaningful percentages with social implications. Some of the major points to be drawn from these:

- o By 1990 Phase Two is expected to lodge 16 percent of all Princeville's visitors (combined Phases One and Two). The proportion would increase to 20 percent at build-out. The resident population in Phase Two would increase somewhat more slowly, so that 13.3 percent of

Table III-25. Alternative Perspectives on Visitor and De Facto Population Projections.¹

	1980 (Post-Census)	1985	1990	1995	Ultimate Build-out
<u>WITHOUT PHASE TWO SCENARIO</u>					
Princeville Visitors	1,000	1,870	2,730	3,150	3,260
Princeville Residents	750	1,060	1,290	1,540	2,290
(Subtotal - Princeville <u>de facto</u>)	(1,750)	(2,930)	(4,020)	(4,690)	(5,550)
Residents Outside Princeville ²	2,170	2,170	2,620	3,200	NA
(Subtotal - North Shore <u>de facto</u>)	(3,920)	(5,100)	(6,640)	(7,890)	NA
<u>ADDITIONAL PHASE TWO</u>					
Visitors	--	--	520	550	830
Residents	--	--	90	330	2,380
(Subtotal - Phase Two <u>de facto</u>)	--	--	(610)	(880)	(3,210)
<u>WITH PHASE TWO SCENARIOS</u>					
Princeville Phases One and Two <u>de facto</u>	•	•	4,630	5,570	8,760
Residents Outside Princeville	•	•			
- Scenario A ³			2,530	2,870	NA
- Scenario B ⁴			2,620	3,200	NA
Total North Shore <u>de facto</u>	•	•			
- Scenario A			7,160	8,440	NA
- Scenario B			7,250	8,770	NA

¹Total North Shore visitor and de facto population figures ignore tourists or part-time residents staying outside Princeville, because these numbers cannot be reliably projected. Therefore, this table may understate actual North Shore de facto population and -- by logical extension -- overstate the proportionate contribution of Princeville Phase One and Phase Two inhabitants to de facto population. Note all figures in this table are rounded to nearest ten.

²Calculated by subtracting Princeville Phase One projected resident population from proposed resident population limits for the North Shore (see Table III-3).

³Calculated by subtracting Princeville Phases One and Two projected resident population from proposed resident population limits for the North Shore (see Table III-3, i.e., Phase Two resident population does not cause limit to be exceeded but assumed to restrict number of residents outside Princeville).

⁴Calculation the same as explained in footnote 2, i.e., Phase Two resident population represents additional growth (proposed County limits are assumed to be revised upwards).

⁵No population growth in Phase Two projected before 1990, so for 1980 and 1985 see "Without Phase Two Scenario" figures.

Source: Tables III-3 and III-10.

Table III-26. Socially Significant Percentage Implications of Population Projections.

	1990	1995	Ultimate Build-out
Percent of Various Princeville Populations in Phase Two			
Visitors ¹	16.0%	14.9%	20.3%
Residents	6.9%	17.4%	51.0%
De Facto	13.3%	15.7%	36.6%
Percentage Increases in Population, From "Without Phase Two" to "With Phase Two"			
Visitors	19.0%	17.5%	25.5%
Princeville Residents	7.4%	21.1%	104.0%
Princeville de facto	15.3%	18.7%	57.8%
Total North Shore Residents			
- Scenario A ₃	0.0%	0.0%	NA
- Scenario B ₃	2.3%	7.0%	NA
Total North Shore de facto¹			
- Scenario A ₃	7.8%	7.0%	NA
- Scenario B ₃	9.2%	11.2%	NA
Percentage of de facto Population Consisting of Visitors -- WITHOUT PHASE TWO			
In Princeville Only	67.9%	67.2%	58.7%
In Total North Shore ¹	41.1%	39.9%	NA
Percentage of de facto Population Consisting of Visitors -- WITH PHASE TWO			
In Princeville Only	70.2%	66.4%	46.7%
In Total North Shore ¹			
- Scenario A ₃	45.4%	43.8%	NA
- Scenario B ₃	44.8%	42.2%	NA

¹Total North Shore visitor and de facto population figures ignore tourists or part-time residents staying outside Princeville, because these numbers cannot be reliably projected. Therefore, this table may understate actual North Shore de facto population and -- by logical extension -- overstate the proportionate contribution of Princeville Phase One and Phase Two inhabitants to de facto population.

²Scenario A -- assumes proposed resident population limits for North Shore are maintained, i.e., Phase Two residents are part of projected planning area growth.

³Scenario B -- assumes Phase Two resident growth is in addition to presently proposed resident population limits, i.e., limits are assumed to be revised upwards.

Source: Table III-25.

total de facto Princeville population would be in Phase Two in 1990; 15.7 percent in 1995; and about 37 percent at ultimate build-out.

- o Because of Phase Two, Princeville's total visitor population in the 1990s is projected to be about 18 percent greater than without Phase Two. The total de facto Princeville population with Phase Two would be 15 percent greater than without Phase Two by 1990; 19 percent greater by 1995; and 58 percent greater at ultimate build-out (unspecified future date in the 21st century).
- o It should be noted that Tables III-25 and III-26 assume no North Shore visitor population outside Princeville, because this additional visitor population cannot be measured. Obviously, however, there are tourists and part-time residents staying elsewhere on the North Shore, and the daytime de facto population is further increased by tourists driving up from other areas on Kaua'i. Therefore, the effect of such an assumption is to overstate the proportionate impact of Phase Two on total North Shore visitor and de facto population.
- o With this caveat, the figures indicate that approval of Phase Two would increase the de facto total North Shore population by only 7.8 percent in 1990 and 7.0 percent in 1995, under Scenario A, and by only 9.2 percent in 1990 and 11.2 percent in 1995 under Scenario B.
- o In regard to the composition of the de facto population (visitors vs. residents), Phase Two would have little effect. Within Princeville itself, the population will be proportionately a little less made up of tourists with Phase Two than without it after 1995. For the North Shore as a whole, the population will be proportionately a little more made up of tourists in the 1990's with Phase Two. In both cases, though, the differences between the "Phase Two" and "no Phase Two" near-term futures would be slight. With or without Phase Two, the ratio of visitor to resident is expected to climb through 1990, then decline somewhat.

3.10.5.3 Political Power

Many of the other social impacts of Princeville development flow from the population situation. Several of the clearest of these involve political power. The more full-time adult residents (and/or voters) a particular community has, the more influence it has relative to another, smaller community. In the political sense, communities may be either geographical or communities of similar interest and background. On the North Shore, two types of political competition have emerged: between or among geographical communities, and between or among people of various lengths of residence (which is often correlated with ethnicity).

Competition for decision-making power can occur both within the formal political elective process and also within the more informal deliberative processes of community associations, civic clubs, etc. Differences between largely Caucasian newcomers and largely non-Caucasian local residents are sometimes more apparent in community meetings -- both on Kaua'i's North Shore and in other parts of Hawai'i which have been subjected to a heavy population influx from the Mainland. Longtime local residents often feel the verbal assertiveness of newcomers amounts to a

"takeover" of community decision making. In their turn, many newcomers feel frustrated that "clear and definite decisions" in which everyone is given a chance to voice an objection often turn out to be temporary agreements which are repudiated a few days later. These experiences may contribute to a tendency to vote for different candidates with different styles during the regular electoral process.

Our fieldwork indicates that, while many newcomers and longtime residents do cooperate both in civic and political endeavors, this sort of competition definitely exists on the North Shore. It is one of the more obvious consequences of rapidly changing ethnic composition within the overall population. However, with or without Phase Two, the relative proportion of Caucasian newcomers on the North Shore is expected to continue increasing. So only time, rather than government land use policies, can be expected to diminish this social problem.

Princeville would affect competition between or among geographical communities on the North Shore. The arithmetic of projected Princeville population increases, and of county population policies for the North Shore as a whole, indicate that Princeville -- already larger than Hanalei -- will probably surpass Kilauea in size and potential influence in the next ten years. Without Phase Two, Princeville would constitute an increasing proportion of the North Shore resident population up through 1990. The Phase Two residential population would continue and accelerate this trend in the 1990s. This is illustrated by the following percentages, which are based on the population projections summarized in Table III-25:

Percentage of All North Shore Residents Residing at Princeville				
	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>
<u>WITHOUT Phase Two:</u>	25.7%	32.8%	33.0%	32.5%
<u>WITH Phase Two:</u>				
Scenario A	--	--	35.3%	39.5%
Scenario B	--	--	34.5%	36.9%

(These numbers are based on total population, including children. Since Princeville residents tend to have fewer children, they will probably hold even larger percentages of the adult North Shore population and possibly of the voting population as well.)

While these figures may hold some implications for the elective process, they probably will prove even more significant in the bidding among North Shore communities for the siting of future public facilities. Because of its central location and consequent cost-effectiveness, Princeville has generally seemed a more desirable location to government officials when considering where to site facilities intended to service the entire North Shore. However, both Kilauea and Hanalei residents traditionally have wanted separate facilities for their own communities. An offer by the Princeville Development Corporation of a library site for the State Department of Education was originally rejected as a result of community opposition from Kilauea and Hanalei, each of which wanted a separate facility. Separate facilities have not been built, however, and most recent indications are that Princeville is once again the favored location. When the new police and fire station was built at Princeville, some

Hanalei and Kilauea residents again expressed unhappiness. The growing population of Princeville -- with or without Phase Two in the 1980s, but even more so in the 1990s and thereafter should Phase Two be approved -- will provide increased justification for government authorities to site public facilities in the centrally located Princeville area. This will probably be seen as a social plus by the government authorities and by Princeville residents, and as a social minus by residents of Kilauea, Hanalei, and some other North Shore areas.

A final aspect of political competition could involve cooperation or conflict among Princeville residents themselves. The Princeville at Hanalei Community Association consists only of Phase One property owners (not renters). The most active members, and particularly the officers, are mostly year-round Princeville residents. As has been the case in virtually every phased Hawai'i residential development project, there have sometimes been disagreements between early project residents and the developer (although this has varied over time at Princeville, where Princeville Development Corporation employees have often been active Community Association participants). The Community Association in general has worked to protect the interests of its members regarding preservation of high property values and the secluded, comfortable, leisure-oriented lifestyles desired by both full- and part-time residents.

The by-laws of the Princeville at Hanalei Community Association permit the group great power (in association with the developer) in governing the design and landscaping of new homes and condominiums. This is important to established Princeville residents and has been a source of frequent concern between the community association and the developer. The community association also takes independent responsibility for assessing members to hire security personnel and to pay for road maintenance.

There is currently some uncertainty as to whether Phase Two property owners would be included in the Phase One community association or whether a second community association would be formed. The present "Declaration of Restrictions, Covenants and Conditions" for Princeville permits the developer to annex additional lands owned by it in Hanalei to the Phase One lands covered by this Declaration. If such annexation occurs, Phase Two property owners could become a part of the current Phase One community association. If the lands are not annexed, a new and separate community association would have to be formed for Phase Two. In this event, the two community associations will need to establish a long-term relationship on matters of design review, security, roads, etc.

If the memberships of the two associations consist of essentially similar types of people, it is reasonable to assume they will usually be able to work out any short-term problems. However, some Phase One association members are concerned about plans for smaller houselots in Phase Two (along Ka Haku Road, adjacent to Phase One). Property owners there theoretically could be of a different socio-economic level and -- should they play a prominent role in the Phase Two association -- have enduring different interests which could affect internal harmony between the two associations. (On the other hand, they could also form a social and

political bridge to the North Shore community outside Princeville, thus increasing Princeville's integration with that larger community.) The legitimacy of this concern depends on a number of assumptions, including the likelihood that the smaller houselots would be built upon by owner-occupants much more rapidly than larger houselots. Since it is impossible at this time to assess the validity of such assumptions, no forecasts could currently be made about competition or cooperation between the two potential community associations.

3.10.5.4 Social Impacts of Employment

Most of our field work informants agreed that Princeville Phase One has been the major source of employment for the North Shore and that many more longtime local residents would have left the area after the plantation closing had not jobs at Princeville become available.

However, 1980 Census data on the composition of employment for working North Shore residents are not yet available. In the County's most recent survey of North Shore residents; 27.9 percent of those replying said that they worked at Princeville; 17.4 percent said that they worked at Kilauea; 16.3 percent said that they worked at Hanalei; and the remainder said that they worked elsewhere (Public Affairs Advisory Service, 1980: 40-41 -- figures adjusted for non-response).

As of June 1980, 60 percent of the over 200 Princeville Development Corporation employees were individuals who listed their high school locations as either Kaua'i (40 percent) or another Hawaiian Island (20 percent). Thirty-one percent said that they had attended Mainland high schools. According to Princeville Development Corporation during our up-date investigation in 1982, there has been little change in this situation.

Availability of local labor is a major consideration in assessing both population and employment impacts of Phase Two. According to the Hawai'i State Department of Labor and Industrial Relations, the Census Tract 401 unemployment rate of 1981 was estimated at 2.5 percent, one of the lowest rates in the State. Taken by itself, this suggests that there may be little currently available labor supply in the North Shore area. The implication of this is that in-migration would be required to fill the positions generated by the Phase Two project.

However, there are a variety of additional factors to consider. First, in the neighboring census tract (CT 402 and 403, or the Kawaihau District of Kapa'a and Wailua), the 1981 unemployment rate was 7.8 percent. This is one of the highest unemployment rates in the State. Second, many currently employed North Shore residents may be seeking additional employment. Third, Princeville Development Corporation continues to receive a large number of employment applications, although the majority in 1981 were not from people raised on Kaua'i. And fourth, some North Shore residents who currently commute to tourism jobs elsewhere on the island may welcome the opportunity to work closer to home.

In summary it is difficult to say which groups will fill the Phase Two construction and operation job openings -- residents or non-residents. Currently, the majority of those applying for jobs through Princeville Development Corporation are graduates of Mainland high schools. However, locally high unemployment rates (Census Tracts 402-403), the slump in the construction trades, and Princeville Development Corporation's desire to employ local residents may result in more local longtime residents receiving employment as a result of Phase Two.

3.10.5.5 Social Impacts of Construction

The construction industry is known for its "boom-bust" cycles. The Island of Kaua'i in general and Princeville in particular are now undergoing a "bust" period in resort and/or condominium construction. Many off-island construction firms and construction workers who had come to Kaua'i to participate in the 1979-80 "boom" have now left. During the peak of Phase One and other Kaua'i resort construction, the "boom" generated certain social issues. Among others, there was a perception by some local contractors that they were not receiving a fair share of the work; perceptions by some local people that Kaua'i construction workers were not being hired; belief that off-island construction workers had caused a housing shortage and were bidding up rentals; and fears that off-island construction workers would remain on Kaua'i and swell both the population and eventual unemployment rolls.

To gain some partial insights into the issues generated by the most recent boom, foremen and managers of all prime contractor construction crews for then-current condominium construction at Princeville were contacted during our 1980 survey. We also surveyed half a dozen major Kaua'i contractors and subcontractors, although the latter effort could not be considered a sample survey or a complete canvassing of local firms.

A majority of the 1980 prime contractors at Princeville, and of the subcontracting firms with which they worked, were off-island operations. They had generally outbid local firms for the large contracts. Most of the local firms contacted expressed dissatisfaction with the amount of work given by resort developers and/or prime contractors to local firms, although they acknowledged that few local firms had the bonding capacity or other resources to handle extremely large jobs. (It was beyond the scope of this study to determine whether the local dissatisfaction was actually warranted; the dissatisfaction itself is regarded as a major psychological impact, with the capacity for becoming a social and political impact.)

With respect to this issue, it is very important to note that most custom house construction on single-family houselots at Princeville is provided by small local firms. Such single-family house construction will be a much greater share of the construction work for Phase Two than it has been for Phase One or for resort-residential projects elsewhere on Kaua'i. As a consequence, jobs generated by construction there are likely to go primarily to Kaua'i residents.

As for employment of Kaua'i construction workers, both off-island and local firm managers agreed that few local construction workers were involuntarily unemployed during the 1980 flurry of activity. One head of an off-island crew said it was his company's policy to hire Kaua'i workers, but unemployed construction workers had been very difficult to locate.

It should be noted that, given the gathering dissatisfaction over use of off-island contractors by resort developers on Kaua'i, a particularly negative situation could result if the few large jobs available during such a dry period were to go to off-island outfits. Developers cannot be expected to underwrite construction companies which make high bids on jobs. Thus, the County of Kaua'i may wish to take an active role in assisting local firms to augment their expertise or other resources in order to improve their competitive bidding position.

On the question of housing for off-island construction workers, it was difficult to establish whether off-island workers were actually a major contributor to

the unavailability of housing and high rents on the North Shore, as was widely believed a few years ago. However, most of the Princeville construction chiefs surveyed said few of their workers had been able to find housing on the North Shore. Thus it is highly possible that the housing shortage struck before, rather than after, the arrival of off-island construction crews at Princeville. Given the reduced construction work force needs in the next few years, it is unlikely this will constitute a problem with Phase Two. At the present time, there is not a housing shortage on the North Shore, according to most of our informants.

Finally, it appears there are little grounds for fears that off-island construction workers often decide to remain behind once their Kaua'i job is done. The major Kaua'i construction firms to whom we spoke estimated that perhaps three percent of their current workers were off-islanders who had lingered after a previous construction project. Prime contractors working at Princeville in 1980 were also skeptical that many of their off-island workers would actually remain once the projects they were employed on had been completed.

Most of the concerns about social impacts of construction are more applicable to boom years, such as 1980, when field work for this study was first undertaken. In terms of Phase Two, they probably apply only to the two years or so (1987 and 1988) when the condominium hotel and condominium are being built. In other years (see Table III-11) the construction employment is fairly low (20 to 55 positions) and largely involves construction of single-family homes. As just noted, small local firms do tend to provide more of this type of construction work and thus the adverse impacts of outside construction workers on housing, etc., are avoided.

3.10.5.6 Local Business Opportunities

Complete information is not available about the extent to which Princeville thus far has generated local business opportunities or about the identities of those who have benefitted from these opportunities. However, the majority of retail operations on the North Shore are tourist-oriented. The bulk of these establishments are located in Princeville or Hanalei. Those located in Princeville are managed predominantly by newcomers. The employees, however, appear to be a mix of newcomers and longtime local residents. Retail operations located in Hanalei are predominantly owned, managed, and operated by longtime local residents. Indeed, a gift shop offering Hawaiian objects has recently opened in Hanalei. The shop is a small business venture owned and operated by longtime local residents. Additionally, a small shopping center was completed in April 1982 on Kuhio Highway in Hanalei. As of August 1982, the center was largely unoccupied. Local business people, however, believe that the center will be occupied by tourist-oriented establishments when the tourist trade picks up.

There is some local participation in management and staffing of the helicopter tour operations. The "front office" of these operations is predominantly newcomer. This is also true of the small airline and rental car office servicing the Princeville airport. The Princeville Airways reservation and operations staff are at Princeville and consist of local people. Increased activity at the airport resulting from the completion of Phase One as well as the establishment of Phase Two will create new jobs in helicopter tours, car rentals, and airline and airport operations. These jobs will be for management, operation, and maintenance.

Local residents acknowledge that tourism on the North Shore has created an opportunity for the expansion of existing and the establishment of new local

businesses. It is likely that Phase Two will provide an additional residential population which will provide a market for local businesses. However, our informants suggested that local residents may require assistance in taking advantage of the opportunities.

3.10.5.7 Social or Personal Disruption

Loss of family cohesion, crime, drug abuse, need for and abuse of social services programs -- all of these are typical symptoms of stress resulting from virtually any rapid social change. In a recent survey, 40 percent to 50 percent of North Shore respondents -- and somewhat higher percentages of those in Princeville itself -- thought that juvenile delinquency, drugs, vandalism, welfare/food stamp fraud, and drunk driving all formed "serious" or "very serious" social problems, although only 22 percent thought child abuse merited such a rating (Public Affairs Advisory Services, 1980:25-30). Our own field work observations and interviews indicated extensive concern among North Shore residents about stresses on the family, the juvenile, and the individual.

Interestingly, despite this general perception of social stress, available quantitative evidence and expert opinion indicate the North Shore of Kaua'i is not a "problem area" compared to other parts of the island or state. And such problems as do exist are regarded by public- and private-sector experts on the topics as usually attributable to forces other than resort development.

For example, islandwide figures on crime indicate that crimes against property (particularly by juveniles) are definitely a growing problem, and there is evidence that this has a statistical association with tourism growth. However, crimes of violence have been stable or declining on Kaua'i in recent years. Both police and Liquor Commission officials say the North Shore has in fact been "quieting down" from the previous disturbance levels of the late 1970s.

Although "quieting down" in terms of violent or serious crimes, the Hanalei district does have the highest per capita crime rate on the island. However, according to North Shore police officers interviewed for this report, the apparent high crime rate is due in part to reporting practices. That is, each complaint is recorded even though it may later be withdrawn -- for example, visitors who lose objects often report them "stolen," though the property may later be located. Nevertheless, theft from parked cars at North Shore scenic areas has been a growing problem in recent years. The victims here are typically visitors driving to the North Shore from hotels elsewhere on the island, although Princeville visitors of course comprise a portion of the victims.

North Shore police officers also stated that Princeville itself usually is not a problem area, although there have been occasional disturbances in bars and restaurants. They said there have been few burglaries within Princeville, possibly because of the security system. And they reported their impressions that the recent influx of renters to Princeville has been associated with an increase in drug traffic there (although this belief could not at that time be supported with much solid evidence).

Drug use by young people is a matter of concern to many parents, and the principals of Kilauea and Hanalei elementary schools reported (personal communications) that some use of drugs by primary school students in Hanalei -- but not Kilauea -- was discovered for the first time in 1979. There is a widespread belief that many young newcomers are getting rich from growing pakalolo on the North Shore.

The truth of this belief would be very difficult to establish. Most of our informants from the young newcomer sub-population feel the extent of commercial growing has been exaggerated, although they do believe there is much growing of marijuana in small quantities for personal use.

State Department of Social Services and Housing (DSSH) officials said the North Shore is not a problem area for child abuse (although nearby Kapa'a is). Similarly, there are no significant problems with neglect or abuse of the elderly, according to the County's Office of Elderly Affairs -- especially in Kilauea, where there is extensive participation in senior citizen programs at the Kilauea Neighborhood Center. Various informants in our field work reported concern over family stresses caused by the growing need for one or more parents to work several jobs each, but neither these "grass-roots" informants nor professional workers in relevant agencies (State and County social workers, pre-school directors, etc.) thought that resort development or tourism employment has been a direct cause of these stresses. Rather, blame was ascribed to national trends (inflation, changing values about divorce) and, in the case of some problems relating to juveniles on the North Shore, to social adjustment problems caused by bussing 12- and 13-year-olds to school with older teenagers at the Kapa'a Intermediate and High School facility. However, most informants from public or private schools said family breakdown problems are more prevalent among the newcomer than among the longtime local population.

DSSH public assistance case loads for the North Shore have generally been holding steady, or increasing at a very low rate in the past several years. No data are available on mental health problems for the North Shore specifically, although our field work discussions with informants often produced comments indicative of a general sense of powerlessness in the face of rapid change.

Given the wide gap between public perceptions of stress and the absence of actual symptomatic evidence for the North Shore, it becomes particularly difficult to predict impacts from Phase Two. It is possible there is a potential for social and personal disruption that has yet to be triggered. If this is true, the projected rapid changes resulting from completion of Phase One and other scheduled North Shore projects (such as development of various agricultural subdivisions in Kilauea or construction of the Stark luxury condominium project at the old Club Mediterranean site) logically would pull the trigger before Phase Two is effectively begun. On the other hand, if no increase in social disruption springs from the much larger populations resulting from these other projects, it would be surprising if Princeville Phase Two were suddenly to produce the anticipated symptoms of social stress.

Some increase in absolute numbers of crimes may be expected from Phase Two just because of increased resident and visitor population. It is impossible to say whether these increases would be proportionate or disproportionate in relation to existing resident and visitor populations. Kaua'i crime figures indicate Caucasians are more likely to be arrested by police than are other ethnic groups, and Phase Two residents are likely to be heavily Caucasian -- but so are other anticipated North Shore newcomers, even without Phase Two. Younger longtime local residents angered by the "invasion" of newcomers are thought to have reacted with directed vandalism or assaults ten years ago. However, the "quieting down" of the North Shore in recent times illustrates gaps in sociological knowledge about the exact circumstances in which social conflict leads to crime and those in which it does not.

One commonly accepted rule of thumb is that crime and other social problems are more a function of the rate of change than of the ultimate amount of

change. Thus, if Phase Two were to be developed and built out in a few years, a good many problems might be expected. However, although changes to the visible landscape may seem abrupt to some, other primary Phase Two impacts (especially population growth) are now projected to be very gradual.

3.10.5.8 Housing and Real Estate

Availability and cost of real estate -- for residential, agricultural, or local investments purposes -- has become a particularly important social concern in Hawai'i during recent years.

The cost of North Shore land and housing has been steeply rising, as is true throughout the State of Hawai'i. Ownership of land (particularly in areas bordering the ocean) has been passing to absentee owners or newcomers from outside Kaua'i. Longtime residents and relatively well-established younger newcomers alike have been wrestling with value questions about whether to "play the speculation game" or to continue traditional orientations to the land as a resource rather than as a commodity.

It is probable that these statewide issues are felt particularly keenly on the North Shore of Kaua'i, due to the traditional importance of land to the rural lifestyle and also due to the association between shifts in land tenure and the perceived "invasion" by outsiders.

The Princeville project is by its nature a land development operation aimed at selling North Shore property to affluent outsiders. Potential advantages for such an operation include the increased property tax revenues for the County of Kaua'i, the additional employment generated by touristic aspects of the project, and, to some extent, opportunities for local residents to acquire housing or investment property. A potential disadvantage is the possibility of "spillover" of speculative activity to lands (particularly agricultural lands) outside Princeville itself -- although some current landowners who desire increased property values would of course consider "spillover" to be an advantage.

To assess the extent to which such "spillover" has already occurred as a result of Princeville's Phase One, we surveyed the principal brokers or realtors-in-charge for the eight realty firms most active on the North Shore. While eight is a small number, it constituted most of the North Shore realty firms at that time. (This mini-survey was originally conducted in 1980. Several respondents were re-contacted in 1982 to determine whether perceptions had changed; they had not.)

Six of the eight realtors surveyed believed that Phase One had either no net effect or only a small effect on prices of nearby agricultural or residential lands outside Princeville. Although Princeville has resulted in somewhat greater exposure of these lands and is something of a selling tool because it provides nearby amenities such as a golf course, development at Princeville has also worked to keep down the price of other North Shore land by providing a ready supply of urbanized land for outsiders. Perhaps most important, though, realtors tend to report very separate markets for Princeville compared to other North Shore lands. Princeville is a recreational community with tight restrictions on housing appearance, yard maintenance, security, animals, etc.; people who prefer to live in Hanalei or the Kilauea agricultural lands are usually more independent and far less attracted to security as a residential consideration than are Princeville residents, according to the majority of the realtors surveyed.

In regard to the possible "spillover" effect of Phase Two on land prices outside Princeville itself, realtors surveyed tended to believe there would be no impact from Phase Two on the Hanalei-Ha'ena residential lands; the overriding factor there is lack of new supply, most realtors felt, and so prices will continue to rise with or without Phase Two. As for Kilauea, the real estate products both within and around that community are marketed to different types of purchasers than people who would be interested in Princeville Phase Two.

Some of the realtors volunteered a professional opinion that construction of a full-service hotel in Phase One could eventually increase real estate activity and prices throughout the North Shore by attracting a greater number of affluent visitors. However, not all realtors agreed, and this prediction remains a point of uncertainty.

In summary, Princeville thus far has had some modest impact on increasing value of nearby lands, but much of the increase is thought to result from the actions of a different type of consumer demand which is occurring independently. Phase Two would not be expected to have any significantly different or additional impacts.

Another aspect of the land ownership question is the extent to which investment in or ownership of Princeville property itself (particularly single-family houselots) has benefitted local residents and/or has passed into others' hands. Files of the Princeville Development Corporation (see Table III-27) show that 52 percent of original purchasers of houselots had Hawai'i addresses, at the time of sale. As of June 1, 1980 a slightly smaller percentage of owner's of record -- 45 percent -- had Hawai'i addresses. In other words, the percentage of lots owned by Hawai'i residents appear to be decreasing over time. However, the percentage of owners with North Shore addresses has remained constant over time at about 21.5 percent. While this analysis excludes condominium unit purchasers, it provides the best indicator of who might buy and/or retain land in Phase Two, which would be predominantly houselots.

Because most Phase One houselots have now been sold, opening of Phase Two would provide a new supply of such lots for local as well as outside purchasers. Historically, Princeville houselot prices have generally been among the most competitive on the island on a per-square-foot basis. Their attractiveness to local purchasers for actual housing construction (as opposed to investment purposes) has been qualified by the large average lot size and consequent larger total price; by design restrictions which result in the need for relatively expensive construction; and sometimes by "lifestyle" restrictions stemming from landscaping and other requirements of the Protective Covenants. However, as more of the North Shore population moves closer to the prevailing Princeville lifestyle and as interest rates drop, the local homeowner market for Phase Two houselots should increase. An R-6 zoned area would be potentially most affordable for residents. (Note that North Shore "local" increasingly will not be as synonymous with "lifetime" or "longtime resident" as it once was.)

In an unanticipated way, Phase One housing units -- including both homes and condominiums -- have contributed to the North Shore's supply of rental housing units, since the tourism slump has resulted in many Princeville units going into residential rentals at reduced rates. Consequently, an extremely tight housing situation in 1980 has given way to an ample housing supply in 1982, although this social benefit comes at the cost of negative cash flows for unit owners and some consternation on the part of owner-occupants. As the North Shore visitor situation picks up, some of these rental units will surely return to tourist use, although others may permanently remain in residential use because of (1) wear and tear from

Table III-27. Permanent Mailing Addresses For Owners of Princeville Houselots.

<u>Mailing Address</u>	<u>Original Owners¹</u>		<u>Owners as of June 1, 1980</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Hanalei or Kilauea ²	131	21.4%	134	21.9%
Other Kaua'i	39	6.4%	19	3.1%
Other Island State of Hawai'i	147	24.0%	123	20.1%
Mainland	239	39.1%	294	48.0%
Canada	45	7.4%	29	4.7%
Other Foreign	<u>11</u>	<u>1.8%</u>	<u>13</u>	<u>2.1%</u>
	612	100.0%	612	100.0%

¹Original owners may have purchased lots as early as 1971 or as late as 1980.

²A Hanalei or Kilauea post office mailing address may sometimes indicate residents of Princeville, who can choose to receive mail at either location.

Source: Files, Princeville Development Corporation, 1980.

long-term residential rentals and (2) the shortage of centralized management to provide marketing and daily servicing of visitor units. Presumably, absentee owners of Phase Two housing units would learn from the history of Phase One and not permit this situation to recur very easily in Phase Two. However, should extremely hard economic times occur in the future, the Phase Two visitor rental units could also be expected to contribute to local housing supply (though this can hardly be ranked as an important social benefit, since hard times result in out-migration from rural areas and consequent lessening of demand for housing).

3.10.5.9 Recreation and Food Gathering

Although the second golf course is located on Phase Two lands, it is being developed in conjunction with the Phase One hotel (i.e., the golf course is proposed whether or not the Phase Two project is approved). However, the second golf course would play an important part in the Princeville Phase Two marketing program. Just as with the current golf course, it is expected to be a central feature in the lifestyle of most year-round and part-time Princeville owner-occupants.

Some indirect social impacts of Princeville development, past and future, involve ocean-based recreation. The ocean plays an important role in the lifestyles of most types of North Shore residents. For younger newcomers, surfing, swimming, and diving are among the major reasons for living on Kaua'i. For longtime local residents, the sea is a source of supplemental food as well as of recreation. In a survey of North Shore residents 72 percent of the respondents said they often engaged in fishing (Public Affairs Advisory Services, 1979a:13).

Population and land ownership shifts on the North Shore have resulted in at least two types of social controversies related to the ocean. The one which was generating most anger at the time of our field observations (May-June 1980 and again in September 1982), involved barricades of, or "Keep Out" signs by, traditional trails across private land to fishing (and some surfing) sites. For the most part, these were cases in which affluent new owners were protecting their privacy and legal property rights, to the outrage of longtime local residents who were accustomed to free access and who felt offended by the suddenness and peremptoriness of the actions.

Informants generally expressed satisfaction that Princeville Development Corporation had kept its word about maintaining access trails in Phase One, although we did encounter one case of confusion over a private access for condominium residents located near the access intended for public use. The proposed Phase Two land involves no current de facto beach access trails down the bluffs, since the logical access to the ocean below Phase Two is from Anini Road, located right beside the ocean.

The other ocean-related source of social impact on the North Shore has to do with gradually increasing crowding of the various beach parks and surfing sites. Although few informants expressed concern over Princeville tourists or residents swarming into the ocean recreation sites outside of Princeville (in fact, the more typical reaction was gratitude that "they keep to themselves"), there is some cause for concern about the future.

The principal beach at Princeville is below the Lot 27 area (western hotel site) in Phase One. Few Princeville residents or visitors now use this beach, and informants among the Princeville population said they are more accustomed to using Hanalei beach facilities. A major problem appears to be the steepness of the access

trail to the Princeville beach. Although a shuttle bus has been available to take residents or tourists down to the beach, its isolation at the bottom of a bluff is apparently unappealing to the Princeville populace. This could change with construction of the hotel, since both access and opportunities for social interaction would be improved. However, the issue bears close watching, since the projected great increases in resident and visitor populations at Princeville could result in greater use of and competition for non-Princeville ocean recreation facilities unless the Princeville beach becomes more popular with the Princeville populace. This is basically true with or without Phase Two.

A potential unique impact of Phase Two on existing recreation facilities is the possibility of visual encroachment on Anini Park. This would occur if condominiums or homes are sited near the bluffs overlooking the park. This is an avoidable effect, if developers and homeowners apply sensitivity to building design, siting, and/or landscaping. (See discussion of possible mitigations in Section 3.10.7.)

3.10.5.10 Lifestyles and Social Interactions Among Newcomers, Oldtimers, and Tourists

To a large although not complete extent, the preceding discussion has covered the past and likely future impacts of Princeville on various North Shore populations' lifestyles. These impacts may be summarized (and/or slightly expanded upon) as follows:

Phase One residents have natural concerns about the effects of Phase Two on property values and social fabric within Princeville, and they are engaging in ongoing discussions with the Princeville Development Corporation to address specific concerns about details of Phase Two development. (These concerns will be specified in the next section.)

For other North Shore newcomers (with special reference to younger people), the major lifestyle concerns about Phase Two would involve population congestion in general and water recreation site congestion in particular. However, the bulk of these potential problems would come from projected population increases in Phase One and other North Shore areas.

For Princeville employees, Phase Two would contribute to job security and some promotion opportunities through the limited additional jobs. Employees would also benefit from the special houselot purchase program. (This is especially true of newcomer employees because lifestyle considerations suggest that newcomers would, on average, be somewhat more likely than longtime residents to be interested in living at Princeville.)

For longtime North Shore residents, the foregoing employment and housing considerations would also apply to some extent (since longtime residents comprise a majority or near majority of Princeville employees). For non-employees among the longtime populace, our fieldwork indicates many people do not relate to the environmental design and lifestyle of Princeville, and they rarely go into the complex. Phase Two would have little direct impact on their lifestyles. There have been indirect impacts from Princeville, however. Kilauea residents see the growing Princeville population as a source of business opportunities and employment opportunities for the next generation, increasing the possibilities of extended family life. For longtime residents whose lifestyles and values have focused on rural characteristics -- isolation, quiet, abundant fish and game -- the North Shore population boom has already gone a long ways toward destroying old patterns, and projected future population increases

will continue these changes, with or without Phase Two. However, Phase Two development would involve the conversion of an existing rural landscape to a more urban use.

For tourists, Phase Two will provide limited additional visitor accommodations and associated facilities.

A related issue is the level and quality of social interaction among these various groups, and the impacts which Phase Two might have on such social interaction.

According to a recent survey of North Shore residents (Public Affairs Advisory Services, 1980: 31-35), perceived relationships among people of different races and religions are generally good, but there is more uncertainty expressed about the quality of relationships between "old timers" and newcomers, and between residents and tourists.

Our field work discussion with the community leaders and other informants did not constitute a sample survey. However, comments made to us were so consistent in tone and nature that we feel confident about repeating and summarizing them. We discovered that the younger and/or newcomer population appeared to have the most negative attitudes toward tourists, but that these attitudes tended to be ones of annoyance or condescension rather than of personal anger or hostility.

By contrast, the longtime local residents had mixed feeling toward tourists as people, but a predominant theme in their remarks was that "tourists aren't the ones who are trying to change our lifestyles or tell us how to live." It was the newcomer resident who generated some degree of defensive anger among the more longtime residents -- either lingering resentment toward the "Taylor Camp hippie-types" (a slowly fading stereotype) or disgruntlement with more influential/affluent types who block off fishing accesses or "take over" community organizations. Residents angered by beach access closures often specified that their frustrations involved newcomers outside Princeville -- e.g., around Kilauea or Ha'ena -- since there has been little access controversy in Princeville. Phase Two is thus unlikely to contribute to this problem.

According to our informants, Princeville residents (i.e., owner-occupants) have generally little interaction with other groups on the North Shore, but such interaction as does exist is pleasant if not intimate. Princeville residents look to their security guards for protection against rowdiness from any quarter, but most informants agreed that Princeville residents feel more discomfort among young Mainland transients perceived to be part of the "drug culture" than among other types of people on the North Shore. Phase Two is not expected to impact this social interaction pattern in any particular way. The issue of interaction between Phase One and Phase Two residents was touched upon in the earlier discussion on political competition (Section 3.10.5.3).

The impact of Phase Two on community attitudes toward tourists may be determined in some part by Phase Two's effect on the ratio of tourists to visitors. Figures given earlier (Table III-26) indicate that, with or without Phase Two, the percentage of visitors -- both tourists and second-home people -- in the North Shore's de facto population is projected to increase from about 25 percent in 1980 to 41-45 percent in 1990. (It should be recalled that these figures probably understate the true percentages, since they do not include either visitors lodging outside Princeville on the

North Shore or tourists driving up from elsewhere on Kaua'i for a day trip.) To the extent that this proportionate increase exceeds some psychological "carrying capacity," resentment of tourists is likely to be a somewhat greater problem in the future on the North Shore no matter what.

On the other hand, what causes resident frustration with visitors is the degree of their visibility and interference with everyday work and leisure activities. Because Princeville is, for the most part, a self-contained recreational community, the relatively few additional visitors staying in Phase Two may not contribute to resident annoyance as much as tourists driving up from other parts of Kaua'i.

A final potential impact on North Shore social interactions might stem from the increased visibility of security guard posts, if the new Phase Two community association decides to put guards or barricades at all three entry roads from the highway to Phase Two. Presently, for Phase One there is a single guard post set back from the highway, and an evening barricade is placed across the side entrance to Phase One (totally out-of-sight to passersby on the highway). Individual reactions to a series of guard posts or barricades would certainly vary, but some non-Princeville residents would doubtlessly feel alienated in the extreme. The Princeville Development Corporation is aware of this potential and considers it unlikely that the Phase Two population will fund three different guard posts. However, the residents of Phase Two may wish to erect unmanned security gates. If this is done, they should be situated so as not to be visible from Kuhio Highway.

3.10.5.11 Community Attitudes Toward Phase Two

There have been no recent public opinion surveys to measure current attitudes toward the proposed Phase Two development. However, two surveys taken as part of the County-sponsored North Shore Development Plan update process did include questions pertinent to the issue. Results from these questions must be viewed in light of the fact that (1) they were conducted several years ago in a period of economic and construction boom, and respondents included temporary population such as off-island construction workers staying on the North Shore, and (2) at least one of the questions described a potential development on the Phase Two site which is very unlike the development now being proposed.

In the first of these surveys, conducted in 1979, one question posed was: "Between Kalihiwai and Princeville, do you favor or oppose urban development (houses and businesses) makai of the highway?" Of 349 respondents, 64 percent opposed such development; 29 percent were in favor, and 7 percent gave no reply (Public Affairs Advisory Services, 1979a: 8). There was somewhat more support for the project from longtime residents of the North Shore than from newcomers (Public Affairs Advisory Services, 1979b: 139).

In the second survey, conducted in early 1980, a smaller majority -- 53 percent -- opposed any further expansion at Princeville, with 13 percent not responding and a combined total of 34 percent favoring various Phase Two development scenarios. (Total sample size was 337.) Opposition declined even though the development scenarios put forth in this survey question were much more extensive in terms of housing units than has actually been proposed for Phase Two -- i.e., a maximum of 5,000 to 10,000 apartment units or houses, compared to the 1,660 now proposed.

More recently, Princeville Development Corporation has undertaken a community outreach program involving presentation of Phase Two plans and concepts to a wide variety of Kaua'i and North Shore organizations. These include the Hanalei at Princeville Community Association and its board of directors; employees of all Princeville divisions; the North Shore Citizens Advisory Committee; the North Shore Realtors; Kilauea Citizens Advisory Committee; Kilauea Senior Citizens; North Shore Ohana; and the ILWU executive committee. To date, none of these organizations has taken official positions for or against the Phase Two proposal. When the Preparation Notice for this Environmental Impact Statement was mailed in the summer of 1982 to various North Shore and Kaua'i organizations, no replies or comments were received.

The community organization which has, however, given the Phase Two proposal the most serious and frequent scrutiny has been the board of directors of the Princeville at Hanalei Community Association.

According to informants within this group, the resident directors -- while they have yet to take action -- have no objection to the basic concept of Phase Two, since Phase One purchasers have always been aware of plans for ultimate expansion of Princeville. There is some disagreement, however, as to timing and specific details of the Phase One proposals. These concerns include the following:

- o Some residents of Phase One are concerned that if overly dense development occurs adjacent to Phase One, especially along Ka Haku Road, that there would be a potential impact on their current property values. Related to this is the question of how future inhabitants of smaller houselots would mesh with the current Princeville social fabric.
- o With many Phase One lots sold but still vacant and available for resale, some Phase One property owners are concerned that increasing the supply of lots by opening Phase Two will slow the rate of growth of property values.
- o Some members of the Phase One community association are unhappy that their roads were deeded over to the association, which could not dedicate them to the County because the roads did not meet County standards. Association members believe that a substantial part of their budget consequently must be spent on lighting, insurance, periodic road repairs, and increased security personnel needs (because County police have no authority to enforce traffic rules on private roads). There is a desire to avoid repetition of this situation in Phase Two.

The foregoing points have been the subject of ongoing discussions between the Princeville Development Corporation and the community association directors. While final agreements have not yet been reached, there has been progress in the talks according to both sides, and there is as of now no feeling of impasse or terminal frustration.

3.10.6 Irreversible Changes

Two major changes associated with Phase Two which could not be reversed without great difficulty are:

- (1) Removal of rural grazing operations and partial replacement with the "urban face" of a resort-residential complex. Approval of this land use change would represent a strengthening of the North Shore's current commitment to resort communities as the area's primary economic base. At the same time, it would permanently remove some of the "country" landscape from the current rural buffer between Kilauea and Hanalei.
- (2) An expanded North Shore population (although the extent of the increase must be viewed against the population expected even without Phase Two). It is no simple matter to guess how many of the new residents or employees would be longtime Kaua'i residents and how many would be "outsiders," although it is clear there would be a large percentage of newcomers among the non-employee residents.

Phase Two would involve many other tendencies for social change, but most of these are subject to some degree of management or mitigation. For example, crimes against property -- which are usually associated with tourism -- could be minimized by the self-contained nature of the Princeville complex. And the possibility of undesired "spill-over" of land investment speculation to areas outside Princeville could be controlled by firmly articulated governmental zoning or agricultural park policies.

3.10.7 Opportunities for Mitigation and Enhancement

Here is a brief discussion of a variety of ways to enhance positive effects of Phase Two and mitigate (reduce or eliminate) negative effects:

(a) Active Recruitment of Local Employees

The Princeville Development Corporation currently prefers to hire long-time residents of Kaua'i to ensure stability of the work force. However, apparent low unemployment in the Census Tract 401 (Hanalei area) and the greater interest of young transients in some types of tourism jobs (especially restaurant work) could frustrate this management policy unless active steps are taken.

One such step might be to locate areas of unemployment on Kaua'i outside (but near) the North Shore and to focus recruitment efforts there. We have noted that one such area is Kapa'a, where the unemployment rate was 7.8 percent in 1981. Potential commuting or relocation problems could be addressed if the various employers in the Princeville area organized car-pools or even private shuttle services between Princeville and Kapa'a (as has been done between North Kohala and Mauna Kea Beach Hotel on the island of Hawai'i).

Other possible steps include careful utilization of North Shore communication tools (community newsletters, bulletin boards, monthly meetings) to advertise jobs for North Shore residents -- some of whom may already have a job but wish to have another. Similar techniques can be used to alert present North Shore residents whose family members or friends might be willing to return to the area if they were aware of upcoming job possibilities.

(b) Work-Study Program and Placement Service

Public sector agencies and resort operators around the island could work together to improve entry-level and in-service training, thus increasing the ability of local residents to acquire better-paying jobs in the tourism sector. Exact details of such a program would require extensive discussion by government, management, and union officials, but one possible scenario might involve cooperation between Princeville and the Kaua'i Community College. A work-study program might allow local students to attend classes either at the KCC campus or at Princeville, plus gain on-site work experience at Princeville.

Princeville and other resort operations could notify the placement office of Kaua'i Community College when job openings occur. They could also give the college feedback about needed curriculum development for in-service training. The experience of the University of Hawai'i's School of Travel Industry Management in student internships and placement on O'ahu could be invaluable to a Kaua'i effort.

(c) Land Swap/Housing Corporation

One alternative (or supplement) to Phase Two employee housing discount provisions might involve construction of housing for employees on land outside Princeville for construction of more or cheaper employee homes. Employee housing within an essentially "local" community such as Kilauea could serve to attract more local employees and/or to improve integration of any newcomer employees into existing social networks.

In several rural Hawai'i communities (e.g., Kahuku), residents have attacked housing problems through formation of housing corporations. A similar community housing corporation could be formed in Kilauea. Advantages and disadvantages of participation in such a corporation by Princeville should be carefully weighed. It is possible that the financial resources of the Princeville Development Corporation and its parent company could bolster the position of other residents, should Princeville decide to focus on Kilauea as an employee housing site.

(d) Encouragement of Local Entrepreneurial Activities

Both in Princeville and in other resort areas around Kaua'i, a number of business opportunities have been generated involving services to new residents or visitors. Too often, longtime residents have not been the principal individuals to take advantage of these opportunities, perhaps because of lack of resources or lack of familiarity with the nature of the opportunities.

Community development corporations are one possible route for coordinating various types of economic assistance programs (such as loans and activities of the Small Business Administration) with community organization and information efforts. Local government sponsorship of economic development efforts is another possible route, although past efforts along these lines have not been very successful on Kaua'i.

To avoid a resurrection of a plantation society, companies such as the Princeville Development Corporation probably should not take the organizing role in trying to stimulate more local involvement in entrepreneurial activities. However, active participation by such developers and resort operators would be invaluable in identifying and forecasting the nature of opportunities. Such cooperation might appropriately involve Alu Like, Inc. which is mandated to aid Hawaiians in establishing private businesses.

(e) Local Government Initiative to Strengthen Island Construction Firms

The most immediate reason that Kaua'i contractors win relatively few major resort construction contracts is that their bids are usually much higher than off-island companies' bids. Some local contractors believe this is because off-island companies are unaware of local conditions, and low bids subsequently will lead them either to lose money or to construct low-quality buildings.

Local government obviously could strengthen the Kaua'i firms by applying hidden "muscle" on developers to award more contracts to on-island companies. However, a more constructive long-term approach would be to analyze the validity of local contractors' assertions; to communicate any such valid facts to prospective developers; and to help local contractors secure business assistance to strengthen their position when they are in fact weak. Developers could assist this process by cooperating in a fact-finding and mutual communication effort. However, since the issue is essentially a statewide one, it would perhaps be appropriate to work through some organization such as the Hawai'i Resort Developers Conference.

(f) Survey to Determine Public Attitudes on Best Use of Phase Two "Public" Lands

There are a number of potential government services needed or desired by North Shore residents: a library, an intermediate school, a new community center, etc. Because there are different possible uses, and because use of "public" land in Phase Two represents a type of reimbursement to North Shore residents, it is important that residents themselves -- not just government agencies -- have a large say in the disposition of this land. A proposal from the State Department of Education to consolidate the North Shore's two elementary schools on this site proved extremely unpopular with the North Shore citizenry. It would appear appropriate for interested residents to have some opportunities to consider all possibilities at once (and to make suggestions). This approach would be more productive for government agencies and the public alike, than having a string of separate proposals put forward by various agencies and then rejected by North Shore residents.

(g) Landscaping of Kuhio Highway

For some individuals, the greatest impact of Phase Two may simply lie in its high visibility from Kuhio Highway. The golf course and houses would alter the present "natural" appearance of the pasture land. This impact

could be reduced through the simple expedient of planting dense shrubbery along portions of the highway. Such plantings could also improve the desirability of Phase Two lots bordering the highway.

(h) Setbacks/Landscaping for Buildings Overlooking Anini Beach Park

The proposed Phase Two includes several large lots on the cliff overlooking Anini Beach Park. Should these lots be built upon, the homes and condominiums would presumably be expensive, large, and possibly conspicuous in their affluence. It would be desirable to avoid any possible connotation of Princeville residents "looking down on" residents who are relaxing in the park. This possibility can be avoided through attention to siting or landscaping of any such buildings.



Princeville Phase Two

Environmental Impact Statement

CHAPTER IV

PHYSICAL IMPACTS AND PROPOSED MITIGATION MEASURES

4.1 INTRODUCTION

The probable socioeconomic impacts of the proposed Phase Two project are discussed in Chapter III. This chapter focuses on the physical impacts that would result from its construction and operation. The discussion is divided into 11 sections, each of which deals with a particular aspect of the physical environment. They are:

- o Geologic and Physiographic
- o Soils
- o Traffic
- o Hydrologic
- o Sonic
- o Biologic
- o Visual
- o Historical and Archaeological
- o Atmospheric
- o Public Utilities, Services, and Facilities
- o Safety Hazards

In general each section describes the environmental setting, discusses the probable impact of the proposed changes, and assesses the significance of anticipated impacts. Where adverse impacts are expected, suggestions are made as to possible mitigation measures. Any adverse environmental effects which cannot be avoided are described and irreversible and irretrievable commitments of resources are noted.

4.2 GEOLOGIC AND PHYSIOGRAPHIC IMPACTS

4.2.1 Geologic History

Kaua'i is the oldest, as well as one of the most structurally complicated, of the main islands in the Hawaiian chain. Like the others, it consists principally of a huge shield volcano built up from the sea floor by many thousands of thin flows of basaltic lava. Toward the end of the growth of the shield, its summit collapsed to form a broad caldera.

After the completion of the great Kaua'i shield came a long period of erosion during which no volcanic activity occurred. Then volcanism resumed. Eruptions occurred from a series of minor vents arranged in nearly north-south and northeast-southwest lines across the eastern two-thirds of the island. The lavas, cinder cones, and ash beds of this last period of volcanism are known as the Koloa volcanic series. Today the volcano is considered extinct.

The Princeville plateau was formed by the Koloa volcanic series. This series features lava flows of olivine basalt, picrite basalt, nepheline basalt, melilite-nepheline basalt, and basanite that erupted from numerous vents scattered throughout eastern Kaua'i. One such vent is Pu'u Po'oku, found on the portion of PDC-owned land mauka of Kuhio Highway and near the Po'oku Stables. It was a lava dome created by this vent that deflected the course of the Hanalei River westward to its present

course, a relatively recent event in geologic time. Another vent, Kapaka, is found where the southernmost boundary of PDC's mauka land adjoins the forest reserve lands.

The Princeville area between the Hanalei and Kalihiwai Rivers was once a large valley cut into lavas of the Waimea Canyon volcanic series--the series of eruptions that gave birth to the island. Later the valley was refilled with lava from the Koloa volcanic series, and over the centuries this lava apron was traversed by stream-cut erosional gullies, the largest of which is Anini Gulch. Hanalei Valley separates Waimea Canyon lavas on the west from Koloa lavas on the east. Both Hanalei and Kalihiwai Valleys were cut when sea level was considerably lower than it is now, but as sea level rose dramatically and then receded to its present level, the valleys were alluviated, producing the flat floors they have today. The 100- to 200-foot cliffs defining the seaward edge of the Phase Two site are believed to have been cut by wave action (MacDonald, Davis & Cox; 1960:16, 19 & Plates 1, 2).

4.2.2 Existing Terrain of Development Area and Proposed Physiographic Changes

As described in Section 2.2, the proposed development would be confined to the three distinct plateaus extending from Kuhio Highway toward the coast and ranging in altitude from 200 to 360 feet above sea level. As seen in Figure IV-1, the plateau areas are basically defined by the edge of "greater than 30 percent slope" shading. Construction would be confined to the areas of less than 20 percent slope.

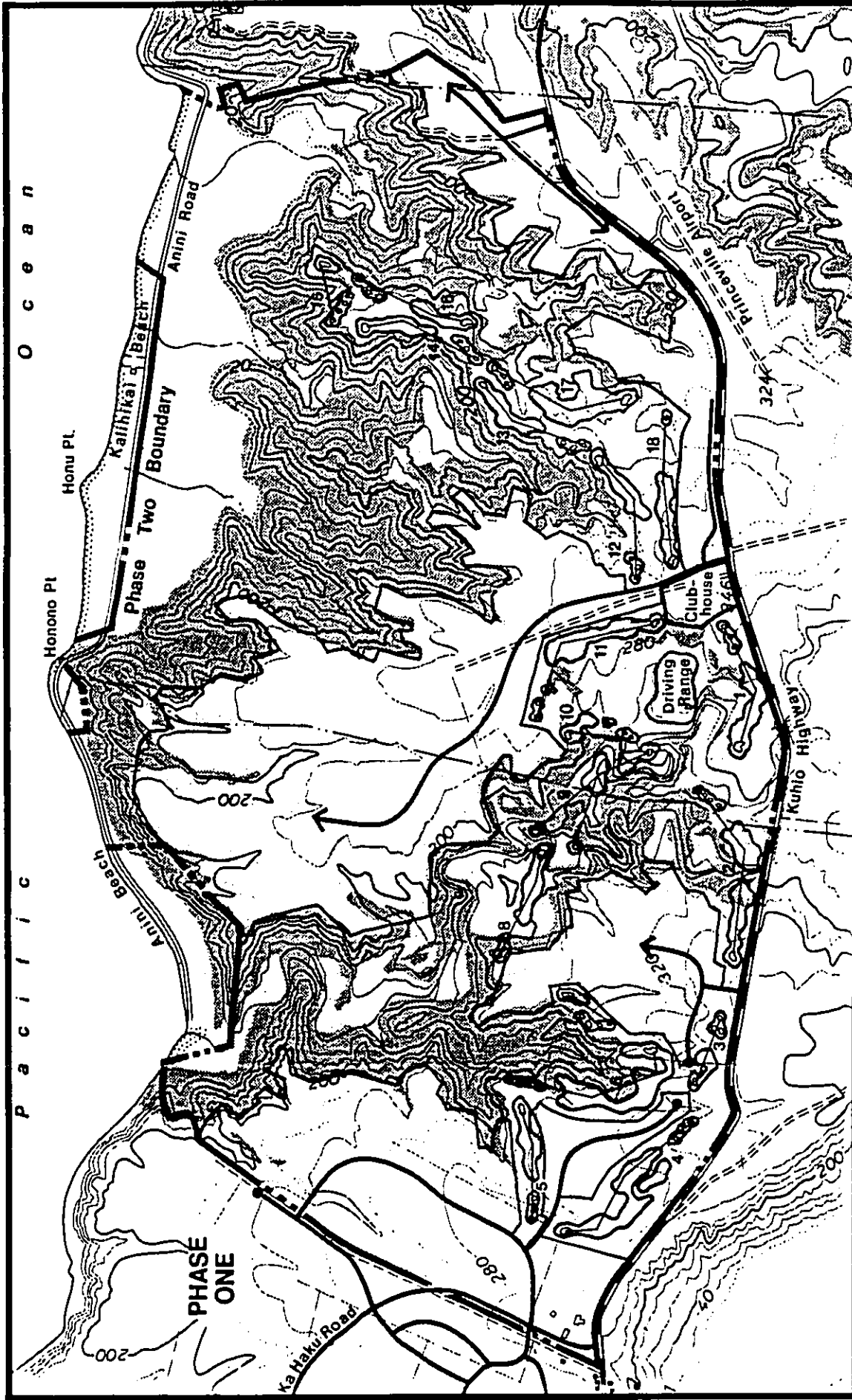
Because these plateaus consist of gently rolling grasslands, grading and clearing required for the development of residential lots would be minor. The only significant physiographic changes anticipated would be those resulting from grading required to bring the horizontal and vertical curve characteristics of new access roads to County standards.

4.3 SOIL-RELATED IMPACTS



4.3.1 Soil Characteristics

The Soil Conservation Service (SCS) of the U.S. Department of Agriculture classifies virtually all of the soils on the plateau portions of the site as belonging to the Makapili series; the soil in Anini Gulch is classified as Rough Broken Land. A small deposit of soil belonging to the Po'oku series is found along Kuhio Highway near the proposed access road to the central plateau (see Figure IV-2). The Makapili and Po'oku soils are silty clays and clay loams with strongly acidic (pH of 4.0 to 6.0) surface and subsurface layers. The Rough Broken Land is land with slopes of 40 to 70 percent broken by numerous intermittent drainage channels. In most places some weathered rock fragments are mixed with the soil material (U.S. Department of Agriculture, Soil Conservation Service; August 1972:88-9, 114, and 119).

The engineering characteristics of the Makapili and Po'oku soils are good, except where slopes are 40 percent or more. The soils are suited for use as road fill and as foundations for low buildings and highways. Their suitability for use as topsoil, however, is only fair due to low fertility. They have a permeability of two to six inches per hour, a water-holding capacity of around 0.13 inches per inch of soil, and a low shrink-swell potential (U.S. Department of Agriculture, Soil Conservation Service; August 1972:62-5).



IV-1 Slope

-  <20 percent
-  20-30 percent

-  >30 percent

-  Phase Two Development Area Boundary



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 By: Bell, Collins & Associates

Source: Slope Analysis done on a 5' Interval Contour Map at 1"=200'

4.3.2 Agricultural Capability of the Soil

Economically, the Makapili and Po'oku soils are commonly used for irrigated sugarcane, pasture, and woodland. The Rough Broken Land is generally not in economic use, but serves as a watershed and wildlife habitat.

On the Phase Two land, the first recorded agricultural use was as a coffee plantation in 1853; this was converted to sugar in the 1860s. The land has since passed through various agricultural uses, but the only enduring activity has been cattle ranching, which continues on the site today. Because agriculture is identified in Chapter VI as an alternative to the proposed resort and residential development, the agricultural capability of the soils is discussed in some detail below.

The Soil Conservation Service rates the agricultural and erosional characteristics of the site's Makapili and Po'oku silty clays as follows:

- MeB** Makapili silty clay, 0 to 8% slope, 30 to more than 60 inches deep. Has moderate limitations that reduce the choice of plants or require moderate conservation practices. Subject to moderate erosion if cultivated and not protected.
- MeC** Makapili silty clay, 8 to 15% slope, more than 20 inches deep. Has severe limitations that reduce the choice of plants or require special conservation practices or both. Subject to severe erosion if cultivated and not protected.
- MeD** Makapili silty clay, 15 to 25% slope, more than 20 inches deep. Has very severe limitations that reduce the choice of plants or require very careful management or both. Subject to severe erosion if cultivated and not protected.
- MeE** Makapili silty clay, 25 to 40% slope, more than 20 inches deep. Has very severe limitations that make these soils generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat. Severely limited by erosion hazard.
- PmB** Po'oku silty clay, 0 to 8% slope, more than 20 inches deep. Has severe limitations because of stoniness, unfavorable texture, shallowness, or low water-holding capacity.

The Makapili and Po'oku series fall into Pasture Group 10, which the SCS describes as follows:

The vegetation in unimproved pasture is dominantly ricegrass, hilgrass, yellow foxtail, lantana, joe, false staghorn fern, melastoma, rhodomyrtus, sensitiveplant, guava, Christmas berry, and ohia. Unimproved pasture produces 3,000 to 5,000 pounds of air-dry forage per acre per year. Forage production is well distributed throughout the year.

Forage species for improved pasture are kikuyugrass, pangolagrass, and intortum. Well-managed pasture produces 8,000 to 10,000 pounds of air-dry forage per acre per year (U.S. Department of Agriculture, Soil Conservation Service; August 1972:147).

Soils in the Makapili series fall into Woodland Group 9, which the SCS describes as follows:

Suitable species are saligna eucalyptus, blackbutt eucalyptus, robusta eucalyptus, tallowwood eucalyptus, lemon-gum eucalyptus, Nepal alder, albizzia, monkeypod, Norfolk Island pine, Australian toon, and Queensland maple. The estimated annual productivity is 400 to 800 board feet per acre. Seedling mortality is slight. Plant competition is severe from melastoma, rhodomyrtus, false staghornfern, and guava ...The erosion hazard is slight to moderate (U.S. Department of Agriculture, Soil Conservation Service; August 1972:151).

The Land Study Bureau of the University of Hawai'i in 1967 and the Hawai'i State Board of Agriculture in 1977 have also evaluated the agricultural potential of the lands in question. Both have presented their findings in map form (see Figures IV-3 and IV-4, respectively). The Land Study Bureau used a five-class productivity rating which gave an A rating to lands of highest productivity, an E rating to those of lowest productivity. According to the report, "The ratings interpret the interacting complex influence of climate, surface relief, drainage, wind velocities, and soil characteristics...inherent in each Land Type under modal cultural practices" (Hawai'i, University of, Land Study Bureau, 1967:19).

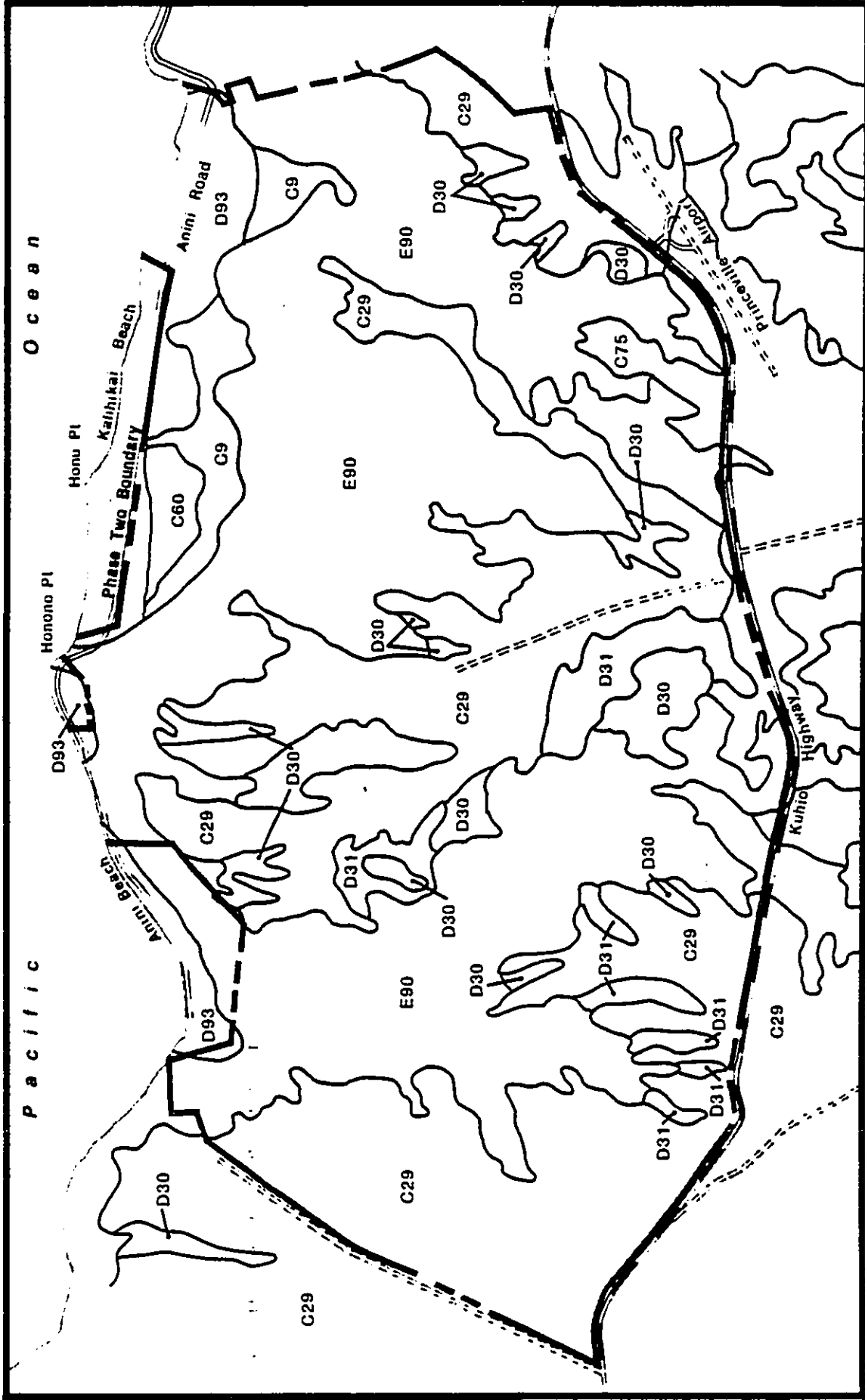
All Phase Two lands, as can be seen in Figure IV-3, received a rating of C, D, or E. The number following the productivity rating identifies the land type. Most of the land proposed for Phase Two development is classified as C29; this means its overall productivity rating is average and its land type is 29. Land type 29 has the following characteristics:

- o a selected crop productivity rating of c for pineapple, vegetables, sugarcane, forage, and grazing, but a rating of b for orchard use;
- o the potential of being used as commercial forest land;
- o a nonstony texture but poor suitability for machine tillability (Hawai'i, University of, Land Study Bureau; 1967:13).

The Agricultural Lands of Importance to the State of Hawai'i (ALISH) classification system, adopted by the State Board of Agriculture in 1977, rates the great majority of the proposed development areas as Prime Agricultural Land (see Figure IV-4). This is the highest of three ratings in this system. It indicates that the land "...has the soil quality, growing season, moisture supply needed to produce sustained high yields of crops economically when treated and managed according to modern farming methods." (Hawai'i, State of, Department of Agriculture; 1977:3).

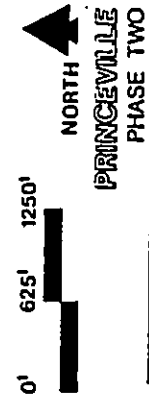
4.3.3 Projected Impacts

As just noted, the soil classification systems of the Soil Conservation Service, the Land Study Bureau, and ALISH seem to indicate differing degrees of limitation on the agricultural capability of the Phase Two lands. In response to the question of which of the three classification systems take precedence when such a difference of classification occurs, the Hawai'i State Department of Agriculture (August 24, 1982) replied:



IV-3 Land Study Bureau Classification

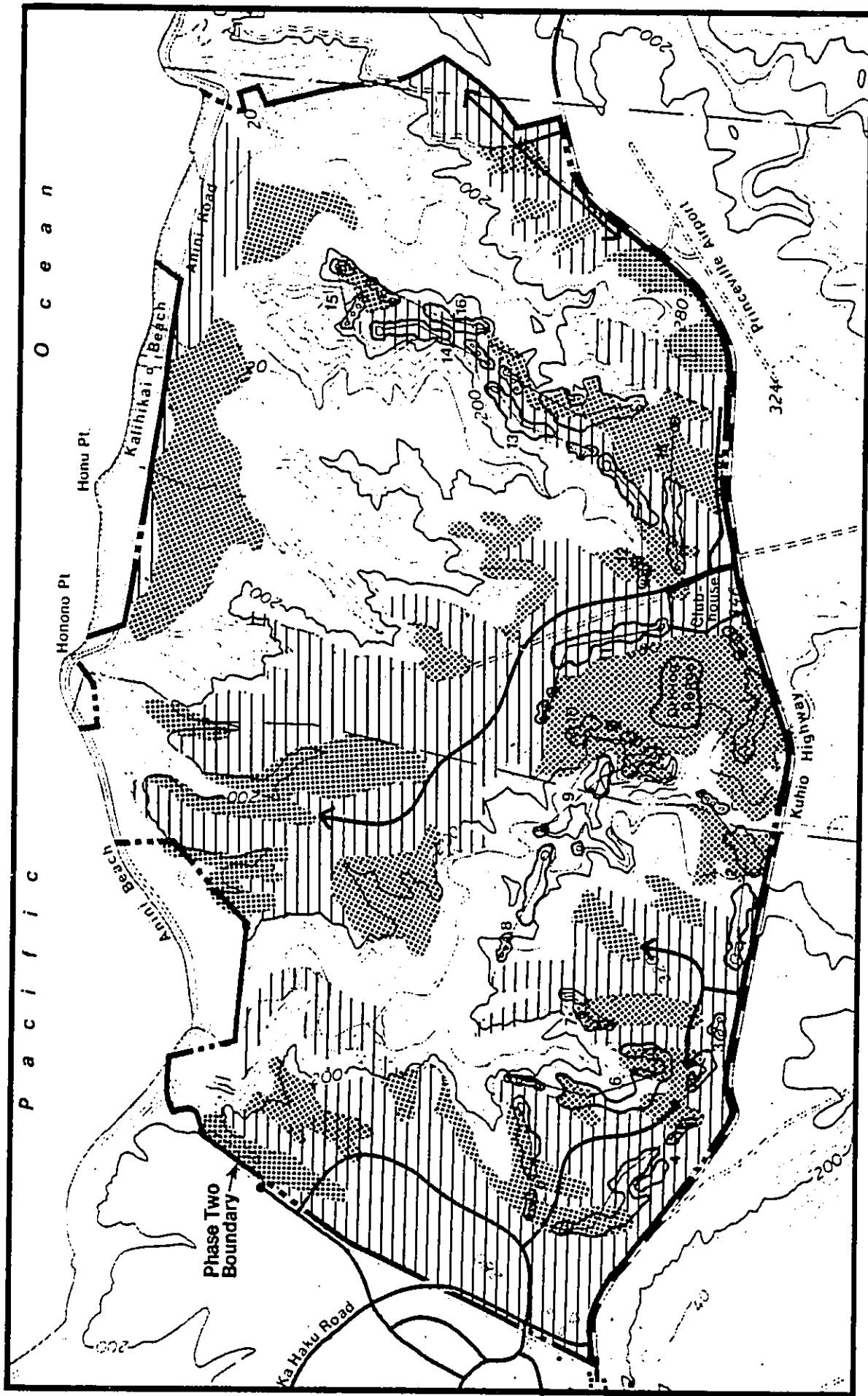
Master Productivity Rating - 'A' Highest Class to 'E' Lowest
 Land Type
 C 29



PRINCEVILLE
 PHASE TWO

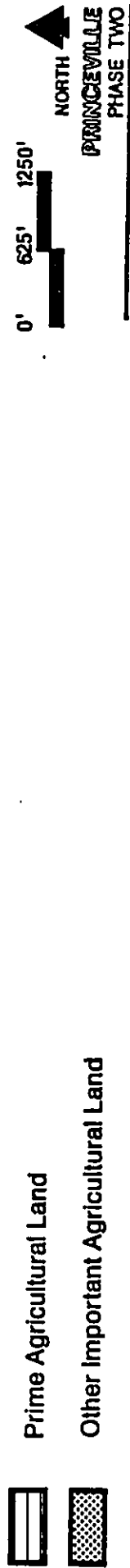
Environmental Impact Statement
 By: Bell, Collins & Associates

Source: Hawai'i, University of. Land Study Bureau (1967)



IV-8

IV-4 Agricultural Lands of Importance to the State of Hawaii



Environmental Impact Statement
By: Bell, Collins & Associates

Source: Hawaii, State of, Department of Agriculture (1977)

The differences in the classifications of any particular parcel of land may be attributable to any one of the differences in the way the land was classified, since the three systems take different data or combinations of data into consideration. We, therefore, consider all three classifications when we look at a particular site. The Soil Survey [SCS] is the most specific for the soils themselves. The LSB Detailed Land Classification System continues to form a legal basis for restrictions and conditions on permissible uses of Class A and B lands within the State Agricultural District, pursuant to Section 205-4.5, Hawaii Revised Statutes. The ALISH system is more current than the LSB and generalizes the soils information contained in the Soil Survey into a more easily used form.

As far as which system takes precedence over the others, legally, the LSB Detailed Land Classification would, as far as Class A and B lands are concerned.

No Class A or B soils occur on Phase Two lands. Hence, the project is in compliance with the only system which has a firm legal basis.

Statewide, the ALISH maps place far more land in a protective category than does the LSB classification. As can be seen through a comparison of the information in Figures IV-3 and IV-4, this is also true on the Phase Two site. Hence, a determination of the significance of the proposed urban development depends upon which of the criteria are used. If the LSB system is applied, the adverse impacts appear as minimal. If the ALISH maps are used as the standard (see discussion in Section 5.2.1 regarding recommendations in the State functional plan for agriculture), the adverse effects would appear to be more substantial. No air-tight case can be made for either alternative. Hence, at this time the subject must be considered an unresolved issue.

The value of this land can also be viewed in a larger socio-economic context. The economic effect of removing this land from its present use for cattle grazing is dealt with in Section 6.4. Public policy also establishes a framework for evaluating the use of prime agricultural land. The Kaua'i County General Plan, for example, calls for encouragement of the visitor industry as well as conservation of agricultural lands. As indicated by the General Plan map for the Hanalei Planning Area, the County seems willing to allow loss of some agricultural land at Princeville in order to establish the area as a major resort. See Chapter V for a discussion of public policies relating to this issue.

Soil loss through erosion is not expected to be a problem. The existing steep slopes would be left undisturbed both during and after construction; hence, the existing protective groundcover would be retained. When the plateau is fully improved and plantings and groundcover are in place, it will be subject to less erosion than it was in the past under agricultural cultivation. During construction of Phase Two facilities, the plateau would be more susceptible to erosion, but confining development to the fairly flat plateau areas, and use of appropriate erosion control practices would minimize this loss. For a fuller discussion of construction-related erosion, see Section 4.5.5.

4.4 TRAFFIC IMPACTS

4.4.1 Introduction

The Princeville Resort is served by Federal Aid Primary Route 56, or Kuhio Highway as it is more familiarly called. This highway provides the only road access to Princeville and the island's other north and east shore communities. Princeville Airport makes air access to the North Shore possible as well, but the highway serves as the only practical access route for the vast majority of persons entering and leaving the region. In view of its obvious importance, as well as the concerns expressed by several agencies, a detailed traffic impact analysis was conducted in 1980 and updated in mid-1982 as part of the planning effort for Phase Two. This section summarizes the results of that study.

4.4.2 Vehicular Traffic

4.4.2.1 Existing Use of Kuhio Highway and Planned Improvements

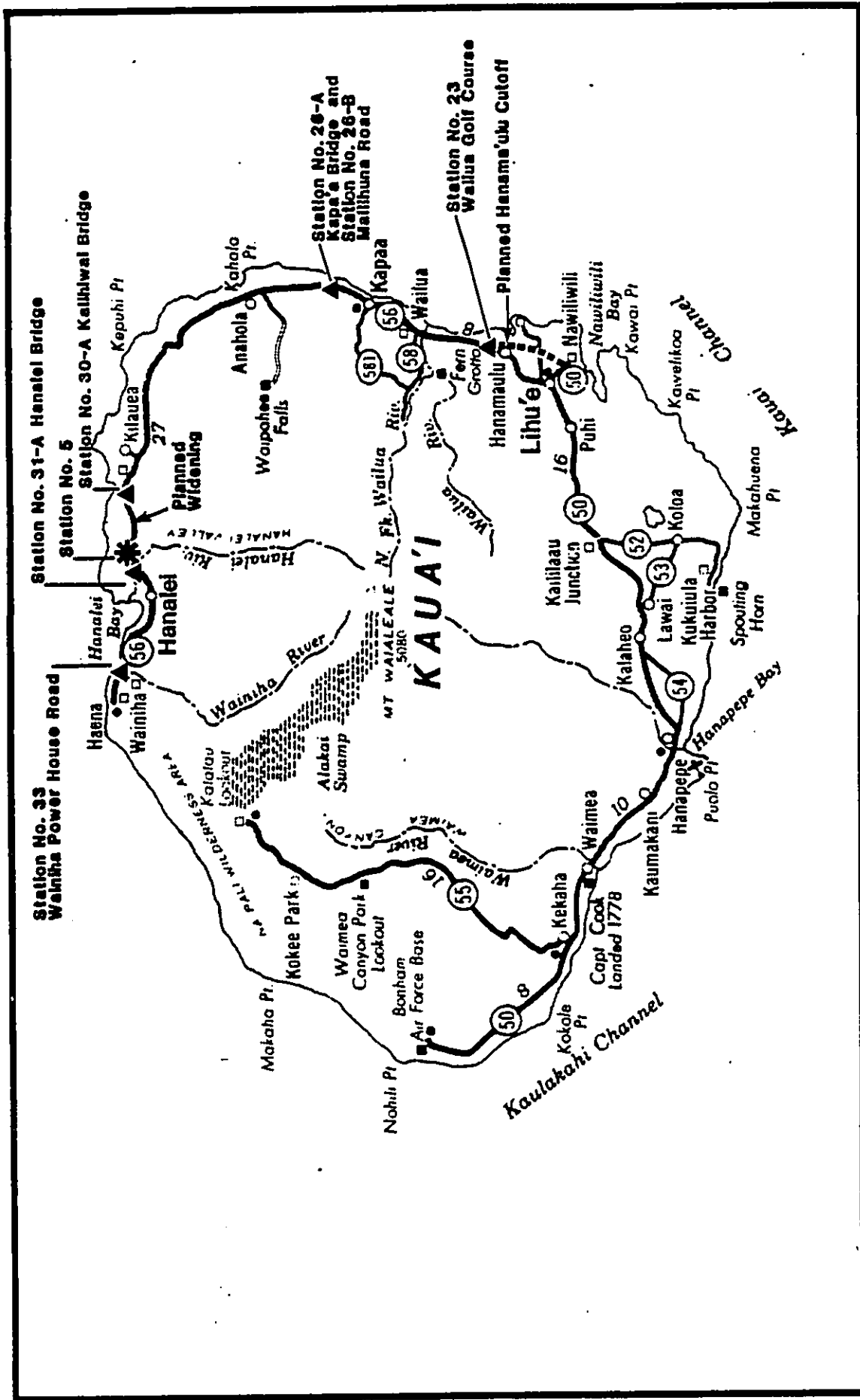
Kuhio Highway extends from Lihu'e to Ha'ena. Between Lihu'e and Kalihiwai it has been gradually improved over a number of years and is considered to be in good condition by the State Department of Transportation. The portion from Kalihiwai to Ha'ena consists of two relatively narrow lanes and eleven one-lane bridges, and is considered substandard in design (U.S. and Hawai'i Departments of Transportation, June 23, 1980:I-1).

As the result of public hearings in 1975 and 1977 on proposed improvements, the Hawai'i State Department of Transportation (DOT) is proceeding with plans to widen the highway and straighten dangerous curves from Kalihiwai to Princeville. These improvements call for provision of two 11-foot lanes with 4-foot paved shoulders and are currently being designed (Hawai'i, State of, Department of Transportation; June 25, 1982). The estimated completion date for the improvements is 1986.

Closer to Lihu'e, the State is proceeding with plans to construct a cutoff road from Ahukini Road near Lihu'e Airport to one mile south of Wailua Golf Course. Completion of this "Ahukini Cutoff" is expected in 1985. In addition, the State DOT is proposing construction of a passing lane from Hanama'ulu to Wailua, with construction scheduled to start in late 1984 (Hawai'i, State of, Department of Transportation; June 25 and August 26, 1982).

Data are available from a number of traffic count stations maintained along Kuhio Highway by the State of Hawai'i Department of Transportation. The location of these stations is shown in Figure IV-5, and they are used as reference points throughout the following discussion.

Traffic volumes recorded at each station are presented in Table IV-1. For the purpose of comparison, the approximate highway capacity (in vehicles per hour at Service Level "E") for each of the roadway segments covered by the traffic counts has been calculated using the methodology established in the Highway Capacity Manual (Highway Research Board; 1965) and is presented in the same table.



IV-5 Location of Traffic Count Stations

- ▲ State Department of Transportation Count Stations
- * Belt, Collins & Associates Count Stations

0 2 4 6 8 10
miles

▲ NORTH

PRINGEVILLE

PHASE TWO

Environmental Impact Statement
By: Belt, Collins & Associates

Table IV-1. Existing and Projected Average Daily and Peak-Hour Traffic on Kuhio Highway Without Phase Two.

Year	Type of ¹ Traffic	Traffic Volume In Vehicles Per Specified Time Period					Station No. 33 Wainiha Power House Road
		Station No. 23 Wailua Golf Course	Station No. 26-B Mailihuna Road	Station No. 30-A Kalihiwai Bridge	Station No. 31-A Hanalei Bridge	Station No. 33	
1979 ²	ADT	15,551	6,993	3,406	3,154	1,653	
	Peak Hour	1,459	616	335	280	180	
1985	ADT	23,700	10,000	5,000	4,100	3,100	
	Peak Hour	2,220	880	490	370	340	
1990	ADT	28,700	11,600	6,600	5,300	3,900	
	Peak Hour	2,690	1,020	650	470	420	
1995	ADT	34,000	13,600	7,500	6,500	4,700	
	Peak Hour	3,190	1,190	740	580	510	
2000	ADT	38,900	15,400	8,400	7,800	5,400	
	Peak Hour	3,650	1,360	830	690	580	
Existing Highway ³ Capacity (in vph) ³		1,860	1,520	1,020	650	640	
Planned Highway ⁴ Capacity (in vph) ⁴		1,860	1,520	1,390	650	640	

¹ Peak hour trips are a percentage of the average daily traffic (ADT). For estimation purposes the percentage of trips in the actual 1979 traffic counts was used.

² Actual counts made by the State Department of Transportation in October 1979.

³ Calculated using Highway Capacity Manual methodology (Highway Research Board; 1965).

⁴ Same as existing capacity except for Station No. 30-A, whose capacity is given in U.S. and Hawaii State Departments of Transportation (June 23, 1980). Final EIS for Kauai Belt Road, Figure 4.

Source: Compiled by Belt, Collins & Associates.

4.4.2.2 Future Traffic on Kuhio Highway Without Phase Two

Even if the Phase Two project is not constructed, traffic volume on Kuhio Highway in the vicinity will change over the coming years in response to growth (including ongoing construction in the Phase One area of Princeville) and changing land use patterns elsewhere on Kaua'i. In order to account for this non-Phase Two component of traffic growth, it was necessary to create a theoretical model which would provide traffic projections for Kuhio Highway without the Phase Two project.

In creating the model, Belt, Collins & Associates utilized a multiple regression analysis to create a theoretical model which relates future highway traffic to projected levels of development at Princeville and elsewhere on Kaua'i. The model related historical traffic volume (the dependent variable) to thirteen different island-wide and area-specific factors (the potential independent variables) that might plausibly affect it. The independent variables tested included resident population (both islandwide and North Shore), number of hotel rooms, and the number of visitors. Traffic counts from the years 1965 through 1977 for each of the stations shown on Figure IV-5 provided the necessary historical data on the dependent variable.

The analysis yielded relatively high correlation coefficients (r-squares ranging from 0.93 to 0.99). It indicated that for most of the count stations, traffic volumes are correlated more with island-wide than with area-specific variables. Only at Malihuna Road and Kalihiwai Bridge was a local factor (the number of hotel units in the district) found to have a significant correlation with the observed traffic volumes.

The high correlation coefficients suggested that, in the absence of any fundamental change in the economic or residential patterns of the County, the regression equations developed would provide a reasonably accurate picture of future highway traffic without the Phase Two development. Hence, they were used as the basis for the projections presented in Table IV-1.

To arrive at estimates of future traffic volumes, it was also necessary to utilize projections of the independent variables. In this instance, official State Government estimates prepared by the Department of Planning and Economic Development (DPED) were used, since they are being used by all State agencies as the basis for their long-range planning.

4.4.2.3 Future Traffic on Kuhio Highway With Phase Two

In November 1979, Belt, Collins & Associates took traffic counts at a number of stations inside the Princeville resort and on Kuhio Highway. Combining these counts with economic activity data compiled by Princeville Development Corporation and Community Resources for November 1979 and with information from a survey by Princeville security guards of the percentage of trips by various user categories in February 1980, trip generation factors were derived for each type of resort user or vehicle. These trip generation factors were then applied to the economic projections of Phase Two development made by Peat, Marwick, Mitchell & Company. This resulted in the average daily trips expected to be generated by Phase Two in selected future years.

The next step in the traffic analysis involved assigning the projected vehicle-trips to the roadway network. Traffic counts taken in April 1980 showed that 17 percent of the trips originating on-site never left Princeville; of the vehicle-trips which did involve Kuhio Highway, approximately 65 percent (54 percent of all trips

generated) were in the Lihue direction while 35 percent (29 percent of all trips generated) were to and from the west. These directional splits, together with estimates of trip origin and destination along the Kuhio Highway corridor were used to project the number of vehicle trips that Phase Two would generate at each traffic count station on Kuhio Highway. These estimates are reproduced in Table IV-2.

The final step in the estimating procedure involved adding Phase Two-related traffic to the volumes expected without it. The results of this addition are presented in Table IV-3.

Comparing projected traffic volumes on Kuhio Highway without Phase Two to highway capacity (see Table IV-1), we find that even without Phase Two, traffic is expected to exceed highway capacity at the Wailua Golf Course before 1985; to be at capacity at Hanalei Bridge by 2000; and to be approaching capacity at Wainiha Power House Road by 2000. Traffic is expected to be approaching, but not exceeding, capacity at Mailihuna Road around 2000. The two remaining stations on Kuhio Highway--Kalihiwai Bridge and the new station east of Ka Haku--are expected to be able to accommodate projected traffic with Phase Two, assuming that the planned improvements to Kuhio Highway are made before the year 2000.

4.4.2.4 Projected Traffic on Resort Roads With Phase Two

The preceding discussion has focused on Phase Two's effect on traffic flows on Kuhio Highway. Another concern which deserves mention is the adequacy of on-site roads.

With respect to the traffic volumes generated by Phase Two alone, the central plateau collector serving 300 condominium-hotel rooms and 480 single-family residential homes would receive the heaviest use. Based on the trip generation factors determined from the Princeville traffic study, it is estimated that this development would produce about 2,600 vehicle-trips per day, or less than 250 vehicle-trips during the peak hour. This is only a small fraction of the 1,800 vehicle per hour capacity of the collector road, and is far below the capacity of even the most restrictive intersection design that is possible. Hence, it appears that the on-site collector roads serving the central and eastern plateaus would be more than adequate to handle the expected traffic volumes.

The collector roads serving portions of the western plateau of Phase Two intersect with Ka Haku Road rather than Kuhio Highway. Ka Haku is the primary access route to Phase One of Princeville as well. Hence, while the total traffic volume generated by Phase Two alone along this corridor is not as great as that generated on the central plateau collector road, the combined (i.e., Phases One and Two) traffic volumes at the Ka Haku Road/Kuhio Highway intersection are expected to be the highest of any point affected by the proposed project.

The portion of Ka Haku expected to have the heaviest use is located just makai of the entrance to Princeville Center. It corresponds to Station No. 5 in the November 1979 resort traffic counts. Phase Two is expected to add about 180 vehicle trips to the vehicle trips that would otherwise be expected in the peak hour, bringing the peak-hour total to about 1,400 vehicles per hour (vph). With Ka Haku designed to handle 1,800 vehicles per hour, it should be possible to maintain service level D or better.

Table IV-2. Impact of Princeville Phase Two-Generated Traffic at Selected Points on Kuhio Highway.

Year	Type of Traffic	Station No. 23-A Wailua Golf Course	Station No. 26-B Mailhuna Road	Station No. 23-A Kailiwal Bridge	New Station Lihue Side of Ka Haku	Station No. 31-A Hanalei Bridge	Station No. 33 Wainiha Power House Road
1990	ADT Peak	580 50	730 60	1,090 110	1,150 110	670 60	330 40
1995	ADT Peak	610 60	760 70	1,140 110	1,410 140	710 60	350 40
2000	ADT Peak	670 60	840 70	1,260 120	1,400 140	780 70	380 40
Ultimate	ADT Peak	1,190 110	1,490 130	2,220 220	2,460 240	1,380 120	680 70

¹ Peak hour trips were estimated using peak-hour:ADT ratios calculated from the State Department of Transportation October 1979 traffic counts.

Source: Belt, Collins & Associates.

Table IV-3. Projected Average Daily and Peak-Hour Traffic on Kuhio Highway With Phase Two.

Year	Type of ¹ Traffic	Station No. 23 Wailua Golf Course	Station No. 26-B Mailihuna Road	Station No. 30 Kalihiwai Bridge	New Station Lihue Side of Ka Haku	Station No. 31-A Hanalei Bridge	Station No. 33 Wainiha Power House Road
1990	ADT Peak Hour	29,300 2,750	12,300 1,080	7,700 760	8,900 880	6,000 530	4,200 460
1995	ADT Peak Hour	34,600 3,250	14,400 1,270	8,600 850	10,100 990	7,200 640	5,000 540
2000	ADT Peak Hour	39,600 3,720	16,200 1,430	9,700 950	10,900 1,070	8,600 760	5,800 630
Ultimate ²	ADT Peak Hour	40,100 3,760	16,900 1,490	10,600 1,040	12,100 1,190	9,200 820	6,100 660
Existing Highway ³ Capacity (vph):		1,860	1,520	1,020	1,100	650	640
Planned Highway ⁴ Capacity (vph):		1,860	1,520	1,390	1,390	650	640

¹ Peak hour trips are a percentage of the average daily traffic (ADT). For estimation purposes the percentage of trips in the actual 1979 traffic counts was used.

² Traffic without Phase Two in the year 2000 plus the number of trips expected to be generated by the ultimate development of Phase Two sometime beyond 2000.

³ Calculated using Highway Capacity Manual methodology (Highway Research Board; 1965).

⁴ Same as existing capacity except for Station 30-A and new station, whose capacities are given in U.S. and State of Hawaii's Departments of Transportation (June 23, 1980; Figure 4).

Source: Belt, Collins & Associates, July 15, 1982; Table 15.

As previously noted, a significant proportion of the trips generated by development at Phase Two will remain on-site. Many of them will be between the residential and resort areas and the commercial facilities at the Princeville Center. Hence, traffic volumes on Ka Haku Road at its intersection with Kuhio Highway are expected to be considerably lower than the Traffic Count Station No. 5 estimates reported above. At the same time, however, the capacity of the intersection is well below the 1,800 vehicles per hour calculated for the open stretches of the roadway. Hence, additional analysis was undertaken to determine whether or not the intersection would be capable of handling the expected traffic volumes.

Expected peak-hour traffic volumes at the Kuhio Highway/Ka Haku Road intersection are summarized in Figure IV-6 assuming complete development of both phases of the Princeville project. The projections assume an outbound/inbound split of 55/45 and a 65/35 split between vehicles entering and leaving the resort from/to the east (Lihu'e-side) and west (Hanalei-side), respectively. The greatest volume would be on Ka Haku southbound approaching Kuhio Highway. The total volume expected in this lane amounts to 670 vehicles per hour. The projected two-way volume on Ka Haku just north of the intersection is 1,220 vehicles per hour (see Table IV-4).

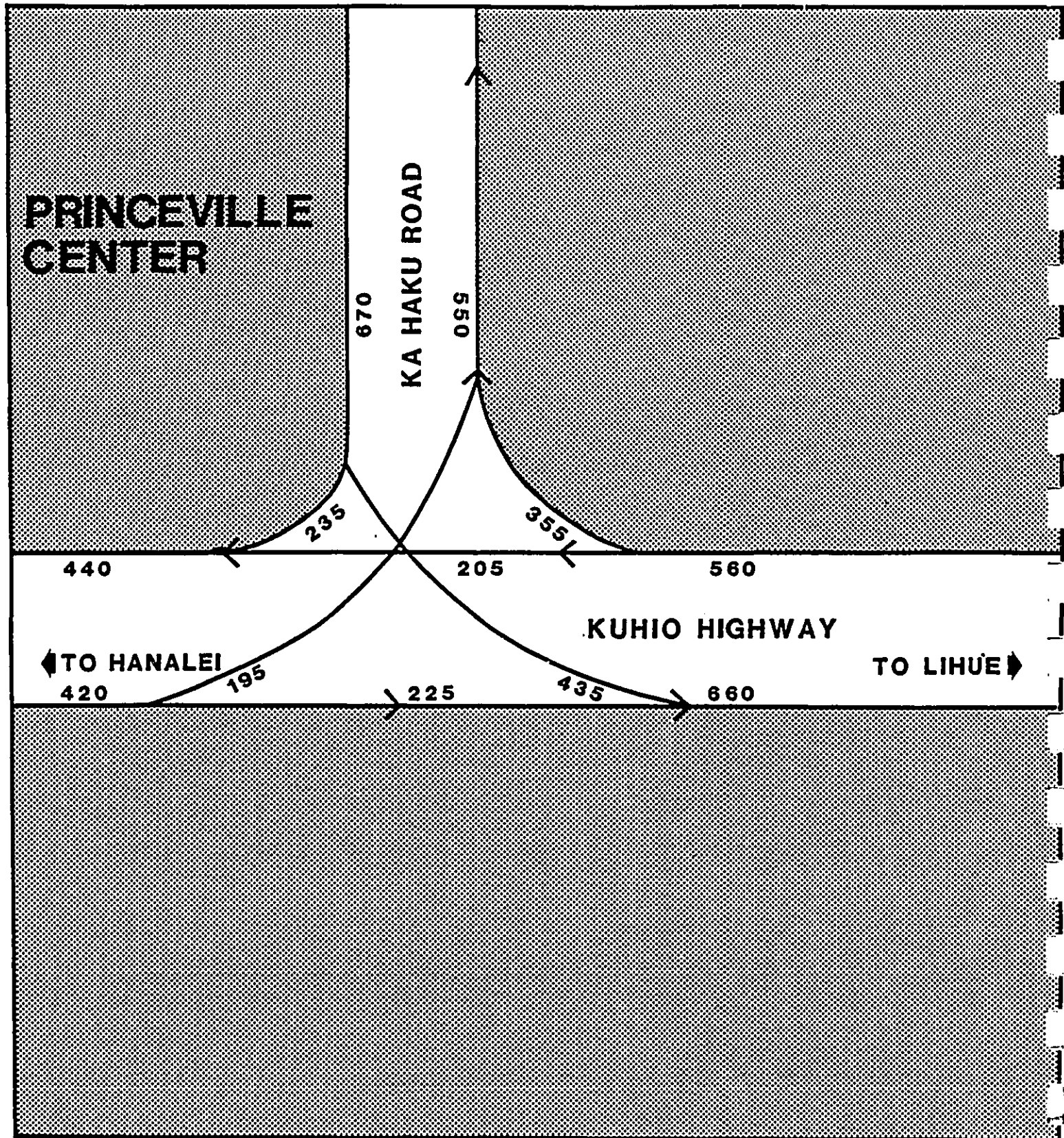
The capacity of each approach leg of the intersection was calculated using procedures contained in the Highway Capacity Manual (Highway Research Board; 1965), the standard reference work for intersection capacity analyses. They are presented in Table IV-5. A comparison of the projected volumes with the estimated capacity indicated that only the Ka Haku Road approach would be unable to accommodate the expected traffic. Because of the conflict which exists between vehicles attempting to leave the resort on Ka Haku and traffic on Kuhio Highway, congestion would result during peak periods. Provision of a short storage lane for vehicles turning right out of Ka Haku onto Kuhio Highway would mitigate the problem.

It is worth noting that the relatively slow pace with which the project will develop over time, together with the availability of extra right-of-way space, provides considerable flexibility for providing higher levels of service if that should be desired. It is possible, for example, to provide a deceleration lane on Kuhio Highway approaching the intersection or to provide an acceleration lane for vehicles turning left out of Ka Haku Road onto Kuhio Highway eastbound. If all possible improvements were made, it is estimated that the capacity of the intersection could be increased to the point where no approach would operate at greater than 60 to 70 percent of its capacity even during the peak hour.

4.4.2.5 Mitigation Measures

Future traffic on Kuhio Highway is projected to exceed highway capacity at three of six traffic count stations. At the Wailua Golf Course the traffic is projected to exceed capacity before 1985 with or without Phase Two. Since Phase Two would have little impact on the problem, traffic congestion would have to be addressed in either case by DOT. Either signalization or some kind of highway improvement would be needed to improve traffic flow.

At Hanalei Bridge the traffic without Phase Two is also expected to exceed highway capacity by 2000. The DOT proposed to replace the existing one-lane bridge with a two-lane structure, but public response to this proposal indicated a desire to retain the present structure and to keep the highway in its present traffic-limiting condition to preserve the scenic state of the Hanalei to Ha'ena area. It is possible that traffic buildups at the Hanalei Bridge would lead to a modification of drivers' behavior



IV-6 Projected Peak Hour Turning Movements

NORTH

PRINCEVILLE
PHASE TWO

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Table IV-4. Projected Traffic on Ka Haku Approach to Kuhio Highway With and Without Phase Two.

Year	Type of Traffic	Traffic Without Phase Two	Traffic With Phase Two
1979 ¹	ADT	3,180	3,180
	Peak	300	300
1985	ADT	6,720	6,720
	Peak	630	630
1990	ADT	10,100	10,900
	Peak	950	1,020
1995	ADT	10,260	11,210
	Peak	960	1,050
2000	ADT	10,690	11,720
	Peak	1,000	1,100
Ultimate	ADT	11,150	12,990
	Peak	1,040	1,220

¹ From actual traffic counts taken in November 1979.

Source: Belt, Collins & Associates.

Table IV-5. Comparison of Projected Volumes to Estimated Capacity: Intersection of Ka Haku Road and Kuhio Highway at Ultimate Development of Phases One and Two.

Intersection Leg	Projected Peak Hour Volume (vph) ¹	Capacity @ Service Level "E" ²	
		"As Is"	Turn Lane On Ka Haku
Northbound on Ka Haku Road:			
- left turn	435		640
- right turn	235		800
TOTAL	670	450	1,440
Westbound on Kuhio Highway			
- right turn	355		
- straight	205		
TOTAL	560	780	780
Eastbound on Kuhio Highway			
- left turn	195	235	
- straight	225	1,000	
TOTAL	420	1,235	

¹ From Figure IV-6.

² Calculated using the methodology outlined in the Highway Capacity Manual (Highway Research Board; 1965).

Source: Belt, Collins & Associates.

with respect to timing their trips. Since a large portion of resort trips are discretionary insofar as timing, it is quite possible that the peak-hour demand factor (percentage of ADT utilizing the highway segment in the peak hour) will diminish from its current nine percent. If this were to happen, traffic congestion at the Hanalei Bridge could be reduced. A modification of the peak-hour usage at Hanalei Bridge would also lessen the peak-hour traffic at Wainiha Power House Road, thus delaying traffic congestion problems currently projected to occur by 2000.

Traffic on Kuhio Highway near Maillihuna Road is expected to approach highway capacity. Eventually (the year 2000 or later), some highway improvements may be desirable in this area to improve traffic flow.

At the two stations on Kuhio Highway closest to the resort and on all Princeville resort roads, the traffic with Phase Two is projected to be well below road capacity. The intersections are the points of greatest congestion, and to mitigate impacts these would be improved as necessary. Plans for Phase Two roadways are being coordinated with the State DOT.

4.4.3 Air Traffic at Princeville Airport

4.4.3.1 Existing Facilities and Level of Operation

Princeville Airport is a private airstrip owned by PDC. It is located just south of Kuhio Highway about two miles east of Ka Haku Road, the main entrance road to Princeville Phase One. Existing facilities include one 3,380-foot long runway aligned in a northeast-southwest direction at 320 feet above mean sea level. There is an existing Federal Aviation Administration (FAA) obstacle intrusion waiver for the existing tree line along Kuhio Highway, which is within 200 feet of the runway. Lighting is available, but at present is only used during the winter to maintain the late afternoon flight schedule. There is a 600-square foot terminal building, a 1,200-square foot helicopter maintenance shed, and 56 parking spaces. No aviation fuel storage facilities are available for the fixed-wing aircraft, but Papillon Helicopters stores and pumps its own fuel.

Princeville Airways, Inc., a subsidiary of Consolidated Oil and Gas, is the commuter airline serving the airport. It currently operates from three to five passenger flights daily to Honolulu or Kamuela using two de Havilland twin otters (DHC-6) and also carries mail, freight, and local produce. Passenger arrivals and departures for 1981 totaled more than 19,000 (Princeville Airways, July 14, 1982). Papillon Helicopter provides a sightseeing service out of Princeville Airport, with an average of 25 flights daily. It also operates out of Lihue Airport, Burns Field, and the Coconut Beach Hotel heliport (Papillon Helicopters, September 2, 1982). Two rental car agencies are located at the airport as well.

In terms of aircraft operations (landings and takeoffs), fixed wing aircraft of the commuter line and some private planes account for around 4,000 operations annually. With helicopter operations adding around 18,000, the total number of operations is around 22,000 annually. Using the methodology established by the Federal Aviation Administration's (December 1969) Advisory Circular No. 150-5060-3A, we estimate the ultimate capacity of Princeville Airport to be over 100,000 operations annually, assuming improvements are made to provide optimum runway width, runway exits, and taxiway system.

4.4.3.2 Projected Future Operations

The projected growth in the number of visitors and residents in the Hanalei District combined with the projected island-wide increase in the number of visitors can be expected to increase air operations at Princeville Airport. The noise impacts associated with the increase in operations are discussed in Section 4.6.4. The following discussion focuses on fixed-wing and helicopter operations projected for 1995.

Fixed Wing Aircraft

Both visitors and residents use the Princeville Airport, and the only passenger data available does not distinguish between the two different types of travellers. This makes the derivation of precise air traffic generation estimates difficult. Visitors are the heaviest users of Princeville Airlines, and their number is expected to increase at a proportionately greater rate than that of residents. Hence, to be conservative the number of operations was projected using the forecast average daily visitors population, a 50 percent higher aircraft load factor (13.0 passengers per flight versus the 9.0 passengers per flight recorded in 1981), and a trip generation factor of 4.0 flights/day/1,000 visitor population (also from the 1981 data). Non-Princeville Airline traffic was assumed to increase by 50 percent to 3,000 flight operations per year. With a projected ultimate average daily visitor population of about 4,000 (see Table III-9), the Princeville Airport is expected to handle about 9,000 fixed wing flight operations per year. The Phase Two project would account for only 15 percent of these.

Helicopters

The helicopter operation at Princeville Airport has rapidly grown to its current rate of an average of 25 flights a day. Present usage of the helicopters for sightseeing indicates that the market is based primarily on Kaua'i visitors as a whole and is not limited to visitors staying at Princeville or Hanalei (Papillon Helicopter, September 2, 1982). Based on the number of yearly visitors to Kaua'i projected by Peat, Marwick, Mitchell & Co., the average daily flights are estimated in Table IV-6 at 52 flights per day.

Given the present facilities at Princeville Airport, it is unlikely that more than six helicopters could be maintained and operated without interfering with the commuter airline service. Assuming five one-hour flights per aircraft per day, a maximum of 30 helicopter flights a day could be handled by the present facilities at Princeville Airport. To accommodate the additional 22 flights a day projected for 1995, either the helicopter facilities at Princeville Airport would have to be expanded or a greater proportion of the flights would have to originate from the other airfields on Kaua'i used by Papillon helicopters.

Total Flight Operations

The total worst-case operations anticipated for 1995 would be 16 DHC-6 operations per day, 52 helicopter operations per day, and an estimated four unscheduled private aircraft operations per day. This would result in 74 operations a day, or 27,000 operations a year, which is about 20 percent of the airport's estimated capacity.

Table IV-6. Existing and Projected Helicopter Operations: 1980, 1985, 1990 and 1995.

<u>Year</u>	<u>Projected Yearly Visitors to Kauai¹</u>	<u>Average Daily Visitors</u>	<u>Average Flights Per Day²</u>
1980	1,033,000	2,830	25
1985	1,311,000	3,590	32
1990	1,838,000	5,040	45
1995	2,131,000	5,840	52

¹ From Peat, Marwick, Mitchell & Co..

² The 25 flights per day recorded in 1980 is one flight per 113 visitors to Kauai. This ratio was used to project future demand.

Source: Belt, Collins & Associates.

4.5 HYDROLOGIC IMPACTS

4.5.1 Introduction

This section of the EIS evaluates the changes that the Phase Two development is likely to cause in surface water, groundwater, and nearshore marine waters. It also discusses the significance of these changes.

The hydrologic unit within which the Phase Two land is located includes the Anini Stream basin and eight smaller erosional gullies in the Kalihikai plateau. The unit is bounded on the east by the Kalihiwai River basin and on the west by the Hanalei River basin. The shoreline impacted by the hydrologic unit is two miles long; it consists of Anini Beach, Honono Point, and Kalihikai Beach. The total land area of the affected watershed is approximately 1,900 acres, of which slightly more than one-fifth is in one of the development areas.

Figure IV-7 shows that according to the Soil Conservation Service's land classification, about half of the watershed has soils subject to severe erosion. This is largely due to steep slopes, rather than soil types. However, the existing condition of the hydrologic unit is fairly stable in terms of erosion. Relatively high levels of rain falling at frequent intervals have encouraged heavy plant cover, especially in the upland areas. This cover serves as effective protection against erosion and resulting sedimentation.

4.5.2 Drainage Pattern and Amount of Surface Runoff

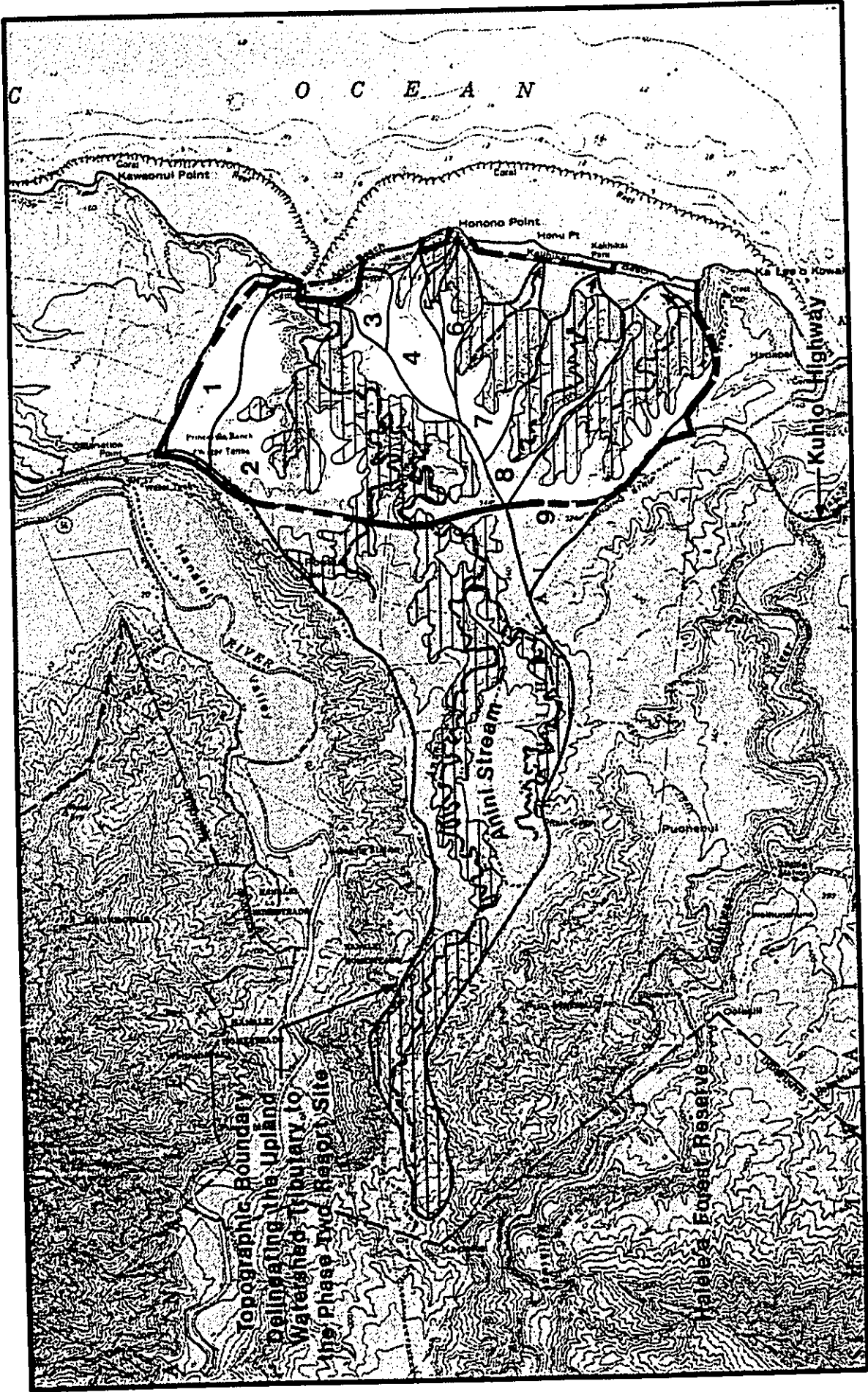
4.5.2.1 Existing Conditions

The affected drainage basin boundaries, the topography, and the drainage courses of Anini Stream and the erosional gullies are shown on Figure IV-7. The four-mile long, 1,244-acre Anini Stream basin is by far the largest component of the hydrologic unit. Its extension inland into the 100-inch-plus median annual rainfall area of the Halele'a Forest Reserve makes it the most likely basin to produce runoff during and following major rainfalls. The other drainage basins involve much smaller areas and are closer to the drier coastal area. Due to the high rainfall in the upland area, Anini Stream flows year-round, whereas most of the coastal erosional gullies flow only during and after heavy rainfalls.

4.5.2.2 Expected Change in Amount and Pattern of Surface Runoff

The Phase Two development is being designed to avoid disturbance of erosion-prone areas and would not affect the basic drainage pattern of the area. Anini Stream would continue to drain the majority of the land subject to severe erosion (i.e., land with a steep slope). No stream courses would be altered nor would the extent of land tributary to each be changed. Culverts under the roads would allow water to drain in the natural pattern.

There are no streamflow gauging stations on Anini Stream or on the intermittent streams which drain the project area. To estimate present and projected runoff volumes a percentage of rainfall volumes was used. In high rainfall areas the runoff factor can be 70 percent or more of rainfall. However, because the watershed of the Phase Two site is lower and drier than adjacent watersheds, which reach into the 150-plus inch median annual rainfall area, a 45 percent rainfall to runoff factor was assumed. The "existing annual runoff" estimates shown in Table IV-7 were based on this factor.



IV-7 Watershed

- 1-9 Drainage Basin Boundary
- Stream Channel
- Soil Subject to Severe Erosion Slope \leq 25%

- Phase Two Development Areas
- Phase Two Boundary
- Halele'a Forest Reserve Boundary

0' 1500' 3000'

NORTH

PRINCEVILLE
PHASE TWO

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By: Bell, Collins & Associates

Table IV-7. Speculative Surface Runoff Calculations for Princeville Phase Two Area.

Basin No.	Acreage	Average Annual Rainfall (inches)	Annual Rainfall Volume (cubic feet)	Existing Annual Runoff (cubic feet)	Area in Vegetation After Development		Runoff After Development ²		Additional Runoff Due to Development (cubic feet)	% Increase in Runoff
					Acres	Annual Runoff (cubic feet)	Acres	Annual Runoff (cubic feet)		
1	79	70	20.0x10 ⁶	9.0x10 ⁶	49	5.6x10 ⁶	30	6.1x10 ⁶	2.7x10 ⁶	30
2 (Ani)	1,244	85	384.7x10 ⁶	173.1x10 ⁶	1,177	163.4x10 ⁶	67	16.5x10 ⁶	6.8x10 ⁶	4
3	21	65	4.9x10 ⁶	2.2x10 ⁶	14	1.3x10 ⁶	7	1.3x10 ⁶	.6x10 ⁶	27
4	49	65	11.5x10 ⁶	5.2x10 ⁶	33	3.7x10 ⁶	14	2.6x10 ⁶	1.1x10 ⁶	21
5	16	65	3.8x10 ⁶	1.7x10 ⁶	12	1.3x10 ⁶	4	.8x10 ⁶	.4x10 ⁶	24
6	31	65	7.3x10 ⁶	3.3x10 ⁶	26	2.8x10 ⁶	5	.9x10 ⁶	.4x10 ⁶	12
7	98	70	24.8x10 ⁶	11.1x10 ⁶	86	9.8x10 ⁶	12	2.4x10 ⁶	1.1x10 ⁶	10
8	118	70	29.8x10 ⁶	13.4x10 ⁶	112	12.8x10 ⁶	6	1.2x10 ⁶	.6x10 ⁶	4
9	256	70	63.2x10 ⁶	29.3x10 ⁶	231	26.4x10 ⁶	25	5.1x10 ⁶	2.2x10 ⁶	8
TOTAL	1,912		552.0x10 ⁶	248.3x10 ⁶	1,742	227.3x10 ⁶	170	36.9x10 ⁶	15.9x10 ⁶	6

1 45% runoff factor assumed.

2 45% runoff factor for area in vegetation and 80% runoff factor for impervious area assumed.

3 The impervious areas were calculated as a percentage of the Phase Two development areas based on the characteristics of similar Phase One or general design studies, as follows:

Use and Density	Area That is Impervious	Source
Hotel Condominium	35%	Manalei Bay Resort in Phase One
Multi-Family, 6 units/acre	45%	Based on multi-family projects in Phase One with similar densities (Mauna Kai, Aili Kai)
Single-Family, 6 units/acre	40%	General design studies
Single-Family, 4 units/acre	40%	Phase One single-family areas
Single-Family, 2 units/acre	25%	General design studies

Source: Belt, Collins & Associates.

Construction of the roadways, residential homes, and other structures that make up the Phase Two project would increase the amount of impervious surface present. In addition, new drainage facilities would collect overland flow and divert it into the project's storm drainage system. As a result, infiltration would be decreased and runoff boosted. The extent of the increase depends upon the proportion of the drainage basin that would be covered with impervious surface and is calculated in Table IV-7. Depending upon the drainage basin, the change varies from +30 percent to +4 percent; it is estimated at +6 percent overall. Anini Stream, which would continue to receive about 70 percent of the total runoff, would experience a four percent increase over present runoff volumes in that drainage basin.

4.5.3 Flooding as a Result of Changes in Surface Runoff

As shown in Table IV-7, the estimated increase in mean annual surface runoff that can be attributed to the development of Phase Two is six percent. The increase in peak runoff rates would likely be greater. However, higher peak discharge rates are not likely to cause flooding of the Phase Two development because the natural drainageways are deep gullies which would not be overtopped.

Within the development areas, all storm drainage facilities would be designed to meet County standards. Major culverts would accommodate runoff from storms having a recurrence period of once in 100 years. Some minor drainage structures might be designed for storms of greater frequency, but the system would be laid out such that overflows would not threaten buildings.

The increase in impermeable surfaces on the site would increase the total volume of runoff; the smoother artificial surfaces and the collection of this runoff into pipe conduits and other artificial drainage structures would also increase the velocity of the runoff and, therefore, lower the time of concentration. The result would be increased "peakiness" of storm runoff, i.e., sharper differences between base flow and the peak flows. This increase in the magnitude of peak flows is a problem if it causes flooding.

As noted above, the on-site drainage system would be designed to accommodate the expected post-development runoff volumes. Hence, flooding would not be a problem there. Whether or not the same is true of off-site areas downstream of the proposed project is difficult to determine without much more detailed project design information than is currently available.

A comparison of recent aerial photographs with a detailed topographic map indicates that no more than four structures near the mouth of Anini Stream are within an area that might be flooded periodically by runoff from Anini Stream. These houses are also within the zone susceptible to flooding by tsunamis (see Federal Emergency Management Agency's November 4, 1981 map for area). The other houses along Anini Road do not appear to be in danger of flooding as a result of increases in runoff. They are much farther from the waterways which drain the other affected basins. To precisely calculate the possibility of Anini Stream flooding any structures, more detailed information on their position relative to the stream, on the capacity of the stream channel, and on peak discharge rates would be required.

4.5.4 Changes in Groundwater Recharge and Stream Flow

Direct evidence of groundwater conditions in the region is meager. The only data available on the hydrology of the area are contained in a 1970 study by Stephen Bowles, which indicates that geologic processes have formed a two-layered groundwater structure. There is a deep confined aquifer in the relatively permeable Waimea lavas that lie at some depth beneath the site. Above it, and separated by a relatively impermeable layer of weathered rock, is an unconfined surface aquifer in the less permeable Koloa volcanic soils. Bowles describes the unconfined surface aquifer and its effect on streams.

A shallow groundwater table is found everywhere on the property. This water body is perched on weathered lava...and is fed by rainfall within the property boundaries. Streams on the property are effluent, deriving their base flow from the draining groundwater, thus, the greatest quantity of flow is found in the lower reaches of the stream (Bowles; 1970:5).

Bowles shows that the two wells that service the Princeville Phase One development are drilled through the Koloa lava and intervening weathered lava layers to the underlying Waimea lavas. His data from well drilling confirms that the unconfined surface aquifer and the confined aquifer tapped by the water system are independent of each other, at least on PDC lands. In view of the above, it seems safe to conclude that the proposed Phase Two project would affect neither the recharge to nor sustainable yield of the deep aquifer from which Princeville draws its water.

By increasing the percentage of the watershed covered with impermeable surfaces, the proposed Phase Two project would reduce the amount of water infiltrating into the ground. Because some of this water currently moves laterally into the various gulleys that drain the site, this would lead to a reduction in the volume of groundwater discharging into them. However, with the exception of Anini Stream, all of the drainageways that cross the site already experience only intermittent flows; hence, the reduction in infiltration would have no effect on base flow.

Anini Stream, on the other hand, is perennial. Moreover, it is a gaining stream over its lower reaches, suggesting that there is movement of seepage water out of the surface Koloa lavas and into the stream channel. Therefore, it is possible that a reduction in the amount of infiltration in the Phase Two area could lead to a reduction in the base flow of Anini Stream.

The exact magnitude of the reduction is impossible to estimate without extensive subsurface testing, but it is believed to be relatively minor when compared with the existing base flow. There are several reasons for this, but one stands out as particularly important. Field investigations of the Princeville Ditch system in the vicinity of Anini Stream show it to be extremely leaky, with most of the leakage occurring in segments adjacent to the Anini Stream channel. On the basis of this, it is believed that most of the base streamflow consists of former ditchwater. If this is indeed the case, changes in infiltration on the plateau that might result from urbanization would affect only a small proportion of total streamflow. In contrast, repairs or other alterations to the ditch system which would reduce leakage from it could have very substantial effects on the magnitude of base flow in the stream.

The recharge rate of the deep confined aquifer that supplies all of the development with water would not be affected by surface activity within Phase Two due to the impermeable layer separating the deep aquifer from the surface groundwater. However, the additional water needed to service Phase Two will be drawn from this deep aquifer.

The ultimate average daily fresh water demand for Phases One and Two and other users is expected to be 2.2 million gallons per day (MGD). The additional withdrawal that is expected to occur due to Phase Two alone is about 0.7 MGD. See Section 4.11.1 for the calculation of these numbers. Bowles (1970:15) estimated the groundwater flow between the Kalihiwai and Hanalei Valleys through the Princeville well field to be 17 MGD. The additional water requirements of the Phase Two development, therefore, are expected to be well within the sustainable yield of the aquifer.

4.5.5 Changes in Water Quality

The Department of Health (DOH) had established water quality standards in Chapter 37-A of the Public Health Regulations, Chapter 342, Hawai'i Revised Statutes. These regulations have now been renamed Chapter 54 of Title 11, Administrative Rules of the Department of Health. In addition to protecting public health, one of the main objectives is to protect aquatic life. Testing for indications of water quality is difficult, costly and time consuming, due to the extensive sampling required and the variability of chemical constituents over time. Furthermore, it can only indirectly indicate impacts on marine and stream biota. Therefore, DOH has established an alternative method by which to evaluate water quality. The criteria state:

...water quality standards for this subsection shall be deemed to be met if time series surveys of benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site [Hawai'i, State of, Department of Health; December 1979: Section 7.5(C)(d) and November 12, 1982:Section 5(c)(2)(B)(v)]

Quantitative baseline studies of marine and stream fauna were commissioned for this EIS and are discussed in Section 4.7, Biological Impacts. While it is not possible to provide quantitative data on water quality, present or projected, qualitative discussions of possible impacts from the three major types of pollutants that the proposed project would generate are presented below.

4.5.5.1 Sediments

The Department of Health's (DOH) water quality standards include very specific criteria regarding episodic deposits of flood-borne soil sediments. However, it is not possible to predict whether these criteria would be exceeded by the Phase Two project, given the unpredictability of storm intensities, storm timing, and current and stream flow velocities. However, the standards also include a general provision regarding sediments:

The standard shall be deemed met upon a showing that the land on which the erosion occurred or is occurring is being managed in accordance with soil conservation practices acceptable to the applicable soil and water conservation district and the director of health, and that a comprehensive

conservation program is being actively pursued, or that the discharge has received the best degree of treatment or control, and that the severity of impact of the residual soil reaching the receiving body of water is deemed to be acceptable (Hawaii, State of, Department of Health; November 12, 1982:Section 4c).

Before starting construction, Princeville Development Corporation would submit its grading and erosion control plans to the Director of Health and the Soil Conservation District Manager, as well as the County Engineer for their approval. Potential erosion control measures are discussed in Section 4.7.3.4. With an approved erosion control plan, impacts on receiving waters are expected to be minimal, especially since impacts would be temporary.

As discussed in Section 4.7.3.4, the marine biota off Phase One was not adversely affected by the temporary increases in sediment levels caused by construction activities in Phase One. Because Phase Two, like Phase One, would be developed incrementally, areas of exposed soil would be limited in size at any one time. This in itself limits erosion and also makes it easier to control.

4.5.5.2 Chemical Pollutants

Among the types of chemical pollutants that are likely to affect water quality are roadway contaminants, fertilizers, herbicides, and pesticides. The sources of these pollutants are extremely diverse. They include the leakage of fuel, lubricants, hydraulic fluid, and coolants from motor vehicles; agricultural operations and home gardens; and industrial processes.

A number of studies locally and nationwide have attempted to quantify the amount of each pollutant that might be expected as a result of a particular size and type of development. However, they show so much variability between different environments that extrapolation to the Princeville situation would be overly speculative.

Fortunately, this does not mean that we cannot make any judgement with respect to the significance of these contaminants. Biota living in the coastal waters which receive runoff from the Phase One area provide an accurate indicator of the seriousness of any development-induced water quality changes that might occur. As indicated in the discussion of this topic presented in Section 4.7.3.4, it does not appear that the changes would be significant. The freshwater biota in Anini Stream currently are subjected to a wide variety of pollutants in the leachate from the landfill located in the Anini Stream basin on Phase Two lands. While it is impossible to predict the exact water quality impacts the Phase Two project might have on the stream, it is important to note that Anini Stream water quality at present is not pristine and the biota in it have been able to withstand some degradation of water quality. See further discussion in Section 4.7.3.3.

4.5.5.3 Sewage Effluent

Sewage generated by the Phase Two development would be conveyed to the existing sewage treatment plant where it would receive secondary treatment (see Figure II-6). The treated effluent will continue to be used for irrigation of the existing 27-hole golf course.

When effluent is re-used for golf course irrigation, most of its nutrients are taken up by the grass or converted to immobile forms in the soil, and the dissolved oxygen content is rapidly increased. This re-use provides a tertiary phase of treatment that meets State Department of Health Standards. This was demonstrated in an extended study by the University of Hawai'i Water Resources Center (Lau, et al.; 1975) and in numerous other engineering studies.

Based on the results of these studies, it is believed that no adverse effects arise from irrigation re-use of the effluent. Indeed, it has significant benefit both as a method of disposal and by limiting the amount of groundwater and surface water needed for golf course irrigation.

Based on the population expected at completion of both Phases One and Two, effluent production is projected to exceed the irrigation requirements, especially in the rainy season. Since it is unacceptable to discharge the surplus effluent into offshore waters without tertiary treatment, one alternative back-up disposal method is to pump it into an injection well in the vicinity of the existing sewage treatment plant. The purpose of the injection well is to dispose of the surplus effluent in a biologically barren environment, i.e., one with few living organisms. The ideal is a deep salt water aquifer, isolated from both fresh water and the ocean (Bowles; 1970:19).

In 1970, a test well was drilled to see if the conditions were correct for the injection of sewage effluent. An aquifer of high permeability, consisting of uncemented boulders and cobbles, was found at a depth of about 450 feet. Tests showed that the water in the aquifer had a chloride content about half that of seawater but that it was only "remotely in hydraulic continuity with the ocean" (Bowles, 1970:19). Furthermore, the well is located below the State's Underground Injection Control line. Thus, wells in this vicinity could meet the conditions necessary for injection wells. However, because of the high cost of drilling so deep, PDC is exploring other back-up effluent disposal methods. This unresolved issue is discussed further in Section 7.1.2.

4.5.5.4 Mitigation Measures

An erosion control plan would be subject to County, State, and Federal review and approval. To minimize soil loss and sedimentation of receiving waters, some or all of the following structural and non-structural measures may be used.

- o **Temporary Sediment Basin.** During the construction period sediment basins could be constructed to hold runoff long enough for the sediment to settle. Water would be released at a slow rate to prevent further erosion.
- o **Diversions.** A temporary channel could be constructed across sloping land either along the contour or at a predetermined grade to intercept surface runoff before it gains sufficient volume and velocity to cause erosion. Water is collected and moved laterally along the diversion at a nonerosive velocity to a stable outlet where it may be safely released.
- o **Slope Protection Structures.** A lined channel (chute, etc.) or a conduit could be used to carry runoff water down the face of steep slopes.
- o **Fibrous Netting Material.** A close-weave heavy fiber netting could be used to control erosion and conserve moisture during establishment of vegetative cover.

- o **Development Sequencing.** The amount of land to be cleared at any one time would be restricted. Erosion would also be minimized by not building during rainy periods.
- o **Minimize Grading.** Deep cuts and fills which alter the natural drainage pattern would be avoided.
- o **Mulching.** As soon as rough grading is completed the ground could be covered with mulch or grass clippings. This helps prevent wind and water erosion.

4.6 SONIC IMPACTS

4.6.1 Introduction

The construction and operation of the Princeville Phase Two development would result in increased noise generated by construction and higher vehicular traffic. The dominant noise source is expected to be automobiles, trucks and buses serving the resort. A separate noise-related issue is the compatibility of the proposed residential development in Princeville Phase Two with projected Princeville Airport operations.

Because it is so highly variable over time and distance, and because humans' primary concern relative to noise is more its physiological, social, and economic effects than its inherent physical properties, numerous different scales have been developed by those attempting to measure and characterize it. Over the past few years, the use of the "Day-Night Sound Level" (L_{dn}) has become generally recognized as the single best descriptor of community noise levels (U.S. Department of Defense, 15 June 1978; U.S. Department of Housing and Urban Development, 12 July 1979).

No State or County codes incorporate the L_{dn} descriptor as yet. However, Federal agencies are now in general agreement that locations with an exterior L_{dn} of 65 or less are suitable for residential housing. Table IV-8 summarizes typical L_{dn} values for different types of residential areas. It provides a reference point against which the noise levels projected for Princeville may be judged.

4.6.2 Highway Traffic Noise

Existing and future highway traffic noise levels associated with Princeville were predicted using the model developed by the Federal Highway Administration (Barry, T.M. and J.A. Reagen; December 1978). The model uses estimates of the A-weighted mean sound energy emission level for automobiles and trucks to arrive at a base traffic noise figure; it then allows adjustments to this figure to account for distance from the roadway, shielding, and other relevant factors. The output of the model is expressed as hourly equivalent sound level, $L_{eq(h)}$, at specified receptor locations.

Noise levels were calculated for three different receptor locations as shown on Figure IV-8:

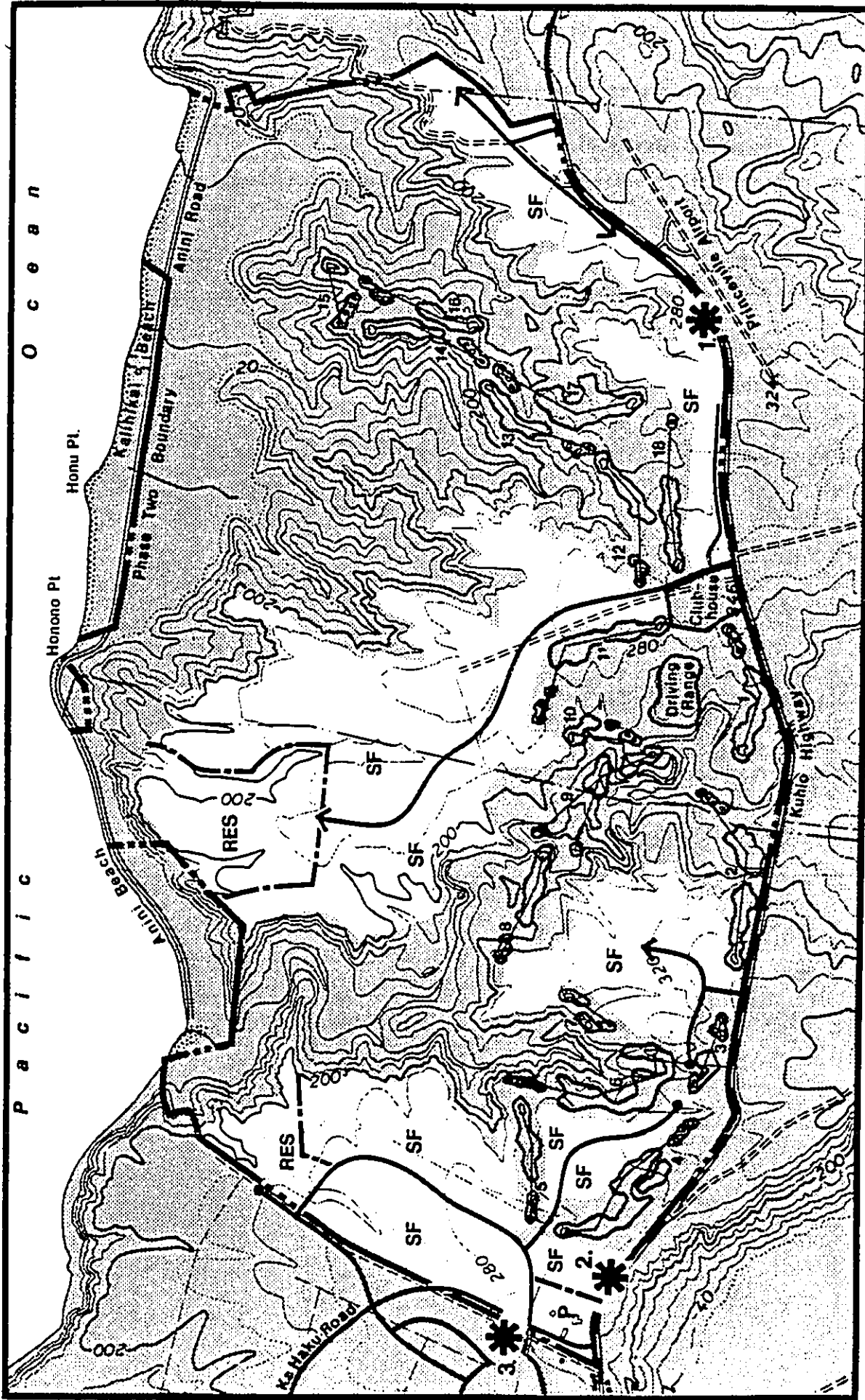
- o The first is adjacent to Kuhio Highway along the eastern plateau. Traffic volumes at this point were assumed to be equivalent to those projected for Kalihiwai Bridge (see Tables IV-1 and IV-2). The terrain in the area is such that it would provide little noise attenuation.

Table IV-8. Typical Values of Yearly Day-Night Average Sound Levels for Various Residential Neighborhoods.¹

Type of Area	Average L_{dn} (in dB)
Rural (undeveloped)	35
Rural (partially developed)	40
Quiet Suburban	45
Normal Suburban	50
Urban	55
Noisy Urban	60
Very Noisy Urban	65

¹ Values shown are for areas where there are no well-defined sources of noise other than the usual transportation noise.

Source: National Research Council (1977).



IV-8 Noise Receptor Locations

* Noise Receptor Locations
 SF Single Family Lots
 P Public
 RES Resort
 Phase Two Development Areas

0' 625' 1250'
 NORTH

PRINCEVILLE
 PHASE TWO
 Environmental Impact Statement
 By: Bett, Collins & Associates

- o Receptor No. 2 is situated adjacent to Kuhio Highway about 800 feet east of the Ka Haku Road intersection. This is the point at which the greatest volume of Princeville-related traffic would occur.
- o Receptor No. 3 is beside Ka Haku Road. It is in the residential area most severely affected by noise from traffic along Ka Haku Road.

The receptors were purposely located in areas where the combination of high traffic volumes and the presence of noise-sensitive land uses was judged most likely to produce adverse noise impacts.

In order to use the model, several assumptions regarding traffic, physical layout of development, and specific highway design features had to be made. These are summarized below:

- o Insofar as was possible, estimates of the vehicle mix (i.e., percentage of automobiles versus trucks) were based on historical traffic counts. Where data was lacking, it was assumed that 97 percent of the vehicles would be automobiles, two percent would be medium trucks, and one percent would be heavy trucks. This is the breakdown reported by the State Department of Transportation in traffic counts it conducted at Kalihiwai Bridge made between 1973 and 1979.
- o Vehicle speeds were assumed to be 35 miles per hour on Kuhio Highway (40 miles per hour following planned improvements) and 25 miles per hour on Ka Haku Road.
- o Receptors were assumed to be set back from the roadways as follows:
 - Receptor No. 1--nearest house 50 feet from the highway centerline.
 - Receptor No. 2--nearest receptor 100 feet from the centerline of Kuhio Highway behind the landscaped buffer zone that would be maintained there.
 - Receptor No. 3--nearest receptor is at the property line of the adjacent single-family lots, i.e., 110 feet from the centerline of Ka Haku Road.
- o Two "worst-case" assumptions were made with respect to the final design of the proposed Kuhio Highway realignment. The first is that the segment of the highway affecting Receptor No. 1 would be infinitely long and flat; the second is that there would be a clear sight line between Receptor No. 2 and the new highway alignment and that there would be no significant change in the vertical alignment of the highway segment affecting this location.

Estimates of present noise levels, projected highway noise levels without the Phase Two project, and estimated noise levels with full implementation of Phase Two were made using the FHWA traffic noise model described previously. These are summarized in Table IV-9. The year 2000 noise projections are based on full development of the Phase Two project by that date. Since the market analysis suggests that this would not occur until a somewhat later date, the level shown may be slightly higher than that which would actually occur.

Table IV-9. Projected Existing and Ultimate Highway Traffic Noise.

Location	Ultimate Development ³			
	1979	Without Phase Two (Phase One Only)	With Phase Two (Assumes Full Development)	Leq(h)
	Peak Hour, Two-Way Traffic	Peak Hour, Two-Way Traffic	Peak Hour, Two-Way Traffic	Leq(h)
#1-Kuhio Hwy. at Eastern Plateau	390 ¹	830	1,020	67 dBA 62 dBA
		62 dBA	66 dBA	
		58 dBA	61 dBA	
#2-Kuhio Hwy. near Ka Haku	390 ¹	1,090	1,220	62 dBA
		58 dBA	62 dBA	
#3-Ka Haku near Princeville Center	300 ²	1,040	1,220	57 dBA
		51 dBA	56 dBA	

1 Rounded from State Department of Transportation traffic counts on October 22 and 23, 1979 at Kalihiwai Bridge.

2 Rounded from Belt, Collins & Associates (BCA) traffic counts at Station #5, Ka Haku Road at Princeville Center, in Nov. 1979.

3 From Section 4.4.

4 From Figure IV-6.

Source: Belt, Collins & Associates.

The traffic noise level estimates presented in Table IV-9 show that sound levels will rise measurably over their present levels as a result of traffic generated by on-going development of the Phase One area. In sharp contrast, the addition of traffic from Phase Two would have little effect. In fact, there would be no measurable change in noise levels at Receptor No. 2, and the increase produced by Phase Two at Receptors Nos. 1 and 3 would be only one (1) decibel. This is too small a change to be detectable by the human ear.

The projected noise levels at receptors Nos. 2 and 3 are below the Federal standard of 65 L_{dn} . However, at the minimum setback distance of 50 feet, the model suggests that noise levels at receptor No. 1 may exceed this standard by one decibel without the Phase Two project and by two decibels with it. This is within the range of error of the projection techniques that have been used. Hence, it is possible that the actual noise level would meet the standard. Increasing the size of the setback to 75-100 feet would bring noise levels below the Federal standard.

4.6.3 Construction Noise

Noise from construction equipment may also be expected as a consequence of the Phase Two project. The site preparation phase of the project is likely to be most significant in this regard because it involves the use of heavy construction equipment for grading, utility line installation, and roadway construction. However, in view of the fact that nearly all of this work would occur in locations far removed from areas that are occupied at the time, noise from this source is unlikely to have significant adverse impacts.

Because of the phased nature of the project and the fact that most of the parcels would be sold as improved lots rather than house/lot packages, residential construction would be spread over many years. Consequently, construction will inevitably occur on parcels adjacent to occupied homes. This would involve only light construction activities, however, the major sitework having been done by PDC at the outset. Hence, construction noise would be low-level and of short duration. No significant adverse effects are expected.

4.6.4 Aircraft Noise

The existing Princeville Airport lies immediately mauka of Kuhio Highway adjacent to the eastern plateau of the proposed Phase Two project. In order to determine whether or not residential development in this area is compatible with the projected volume of flight operations at the Princeville Airport, a noise exposure analysis was conducted using standard analytical techniques developed by the Federal Aviation Administration (Bishop and Hays; 1975).

The Noise Exposure Forecast (NEF) parameter was utilized for the analysis because it is the descriptor most commonly used for aircraft noise analyses. The NEF noise measure is nearly the same as the L_{dn} descriptor used for highway noise. The primary difference is that calculations of NEF penalize nighttime (10:00 pm to 7:00 am) events to a slightly greater degree than those for L_{dn} . This difference is insignificant in the case of the Princeville Airport because of the absence of nighttime flight operations. Hence, NEF is equivalent to L_{dn} minus 35. NEF levels of 25 and below are considered "clearly acceptable" in residential areas and an NEF in the 25 to 30 range is "normally acceptable". NEF levels greater than 30 are generally unacceptable in residential areas.

As indicated above, noise generated by aircraft operations was estimated using a noise model developed by the Federal Aviation Administration (FAA). In applying this model to the Princeville Airport situation, it was necessary to make a number of assumptions with respect to specific operational parameters. These assumptions are summarized below:

<u>Model Parameter</u>	<u>Value for Princeville Airport</u>
Runway length	3,380 feet
Traffic pattern	Left-hand (makai)
Operations per year	27,000 (worst-case in 1995)
Runway utilization	100% in northeast direction (worst-case)
Percent of operations during nighttime	0% from 2200 to 0700
Proportion of operations involving turbojets	0%
Type of operation	Propellor
Proportion of operations involving twin-engine aircraft (Note: see following explanation for rationale.)	0%

It should be noted that the mix expected for 1995 consists of fixed wing Cessna 402 and 404, and DHC-6 airplanes and Bell 206 or equivalent helicopters, all of which are relatively quiet. Takeoff sound exposure levels for each type of aircraft at 1,000 feet distance are given by the FAA as follows:

79 dB for Bell 206
 84 dB for Cessna 402 and 404
 85 dB for DHC-6

Using the 85 dB level for the DHC-6 as the controlling figure, Figure 3-3 in the Bishop and Hays (1975) report was examined for a comparable value. The Composite Curve for single-engine aircraft is between 84 and 85 dB, i.e., approximately that of the DHC-6. Hence, this single-engine aircraft curve was used as the basis for the noise projections despite the fact that many multi-engine aircraft use the facility.

The methodology described above was designed to account for the flight characteristics of fixed-wing aircraft. Though they are quieter than the DHC-6s, helicopters are capable of flying much different approach and takeoff patterns. As a result, it is possible that they might pass closer to the residential areas of the resort. To account for this, the total projected flight operations were multiplied by a factor

of two, i.e., increased from 27,000 per year to 54,000 per year to arrive at the number used to determine noise impacts. The NEF 25 contour shown on Figure IV-9 was obtained from contour D on map NEF-P-100-4 in the Bishop and Hays (1975) study.

From Figure IV-9 it can be seen that nearly all of the proposed Phase Two development would have an airport noise NEF level of 25 or below. This indicates that residential uses there are "clearly acceptable" from a noise standpoint. However, a strip of the eastern plateau proposed for residential lots would experience an NEF level in the 25 to 30 range. This is considered "normally acceptable," but, when considered in conjunction with highway noise, suggests that development here must be designed and constructed with particular care if homes closest to the airport and highway are to have satisfactory noise levels.

4.6.5 Noise Mitigation Measures

As mentioned earlier, the portion of the eastern plateau close to Kuhio Highway is expected to experience noise levels slightly in excess of the accepted standard of 65 L_{dn}. By establishing a landscape setback of around 70 feet from the highway right-of-way, both the highway and airport noise can be reduced to acceptable levels.

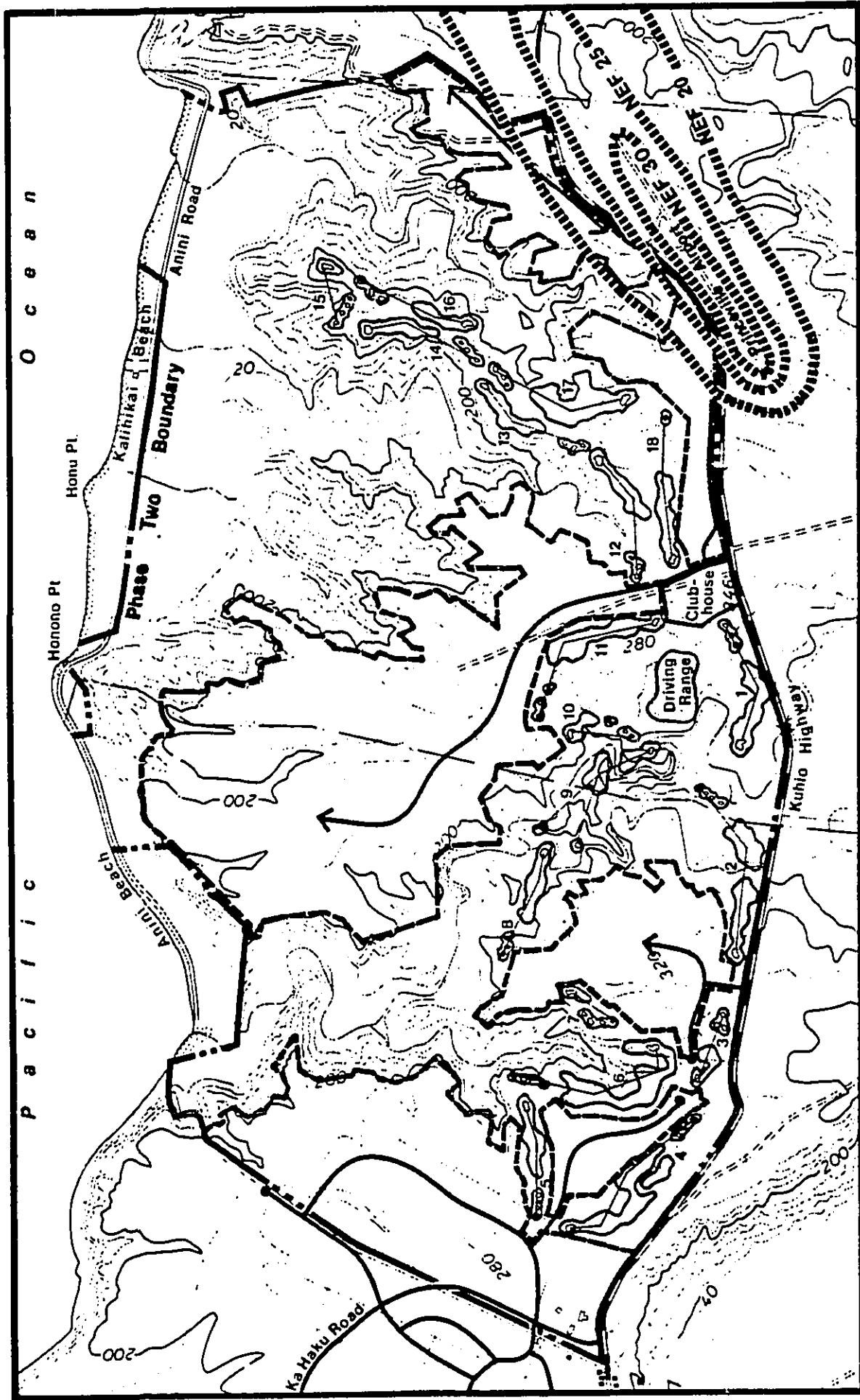
Although a landscape setback would bring noise to within accepted standards, it should be noted that noise levels immediately adjacent to the setback are still expected to be higher than in most of Phase One. In these areas, noise levels would be similar to those in urban areas rather than the suburban and rural noise levels currently prevailing in Phase One and anticipated in the interior areas of Phase Two. To further reduce noise to suburban levels along Kuhio Highway, either a wall or a berm would have to be built along the road to shield highway noise. Additionally or alternatively, highway and airport noise could be masked by planting landscaping such as palm trees, which produces "white" noise when the relatively constant trade winds rustle the leaves.

If helicopter operations prove to be a disturbance to the Phase Two development, it would be feasible to move the operation to a location more distant from the developed portion of Princeville, possibly to the mauka side of the runway.

4.7 BIOLOGICAL IMPACTS

4.7.1 Introduction

The proposed Phase Two expansion of the Princeville resort would inevitably cause changes in the vegetation. These changes, together with increased human presence in the area, could affect the terrestrial wildlife present, especially birds. Development could also affect the aquatic biological community through changes in the amount and quality of surface runoff and groundwater discharge reaching Anini Stream and the ocean. Therefore, the existing biota was studied so that the extent of future alterations could be determined. Mitigation measures which could avoid or offset any potentially adverse effects of the proposed project were also considered. The remainder of this section describes the existing flora and fauna, examines probable impacts of the proposed development, and suggests possible mitigation measures.



IV-40

IV-9 Airport Noise Contours

- ||||| Noise Exposure Forecast (NEF) Contours
- Development Areas

0' 625' 1250'

NORTH

PRINCETONVILLE

PHASE TWO

Environmental Impact Statement
By Bell, Collins & Associates



4.7.2 Existing Flora and Fauna

4.7.2.1 Vegetation

The project area consists primarily of gently sloping plateaus, dissected by a series of gulches. The vegetation differs between the plateau areas (currently used as pasture), the slope areas, and the stream areas, although there is some overlap in plant species. The Phase Two development area was surveyed by Steve Mechler of Belt, Collins & Associates' Landscape Architecture department in the spring of 1979. The plant species found there are listed in Table IV-10 by the type of area where they grow. None of the species listed is endangered.

4.7.2.2 Terrestrial Wildlife

An ornithological survey of the Princeville Phase Two property was conducted on April 20 and 21, 1979 by Phillip Bruner, a biology professor at Brigham Young University, La'ie. Several indigenous birds, including Hawaiian duck (koloa) Anas wyvilliana, black-crowned night heron (auku'u) Nycticorax nycticorax, great frigatebird (iwa) Fregata minor, and Hawaiian owl (pueo) Asio flammeus sandwichensis, were observed in the area.

The koloa is listed on both the State and Federal "endangered species" lists, and the largest remaining population of this species is on Kaua'i. According to the U.S. Fish and Wildlife Service, the number of birds present in and around the Princeville area is small. According to their files, the koloa use flooded pastureland for feeding and loafing after heavy rains. They have also been observed in small numbers in drainage ditches and streams adjacent to the project area. During this 1979 survey of the Phase Two area, Bruner observed only one koloa.

Over 250 migratory golden plover (Pluvialis dominica) were observed during Bruner's two-day study. While no other migratory birds were observed, ruddy turnstone (Arenaria interpres) and possibly bristle-thighed curlew (Numenius tahitiensis) might occasionally use the area. Besides the native and migratory birds, 16 exotic bird species were recorded and are listed in Table IV-11; habitat and abundance information are noted as well.

A secondary goal of the survey was to determine if the Hawaiian bat (Lasiurus cinereus semotus) occurred in the area. However, none were observed during the fieldwork, and a literature search failed to uncover any records of observations of this species in the area. No studies were conducted of other animals on the site, although feral dogs and cats were observed. Pigs, rats, and mongese are also possibly present.

4.7.2.3 Freshwater Fauna

A reconnaissance survey of the aquatic fauna present in Anini Stream was conducted in November 1982 by Dr. Amadeo Timbol, a biology professor at Kaua'i Community College. Four stretches of the stream channel, stations measuring 20 x 1 meters, were studied, and all animals visible to the naked eye were identified and counted. The aquatic macrofauna seen in these four stations are listed in Table IV-12. Also indicated on this table are the distribution and relative abundance at each station. (Station locations are shown in Figure IV-10.) None of the fauna listed are considered endangered or threatened in the official U.S. Fish & Wildlife (1977) register or in scientific publications (Miller; 1972 and Deacon et al.; 1979) but the awaous stamineus (endemic 'o'opu-nakea) is depleted on O'ahu (Miller; 1972) and considered of "special concern" by Deacon et al. (1979).

Table IV-10. Plant Species on the Phase Two Development Site.

<u>Common Name</u>	<u>Botanical Name</u>	<u>Common Name</u>	<u>Botanical Name</u>
<u>Species found in Pasture Areas</u>			
Kikuyu grass	<u>Pennisetum clandestinum</u>	Swamp Mahogany	<u>Eucalyptus robusta</u>
Pangola grass	<u>Digitaria decumbens</u>	Indigo	<u>Indigofera suffruticosa</u>
Intortum	<u>Desmodium intortum</u>	Range grass	<u>Pennisetum (variety)</u>
Star-of-Bethlehem	<u>Laurentia longiflora</u>	Cat's claw	<u>Caesalpinia sepiaria</u>
Porter weed	<u>Stachytarpheta (variety)</u>	Lantana	<u>Lantana camara (variety)</u>
Sensitive plant	<u>Mimosa pudica</u>	Silk oak	<u>Grevillia robusta</u>
Pineapple	<u>Ananas comosus</u>	Naupaka	<u>Scaevola frutescens</u>
Elephant's foot	<u>Elephantopus mollis</u>	Red hibiscus	<u>Hibiscus rosa-sinensis</u>
Swamp mahogany	<u>Eucalyptus robusta</u>	Morning glory	<u>Ipomoea (variety)</u>
Indigo	<u>Indigofera suffruticosa</u>	Wedelia	<u>Wedelia trilobata</u>
Range grass	<u>Pennisetum (variety)</u>	Lilikoi	<u>Passiflora (variety)</u>
Cat's claw	<u>Caesalpinia sepiaria</u>	Changeable vervian	<u>Stachytarpheta mutabilis</u>
Lantana	<u>Lantana camara (variety)</u>	Ageratum	<u>Ageratum conyzoides</u>
Silk oak	<u>Grevillea robusta</u>	Cuba jute	<u>Sida rhombifolia</u>
<u>Species found in Stream Areas</u>			
False staghorn fern	<u>Dicranopteris linearis</u>	Pohapoha	<u>Passiflora (variety)</u>
Bracken fern	<u>Pteridium aquilinum</u>	Kalamona	<u>Cassia biflora</u>
Sword fern	<u>Nephtrolepis (variety)</u>	Christmas berry	<u>Schinus terebinthifolius</u>
Java plum	<u>Eugenia cumini</u>	Ohia lehua	<u>Hibiscus tiliaceus</u>
Lemon guava	<u>Psidium guajava</u>	Hau	<u>Metrosideros collina</u>
Yellow strawberry guava	<u>Psidium cattleianum f. lucidum</u>	Ironwood	<u>Hibiscus tiliaceus</u>
Hala	<u>Pandanus odoratissimus</u>	Mulberry	<u>Casuarina equisetifolia</u>
False kamani	<u>Terminalia catappa</u>	Umbrella tree	<u>Morus alba</u>
Green ti	<u>Cordyline terminalis</u>	Chinese banyan	<u>Brassia actinophylla</u>
Wild orchid	<u>Spathoglottis plicata</u>	Fleabane	<u>Ficus retusa</u>
Noni	<u>Morinda citrifolia</u>	Haole koa	<u>Pluchea odorata</u>
Kalu	<u>Acacia farnesiana</u>	False staghorn fern	<u>Leucaena glauca</u>
Pothos	<u>Pothos aureus</u>	Bracken fern	<u>Dicranopteris linearis</u>
Wetland taro	<u>Colocasia esculenta</u>	Sword fern	<u>Pteridium aquilinum</u>
Wild ginger	<u>Zingiber zerumbet</u>	Java plum	<u>Nephtrolepis (variety)</u>
Wood fern	<u>Cyclosorus dentatus</u>	Lemon guava	<u>Eugenia cumini</u>
Pala'a fern	<u>Sphenomeris chusana</u>	Yellow strawberry guava	<u>Psidium guajava</u>
Basket grass	<u>Oplismenus hirtellus</u>	Hala	<u>Pandanus odoratissimus</u>
Kukui	<u>Aleurites moluccana</u>	False kamani	<u>Terminalia catappa</u>
Bamboo (green)	<u>Bambusa vulgaris</u>	Green ti	<u>Cordyline terminalis</u>
Mango	<u>Mangifera indica</u>	Wild orchid	<u>Spathoglottis plicata</u>
<u>Species found on Slope Areas</u>			
		Noni	<u>Morinda citrifolia</u>
		Kalu	<u>Acacia farnesiana</u>
		Pothos	<u>Pothos aureus</u>
		Wetland taro	<u>Colocasia esculenta</u>
		Wild ginger	<u>Zingiber zerumbet</u>
		Wood fern	<u>Cyclosorus dentatus</u>
		Pala'a fern	<u>Sphenomeris chusana</u>
		Basket grass	<u>Oplismenus hirtellus</u>
		Kukui	<u>Aleurites moluccana</u>
		Bamboo (green)	<u>Bambusa vulgaris</u>
		Mango	<u>Mangifera indica</u>
		Swamp mahogany	<u>Eucalyptus robusta</u>
		Indigo	<u>Indigofera suffruticosa</u>
		Range grass	<u>Pennisetum (variety)</u>
		Cat's claw	<u>Caesalpinia sepiaria</u>
		Lantana	<u>Lantana camara (variety)</u>
		Silk oak	<u>Grevillia robusta</u>
		Naupaka	<u>Scaevola frutescens</u>
		Red hibiscus	<u>Hibiscus rosa-sinensis</u>
		Morning glory	<u>Ipomoea (variety)</u>
		Wedelia	<u>Wedelia trilobata</u>
		Lilikoi	<u>Passiflora (variety)</u>
		Changeable vervian	<u>Stachytarpheta mutabilis</u>
		Ageratum	<u>Ageratum conyzoides</u>
		Cuba jute	<u>Sida rhombifolia</u>
		Pohapoha	<u>Passiflora (variety)</u>
		Kalamona	<u>Cassia biflora</u>
		Christmas berry	<u>Schinus terebinthifolius</u>
		Ohia lehua	<u>Hibiscus tiliaceus</u>
		Hau	<u>Metrosideros collina</u>
		Ironwood	<u>Hibiscus tiliaceus</u>
		Mulberry	<u>Casuarina equisetifolia</u>
		Umbrella tree	<u>Morus alba</u>
		Chinese banyan	<u>Brassia actinophylla</u>
		Fleabane	<u>Ficus retusa</u>
		Haole koa	<u>Pluchea odorata</u>
		False staghorn fern	<u>Leucaena glauca</u>
		Bracken fern	<u>Dicranopteris linearis</u>
		Sword fern	<u>Pteridium aquilinum</u>
		Java plum	<u>Nephtrolepis (variety)</u>
		Lemon guava	<u>Eugenia cumini</u>
		Yellow strawberry guava	<u>Psidium guajava</u>
		Hala	<u>Pandanus odoratissimus</u>
		False kamani	<u>Terminalia catappa</u>
		Green ti	<u>Cordyline terminalis</u>
		Wild orchid	<u>Spathoglottis plicata</u>
		Noni	<u>Morinda citrifolia</u>
		Kalu	<u>Acacia farnesiana</u>
		Pothos	<u>Pothos aureus</u>
		Wetland taro	<u>Colocasia esculenta</u>
		Wild ginger	<u>Zingiber zerumbet</u>
		Wood fern	<u>Cyclosorus dentatus</u>
		Pala'a fern	<u>Sphenomeris chusana</u>
		Basket grass	<u>Oplismenus hirtellus</u>
		Kukui	<u>Aleurites moluccana</u>
		Bamboo (green)	<u>Bambusa vulgaris</u>
		Mango	<u>Mangifera indica</u>

Source: Compiled by Belt, Collins & Associates, 1979.

Table IV-11. Relative Abundance and Habitat Preference of Birds at Princeville Phase Two, Kaua'i.

Common Name	Scientific Name	Habitat ¹	Abundance ²	Category ³
Cattle Egret	<u>Bubulcus ibis</u>	P, E, R	A	E
Ring-necked Pheasant	<u>Phasianus colchicus</u>	E, P, R	C	E
Erckel's Francolin	<u>Francolinus erckelii</u>	E, R	R=02	E
Feral Chicken	<u>Gallus gallus</u>	R, W	U	E
Barred Dove	<u>Geopelia striata</u>	R, W, E	C	E
Spotted Dove	<u>Streptopelia chinensis</u>	R, E	U	E
Barn Owl	<u>Tyto alba</u>	R, P, E	R=1	E
Shama Thrush	<u>Copsychus malabaricus</u>	R, W, E	A	E
Melodious Laughing-Thrush	<u>Garrulax canorus</u>	R, W	U	E
Common Mynah	<u>Acridotheres tristis</u>	E, P, W, R	A	E
Western Meadowlark	<u>Sturnella neglecta</u>	P, E	C	E
Japanese White-eye	<u>Zosterops japonica</u>	E, W, R, P	A	E
Northern Cardinal	<u>Cardinalis cardinalis</u>	R, W, E	A	E
House Sparrow	<u>Passer domesticus</u>	E	U	E
House Finch	<u>Carpodacus mexicanus</u>	E, W, R	U	E
Spotted Munia	<u>Lonchura punctulata</u>	P, E	R=10	E ⁴
Golden Plover	<u>Pluvialis dominica</u>	M, P	A	M ⁴
Koloa (Hawaiian Duck)	<u>Anas wyvilliana</u>	R	R=1	N
Auku'u (Black-Crowned Night Heron)	<u>Nycticorax nycticorax</u>	R	R=2	N
Pueo (Hawaiian Owl)	<u>Asio flammeus sandwichensis</u>	E, P	R=2	N

¹ Habitat - Area most frequented. Order of most preferred or utilized begins at left.

- P = Pasture
- R = River valley floor
- W = Walls of river valley
- E = Edge of pasture and forest
- M = Mudflats

² Abundance - Number of times observed during survey or frequency on eight minute counts.

- A = Abundant (average number on 8 minute count > 10)
- C = Common (average number on 8 minute count > 5 but < 10)
- U = Uncommon (average number on 8 minute count < 5)
- R = Recorded, but not on 8 minute count. Number that follows is the actual number seen.

³ Category - Provenance of species

- E = Exotic (Introduced)
- N = Native--Indigenous or Endemic
- M = Migratory

⁴ Two other migratory species--Ruddy Turnstone (Arenaria interpres) and Bristle-thighed Curlew (Numenius tahitiensis) could be expected to utilize the site.

Source: Phillip Bruner (May 1979:Table 1) and Hawai'i Audubon Society (1975).

Table IV-12. Aquatic Macrofauna in Anini Stream, Kauai.¹

Scientific Name	Local Name	Origin ²	Distribution and Relative Abundance ³			
			Stn. 1	Stn. 2	Stn. 3	Stn. 4
FISH						
1. <u>Awaous stamineus</u>	'o'opu-nakea	endemic	A	U	U	O
2. <u>Eleotris sandwicensis</u>	'o'opu-akupa, 'o'opu-okuhe	endemic	C	O	O	O
3. <u>Kuhlia sandwicensis</u>	aholehole	endemic	A	O	O	O
4. <u>Mugil cephalus</u>	'ama'ama, mullet	indigenous	A	O	O	O
5. <u>Sphyræna barracuda</u>	kaku	indigenous	C	O	O	O
6. <u>Tilapia (-Sarotherodon) mossambica</u> ⁴	tilapia	introduced	C	O	O	O
7. <u>Xiphophorus helleri</u>	swordtail	introduced	O	C	A	C
PRAWNS						
1. <u>Macrobrachium grandimanus</u>	'opae-'oeha'a	endemic	A	O	O	O
2. <u>Macrobrachium lar</u>	Tahitian prawn	introduced	A	A	A	U
CRABS						
1. <u>Metopograpsus messor</u>	thukuhar	indigenous	C	O	O	O
SNAILS						
1. <u>Neritina granosa</u> ⁵	hihi-wai	endemic	U	O	O	O
2. <u>Theodoxus vespertinus</u>	brown wi	endemic	C	O	O	O
FROGS						
1. <u>Rana catesbeina</u>	bullfrog	undetermined	C	C	C	C

¹ Field observations of fauna on November 11, 13, and 20. Physical damage to the stream and its vegetation was surveyed post-hurricane Iwa on November 24 and 30.

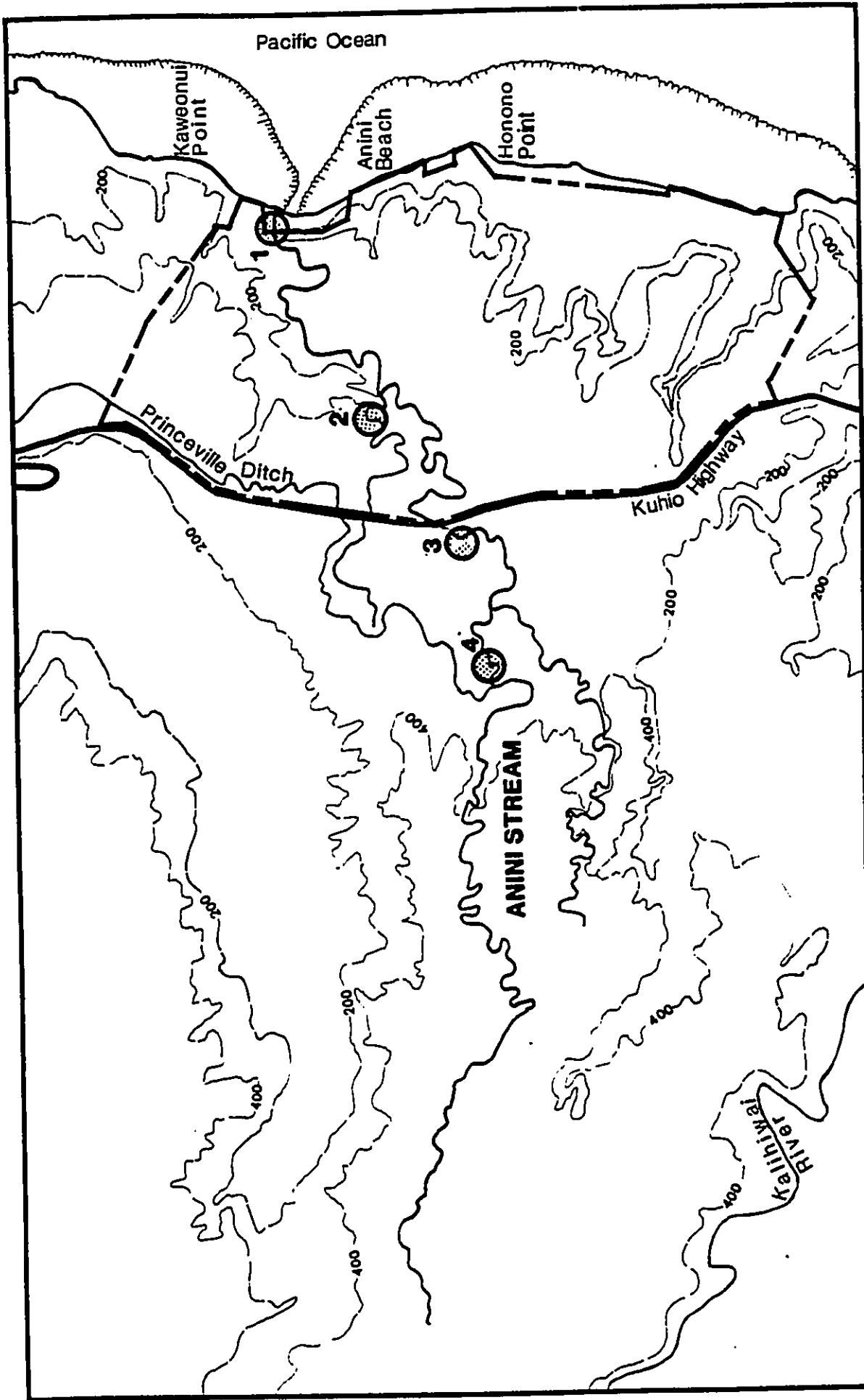
² Endemic - occurring naturally in Hawaii only; Indigenous - occurring naturally in Hawaii and elsewhere; Introduced - brought to Hawaii either intentionally or accidentally.

³ A - Abundant (more than 5 individuals)
 C - Common (between 2 and 5 individuals)
 U - Uncommon (only one individual seen)
 O - Absent (neither sighted nor collected)

⁴ Tilapia was not seen by Timbol but resident living near Station 1 confirmed presence of this species.

⁵ Maciolek (1978) states that this snail is depleted, "apparently...from habitat degradation and exploitation."

Source: Timbol (December 1982).



IV-10 Location of Anini Stream Sampling Stations

----- Phase Two Boundary



Approximate Location of Sampling Stations



NORTH

PRINCEVILLE
PHASE TWO

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The physical features of Anini Stream were discussed in Section 4.5, Hydrological Impacts. Timbol noted that the water was only slightly to very slightly turbid on the days he was observing. The bottoms of Stations 3 and 4 were characterized by mud, silt and rotting vegetation; Station 2 had a bottom of mud and silt; and Station 1 had a boulder and gravel bottom. Another significant feature that Timbol noted was the presence of the County's Hanalei Landfill in the stream's basin. He believed pollutants from the landfill may be leaching into the stream, and that the cattle egrets which are attracted to the landfill may also be feeding on aquatic animals in the stream.

Of the 13 species Timbol observed in Anini Stream (see Table IV-12), he felt seven had scientific, biological, and economic values. These are discussed below:

- o Awaous stamineus ('o'opu-nakea) - This endemic goby is the largest of the freshwater gobies. To complete its life cycle, it must migrate between fresh and salt water. It, therefore, needs suitable environmental conditions throughout the stream channel for its larvae to reach the ocean and for the post-larvae to migrate upstream to their place of permanent residence.

In Anini, nakea was found abundant from near the stream mouth (Station 1) to about a kilometer upstream. Beyond that, it was uncommon in both mainstream and tributary. Only one nakea was found upstream of the highway (Station 3). None was found at the uppermost station (4). The shallow and narrow stream channels in Stations 3 and 4 could subject the post-larvae nakea to predation by waterbirds. In the morning of November 20, we counted nine koloa ducks, one black-crowned night heron, and more than a dozen cattle egrets at and in the vicinity of Station 4. All these birds are potential nakea predators.

The nakea supports an ethnic fishery and it is periodically found on sale commercially. Big Save Supermarket in Kapa'a had nakea for sale at \$7.99/lb. on November 12, 1982 (Don Heacock, State Aquatic Biologist, verbal communication).

- o Eleotris sandwicensis ('o'opu-okuhe) - This goby-like endemic fish is characterized by separate pelvic fins (true gobies have fused pelvic fins). It attains a length of 25 cm. and lives in the lower reaches of streams. At Anini, it was found only in Station 1. This fish has some recreational value since it readily takes a hook with any kind of bait. It is not, however, utilized for food.
- o Mugil cephalus (mullet) - The mullet found in Anini are fingerlings. These move to the ocean where they grow to more than a foot long. Young and adult mullet are sold for food.
- o Tilapia mossambica (tilapia) - This introduced species is suspected to prey on nakea eggs. Adult tilapia has some recreational value since it is easy to catch by hook and line. Some residents utilize this fish for food.
- o Macrobrachium grandimanus ('opae-'oeha'a) - This small (up to 15 cm. total length) native prawn with the second chelae (claw) unequal in size is mostly utilized for bait. It inhabits the lower reaches of Anini Stream.

- o Macrobrachium lar (Tahitian prawn) - This introduced prawn preys on nakea. It grows to a length of between 15 and 30 cm. Some people catch them for food but it is not sold commercially. Since it is caught with traps, by snorkel and spear, and even by hook and line, this prawn has some recreational value. Only this species and Rana catesbina (bullfrogs) were found at all four stations. An aquatic biologist on the staff of the Hawai'i State Department of Land and Natural Resources (April 19, 1983) has observed subsistence fishermen who reported taking 15 pounds of prawns (Macrobrachium lar) in a single night with 15 traps.
- o Neritina granosa (hihiwai) - This Hawaiian snail must also migrate between fresh and salt waters to complete its life cycle. It is the largest endemic neritid and its shell diameter reaches six centimeters. The adults and juveniles live in freshwater and flourish only in rapidly flowing and relatively pristine water. Therefore, large numbers of these animals seem to be confined to the more remote streams. This organism is rare or absent in streams that have been significantly modified. In the approximately two kilometers of Anini Stream that were examined, only three snails were found. These snails are occasionally sold in supermarkets. The last reported price was \$5.99/lb. at Big Save in Kapa'a during August or September 1982 (Don Heacock, verbal communication).

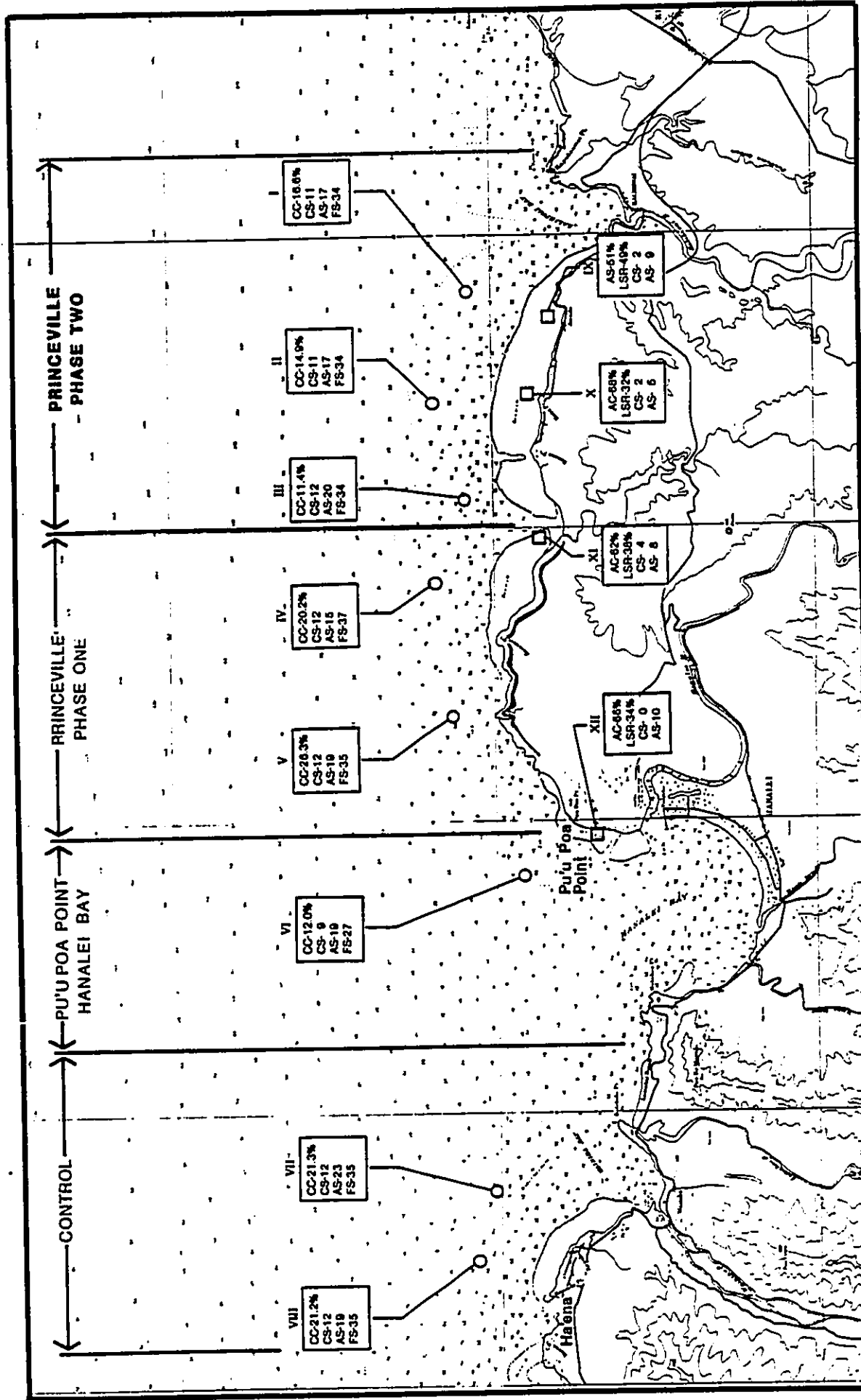
4.7.2.4 Marine Community

The reef ecosystems in the vicinity of Princeville were studied in July 1980 by Dr. Richard Grigg and Steven Dollar of the University of Hawai'i's Institute of Marine Biology. Their reconnaissance utilized 12 study stations. Figure IV-11 shows that Stations I, II, III, IX, and X are offshore from the Phase Two development area, with Station III at the mouth of Anini Stream. Stations IV, V, and XI are offshore from the existing Phase One development. Stations VI and XII are offshore from Pu'u Poa Point, Hanalei Bay area. Stations VII and VIII are on the reef near Ha'ena; they serve as undisturbed control stations for future time-series studies that may be required for the other stations.

Also shown in Figure IV-11 is the basic information derived from each station, which consists of:

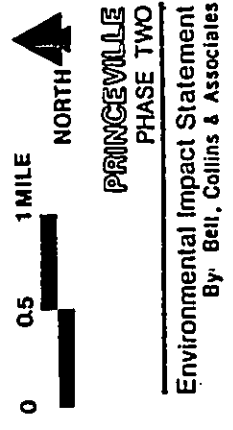
- Percent of coral cover;
- Percent of algal cover;
- Percent of limestone, sand and rubble cover;
- Number of coral species present;
- Number of algae species present;
- Number of fish species present.

Appendix A lists all species of coral, algae, and fish observed, and notes their distribution.



Source: Grigg, Dr. Richard and Steven J. Dollar (July 15, 1980)

IV-11 Marine Reconnaissance: Findings



- Offshore Reef Station
- Inshore Reef Flat Station
- CC Percent of Coral Cover
- CS Number of Coral Species
- AS Number of Algae Species
- FS Number of Fish Species
- AC Percent of Algal Cover
- LSR Percent of Limestone, Sand and Rubble Cover
- 2' Soundings in Fathoms

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4.7.3 Probable Biological Impacts of the Proposed Project

4.7.3.1 Impacts on Vegetation

The proposed Phase Two project would lead to a radical change in the character of the flora on the plateau areas. The existing pasture grasses would be eliminated and replaced by landscape plants. "Protective Covenants" similar to those that govern landscaping by all residential lot owners in the Phase One portion of Princeville would be imposed on the Phase Two residential lot buyers. As a result, each owner would be required to plant from two to five trees. The greater variety of plant species that would be present following full development would at least partially offset the decrease in total vegetated area in terms of providing productive biological habitats.

While the floral species present in the gullies which transect the Phase Two property are not rare or endangered, they form a productive biological habitat. By avoiding these areas, the proposed project insures that they would remain virtually unchanged.

4.7.3.2 Impacts on Terrestrial Wildlife

The Phase Two development is expected to have a minor impact on bird species that use the pastureland on the site. "For most species [it is] the valleys [which] provide the most critical habitat for feeding and refuge" (Bruner; May 1979:5). The valleys will not be affected by development.

The four species that utilize the pastureland for foraging are cattle egret, golden plover, meadowlark, and pueo. It is not expected that the same number of cattle egrets as are presently in the area could be supported after the cattle are removed. Bruner (April 11, 1980) has noted that there is a current statewide population explosion of cattle egrets which is not sustainable. The loss of pastureland would also cause a population decline in the three other species that use this area for foraging. The birds that could be expected to increase as a result of development are those not sensitive to human activity, usually exotic species. Some of these, however, may also experience a short-term population decline until landscaping flourishes.

The only endangered native bird that has been seen in the project area is koloa, or Hawaiian duck, which has been reported occasionally. The extent to which this species uses the stream for feeding or nesting purposes has not been determined, but the presence of feral dogs means that nesting here is highly unlikely. Bruner (May 1979:6) recommends that precautions be taken not to disrupt stream flow or disturb stream vegetation if koloa are found to frequent this area. The development of Phase Two is expected to have only a minor effect on streamflow. Fencing off the stream area would be a means to mitigate possible disturbance of stream vegetation if this is found necessary to protect nesting Koloa.

In general, development of the Phase Two area would affect the birds currently there. Because avifaunal populations tend to build to the environment's carrying capacity, this means that the birds cannot simply move to another area if displaced or disturbed by the new development, since an equilibrium between the available food and shelter and the bird population has already been established throughout the island. Urbanization of the Phase Two area would reduce the available habitat for native and migratory birds. Feral dogs and cats which are now present would decline in number, but this would be offset by an increase in the number of

domesticated animals of these species that are kept as pets. In short, a smaller number of actively hunting animals would be replaced by a larger number of dogs and cats which hunt only sporadically. It is impossible to determine the exact net effect that this would have on bird populations. Koloa, an endangered species which is susceptible to predation, are known to be present in the Hanalei area. However, the evidence now available suggests that they are infrequent users of the Phase Two lands and that their numbers would not be reduced by the proposed project.

4.7.3.3 Impacts on Freshwater Fauna

As indicated in the discussion of existing drainage patterns (Section 4.5.2.1), all of the streams on the Princeville Phase Two lands, except Anini Stream, are intermittent. Thus, probably no aquatic macrofauna are supported in these streams, and any microscopic biota is already adapted to periods of no flow, interspersed with short periods of storm runoff. The proposed Phase Two project would not substantially alter conditions in them and no significant adverse effects are expected in these streams.

Anini Stream is perennial and supports the freshwater fauna described in Section 4.7.2.3. The fauna could be affected if the project caused changes in the stream's flow rate or water quality. As indicated in the hydrologic impacts discussion (Section 4.5), there could be a slight reduction in the amount of infiltration in the Phase Two area and therefore a slight reduction in the base flow of Anini Stream as a result of the Phase Two project. However, the more important condition to note about Anini Stream's base flow is that a large portion of it derives from water leaking out of the ditch (see Figure IV-10) which draws from Anini at about elevation 350 feet, into the upper groundwater compartment and thence back into Anini Stream. Thus, alterations or repairs to the ditch system are of more concern.

The effect of siltation on the fauna in Anini Stream areas would be essentially limited to the construction period. After development is completed, the siltation and other discharges into the stream would be more controlled than they are now or have been in the past. Since subdivision construction would be in a sequence of small parcels, and housing construction is to be by individual lot owners, erosion would be much less than with a mass building program. The largest amount of land to be exposed in one year would be about 50 acres, when the largest condominium site and perhaps 25 residential lots would be developed.

Since the lease for the sanitary landfill in Anini Gulch will soon expire, this source of leachate to the stream will be curtailed, although leaching can continue long after a landfill is closed. Existing biota would probably not be greatly affected by runoff from yards and roads after construction, because it has been able to withstand large amounts of runoff with strong fertilizers and herbicides during the long period of agricultural operations in the watershed.

Based on his survey of the macrofauna in Anini Stream, Timbol reached the following conclusion regarding the existing quality of the stream environment:

Considering both riparian vegetation and aquatic macrofauna, Anini Stream is only of moderate ecological quality on the mainstream starting from the mouth up to one-half kilometer below Kuhio Highway. The tributaries downstream of the highway are of moderate to poor ecological quality. The rest of the stream is of poor quality. On these bases, Anini Stream has an overall ecological quality grade of III...

The ecological quality rating of III referred to above is contained in the U.S. Fish and Wildlife Service publication Stream Channel Modification in Hawaii--Part A: State-wide Inventory of Streams; Habitat Factors and Associated Biota. This rating is termed "Exploitive-Consumptive", and is applied to stream reaches with moderate to low natural values and/or water quality that are well-exploited, modified, or degraded. It is the next-to-lowest rating in the classification system. An aquatic biologist on the staff of the Hawai'i State Department of Land and Natural Resources (April 19, 1983) has concurred with this assessment. However, it was suggested that Timbol may have underestimated the density of the resource organisms in the lower stream.

Depending upon one's point of view, two different conclusions can be drawn from the foregoing. A biologist following one line of reasoning could conclude that the very limited change in average annual stream discharge that is projected, together with the generally poor quality of the existing stream environment, means that any changes which do occur are likely to be of little consequence. A scientist adhering to the opposing viewpoint might argue that the present degraded quality of the stream makes any further decrease in water quality and/or flow rate undesirable.

With the information currently available, it is impossible to reach a definitive conclusion with respect to the significance of the proposed Phase Two project's impacts on stream biota. However, when the limited extent of project-related changes in flow rates and the erosion control measures that would be taken during construction (see Section 4.5.5.4) are considered in the context of the already-degraded character of the stream, it is our belief that they are not significant.

4.7.3.4 Impacts on Marine Organisms

The marine biota appear to be resistant to stresses imposed by development. This conclusion is based on an extensive reconnaissance of the reef and reef flat ecosystems in the waters off Phases One and Two lands, and also--for control purposes--in waters off Ha'ena. The purpose of the reconnaissance conducted by marine biologists Dr. Richard Grigg and Steven Dollar was to evaluate the tolerance to stress of existing benthic communities.

As can be seen in Figure IV-11, the establishment of twelve different inshore and offshore reconnaissance stations allows a comparison of reef and reef flat communities already affected by Princeville resort development with: (1) those likely to be affected by Phase Two development, and (2) those unaffected by development of any kind and therefore suitable as controls.

This comparison reveals that the stations off Phase One (IV and V), where development has been underway for twelve years, are virtually identical in terms of distribution and species composition of coral, algae and fish to the stations off Phase Two (I and II) and to those stations designated as controls (VII and VIII). If anything, the coral cover off Phase One is higher than off Phase Two.

Less coral cover and a greater number of algae species were recorded at Station III, located at a point offshore of an imaginary dividing line between Parcels One and Two. The low percentage of coral cover is apparently related to historical erosional effects of Anini Stream, while the wide variety of algae, invertebrates, and fish are due to the habitat complexity of the area. Also unique was Station VI off Pu'u Poa Point, which proved suboptimal for reef ecosystems in terms of coral abundance and associated species composition. This station is in close proximity to Hanalei Bay, where conditions of high turbidity, high suspended sediment load, low salinity, and low temperature occur during periods of heavy rainfall.

A comparison of the structure of relevant benthic communities, allowing for differences related to natural environment, suggests that the proposed Phase Two development would not cause significant adverse impacts. This is likely because the area to be developed and the density of development would be considerably less in Phase Two than that in Phase One. Phase Two would be developed in much the same manner as Phase One, with a measurable increase in siltation occurring only temporarily during the worst year of construction, when the condominium hotel site is graded. Since the reef and reef flat communities off Phase One do not appear to have been adversely affected by past increases in siltation (or if they have been affected, they have since recovered), it is not expected that the marine biota offshore of Phase Two would be significantly disrupted by development.

In summarizing their findings, Dr. Richard Grigg and Steven Dollar concluded (July 1980:15):

"Insofar as no significant adverse changes in water quality or relevant biological communities are anticipated to result from the proposed development and no significant changes in recreational use of the area in terms of fishing, diving, swimming or surfing are expected, the proposed development appears to satisfy State water quality regulations...and the requirements of the Kauai General Plan, the Hawaii Coastal Zone Management Act, and other pertinent Federal and State laws."

4.8 VISUAL CHARACTER

4.8.1 Introduction

The proposed Phase Two project involves the conversion of several hundred acres of land from pasture into moderate density urban use. Any development on this scale has the potential to significantly affect the visual character of an area. Because of this, a detailed analysis of the visual attributes of the Phase Two project was undertaken for this assessment. The analysis had the following objectives:

- o to describe existing views makai from Kuhio Highway across the site, mauka from Anini Beach towards the project, and eastward across the site from existing development in the Phase One portion of Princeville;
- o to determine ways in which the views identified above would be affected by Phase Two; and
- o to assess the project's compatibility with surrounding areas and development.

Before proceeding, it is important to note that our assessment of visual impacts was complicated by the fact that the "action" being proposed by PDC consists solely of land subdivision and the installation of roads and utilities. It does not encompass building construction, an activity which is a natural consequence of PDC's activities but which would be undertaken by individual lot owners. Since it is buildings which produce the greatest visual impact, the absence of specific structural plans limits the detail to which our analysis could be carried. Consequently, our work focused on fundamental design attributes such as bulk, height, siting, etc.

4.8.2 Views from Kuhio Highway

The Phase Two project area borders Kuhio Highway for a distance of approximately two miles east of Ka Haku Road. For about half that distance the road abuts the proposed second golf course, which serves as a buffer zone between it and the nearest residences; for the remainder, the highway runs along the development area boundary.

This segment of Kuhio Highway cuts perpendicularly across the series of gullies and plateau areas that form the Phase Two site. Heavy vegetation growing in the gullies blocks views from them. The presence of numerous cuts along other portions of the roadway further limits the number of points from which views are available. As a result, panoramic views from Kuhio Highway are available from only a limited number of areas. Three such locations are identified on Figure IV-12 as viewpoints numbers 1 through 3, and views from these locations are reproduced in Figure IV-13.

4.8.2.1 Viewpoint No. 1 (Figure IV-13)

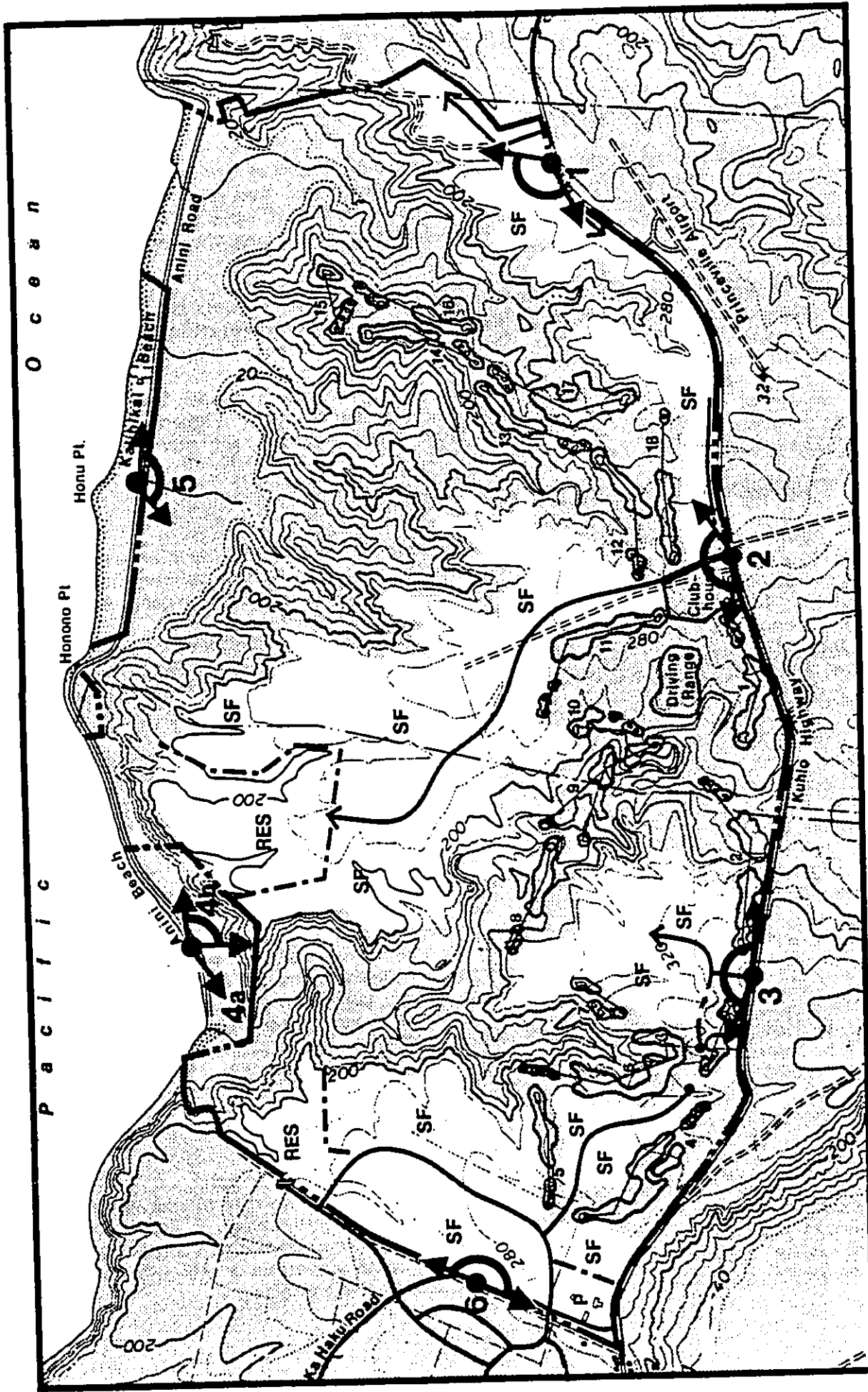
Existing View. Viewpoint No. 1 is situated at the top of the rise leading out of the Kalihiwai Stream Valley. The Princeville Airport is visible on the mauka side of the roadway. Views in the makai direction are limited and, for the most part, uninteresting. In the foreground is pastureland and a barbed wire fence. Scrub vegetation is encroaching on the pasture, but it is still open for a distance of several hundred feet. The middle-distance is delineated by a line of low trees. The Wainiha Pali forms the backdrop for the left side of the photo. At no point can the ocean be seen.

Impacts. The Phase Two project involves the conversion of the existing pastureland in the vicinity of this viewpoint into a residential area with from two to four units per acre. The average density within this portion of the project would be about three units per acre, a modest level, but one which is fairly intensive in contrast to the existing pasture.

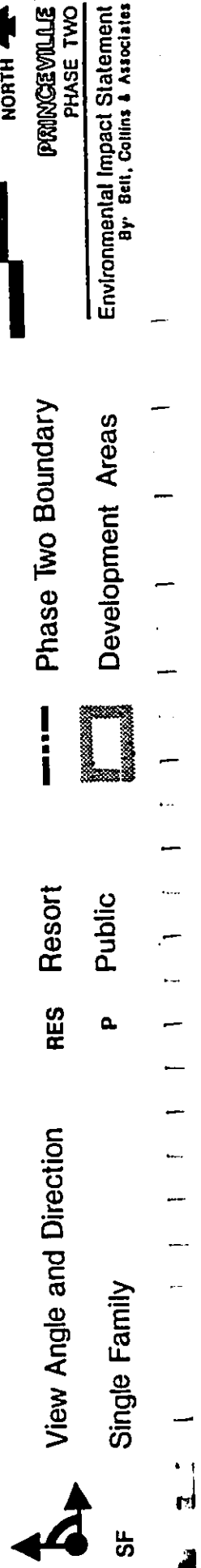
Detailed site plans have not yet been prepared for this area, but it has been determined that the main collector road within this increment would run adjacent to Kuhio Highway and would be separated from the highway by a landscape buffer strip. The buffer would consist of dense plantings which effectively block views of the near and middle distance. As a result, the view from the highway would be more limited than it is at present. However, the fact that: (1) no particularly attractive views would be lost as a result of this and (2) a view of a vegetation screen would be considered by most viewers as being more desirable than a slightly more open view of single-family homes, suggests that the change would not be significant. A carefully designed strip might even improve the visual quality of the roadside.

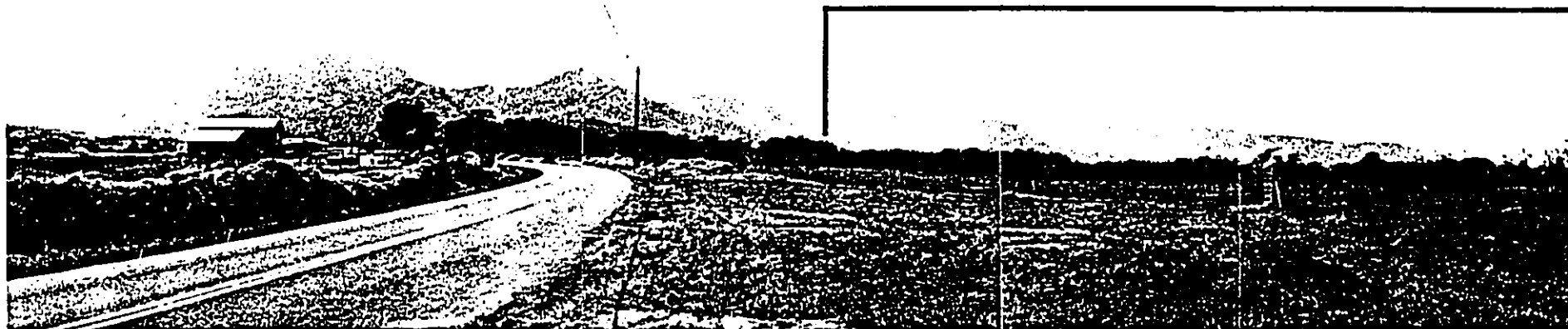
4.8.2.2 Viewpoint No. 2 (Figure IV-13)

Existing View. This viewpoint is located at the high point of Kuhio Highway as it crosses the central plateau. It is near the old Princeville mauka ranch road. As can be seen from the photograph, the view from this location is similar to that from Viewpoint No. 1. Open pastureland is in the foreground with some shrub vegetation visible in the distance. Because of the greater elevation, a thin sliver of ocean is visible along the horizon in the right-hand side of the photograph.

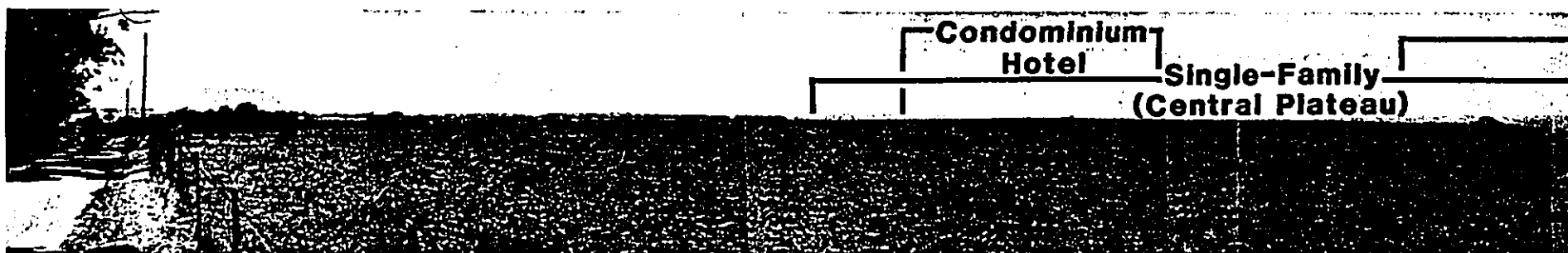


IV-12 Location of Viewpoints

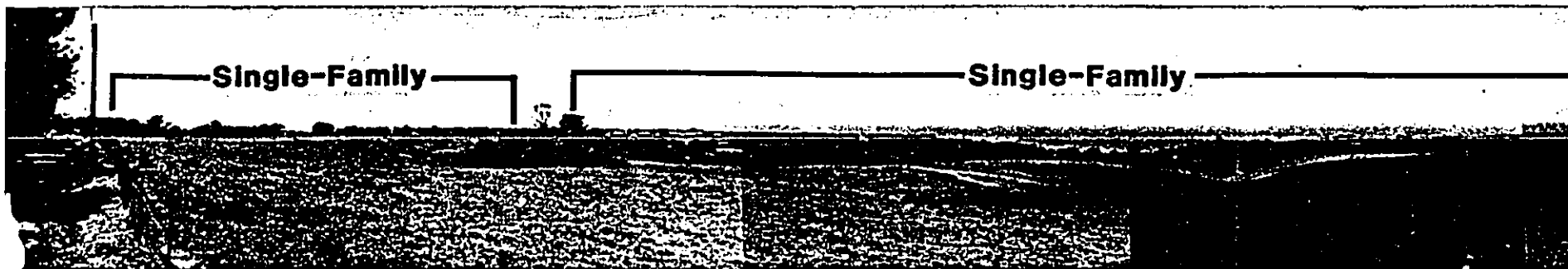




View 1. From Kuhio Highway looking north and east, at Eastern Plateau of Phase Two.

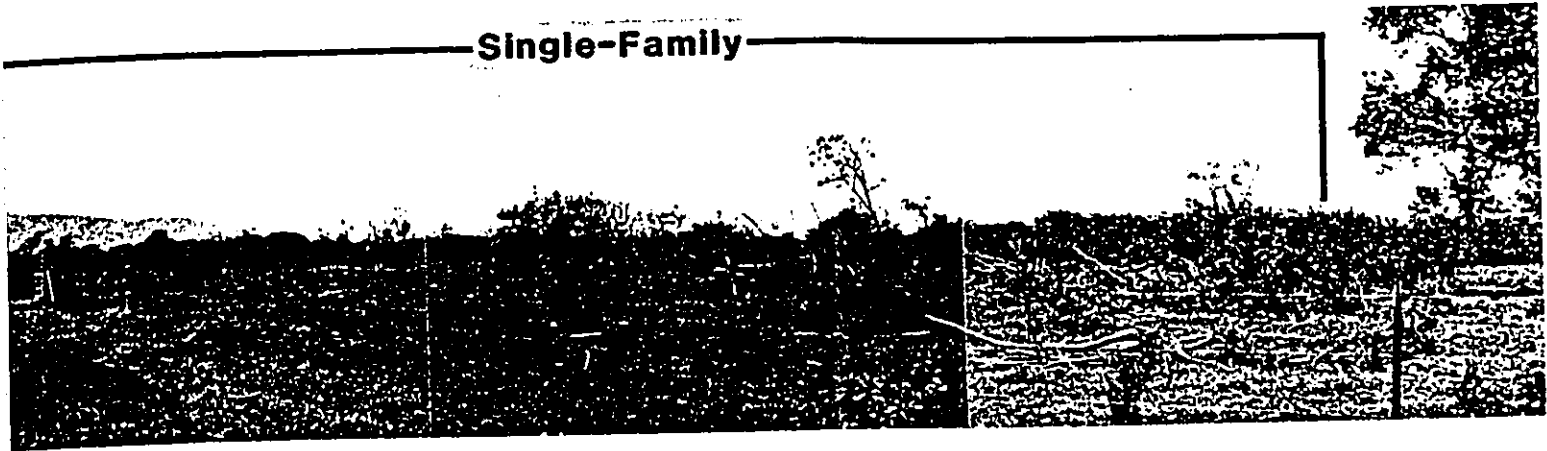


View 2. From Kuhio Highway, looking north at Central and Eastern Plateaus of Phase Two.

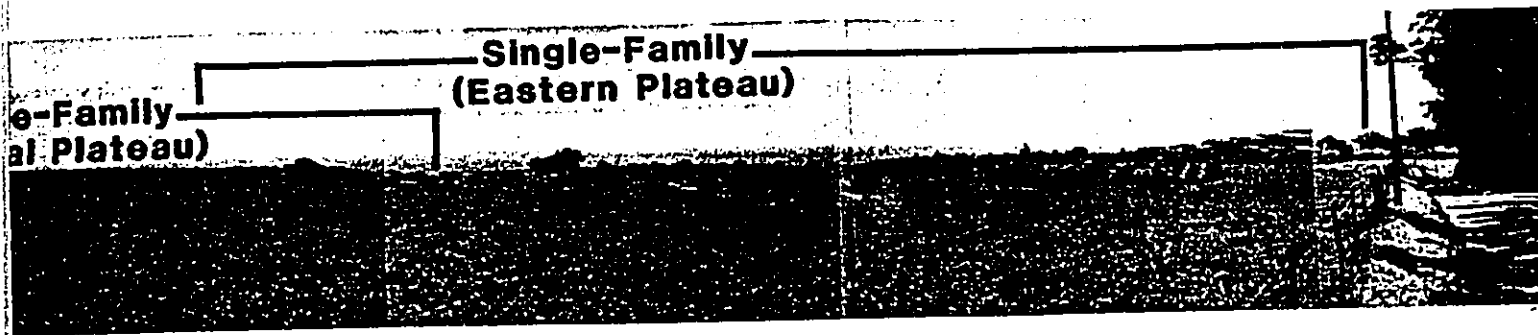


View 3. From Kuhio Highway, looking north at portions of Western Plateau of Phase Two.

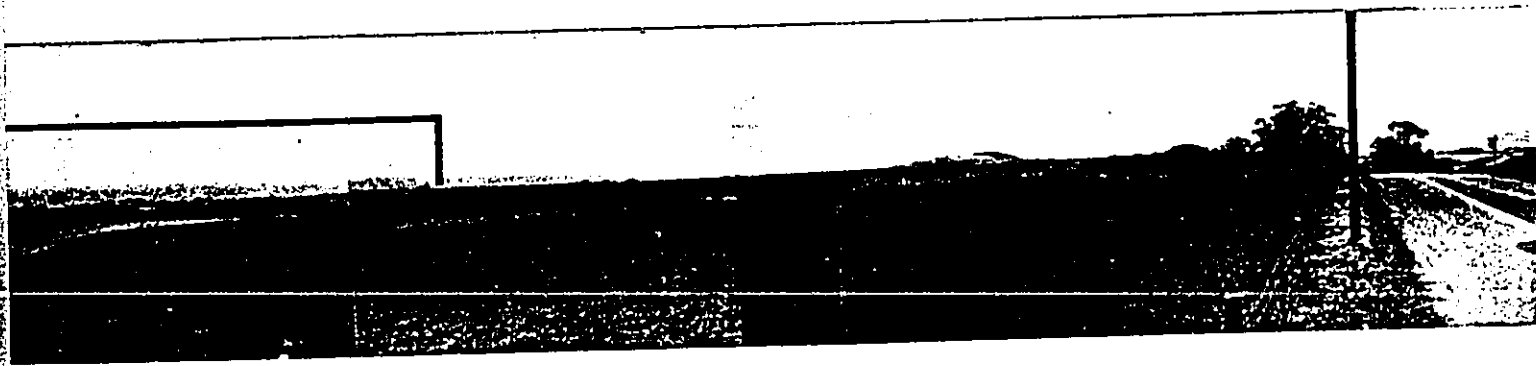
IV-13 Views From Kuhio Highway of Phase Two



Phase Two.



is of Phase Two.



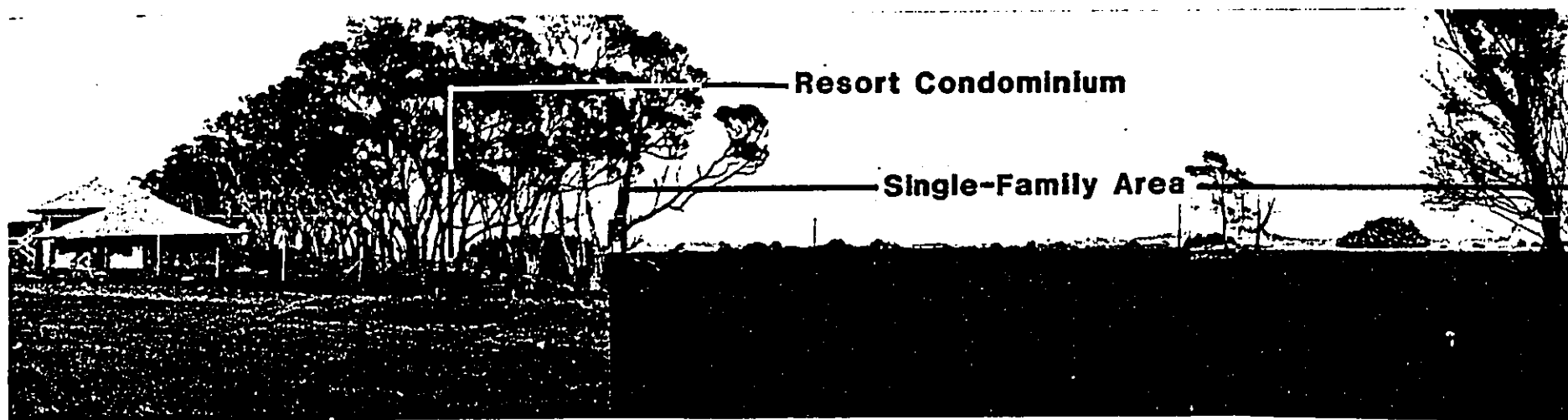
u of Phase Two.



View 4a. From Anini Road, looking , southeast toward Central Plateau of Phase Two.



View 5. From Anini Road, looking south and up to Central Plateau of Phase Two.



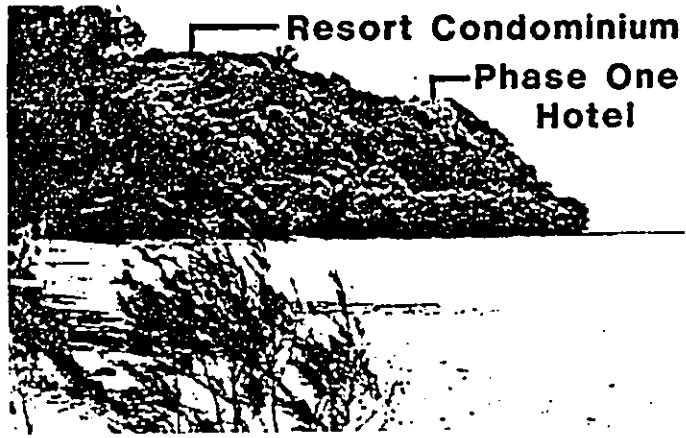
View 6. From Ka Haku Road, looking east over Western Plateau of Phase Two.

IV-14 Views From Anini Road and Ka Haku Road of Phase T

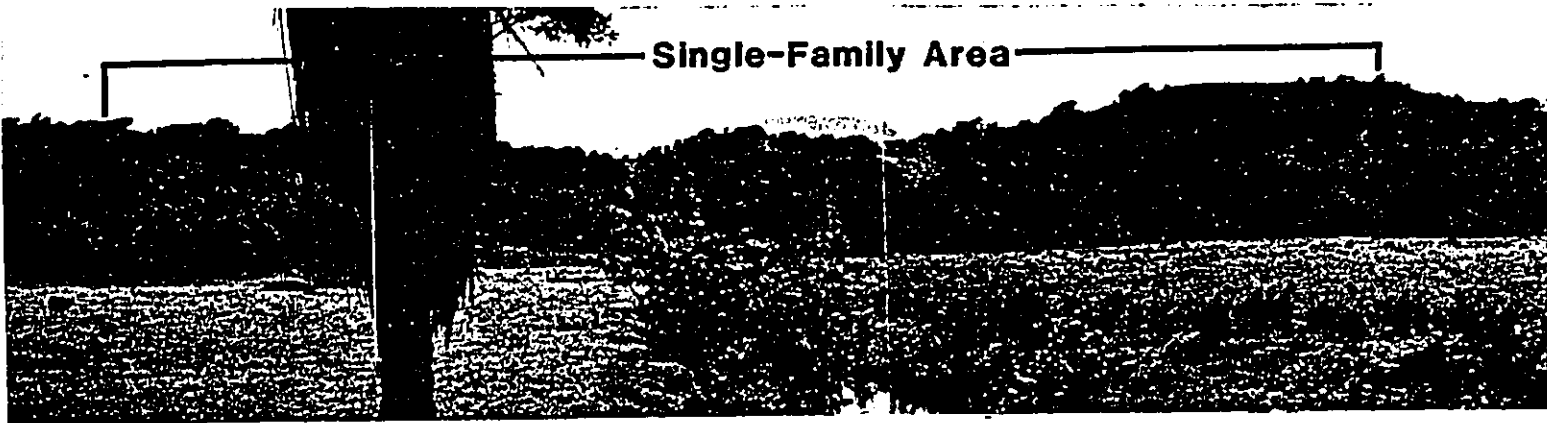
minium Hotel



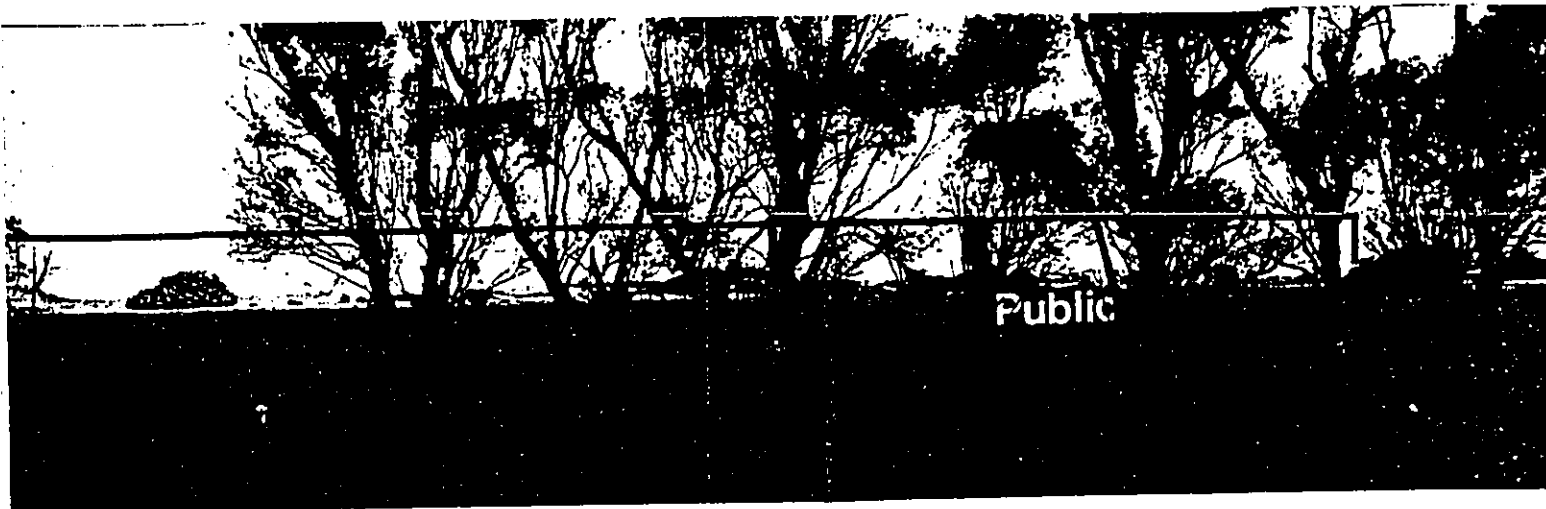
of Phase Two.



View 4b. Looking southwest toward Western Plateau of Phase Two.



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PRINCEVILLE
PHASE TWO

Environmental Impact Statement
By: Bell, Collins & Associates

Impacts. Development of Phase Two would substantially alter the appearance of the area in the vicinity of this viewpoint. The presence of the second golf course along the roadside west of this point will insure that views across this area are maintained. However, single-family residential development in the area to the east of the proposed golf course clubhouse site will alter that area. Creation of a roadside buffer strip would screen the buildings from view by highway users, but it would also eliminate the limited view of the ocean that is currently available. Even without a buffer, the existing view of the ocean would be largely blocked by structures built on the individual lots and by trees planted on the homesites.

4.8.2.3 Viewpoint No. 3 (Figure IV-13)

Existing View. This viewpoint is situated opposite the entrance to Po'oku Stables. In contrast to conditions at the first two viewpoints discussed, observers at this viewpoint have an unobstructed panoramic view over the rolling range lands to the distant ocean horizon. The mauka portion of the existing Phase One development is effectively screened from view by a long row of mature trees running along the boundary line between it and the Phase Two area. This same tree line also hides some of the homes that have been built on the makai half of Phase One, but many of the multi-family units there are visible.

Impacts. The presence of the first few holes of the second golf course provides an open foreground in this area, although even it will have a somewhat more landscaped character than the existing pasture. Single-family residences would line the makai side of the golf course, giving the area a suburban feel. If only single-story homes are built and only low trees and other vegetation are planted, the ocean might remain visible. If two-story residences or vegetation higher than 20 feet are introduced, most of the ocean would probably be screened from view.

4.8.3 Views from the Coastline

The Phase Two project would be confined to the plateau which begins 200 feet above the coastal plain. Hence, there would be no development immediately adjacent to the shoreline. The sharp break in the topography which occurs at the edge of the plateau (in most cases the slope of the face of the escarpment is in excess of 40 percent) makes it impossible to see the vast majority of the Phase Two development from below. However, as noted in the more specific analysis of impacts presented below, structures built close to the edge of the plateau may appear along the skyline.

4.8.3.1 Views From Anini Beach (Figure IV-14)

Existing View. Viewpoint No. 4 is located near the western end of Anini Road. At that point the coastal plain is only a few hundred feet wide, and the nearby cliffs force one's attention towards the sky and the ocean (View 4a). The headland which marks the western end of Anini Beach juts strongly out into the water (View 4b). This promontory has not yet been developed, and the vegetation which covers it gives the area a natural appearance. Once the "Hotel"-zoned land atop the headland has been developed (as part of the Phase One project), structures will almost certainly be visible. This, in turn, will give observers on Anini Beach a much stronger sense of the Princeville Resort's presence than is currently the case.

Impacts. The plateau land on either side of Anini Beach is planned for resort condominium use. Without architectural and site plans for these lots, it is impossible to determine the exact impact that their development would have on views from Anini Beach. However, it is quite possible that the resort condominiums proposed for them would be visible from the coastal plain. If they are, and if the Phase One hotel proposed atop the headland is also visible, Anini beach could find itself ringed (albeit at a distance) by multi-story buildings. This, in turn, would create a much more urban setting than presently exists. However, setbacks and landscaping could greatly reduce the visual impact of this edge-of-the-plateau development. Hence, it is not possible to provide a definitive assessment of the significance of this potential impact.

4.8.3.2 Views From Kalihikai Beach (Figure IV-14)

Existing View. Viewpoint No. 5 is situated near the westernmost Anini Road culvert behind Kalihikai Beach. The existing view is across the flat pastureland at the mouth of Anini Stream to the face of the central plateau beyond. The cliff is densely vegetated near its bottom. But at its top only occasional trees project above the skyline of the pastureland. A few homes are visible along the eastern edge of the meadowland that occupies most of the coastal plain.

Impacts. Implementation of the Phase Two project would result in the construction of single-family homes along the top of the plateau west of Kalihikai Beach. However, even a slight setback of the homes from the edge of the plateau would tend to make them invisible from below. Even if some rooftops are visible, the distance between the roadway and beach and the nearest homesites is sufficiently great (more than 1,200 feet) to insure that their presence would be unobtrusive. Hence, there is little likelihood of significant adverse impact here.

4.8.4 Views From Princeville Phase One (Figure IV-14)

Viewpoint No. 6 is located at the point where Ka Haku Road penetrates the tree line between Phases One and Two. It is the spot in the Phase One project area that will have its views most affected by the Phase Two development.

Existing Views. Existing units built along the eastern edge of the Phase One area have views across the rolling pasturelands that comprise the proposed Phase Two site. The view is framed by the trunks of trees in the long windbreak that runs almost continuously from Kuhio Highway to the edge of the plateau. Because of the topography, particularly the steepness of the gullies and the coastal cliffs, the ocean and stream are largely hidden from ground-level observers.

Impacts. If the current Phase Two plan is implemented, a view of single-family homes, public/commercial facilities, and resort condominiums would replace the view of rolling grassland that now occupies the site. This would affect residents of Phase One homes along the property line and, to a lesser extent, persons in vehicles driving along Ka Haku Road. The change is an inevitable product of continuing development at Princeville, but it would significantly alter the character of the views available to occupants of these Phase One perimeter lots.

Impacts. The plateau land on either side of Anini Beach is planned for resort condominium use. Without architectural and site plans for these lots, it is impossible to determine the exact impact that their development would have on views from Anini Beach. However, it is quite possible that the resort condominiums proposed for them would be visible from the coastal plain. If they are, and if the Phase One hotel proposed atop the headland is also visible, Anini beach could find itself ringed (albeit at a distance) by multi-story buildings. This, in turn, would create a much more urban setting than presently exists. However, setbacks and landscaping could greatly reduce the visual impact of this edge-of-the-plateau development. Hence, it is not possible to provide a definitive assessment of the significance of this potential impact.

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4.8.5 Mitigation Measures

At present, the Princeville resort retains a strong sense of openness; nature still outweighs development; and there is a sense that the project has been woven carefully into, rather than imposed upon, the natural landscape. Present plans indicate that the Phase Two project would maintain this same character.

The land use plan is laid out so that low density uses would occupy many of the most view-sensitive areas of the Phase Two site. The second Princeville golf course is used as a buffer zone between residential development and Kuhio Highway along most of the mauka sides of the western and central plateaus. Landscaping and a substantial setback would be used to provide a visual shield between residences in the eastern plateau and highway traffic.

Deed covenants would also be used to maintain the visual quality of the area. These covenants could provide for setbacks from the edge of the shoreline cliffs that would reduce the visibility of the development from beaches and other areas on the coastal plain. They would also stipulate minimum landscaping requirements for individual lot owners similar to those used in Phase One.

It is also worth noting that the basic configuration of the Phase Two land use plan would insure that residents of the project benefit from the many visual amenities of the site. An attempt will be made to maximize the number of lots which are adjacent to and have view over open space such as the golf course and the various gullies, thereby preserving the more visually interesting (as well as more environmentally sensitive) ecosystems along the valley sides and bottoms.

4.9 HISTORICAL AND ARCHAEOLOGICAL IMPACTS

An archaeological reconnaissance survey of the Phase Two lands was conducted by Paul L. Cleghorn and Thomas Dye of the Department of Anthropology of the Bishop Museum, between April 16 and 18, 1979. No prehistoric archaeological sites were identified in the area proposed for Phase Two development.

The only site located in the project area consists of an upright boulder and a semicircular area excavated into a ridge slope, measuring 2.5 meters in diameter with a maximum depth of about .7 meters below the surrounding ground surface. The boulder (.97 meter high with a .35 by .58 meter base) is located approximately ten meters upslope (southwest of the excavated area). The archaeologists believed these features originate in historic time, probably World War II. They speculated that the excavation functioned as a military observation/defensive position and that the boulder served as a locational marker.

The Bishop Museum archaeologist's conclusion was that "No further archaeological investigations are warranted" of the Phase Two development area. They recommended that if archaeological features are encountered during construction, "qualified archaeological personnel should be contacted to examine such remains".

The State Historic Preservation office also has no recorded sites in the Phase Two development areas. The long history of post-contact agricultural use of the area is believed to account for the paucity of archaeological or historical features.

Several sites have been noted on PDC lands in the immediate vicinity of the Phase Two project site, including an historic-period cemetery, Po'oku Heiau, and five irrigated agricultural systems with 'auwai (ditches). However these are all outside of the proposed development areas. Therefore, no impact is expected on historical or archaeological resources as a result of Princeville's Phase Two development.

4.10 AIR QUALITY IMPACTS

The Phase Two project would lead to traffic and construction activities that have the potential to affect air quality adversely. In particular, exhaust emissions from motor vehicles can increase atmospheric levels of the various pollutants produced by combustion of fossil fuels.

This section describes existing air quality in the vicinity of the resort. It then discusses potential changes in air quality that could result from ongoing development at Princeville, including the Phase Two project, and utilizes an air quality screening methodology developed by the U.S. Environmental Protection Agency (September 1978) to determine whether or not violations of state or national air quality standards are likely to occur.

4.10.1 Existing Air Quality and Meteorology

The only air quality monitoring station on Kaua'i is situated in Lihu'e, 20 miles south-southeast of Princeville. Even there, only particulates and sulfur dioxide are sampled. In 1981, particulate concentrations measured in Lihu'e ranged from 18 to 83 micrograms per cubic meter (mg/m^3); the average was 37 micrograms per cubic meter. The concentration of sulfur dioxide was below 5 micrograms per cubic meter. Both state and federal ambient air quality standards (see Table IV-13) were met.

Pollutant concentrations measured at Lihu'e reflect the urban activities, including heavy traffic and industry, present in that town. In view of the much lower intensity of urban development and traffic volumes near Princeville, air quality there is believed to be even better than it is in Lihu'e.

Average rainfall in the Phase Two area of Princeville ranges from 60 to 75 inches per year. The monthly mean high temperature (in degrees Fahrenheit) ranges from 70 to the low 80s at the National Weather Service measuring station in Kilauea.

The best available data on wind speed and direction is from Kilauea Point, about five miles distant from the Princeville Center. There, winds are from the northeast, east, or southeast more than 80 percent of the time (with the most common direction being the southeast). The same data set indicates that winds blow in excess of nine miles per hour more than 80 percent of the time. While local geography can have substantial effects on wind patterns, it is believed that the Kilauea Point data are representative of conditions at Princeville.

4.10.2 Effect of Motor Vehicle Emissions

Of the pollutants which are regulated by the State Department of Health, three (carbon monoxide [CO], hydrocarbons [HC], and oxides of nitrogen [NOx]) are emitted primarily by motor vehicles. The standard for carbon monoxide is by far the most likely to be violated by a project such as Princeville. Hence, our analysis focused on that constituent.

Table IV-13. Summary of State of Hawai'i and Federal Ambient Air Quality Standards.

Pollutant	Sampling Period	Federal Standards		State Standards
		Primary ¹	Secondary ²	
Suspended Particulate Matter (Micrograms per Cubic Meter)	Annual Geometric Mean	75	60	--
	Annual Arithmetic Mean	--	--	55
	Maximum Average in Any 24 Hours	260	150	100
Sulfur Dioxide (SO ₂) (Micrograms per Cubic Meter)	Annual Arithmetic Mean	80	--	20
	Maximum Average in Any 24 Hours	365	--	80
	Maximum Average in Any 3 Hours	--	1,300	400
Carbon Monoxide (CO) (Milligrams per Cubic Meter)	Maximum Average in Any 8 Hours	10	10	5
	Maximum Average in Any 1 Hour	40	40	10
Hydrocarbons (HC) Non-Methane (Micrograms per Cubic Meter)	Maximum Average in Any 3 Hours	160	160	100
Photochemical Oxidants (Micrograms per Cubic Meter)	Maximum Average in Any 1 Hour	240	240	100
Nitrogen Dioxide (NO ₂) (Micrograms per Cubic Meter)	Annual Arithmetic Mean	100	100	70
	Maximum Average in Any 24 Hours	--	--	150
Lead (Micrograms per Cubic Meter)	Calendar Quarter	1.5	1.5	N/A

¹ Intended to prevent adverse effects on public health.

² Intended to prevent adverse effects on public welfare including effects on comfort; visibility, vegetation, animals, aesthetic values, and soiling and deterioration of material.

Source: Compiled by Morrow, February 1980: Table 3.

To determine if the proposed project is likely to result in a violation of the standards for carbon monoxide (CO), a microscale screening analysis was conducted. The methodology is described in the U.S. Environmental Protection Agency's (September 1978) Guidelines for Air Quality Maintenance Planning and Analysis-- Volume 9 (Revised): Evaluating Indirect Sources. Adjustments were made in the emission factors given in Volume 9 (Revised) to account for the updated emission rates published by the EPA in 1980. Inputs to the model included:

- o Projected levels of traffic with and without the project as presented in Section 4.4 of this report.
- o An assumed background ambient CO concentration of one microgram per cubic meter. The lack of historical data made this assumption necessary. It is a low level considered appropriate for a rural area such as Princeville.
- o A steady wind speed of one meter per second (approximately two miles per hour) blowing at an angle of 10 degrees with the roadway. Winds of this speed and direction are extremely rare at Princeville (occurring less than a few tenths of one percent of the time), and pollutant concentrations decrease dramatically under less severe circumstances. An increase in assumed wind speed to four miles per hour, for example, cuts concentrations in half.
- o Pasquill-Gifford stability class "E", a moderately stable situation which leads to restricted dispersion of pollutants and, hence, relatively high pollutant concentrations.

The techniques and assumptions incorporated in the Chapter 9 methodology are intended for use in screening proposed actions to determine which require more detailed study. Because of this it is "conservative," i.e., incorporates assumptions which lead to projected pollutant concentrations which are at the high end of the possible range. Hence, if the Chapter 9-type analysis indicates compliance with air quality standards, it is virtually certain that this will be the case. In cases where possible violations are indicated, more detailed modeling is called for to determine whether or not the potential violations identified are actually likely to occur.

For the purposes of this study, air quality was examined at two locations that are representative of the worst traffic situations likely to occur with the proposed Phase Two project. The first is on the eastern plateau adjacent to Kuhio Highway; it is representative of an open road situation where traffic is flowing freely. There is virtually no pedestrian traffic along the highway, and so a location approximately 50 feet (15 meters) makai of the roadway on the nearest parcel proposed for residential use was used as the nearest receptor point.

The second receptor location analyzed is on the parcel proposed for public facilities adjacent to the intersection of Kuhio Highway and Ka Haku Road, the two busiest roadways in the area. No specific site plans are available for this parcel. Hence, ambient air quality calculations were made for a receptor location 50 feet from the edge of Ka Haku Road. The wind was assumed to be blowing from the west-southwest at an angle of 10 degrees to Kuhio Highway.

Estimated "worst-case" CO concentrations at the two receptor locations are presented in Table IV-14. They indicate that the ambient air quality standard for CO would be met in the residential areas along the free-flowing portions of Kuhio Highway even with the meteorological conditions most conducive to pollutant build-up, the highest projected traffic volumes, and per vehicle-mile emission rates at the relatively high 1985 level. Since more stringent emission standards imposed on automobile manufacturers are gradually decreasing the average emission rates as new vehicles replace older ones, actual post-1995 emissions are expected to be less than half those used in developing the "worst-case" estimates. This means that ambient concentrations will be far below both the State and Federal CO limits of 10 and 40 micrograms per cubic meter, respectively.

Projected carbon monoxide concentrations in the vicinity of the Ka Haku Road/Kuhio Highway are expected to be considerably higher than those at areas affected only by portions of Kuhio Highway where traffic moves freely, (e.g., see discussion above). This is partially due to the slightly higher vehicle volumes experienced there, but the most important cause is the increased emissions from vehicles slowed or stopped by traffic controls and/or peak-hour traffic congestion.

The highest concentration shown in Table IV-14, 29 micrograms per cubic meter, is based on a set of "worst-case" assumptions; it would not occur unless Congress relaxed existing emission standards instead of allowing currently legislated increases in emission limitations to take effect. While there has been some talk in Congress of delaying the imposition of stricter limits, a wholesale rollback to less stringent emission standards is extremely unlikely. A review of the inputs to the model used in estimating the CO concentrations suggests that the actual "worst-case" per-vehicle-mile emission rates when the project is completed will be approximately half those used to arrive at the "Case 1" estimates shown in Table IV-14. Adjusting for this projected decrease in the emission rate results in the CO concentrations shown under "Case 2". Finally, the "Case 3" estimates that are shown assume that the wind speed is 4 miles per hour rather than the 1 meter per second (about 2.25 miles per hour) assumed in the other two cases. The limited meteorologic data that is available indicates that this is much more typical of a "low wind" situation at Princeville.

Comparing the CO concentrations shown in Table IV-14 with the ambient air quality standards summarized in Table I-13, it can be seen that the Federal 1-hour limit of 40 milligrams per cubic meter would be met at all times under all assumptions. Whether or not the much more restrictive State standard of 10 milligrams per cubic meter would always be achieved adjacent to the intersection is less certain. The screening method indicates that levels in excess of this could be experienced under "worst-case" conditions. However, the 8.9 milligrams per cubic meter estimate under the Case 3 assumptions is below the State standard.

In interpreting the foregoing, two important facts should be taken into consideration. First, over 85 percent of the traffic which contributes pollutants would be on the roadways even if Phase Two were not developed. While the relationship between ambient concentrations and traffic volumes is not linear, there is a strong correlation between the two. Hence Case 1 and Case 2 CO levels would be in excess of the standard even without Phase Two. Second, available scientific evidence indicates that compliance with the Federal standard of 40 micrograms per cubic meter insures adequate protection of community health. Thus, while the project would result in a measurable increase in the peak ambient concentration of carbon monoxide in the atmosphere, traffic-related emissions appear unlikely to have a significant adverse on the general public.

Table IV-14. Projected "Worst-Case" One-Hour CO Concentrations.¹

Location	Carbon Monoxide Concentrations (mg/cu.m)		
	Case 1 ⁴	Case 2 ⁵	Case 3 ⁶
Eastern Plateau Adjacent to Kuhio Highway ²	3.7	2.3	1.7
"Public" Area Adjacent to Ka Haku Road and Kuhio Highway Intersection ³	29.4	15.2	8.9

¹ Calculated using methodology described by the U.S. Environmental Protection Agency (September 1978) in Guidelines for Air Quality Maintenance Planning and Analyses, Volume 9 (Revised): Evaluating Indirect Sources. Assumes one meter/second wind speed, "E" stability, and wind from west-southwest of angle of 10 degrees to Kuhio Highway.

² Receptor location 15 meters (50 feet) makai of Kuhio Highway adjacent to the eastern plateau of Phase Two.

³ Receptor location 15 meters (50 feet) east of Ka Haku Road and 30 meters south of Kuhio Highway.

⁴ Assumes 1985 per-vehicle-mile emission rates and "ultimate" traffic volumes.

⁵ Assumes 1995 per-vehicle-mile emission rates and "ultimate" traffic volumes.

⁶ Same assumptions as foot notes 1 and 5 except wind speed of four miles per hour rather than one meter per second.

Source: Belt, Collins & Associates.

4.10.3 Construction Dust

Fugitive dust arising from construction can create serious short-term problems if left unabated. Studies by the U.S. Environmental Protection Agency have found that "medium" construction such as that involved in the development of shopping centers can emit up to 1.2 tons of particulates per month per acre assuming a moderate silt content in the soil (about 30 percent) and a semi-arid climate. Naturally, day-to-day variations in the rate of emissions can be substantial. The same studies also indicate that twice-daily watering can reduce these emissions by up to 50 percent.

In order to get some idea of the order of magnitude of downwind total solid particulate concentrations that might result from an acre of construction, the above monthly emission rate was adjusted for use in a Gaussian diffusion equation by assuming an 8-hour workday, six days per week. Twelve and twenty-four hour concentrations were calculated at various distances under different wind conditions both with and without twice-daily watering. Neutral stability and a background concentration of 30 ug/m^3 were assumed throughout. The results are summarized in Table IV-15. The table is intended to show only the potential significance of particulate levels from construction activity, not to provide estimates of exact values for the proposed project.

The EPA figures on which the estimates in the table are based assume a semi-arid climate. In view of the wetter conditions typical of Princeville, particulate levels there are likely to be below those shown for the "with no watering" case. It should also be noted that wind speeds at Princeville exceed 4 meters per second (about 9 miles per hour) over 80 percent of the time. This means that the lower concentrations shown in the bottom half of the table are most typical.

Nevertheless, the calculations make it clear that good dust control measures are essential if particulate concentrations are to be kept to reasonable levels. They also highlight the importance of phasing construction so that site-grading, the activity which generates the most dust, is undertaken before residents begin to move into nearby areas.

4.11 IMPACTS ON PUBLIC UTILITIES, SERVICES, AND FACILITIES

4.11.1 Water System

Princeville Water Systems, Inc., a subsidiary of PDC, owns and operates the water source, storage tanks, and transmission mains serving the Princeville resort and other nearby users. Kauai County Public Improvements Corporation (KCPIC), a non-profit organization, owns and operates the distribution lines in Phase One. As discussed in Section 2.4.3, KCPIC must offer the system to the County in March 1984. If the County does not accept it, KCPIC would continue to operate and maintain the distribution system unless it transferred responsibility to another group. The Phase Two water distribution system could be independent of the Phase One system and connected directly to the Princeville Water Company transmission main. However, operations would be simplified by connecting the two systems. Therefore, application for this would be made by PDC to KCPIC or its successor after the overall land use approvals for Phase Two are obtained.

The water source presently consists of two 1,500-gpm wells and a 1.5-mg storage tank at the 400-foot elevation (see Figure II-5). The present system is estimated to be able to supply an average demand of 1.44 mgd with one of the two wells inoperative.

Table IV-15. Estimates of Total Suspended Particulate Concentrations Downwind of a One-Acre Construction Site.

Downwind Distance With Wind Speed of 1 Meter/Sec	TSP Concentration (ug/m ³)			
	12-Hour		24-Hour	
	With Twice Daily Watering	With No Watering	With Twice Daily Watering	With No Watering
100 m	800	1600	420	815
200 m	370	700	200	365
600 m	100	170	65	100
1 km	60	95	45	60
With Wind Speed of 4 Meters/Sec				
100 m	230	420	130	230
200 m	115	200	70	115
600 m	50	65	40	50
1 km	40	45	35	40

Background: 30 ug/m³
 12-hr standard: 150 ug/m³ above background
 24-hr standard: 100 ug/m³

Source: Belt, Collins & Associates.

Besides Phase One, Princeville Water Systems, Inc. also currently supplies water to the Honu Road agricultural subdivision (six approximately 15,000-s.f. single-family lots), the 24-lot Princeville agricultural subdivision, the County's Anini water distribution system, Po'oku Stables, Princeville Cattle Company, and Princeville Airport. Emergency backup water service is also provided to the Hanalei water system. In the future Princeville Water Systems also expects to supply water to Anini Vistas subdivision (Princeville Water Systems, Inc.; August 13, 1982). The ultimate demands of these various users are projected based on design standards of the Kaua'i County Water Department or historical use records of Princeville Water Systems; these projections are shown in Table IV-16.

Even without Phase Two, the future design water demand generated by these users is expected to be about 1.4 mgd. This would be about equal to the present pumping capacity of the system assuming one pump is inoperative. So additional well capacity would be provided as part of the Phase Two project. Phase Two is expected to add about 0.7 mgd demand for water. To meet the standby requirement and provide the combined water needs of all users, both a 0.7-mg storage tank and additional well capacity would have to be added to the system. In accordance with Section 11-20-30 of Chapter 20, Title 11, Administrative Rules, prior to construction of these improvements, Princeville Water Systems Inc. will submit plans and supporting information to the Department of Health for approval of the proposed modifications. The Kaua'i County Department of Water Supply would also have to review their plans. For a discussion of the capacity of the aquifer supplying this water, see Section 4.5.4.

4.11.2 Sewage Treatment and Disposal

The sewage treatment system currently serving Phase One is owned and operated by KCPIC. It uses the conventional activated sludge process to treat sewage effluent to a secondary level. The sludge is used in Princeville's nursery. The treated effluent is transferred to the golf course lakes and eventually used to irrigate the existing golf course. See Section 4.5.5.3 for a discussion of the relationship of the sewage effluent to water quality. The plant has a present capacity of 1.5 mgd and is readily expandable to 4.5 mgd.

Based on a sewage generation rate of 70 percent of potable water use, Phase One is ultimately projected to produce 0.97 mgd of effluent and Phase Two 0.48 mgd, for a total load of 1.45 mgd including the second golf clubhouse. The total amount of sludge generated by both Phases One and Two would be approximately 2.5 cubic yards per day. This is less than originally projected when the treatment plant was sized. This is due to the fact that Phase One has been developed at a much lower density than originally planned.

As discussed in Section 2.4.4, KCPIC is required to offer the sewerage system to the County in March 1984. The existing plant operating at capacity could handle the projected flow from both Phases One and Two. If other areas besides Princeville are added to the system, expansion of the plant may eventually be required. In any case, a back-up effluent disposal system will be constructed; injection wells and other methods are being considered. See discussion of the unresolved issues related to sewage treatment and disposal in Section 7.1.2.

Table IV-16. Total Water Demand on Princeville Water System.

Use	Ultimate Planned Amount	Daily Potable Water Design Rate ¹	Potable Water Flow (mgd) ¹	Maximum Irrigation (mgd) ⁴	Total Water Demand (mgd)
PHASE ONE:					
Single-Family	750 units ³	400 gal./unit	0.300	---	0.300
Multi-Family	2,280 units ³	350 gal./unit	0.798	---	0.798
Hotel	700 rooms ³	350 gal./room	0.245	0.015	0.260
Commercial	9 acres ⁴	3,000 gal./acre	0.027	---	0.027
Golf Clubhouse	3 acres ⁴	3,000 gal./acre	0.009	---	0.009
SUBTOTAL			1.379	0.015	1.394
SECOND GOLF COURSE:					
Golf Clubhouse	6 acres ⁴	3,000 gal./acre	0.018	---	0.018
PHASE TWO:					
Single-Family	1,240 units ⁵	400 gal./unit	0.496	---	0.496
Multi-Family	420 units ⁵	350 gal./unit	0.147	0.039	0.186
Public	5 acres ⁵	2,000 gal./acre	0.010	---	0.010
Park	10.5 acres ⁴	2,000 gal./acre	0.021	0.019	0.040
SUBTOTAL			0.674	0.058	0.732
OTHER USERS:					
Princeville Agricultural Subdivision	24 units ⁶	400 gal./unit	0.010	---	0.010
Honu Road Agricultural Subdivision	6 units ⁶	400 gal./unit	0.002	---	0.002
Anini Water System	---	---	0.015 ⁷	---	0.015
Princeville Airport	---	---	0.005 ⁸	---	0.005
Anini Vistas-	10 units ⁴	400 gal./unit	0.004 ⁹	---	0.004
SUBTOTAL			0.036	---	0.036
TOTAL, WITHOUT PHASE TWO			1.433	0.015	1.448
TOTAL, INCLUDING PHASE TWO			2.107	0.073	2.180

¹ Based on Kauai County Water Department's (August 11, 1982) planning estimates. Note that this assumes 100 percent occupancy, a level unlikely to be reached.

² Includes those land uses expected to use more than the per-unit amount of potable water because of additional irrigation needs. Based on a desired level of 6 inches of water per month during the driest month (the average of the driest month of rainfall is about 4 inches), a maximum of two inches per month (0.067 inches per day) is required for irrigation. The golf courses are not expected to use potable water from the Princeville system and, therefore, are not included in this table.

³ From Table II-1.

⁴ Estimated by Belt, Collins & Associates.

⁵ From Table II-2.

⁶ Princeville Development Corporation (November 30, 1982).

⁷ Estimated by Kauai County Water Department in their letter dated August 12, 1982.

⁸ Based on meter readings by Princeville Water Systems, Inc. from July 1, 1981 through July 1, 1982.

⁹ Expected future user of Princeville Water System.

Source: Belt, Collins & Associates.

4.11.3 Electric Power and Communication

Electricity for the proposed Phase Two project would be supplied by Kaua'i Electric, a Division of Citizens Utilities Company. Power to the Hanalei, Princeville, and Kilauea areas is delivered via its Princeville Substation. This facility is located adjacent to Kuhio Highway near the Princeville Shopping Center. According to company representatives, it is currently in the process of expanding this substation to increase its capacity and provide more flexibility in meeting the energy needs of the service area.

In conjunction with the changes being made to the Princeville Substation, Kaua'i Electric is also extending a major 12 KV distribution line paralleling Kuhio Highway between the Princeville Substation and the Princeville Airport. This line has sufficient capacity to meet the needs of all development proposed for the Phase Two area. Both the substation expansion and the powerline extension are expected to be completed by the end of 1982. In a letter dated September 30, 1982, Kaua'i Electric indicated that the improvements to their power distribution system described above would provide the additional capacity and facilities required to serve the Phase Two project adequately.

The Princeville Substation is tied in with Kaua'i Electric's islandwide 57 KV grid. Hence, all of the company's generating resources are available to meet the area's demand. This means that Princeville has access to the various alternate energy sources that exist on Kaua'i, as well as to Kaua'i Electric's fossil fuel power plant in Port Allen.

Kauai Electric estimates that the average monthly energy consumption in a typical all-electric single-family residence is approximately 580 Kilowatt hours. The estimated demand (i.e., the peak use rate) is 2,500 Kilowatts. The company does not have sufficient data to allow it to make different estimates of energy use by resort condominium units. However, in all probability, the rates are below those for single-family homes except in cases where the condominium apartments are air-conditioned.

As noted above, Kaua'i Electric currently obtains a significant proportion (between 45 and 50 percent) of the power it delivers to customers from non-fossil fuel sources. As of September 1982, the company estimated that the proportion of its total energy sales attributable to alternate energy sources could reach as high as 50 percent by 1985. They expected that this proportion would decline to 45 percent in 1990, 40 percent in 1995, and 35 percent in the year 2000. The projected decline is attributable to continuing increases in projected demand combined with a leveling off in the growth of alternate energy source capacity.

The proposed Phase Two project consists largely of single-family homes. Because of Princeville's mild climate, such homes can easily be designed to maintain a comfortable interior environment without either heating or air-conditioning. Solar water heating (either through roof collectors or heat pumps) is feasible, though the relatively cloudy conditions may make heat pumps more economical. Kaua'i Electric also suggested maximizing the use of fluorescent and high pressure sodium lighting.

Estimates of the total power consumption by the Phase Two project were made using per-unit energy use factors supplied by Kaua'i Electric. They are summarized below. These estimates are based on 100 percent occupancy of all of the units that are proposed. In reality, of course, actual occupancy is expected to be well below that figure. Hence, actual energy use would probably be no more than 70 to 80 percent of the level shown. Further reductions could be achieved if improved energy conservation measures discussed above are used.

<u>Use</u>	<u>Estimated Consumption Rate (in KWH/Mo./Unit)</u>	<u>Number of Units</u>	<u>Energy Use (in MWH/Mo.)</u>
Resort Condominiums	465 ⁽¹⁾	420	195
Single Family	580 ⁽²⁾	1,240	720
Library	12,000 (if airconditioned) ⁽²⁾	one 8,500 s.f. library	12
or	5,000 (if non-airconditioned) ⁽²⁾		or 5
		TOTAL	927 or 920

(1) Estimated to be 80 percent of single-family rate.

(2) Kaua'i Electric (September 30, 1982)

Telephone service to Princeville is currently provided by Hawaiian Telephone from a switching center in Hanalei. A digital electronic common control switching center is currently under construction at Princeville and is expected to be operational in June 1983. A microwave system between Princeville and Lihue will be established to provide added trunk capacity and route diversity. Hawaiian Telephone states (August 17, 1982) "There will be no problems whatsoever in providing telecommunications services to Phase Two, to Princeville, or to the entire North Shore."

4.11.4 Solid Waste Disposal

The North Shore area is currently served by the County's Hanalei landfill, which is located on Phase Two land. Solid waste from Phase One of Princeville is collected by a private refuse hauler and disposed of at the landfill site. Until recently, the Kaua'i County Department of Public Works (August 30, 1982) planned to replace the Hanalei landfill with a transfer station, and from there haul the refuse to a new island-wide landfill. Now, since the recommended location for the island's major landfill is Kekaha, the DPW considers the haul from the North Shore to be prohibitively expensive (*Ibid.*; May 5, 1983). Therefore, there appears to be two alternatives for future solid waste disposal in the North Shore area. One would be to implement the transfer station idea, with the refuse hauled to either an as-yet-to-be-chosen new regional landfill or a proposed solid-waste-to-energy facility, located closer to the North Shore than Kekaha. The other alternative is to locate a new landfill somewhere within the North Shore area, probably on Princeville lands.

If the first alternative is implemented, it is unknown at this time whether Phase One would continue to use a private refuse hauler and what type of disposal service would be adopted for Phase Two, given the current County policy prohibiting use of a transfer station by private haulers. Because of this, an evaluation of this alternative's ability to accommodate Phase Two must consider two possibilities. The first is that all refuse would first go to the County transfer station proposed mauka of the resort. The second possibility is that some or all of the solid waste would be collected by private haulers who, based on existing policy, would be required to transport the waste directly to the County landfill (or if it is built, a solid-waste energy recovery facility).

The County will plan for landfill capacity to accommodate the population allowed under existing County land use plans. The Phase Two project, in turn, will be allowed only if it is found by the County of Kaua'i to be consistent with its General Plan. Hence, we may infer that landfill capacity will not be a constraint.

The question of transfer station adequacy arises only if solid waste from Princeville is accepted there. The DPW in August 1982 indicated that a transfer station was being designed that would accommodate a population from Ha'ena to Kilauea of 9,000 in the year 2000. Estimates of the de facto population of the transfer station's service area (see Table III-25) indicate that it will almost reach 9,000 persons by 1995. This suggests that expansion of the transfer station might be necessary before the year 2000.

The second alternative is to establish a new landfill somewhere within the North Shore. Existing government regulations would make it difficult and expensive for a private entity such as PDC to establish a private landfill, and that is not considered a viable alternative. However, the Kaua'i County Department of Public Works (May 5, 1983) has suggested that the possibility of "the developer establishing a landfill for County operation should be pursued." Princeville Development Corporation (PDC) is discussing possible sites on their land with the DPW. The issue of the solid waste disposal alternative for the North Shore area will be resolved before the Phase Two project is implemented.

As for the generation, rather than disposal, issue, there is little that a developer such as PDC can do to limit the amount of solid waste that is generated. The County theoretically could reduce solid waste generation by imposing regulations on packaging and recycling, but these are often difficult to enforce. It seems more feasible for the County either to expand the size of its disposal sites or to eventually consider alternative methods of refuse disposal such as waste energy recovery.

4.11.5 Police Protection

Police protection for the Phase Two project would be provided from a police substation located adjacent to the Princeville Phase One area at the corner of the old Hanalei Plantation Road and Kuhio Highway. The substation was completed recently on land dedicated to the County by the Princeville Development Corporation. It is operated on a 24-hour basis and is accessible from Kuhio Highway. Patrol officers are dispatched to the site of complaints or disturbances by the Police Department's central headquarters in Lihu'e via police radio communications.

According to Police Chief Roy Hiram (July 30, 1982), the substation is staffed by twelve officers and three civilian personnel who handle clerical duties. He indicated that existing facilities and service are adequate and stated that there would be no need to expand them immediately as a result of the Phase Two project. However, Chief Hiram did express some concern over enforcement of traffic laws within the confines of the Princeville Resort since the County Police Department's jurisdiction (in regard to traffic law offenses) does not extend onto private roadways. He suggested that this be handled by a private security operation.

Given the large number of units that remain to be developed in Phase One and the substantial number of additional units that would be constructed if the Phase Two project is implemented, some eventual increase in the number of police officers operating out of the Princeville Substation may be required. This will certainly be the case if the Princeville roadways are ever dedicated to the County and the Kaua'i Police Department became responsible for enforcement of traffic laws.

Simply by increasing the number of persons present in the Hanalei District, the Phase Two project may be expected to result in a rise in the absolute number of crimes that are committed there. This effect, together with related topics of social change and its relationship to crime rates, are discussed in Section 3.10.5.7.

4.11.6 Fire Protection

4.11.6.1 Existing Situation

Fire protection for the entire Hanalei District from Moloa'a to Ha'ena is provided by the Hanalei Fire Station. The station is located at Princeville in the same structure as the police station. It is manned 24 hours per day by a complement of twelve firefighters who work in three shifts of four persons each. In addition to normal firefighting duties, the station also handles calls for land and sea rescues, heart attacks, automobile accidents, and other miscellaneous emergency calls.

The Hanalei Fire Station is currently assigned two engine trucks, a 1976 American La France 1,500-gpm (gallons per minute) pumper and an obsolescent 1945 Seagrave 750-gpm pumper. The Seagrave unit is serviceable, but is outdated by today's standards. It is used as a back-up unit and is moved to Hanalei Town whenever flood conditions threaten to render the highway between the fire station at Princeville and Hanalei Town impassable.

The number of calls answered by the Hanalei Fire Station in each of the past three years is summarized below:

<u>Type of Call</u>	<u>Time Period</u>		
	<u>7/1/79- 6/30/80</u>	<u>7/1/80- 6/30/81</u>	<u>7/1/81 7/1/82</u>
Rescue Calls	116	128	98
Fire Calls	37	33	33

Note: includes land and ocean rescues, heart attacks, traffic accidents, false alarms, and other miscellaneous calls.

The data indicate that the number of fire calls has remained fairly constant despite the significant increase in the number of dwelling units present in the district. In contrast, the number of rescue calls has declined markedly. No detailed analysis was undertaken to determine the root cause of this. However, a very large proportion of the rescue calls are for tourists who get into trouble in Kaua'i's mountains or waters, and the decline in the average visitor population that has accompanied the slump in the tourism is believed to account for much of this.

4.11.6.2 Impacts of the Proposed Phase Two Project

According to representatives of the Kaua'i County Fire Department (Silva, September 1982; Enoka, July 1982) continued growth at Princeville will contribute to the need for expanded facilities and manpower. A list of the improvements that have been cited as desirable follows below.

- o Obtain a combination pumper/ladder truck for use on structural fires in condominiums and hotels.
- o Purchase a mini-pumper for use in the Hanalei District. Because of its small size and maneuverability, this unit would be ideal for combatting incipient brush fires and to aid in fighting small structural fires. It could also be equipped and used as an emergency rescue vehicle.

- o Procure a Zodiac rubber boat for use in responding to all water incidents between Moloa'a and the Na Pali Coast.
- o Increase the number of personnel assigned to the district by twelve to operate the additional equipment and to free persons for time-consuming rescue operations without detracting from the level of fire protection that is available.
- o Expand the garage area of the Hanalei Fire Station to accommodate the new equipment. The existing sleeping quarters are adequate.

In its response to a letter asking for comments on the proposed Phase Two project, the Fire Department did not differentiate between needs generated by continued growth of the Phase One area and those associated only with the proposed Phase Two project. However, all of the changes in staffing and equipment/personnel that were recommended are programmed for implementation within the next ten years, i.e., well before most of the units in Phase Two would be developed. This indicates that few, if any, of the improvements could be dropped from the Department's funding request even if the Phase Two proposal were to be abandoned.

4.11.7 Medical Service

4.11.7.1 Existing Situation

The nearest outpatient medical services for persons in the Hanalei area are now provided by the North Shore Clinic. It is located in Kilauea, about seven miles east of the Princeville Resort. The clinic, which opened in 1981, is associated with the Kaua'i Medical Group and Wilcox Hospital; it employs one full-time physician. Sufficient land is available on the site to allow future expansion, and the clinic itself has been designed with this in mind.

Acute care facilities for the entire island of Kaua'i are provided by the Wilcox Hospital in Lihue. In 1979, the number of beds there was increased from 96 to 143. Use of the hospital has not increased proportionately. As a result, the average annual occupancy rate for the hospital is below 50 percent. This is about the same as that experienced on the island of Hawai'i, but it is well below the level achieved on O'ahu.

Ambulance service at the Princeville Resort is provided by International Life Support, a private company which stations an ambulance at the Princeville housing area. The company can transport patients by helicopter or ambulance. Its vehicles are equipped with advanced life support systems and trained personnel. As a result, it is possible to transport critically ill patients to Wilcox Hospital quickly. Additionally, at least one fireman on each shift at the Hanalei fire station has received specialized training as an emergency medical technician and can stabilize patients until more sophisticated equipment arrives.

4.11.7.2 Adequacy of Medical Service

The adequacy of the existing health care facilities was discussed with Mark Hemmings (July 27, 1982), former Kaua'i District Health Officer for the Hawai'i State Department of Health. His assessment was that the only changes needed to accommodate the Phase Two project would be an increase in the outpatient services available. Wilcox Hospital was judged able to serve the acute care needs of the expanded population.

It was Mr. Hemmings' belief that the Medical Group clinic in Kilauea was adequate for the resort's current needs, and he noted that the low level of unmet demands has made it impossible for either Princeville or the Ching Young Shopping Village in Hanalei to attract a physician as a tenant in their new space. However, he expected that there would be no difficulty increasing the number of physicians if population growth warranted it.

4.11.8 Recreational Facilities and Activities

The proposed Phase Two project would impact recreational activities on Kaua'i in two essential ways. First, by raising the de facto population of the island, it would increase the number of "recreational activity days" that would have to be accommodated by the island's recreational facilities. Second, the recreational facilities that would be constructed as part of the Phase Two project would increase the recreational alternatives that are available.

The most recent comprehensive analysis of recreational facilities on Kaua'i is contained in the State Recreation Plan--Technical Reference Document (Hawai'i State Department of Land and Natural Resources; January 1980).

The 1980 State Recreation Plan-TRD study defines "usable supply" as the supply of facilities, resources, and activities available for use by the public to satisfy recreational demand. It notes that the outdoor recreation supply relies heavily on facilities operated by the State Department of Education and the University of Hawai'i and that this places certain limitations on their availability to the general public. Tables IV-17 and IV-18 indicate the usable supply of recreational facilities on Kaua'i.

According to that report, the island enjoys the greatest amount of improved recreation acreage per capita of any county in the state. Moreover, the greatest concentration of shoreline/beach part resources is on the northern and eastern shores of the island reasonably close to the Princeville Resort. However, the local usable recreational supply is unevenly distributed about the island. Much of the improved active park acreage, sports fields, and sport courts are in the Lihue and Wailua-Kapa'a Planning Areas. Waimea-Kekaha has three of the island's five public swimming pools. And the Hanalei-Kilauea Planning Area has no improved active park or sport field acreage and lacks improved inland campsites.

The State Recreation Plan-TRD study contains detailed estimates of the future demand for recreational facilities. These estimates are based on population projections for the island of Kaua'i developed by the Hawai'i State Department of Planning and Economic Development (March 1, 1978) and recreational activity participation rates determined by an extensive survey of recreationists conducted in 1978. The participation rate projections are the best available at this time. Considering the long time frame that is involved, the DPED's population projections are remarkably close to the independent estimates made for this study and presented in Table III-8. Hence, they already account for the magnitude of growth in recreation demand that would be generated by the proposed Phase Two project. This implies that the project would not alter the facilities need projections presented in that Plan.

Key recommendations of the State Recreation Plan-TRD includes the following:

- o Additional facilities and programs should be established only if the County is also willing and able to provide the funds and staffing needed to operate them properly and to keep them at their highest possible level of performance.

Table IV-17. Recreational Resources and Facilities Available on Kaua'i: 1980.

Facility Resource	Area			
	Hanalei-Kilauea		Island-wide	
	Acres	Acres/1,000 Persons	Acres	Acres/1,000 Persons
Recreation Resources:				
Park-Related Beach	29.6	14.8	98.6	2.7
Hunting Areas	24,016	12,008	125,926	3,440.6
Linear Facilities: (in miles)				
Trails	29	n.a.	155.2	n.a.
Bikeways	0	n.a.	2.7	n.a.
Recreation Facilities:				
Active	7.1	4	379.2	10
Passive	24.9	12	282.3	8
Service	0.0	---	29.9	---
Total Improved	32.0	16	682.2	19

Source: Hawai'i, State of, Department of Land and Natural Resources (January 1980).

Table IV-18. Usable Supply of Recreational Facilities and Resources on Kaua'i by Type.

Type of Facility	No. of Sites	Quantity
Active Park	38	179.4 acres
Swimming Pools	4	0.4 acres
Sport Fields	32	61 courts
Sport Courts	30	47 courts
Tennis Courts	19	71 courts
Golf Courses	4	4 courses
Boat Launching Ramps	11	13 lanes
Boat Moorages	4	91 spaces
Sandy Beach:		
Improved Park	18	91.5 acres
Unimproved Park	22	396.1 acres
Total	40	487.6 acres
Picnicking:		
Beach	19	161.5 acres
Inland	7	82.9 acres
Total	26	244.4 acres
Camping Sites:		
Beach	12	290 units
Inland	1	99 units
Total	13	389 units

Source: Hawai'i, State of, Department of Land and Natural Resources (January 1980).

- o Natural and cultural resources should be considered part of the recreational value of an area.
- o Efforts should be made to satisfy the recreational interests and needs of minority user groups.
- o Backcountry recreational areas should be provided, but only when it is possible to insure that they are not misused.
- o Innovative approaches to meeting the golfing needs of the populace should be devised to insure that more facilities are available to local users at reasonable cost.
- o Efforts related to coastal recreation should focus on maintaining compatibility between shoreline uses, acquisition of sufficient shoreline areas to provide for present and future needs, and ensuring the safety of shoreline recreationists.
- o Improve opportunities for inland recreational activities while maintaining adequate security and avoiding conflicts with other recreational uses.
- o Utilize the natural scenic resources of the Hanalei District to provide regional, local, and backcountry recreational opportunities for the people of Kaua'i.
- o Use the natural resources of the Hanalei-Kilauea area to provide more "remote," nature-oriented experiences which emphasize rural or wilderness themes.
- o Take advantage of private initiative by using public incentives to induce developers to provide recreational facilities for golf, tennis, and other pursuits.

4.11.8.1 Park Dedication Requirements

Kaua'i County has a Park Dedication Ordinance (Ordinance No. 304) that requires developers to dedicate 1.75 acres of land for each 1,000 persons (or portion thereof) residing in their projects. At least half of the dedicated park acreage must be for general public use. The ordinance also specifies the per-unit population density assumptions that must be used in the calculations (2.1 persons per multi-family unit and 3.5 persons per single-family unit). Based on these rates and the proposed development scheme for Phase Two, the calculations shown below indicate that the Princeville Development Corporation will be required to dedicate a total of 10.5 acres in order to meet the provisions of the ordinance:

<u>Type of Unit</u>	<u>No. of Units</u>	<u>Pers./Unit</u>	<u>No. Persons</u>
Single-family	1,240	3.5	4,340
Multi-family	420	2.1	882
			5,222 =
			6,000 for purpose of ordinance

6,000 persons x 1.75 acres/1,000 persons = 10.5 acres

As part of the Phase One project, the Princeville Development Corporation dedicated approximately 11 acres of beachfront land at Kalihiwai to the County for park purposes. The value of this land, together with other land dedications and/or payments made by PDC to the County, exceeded that required under the Park Dedication Ordinance.

4.11.9 Employee Housing

The Phase Two project would result in an increase in the number of persons employed at Princeville. This, together with the employment growth brought on by continuing development within the Phase One area will generate additional demand for housing on Kaua'i, particularly within the Hanalei District. This section reviews the overall housing situation in Hanalei/Princeville, estimates the number of additional housing units that may be needed to accommodate Phase Two workers, and discusses the effect that this demand for housing will have on the regional housing market.

4.11.9.1 Kaua'i Housing Market Overview

The 1980 U.S. Census reported that there were 1,468 year-round housing units within the Hanalei District as of April 1 of that year. This is approximately 10.1 percent of the islandwide total of 14,544 (see Table III-22a). In contrast, the resident population of the Hanalei District accounts for only 6.8 percent of the islandwide total. The disparity between these two numbers is a reflection of the significant number of units that are used as visitor accommodations or as second homes.

Between 1970 and 1981, the average annual increase in the housing inventory on Kaua'i was 5.5 percent. There were two periods of particularly rapid growth in the housing supply over this period. The first was 1972-1974, when the number of new units averaged nearly 800 per year. A second, and much higher, peak occurred during 1979-1980. An average of over 1,400 new units were completed in these years. The second of these two peaks is accounted for largely by multi-family units, many of them at Princeville.

According to Peat, Marwick, Mitchell & Co. the most recent available data showed a housing vacancy rate on Kaua'i of 3.7 percent, slightly below the 3.9 percent figure recorded for O'ahu. However, the vacancy rate on Kaua'i tends to fluctuate much more, largely as a result of seasonal changes in the number of units rented to visitors. The highest vacancy rates tend to occur in the first quarter of the year when Kaua'i has its wet winter season. The lowest vacancies are in the summer when the island remains relatively dry and school holidays make it possible for entire families to vacation together. The modest vacancy rates together with a relatively low turnover rate (i.e., the rate at which resident families move from one home to another) indicate that relatively little flexibility is available in housing choices.

According to the State Housing Plan, a significant demand for subsidized low-income housing exists. The State Tourism Plan, for example, established a goal of providing over 1,900 government-assisted housing units on Kaua'i during the 1980s. However, less than half that amount are currently planned. In view of this, the demand for such subsidized units appears likely to continue, and those at the bottom of the economic ladder will continue to have to live in crowded conditions and/or remain in the homes of parents and friends longer than they would otherwise choose.

4.11.9.2 Projected Princeville Employee Housing Demand

Continued growth in the number of visitor-oriented units (both resort residential and hotel) at Princeville will lead to an increase in employment and, consequently, in the number of homes needed. Because of inherent differences in the work force, there tends to be a difference between construction workers and those employed in the operational phase. Hence, these are discussed separately below.

Construction Employment. Construction employment at Princeville has historically been extremely cyclical in nature. This is largely due to the multi-family projects that have been developed. In contrast to the multi-family projects, single-family home development has been considerably more constant. This reflects the fact that these have been custom-built homes developed one at a time by owners of individual lots.

The amount of construction employment expected at Princeville over the next fifteen years is summarized in Table III-11. As indicated in those figures, it is expected to peak in 1987 when multi-family construction is underway in both Phase One and Phase Two. After that time, construction employment will be confined to the much smaller crews involved in custom home construction.

The workers involved in custom home development are generally drawn from the local labor force rather than imported from off-island. Available labor statistics indicate that there should be little difficulty in filling these jobs using local residents.

Multi-family projects, on the other hand, typically involve short construction schedules and relatively large numbers of workers with specialized skills. They often also attract off-island contractors. As a result, a greater proportion of the work force on multi-family projects tends to be made up of workers from elsewhere in the state. Hence, such projects tend to generate a demand for temporary accommodations.

The magnitude of this demand can vary significantly depending on the particulars of a given project. Hence, no precise estimate is possible. However, for brief periods during 1987 it might reach the 100 to 150 range; the rest would be Kaua'i residents. These workers would stay in economy hotels, in apartments rented by their company on a short-term basis, or would share rented condominium units. In view of the large number of such units that will be available in the Princeville area by the time this peak employment period is reached, it appears unlikely that there will be any difficulty housing these workers.

Operational Employment. Employment generated by resort operation (both hotels and resort residential) is more permanent in nature than the construction employment discussed above. Hence, it creates an incremental increase in the Kaua'i housing demand. In estimating the magnitude of this demand, Peat, Marwick, Mitchell & Co. took into account numerous factors. These included the percentage of resort employees who are heads of households, the extent to which workers are in-migrants to the island, and the housing location preference of the workers.

To determine the housing preferences of workers at Princeville, the Princeville Development Corporation conducted a survey of its employees in April 1980. A total of 76 employees, or about 35 percent of the total, responded to the questionnaire that was distributed. Of these, 55 percent indicated that they were "very interested" and 25 percent said they were "interested" in buying or renting housing at Princeville. Nearly all of those respondents indicated a desire to buy, rather than rent, and over 90 percent stated a preference for a single-family house and lot.

While the results of the survey are of some interest, several factors tend to limit its usefulness. First, it covered only those persons employed by the Princeville Development Corporation; other employers at the resort account for the bulk of the workers there, particularly in the rental condominiums. Hence, the results may not accurately reflect the characteristics of the resort-wide work force. Second, it is likely that persons/families with an interest in obtaining housing on the resort property were more likely to respond to the questionnaire than those who do not, thereby biasing the survey results in favor of those who want to move to Princeville. Finally, there were no cross tabulations on the results and no information collected which showed the extent to which persons indicating a preference for on-site housing actually had the financial resources to purchase/rent it.

Because of the limitations in this Princeville-specific data, Peat, Marwick, Mitchell & Co. based its employee housing estimates on statewide visitor industry employee characteristics reported in other studies. The assumptions used in their analysis and the factual basis for them are summarized below:

- o **Head of Households.** There is not a one-to-one relationship between the number of resort employees and the number of housing units needed. Only those persons who are the head of a household need to provide housing for their families. Studies have shown that heads of households comprise only 45 percent of the total resort work force. Hence, in converting projections of employment into projections of housing need, estimates of employment were multiplied by 0.45 to arrive at estimates of the number of housing units that would be required.
- o **Employees' Place of Residence.** The State Tourism Study (Hawai'i, State of, Department of Planning and Economic Development; 1978) found that 54 percent of all neighbor island resort employees have resided in Hawai'i all their lives. It also found that 50 percent of the workers in this industry have resided at their current street address for two years or less. The Peat, Marwick, Mitchell & Co. analysis concluded that these residency patterns demonstrate a high degree of work force mobility. For the purposes of their analysis, they assumed that 50 percent of the new employees at Princeville would consist of persons either moving to Kaua'i for employment or Kaua'i residents moving to the North Shore area in order to be close to their place of employment. (See Section 3.10.5.4 for a discussion by Community Resources of other factors affecting source of future Princeville labor supply.)
- o **On-Site Housing Preference.** Based on the State Tourism Study's finding that 50 percent of Neighbor Island hotel employees live within 10 minutes commuting time from their place of work, Peat, Marwick, Mitchell & Co. assumed that 35 percent of the employee households generated by continued development at Princeville would reside within the resort boundaries (50 percent within the Hanalei District).

Table IV-19 presents Peat, Marwick, Mitchell & Co.'s estimate of the resort employee housing demand over the period 1985 to completion. Based on a head of household factor of 45 percent of total employees, and a 50 percent residency factor, operational employment at Princeville is expected to generate a need for approximately 220 additional housing units by 1985 and 380 additional housing units in the North Shore area by the time the project is completed. Based on the 35 percent on-site preference factor, there is a demand for about 75 on-site employee units in 1985 and 130 by completion in the Princeville resort.

Princeville Development Corporation currently owns and operates twenty rental housing units at the resort that are used by its employees. In addition to these rental units, PDC assists company employees who wish to purchase lots in the development by discounting the selling price of the improved houselots. The amount of the discount has varied, but is generally on the order of 25 percent. To date, approximately 50 employees have availed themselves of this program, and 30 have actually constructed their homes there and 19 are owner-occupant currently residing in these houses (Princeville Development Corporation; January 28, 1983). If employees actually construct homes on the remaining 20 lots that they have purchased and the 20 existing rental units remain in an employee pool, a total of 59 units would be available in Phase One for employee use. Peat, Marwick, Mitchell & Co. projected that approximately 30 lots in Phase Two would be purchased by employees, based on historical trends in Phase One (see Table III-4).

Projections developed as part of this and earlier studies have made it evident that full development of the Princeville Resort project as now planned could greatly increase the need for rental housing at the low end of the market. The Princeville Development Corporation has had ongoing discussions with prospective joint venture developers of such units. However, it has been discouraged from pursuing such a project more fully by the fact that occupancy rates in its existing 20-unit employee housing project have remained low. Currently, for example, the occupancy rate for these units stands at just under 50 percent.

Discussions with PDC suggest that there are two primary reasons for this. First, the recent slump in visitor arrivals has reduced the growth in the number of persons seeking resort rentals. Second, a very large number of resort condominium units have been completed in the past two years and have not been fully absorbed by the market. The result is that owners of these units have dropped the rental prices below their actual cost just to generate some kind of cash flow from them. This has made it possible for employees to rent new units with all of the amenities that are typically built into resort units for only slightly more than they would have to pay for one of the twenty rental units that are intended for employees. This diversion of units from the resort residential into the employee residence market will cease once the visitor market recovers. This will force employees to look for alternatives, and it is expected that interest in new employee housing will rise.

At present, PDC intends to act only as the developer of improved lots on the Phase Two land. It would not construct any of the actual residential units, whether for employees or otherwise. However, it will continue its policy of offering discounts on lots sold to Princeville employees.

Table IV-19. Estimated Princeville Employee Housing Demand.

	<u>1985</u>	<u>1990</u>	<u>Completion</u>
Projected resort operations full-time employment ¹	975	1,620	1,675
Head of household percentage ²	<u>45%</u>	<u>45%</u>	<u>45%</u>
Estimated number of heads of households	438	729	753
Employee residency factor ³	<u>50%</u>	<u>50%</u>	<u>50%</u>
North Shore housing requirement	219	365	377
On-site preference ³	<u>35%</u>	<u>35%</u>	<u>35%</u>
Projected resort housing demand, rounded	75	125	130

¹ From Table III-11.

² Based on a survey of hotel and resort employees as presented in Belt, Collins & Associates (September 1975) Employees Housing Requirements Generated from Mauna Loa Land, Inc.'s Planned Resort Development in South Kohala, Island of Hawaii.

³ Based on a survey of hotel employees as presented in the Hawai'i, State of, Department of Planning and Economic Development (1978b) State Tourism Study: Manpower.

Source: Prepared by Peat, Marwick, Mitchell & Co. (October 1982:Exhibit II-D).

As indicated in Table II-2, 420 of the units expected to be developed in the Phase Two project are in the multi-family category. These have a resort-residential orientation, and, although a small percentage of them may be occupied by permanent or semi-permanent residents, most are visitor rentals. Sales prices of these units are expected to be relatively high, particularly on a square-foot basis, and it is unlikely that a significant number of resort employees would work there. An exception to this would occur during very slack times for tourism; during such periods owners might reduce rents to the point where they are affordable to permanent working residents. In the long run, however, it is most realistic to exclude these units from the number available.

The remainder of the Phase Two area consists of 1,240 improved single-family lots. Buyers of these lots would build individual homes on them, just as they have done in the Phase One area. The improved lots are expected to sell for approximately \$5.50 to \$6.00 per square foot (in 1982 dollars). At this price, a 6,500 square foot lot would sell for approximately \$36,000. This is an extremely attractive price by current day standards on Kaua'i. There are restrictions on the type of construction that can be used for homes at Princeville, and a number of the requirements, such as shake or monier tile roofs, landscaping, etc., make it impossible for owners to use the cheapest type of construction. These restrictions insure that the quality of development at Princeville remains high, but they also mean that owners will probably have to spend a minimum of \$55 to \$60 per square foot on their dwellings. Taking 1,000 square feet as the minimum size of a "start-up" home, that means that the total investment in a low-end house/lot package would be on the order of \$85- to \$90,000. In view of the fact that most improved lots in new unsubsidized subdivisions elsewhere on Kaua'i are selling for at least \$70,000 without homes, the price of these homes at Princeville is relatively low.

Unfortunately, the fact that the cost is low relative to other options that are available does not offset the fact that it is still greater than what many of the entry level employees who might work at the resort can afford to pay. In fact, analysis of estimated maximum rental levels and housing prices affordable by Princeville employees conducted by Peat, Marwick, Mitchell & Co. suggests that no more than 15 percent of them could afford to own even a minimal house and lot at Princeville.

The PMM analysis was based on standard assumptions about the percentage of income that households would devote to home purchase, including the assumption that 80 percent of the purchase price would be financed. Experience has shown that many households are able to accumulate more than the minimum down-payment and/or devote more than the standard 25 percent of income to housing. To the extent that this remains the case at Princeville, it is to be expected that a greater number of Princeville employees will be able to develop homes there. Nevertheless, it is apparent that at least half, and quite possibly three-quarters, of the households who depend upon resort employment as their primary source of income will be unable to afford to reside within the confines of the Princeville Resort.

Cost is not the only factor that may lead employees to establish their residences away from the resort. Discussions with resort operators indicate that many of the employees would not feel comfortable living within a community composed of so many newcomers. Instead, they prefer to live in established communities such as Kilauea. This is particularly true for persons who are longtime residents of the island.

In contrast to the longtime residents who value their separation from the resort community at Princeville, many of the younger employees are transients who have not yet decided on Kaua'i as a permanent home. They tend to be single and/or childless, to have limited transportation options which makes them value a residence that is close to their place of employment, and to desire the kinds of socializing that living within the resort environment permits. Moreover, their modest incomes make it difficult for them to purchase homes or to find satisfactory rental housing. At present, the fact that the visitor slump has resulted in a significant number of resort-residential units being placed in the intermediate-term rental market at distress rates has helped this lower income group find adequate housing. However, as the visitor rental market revives, many of these condominium units will be moved back into the more lucrative resort-residential market, and this housing option will become increasingly scarce and expensive.

The Princeville Development Corporation is aware of the problems which an employee housing shortage could cause. Because of this, its representatives have had preliminary discussions with potential developers of moderate-cost multi-family rental housing. This housing would be developed on two of the still-vacant parcels in Phase One. A total of approximately 15 acres is available for this purpose, and could accommodate from 150 to 200 households. Given the kind of doubling-up which would probably occur in some of these units, the number of employees living there could be even higher. The current availability of resort-residential units for employee use has made it infeasible to proceed with plans for these employee rental units immediately, but Princeville is committed to pursuing the concept as soon as demand warrants.

4.11.9.3 Available Assistance Programs

As indicated above, PDC currently offers resort employees a percent discount on the price of lots. As part of its exploration of employee rental housing options, the company is also considering the other government assistance programs.

At present, government programs exist which assist both renters and buyers. The rental assistance programs for low-income employees include the U.S. Department of Housing and Urban Development Section 8 program and Hawai'i Housing Authority Section 23, State rent supplements and State shelter allowances. These programs provide cash subsidies to households so that their total monthly rental costs do not exceed 25 percent of their monthly income.

Home buyer assistance in Hawai'i is available primarily through programs established under Act 105 of the State Legislature. These programs provide for loans to moderate income families at rates below those prevailing in the private market. Other provisions in the Act aimed at reducing housing costs include a waiver of general excise tax on building materials and services used in Act 105 projects, authority for the State Housing Authority to preempt local zoning and subdivision codes, and a limitation on developer profits on projects built using funds from the assistance program.

4.11.10 Public Education

There are two public elementary schools in the Hanalei District, at Hanalei and Kilauea. Princeville is within the Hanalei Elementary School District. All North Shore public school students in grades 7 through 12 attend Kapa'a Intermediate and High School. The 1978 enrollment figures for these three schools were 132, 103 and 1,121, respectively.

There are only seven private academic schools on Kauai, and only four offer secondary-level instruction. All but one have religious affiliations. Enrollment figures for 1978 ranged from 39 to 236.

For at least two reasons, Princeville Resort has lower student population factors than residential communities. First, there are fewer full-time residents in a resort community, and census data shows that Princeville residents tend to have fewer school-age children. Based on Phase One housing units and student enrollment, the Hawai'i State Department of Education (July 28, 1982) has estimated the following student population factors per 100 housing units:

<u>Type of Residence</u>	<u>Student Population Factor</u>
Single-family/employee housing:	
Grades kindergarten to 6	5
Grades 7 to 12	2
Multi-family housing:	
Grades kindergarten to 6	2
Grades 7 to 12	1

Applying the above factors to the development schedule estimated by Peat, Marwick, Mitchell & Co. in Table III-4, at completion Phase Two would add 64 elementary (grades K-6) and 26 secondary (grades 7-12) public school students to the Hanalei District. Another estimate provided by the Hawai'i State Department of Education (August 13, 1982) projected an increase of 50 to 100 in elementary students, and 30 to 70 secondary students due to the Phase Two project.

In any case, both the Hanalei and Kilauea Elementary schools are operating at capacity and will require additional facilities to accommodate any student population growth in the area, whether from Phases One or Two or outside of Princeville Resort. Requests for funds to construct additional classroom facilities at Kapa'a Intermediate and High School have been submitted to the Legislature for the 1983-85 biennium budget.

No units are projected to be built and occupied in Phase Two before the late 1980s. The impact of the project on public school facilities will be gradual over the 1990s. Given that the need for additional facilities will arise (and already has in the case of Kapa'a Intermediate/High) with or without Phase Two, and the slow growth rate projected for the project, it would be possible to take the Phase Two project into account in planning for expansion of educational facilities.

4.12 SAFETY HAZARDS

4.12.1 Introduction

This section focuses not so much on the potential impact of the proposed development upon the environment, but rather on the potential impact of the environment upon the proposed development. The question is asked: Is the development project suitably well-planned to avoid or withstand natural disasters such as tsunamis, floods, hurricanes, earthquakes, or landslides? To this traditional list of potential safety hazards must be added a long dormant health hazard which might

possibly be regenerated by human activity—that of potentially viable anthrax spores present in mass cattle graves found on the site. The potential impact of each of these natural hazards is discussed below.

4.12.2 Tsunami

In recent history, the greatest wave run-up height recorded for a tsunami at Princeville was 24 feet. This was produced by the tsunami of 1946 which originated in the Aleutian Islands. The greatest wave run-up height recorded in the surrounding vicinity was 45 feet plus, recorded near Kilauea for the same tsunami (Loomis, May 1976). All development proposed for Phase Two would be at altitudes of 200 feet or more. As can be seen from the tsunami inundation zone drawn up by the U.S. Department of Housing and Urban Development for the Federal Flood Insurance Program (see Figure IV-15) Phase Two development areas would be in no danger of tsunami inundation.

4.12.3 Flood

The National Flood Insurance Act of 1968 (P.L. 90-448), the Flood Disaster Protection Act of 1973 (P.L. 93-234), and subsequent amendments established a flood insurance program to make insurance available to homes and establishments in flood-prone areas and to reduce the need for the Federal government to provide massive relief funds following major riverine and coastal floods. The insurance program is mandatory for those who seek the use of Federal funds, and so the County of Kaua'i requires compliance with the program on the part of all public and private entities seeking to build in areas of potential flood hazard.

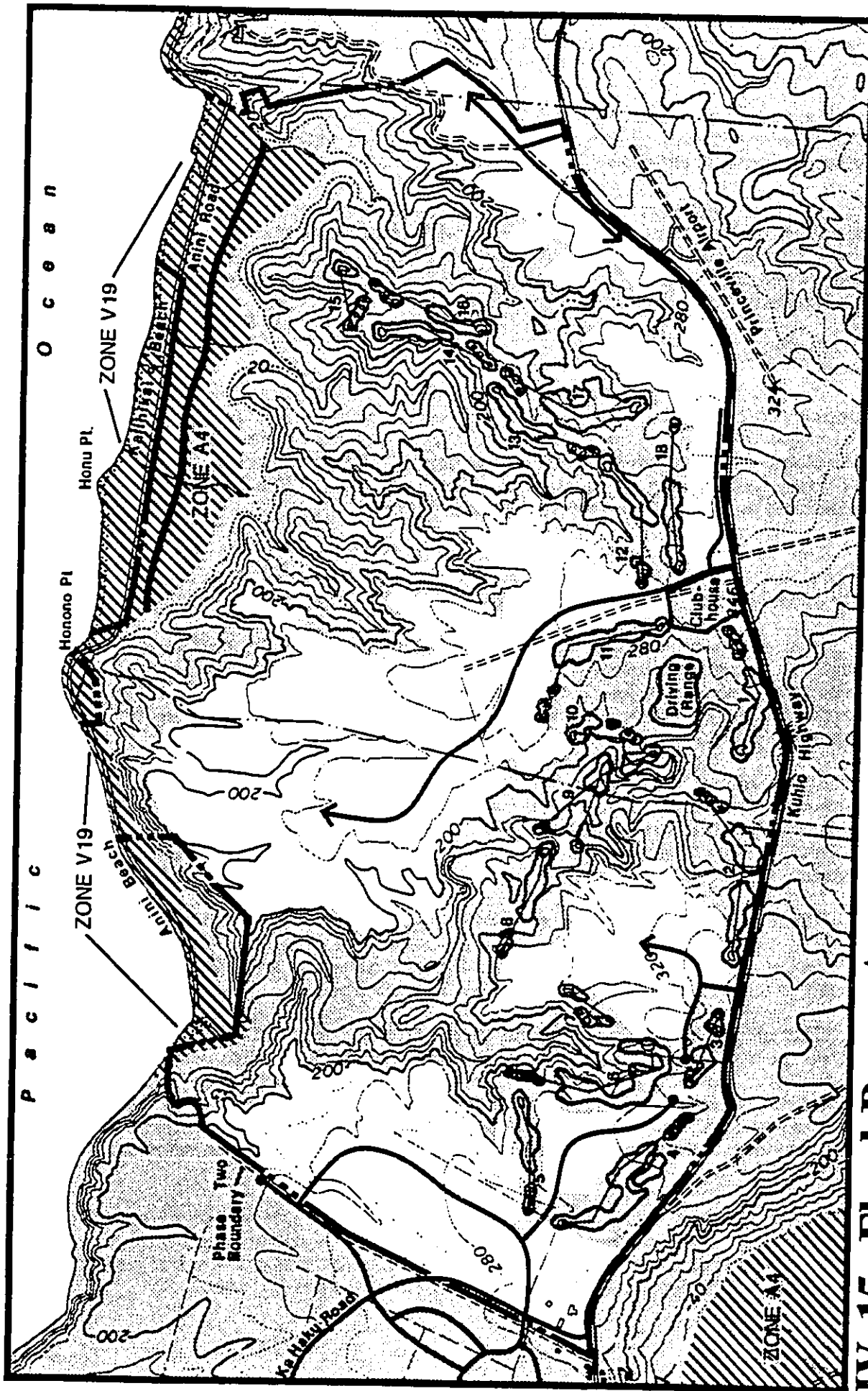
The Phase Two development area does not fall within the flood zones shown on the Flood Insurance Rate Map for the area published by the Federal Emergency Management Agency (see Figure IV-15). The plateau areas are designated as areas of "minimal flooding". Because most of the runoff from the mountains above Phase Two lands drains into either the Hanalei or the Kalihiwai River for Phase Two lands only coastal flooding is indicated on the federal maps. Because the plateau lands are located well above the major stream courses, the Phase Two development areas are virtually as secure from stream flooding as from coastal flooding. To prevent flooding resulting from poor drainage design of road culverts and other forms of artificial constriction, Phase Two would be provided with local drainage facilities that meet all applicable standards.

4.12.4 Hurricanes and Wind Storms



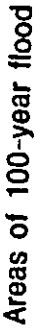
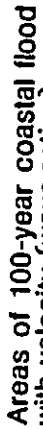
During and after Hurricane Iwa the utility systems of Princeville fared much better than the rest of the island (Princeville Development Corporation; November 30, 1982). Phase Two would be engineered to the same high standards as Phase One. Because telephone and electric lines are underground, there is less chance of breakdown in service or hazards created by high winds snapping poles with electric and telephone wires.

4.12.5 Earthquake and Landslide

The proposed development is in in a tectonically stable, volcanically inactive area. The Uniform Building Code designates all of Kaua'i as Seismic Zone Zero, meaning that there is very little risk of damage from seismic events (International Conference of Building Officials; 1976:149-50).



IV-15 Flood-Prone Areas

-  ZONE A4
-  ZONE V19
-  Areas of 100-year flood
-  Areas of 100-year coastal flood with velocity (wave action)

Phase Two Development Areas



PRINCEVILLE
PHASE TWO

Environmental Impact Statement
By: Bell, Collins & Associates

Source: Federal Emergency Management Agency, National Flood Insurance Program, (November 4, 1981)

As discussed in Section 4.5.1, the likelihood of erosion-induced landslides is minimal. Dense vegetation covers all of the steep slopes with Phase Two lands, and these are not included in the development areas.

To avoid problems with slumping, construction will not take place in any area with slopes of 20 percent or more. The SMA requirements regarding ridge line setbacks will be followed to maintain a rear lot line setback of 30 feet which will be established for Phase Two similar to the Princeville Protective Covenants for Phase One, and to practice proper construction techniques.

4.12.6 Anthrax

The earliest recorded anthrax epidemic at the Princeville Ranch was in 1890. Another outbreak occurred in 1917 but was brought under control through a program of serum and vaccine administration. Today, several cattle burial sites dating from both epidemics are located on Princeville lands. They are marked by clusters of silver oak trees (also known as silky oak) or by rock piles. The location of known cattle burial sites on Phase Two land is shown in Figure IV-16.

The Hawai'i State Department of Health (June 2, 1982) reported from conversations with Drs. Kaufman and Schmit of the Bacterial Zoonoses Branch, Centers for Disease Control, U.S. Public Health Services, Atlanta, Georgia that:

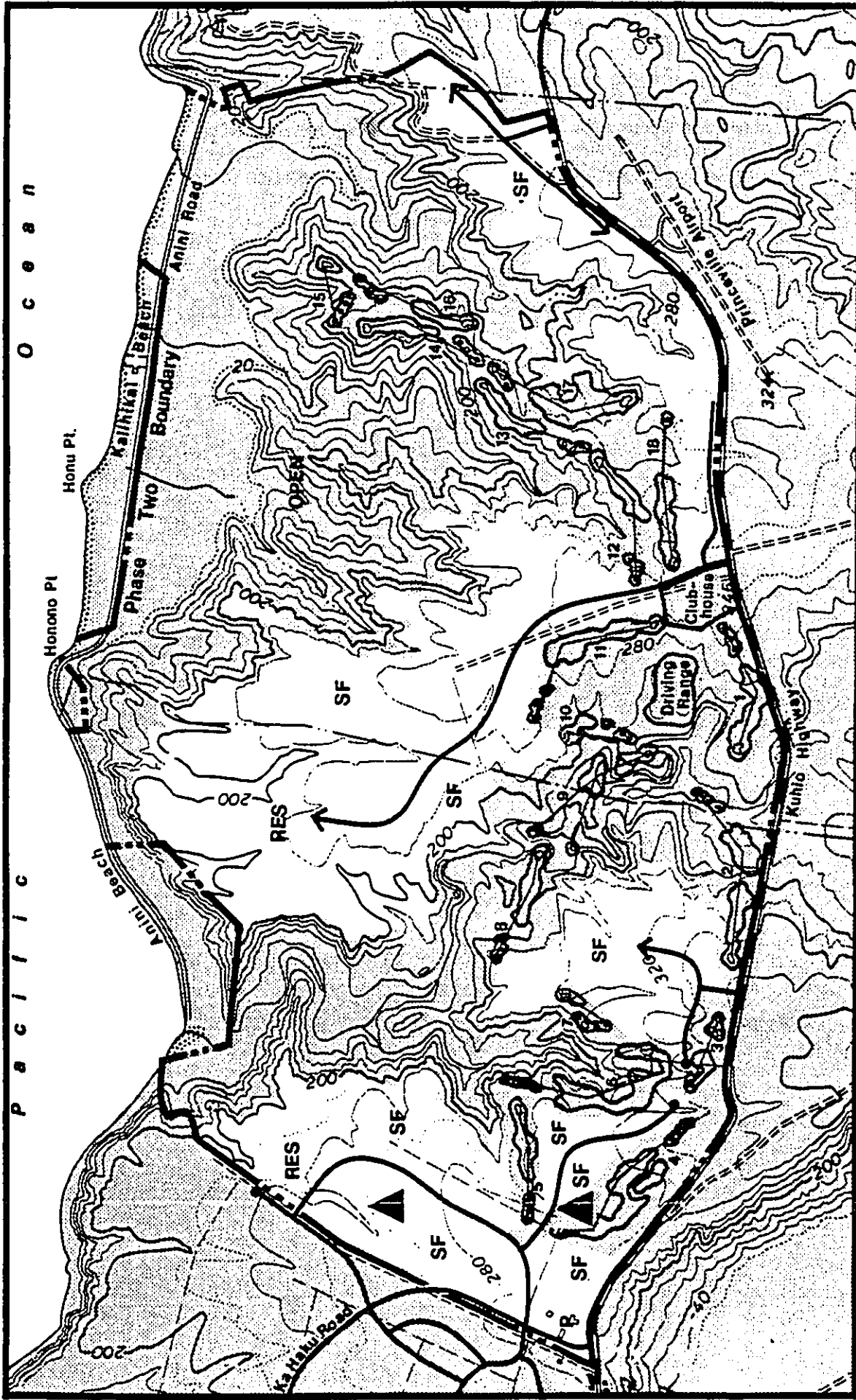
The risks of disturbing the 60-year-old burial sites at Princeville are thought to be very minimal, if any.... Much Louisiana land where anthrax has occurred has later been developed for homes, roads, etc., with no reported cases of anthrax in construction workers. The same is true for areas in California and Hawai'i.

Present techniques for isolating anthrax organisms from soil specimens are relatively insensitive. Even in soils known to be infectious, only about 1% of soil samples yield identifiable spores. This suggests that soil sampling at the Kaua'i sites would probably not be helpful [in determining the presence or absence of anthrax].

There are two cattle burial sites on Phase Two land as shown in Figure IV-16. One of these sites would be incorporated into the second golf course. The silver oak marker would be retained for identification purposes, and the area would be either fenced or landscaped with thorny shrubs to restrict access.

The second burial site is in the single-family area on the western plateau. Depending on the final site plan, one of two methods would be used to protect against possible infection. The first is again to retain the marker tree and fence the affected area. If the final site plan calls for disturbance of the site, a 20-foot deep pit would be dug and the top five feet of soil at the burial site bulldozed into it. Anthrax spores are oxygen dependent, and this deep reburial would eliminate the oxygen necessary for their survival.

On both sites construction workers will be monitored for evidence of anthrax skin lesions. This surveillance will continue for one week after work on the burial site. Skin anthrax can only develop in skin wounds or abrasions and responds readily to treatment (Hawai'i State Department of Health; June 2, 1982).



IV-89

IV-16 Cattle Burial Sites

- ▲ Cattle Burial Site
- SF Single Family Lots
- P Public
- RES Resort
- Phase Two Development Areas

0' 625' 1250'



NORTH

PRINCEVILLE

PHASE TWO

Environmental Impact Statement

By: Bell, Collins & Associates

Regarding the relationship of the cattle burial sites to the Princeville resort water supply, it should be noted that water is drawn from a confined aquifer, while the burial sites are located within an unconfined surface aquifer. The two are separated by an impermeable layer of weathered Waimea lava. Moreover, the supply wells are located well "upstream" of the burial sites with respect to the direction of groundwater flow.



Princeville Phase Two

Environmental Impact Statement

CHAPTER V

RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES, AND CONTROLS FOR THE AFFECTED AREA

There are a number of different State and County plans, policies, and controls that bear some relationship to the proposed Phase Two of the Princeville resort. Some of these are purely policy plans (i.e. the Hawai'i State Plan, the State Functional Plans, and the Coastal Zone Management program). Other plans contain both policies and maps intended to control development in their area of focus (region, County, or State). Two of the major plans in this category that affect Princeville Phase Two, the Kauai County General Plan and the North Shore Development Plan, are in the process of being updated. The proposed project's consistency with all relevant plans, including the two draft update plans just mentioned, are discussed below. Also discussed are the interests and considerations of governmental policy which are thought to offset adverse environmental effects.

5.1 THE HAWAII STATE PLAN

The Hawai'i State Plan, adopted in 1978, consists of a series of broad goals, objectives, and policies which are to act as guidelines for future programs that will determine the growth and development of the State. Because the goals, objectives, and policies are broadly stated, it is difficult to say conclusively that the proposed project is or is not in conformance with any given policy. However, as indicated by the following listing, the discussion of impacts found in this report touches on all of the issues addressed by State Plan policies that are relevant to the proposed Princeville Phase Two project:

<u>State Plan Reference</u>	<u>Sections(s) of EIS Where Discussion is Located</u>
Section 5 Population	3.4, 3.10.5.1, 4.4 and 4.11
Section 6 Economy - in general	3.7 and 3.9
Section 7 Economy - agriculture	4.3.2
Section 8 Economy - visitor industry	3.8
Section 11 Physical Environment - land-based, shoreline, and marine resources	Chapter IV, 5.3 and 5.4
Section 12 Physical Environment - scenic and historic resources	4.8 and 4.9
Section 13 Physical Environment - land, air, and water quality	4.5, 4.6, 4.10, 4.11 and 4.12
Section 14 Facility Systems - in general	4.4, 4.11.1, 4.11.2, 4.11.3 and 4.11.4
Section 15 Facility Systems - solid and liquid wastes	4.11.2 and 4.11.4

<u>State Plan Reference</u>	<u>Sections(s) of EIS Where Discussion is Located</u>
Section 16 Facility Systems - water	4.11.1 and 4.11.2
Section 17 Facility Systems - transportation	4.4
Section 18 Facility Systems - energy/utilities	4.11.3
Section 19 Housing	3.10.5.8 and 4.11.9
Section 20 Health	4.11.2, 4.11.4, 4.11.7 and 4.12.6
Section 21 Education	4.11.10
Section 23 Leisure	4.11.8
Section 25 Culture	3.10
Section 26 Public Safety	4.11.5, 4.11.6 and 4.12

The State Plan also includes "implementing actions" under "Part III: Priority Directions," whose overall direction is "to ensure the availability of desired employment opportunities for Hawaii's present and future population in an environmentally and socially sound manner through the fostering of a balanced population and economic growth rate." The Hawai'i State Department of Planning and Economic Development (September 1, 1982) has identified relevant implementing actions, two with which the project is "potentially in accord" and two with which the project "may be at odds," and asked for further discussion on these. A summary is presented below, with references to other sections of the EIS which address these issues.

The project is consistent with the following priority actions for the visitor industry in the State Plan:

Section 226-103(b)(3): Maintain or enhance the quality of existing and future hotels and resort destination areas which conform with regional carrying capacities and state policies providing for adequate shoreline setbacks and beach access.

Section 226-103(b)(10): Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.

Discussion: The objective of the proposed Phase Two project is to enhance Princeville as a resort destination area by expanding development to a point where it can be a self-sustaining community (i.e. one with a favorable resort investment climate). The project generally conforms with the regional carrying capacities of public utilities and services, as is further discussed in Section 4.11 of this report. The project is also in conformance with State policies providing for shoreline setbacks and beach access. There would be an adequate shoreline setback and no obstruction of beach access, as all development is confined to the plateaus above the shoreline.

The two priority actions which DPED thought the project might conflict with are:

Section 226-104(c)(4): Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimal.

Section 226-105(c): Seek to accommodate urban growth in existing urban areas while maintaining agricultural lands in agricultural designation.

Discussion: Parts of the Hanalei district are critical environmental areas, such as the taro loi along the Hanalei River. However, the proposed Phase Two project would occur only on plateaus that are not critical environmental areas. Furthermore, the impacts of the project on the environment are expected to be minimal, due to the proposed low density of development as well as its location. See Chapter IV for a further discussion of impacts and mitigation measures.

While all of the proposed Phase Two project site is in a State Land Use Commission-designated Agricultural District, various portions of the project site have been designated for urban uses in the Kaua'i General Plan and North Shore Development Plan (see discussions in Sections 5.5 and 5.6). The agricultural suitability of the site is discussed in Section 4.3.

5.2 STATE FUNCTIONAL PLANS

State Functional Plans are intended to provide more detail to the State Plan by addressing specific topics such as energy, water resources, conservation, and housing on a statewide basis. As defined in the 1978 Hawai'i State Planning Act, a functional plan is to set forth "the policies, programs and projects designed to implement the objectives of a specific field of activity when such activity or program is proposed, administered, or funded by any agency of the State."

The Act (Section 59) also states that the "Functional Plans shall not be used as a guide or to implement state policy unless said plans shall have been approved by the legislature." However, the Governor on May 3, 1982 issued a proclamation establishing the 12 proposed Functional Plans as interim guidelines until the legislature approves the plans. Therefore, the State Department of Planning and Economic Development believes it is appropriate for the EIS to examine the proposed project in terms of the 12 state Functional Plans, especially the Agriculture, Transportation, Water Resources Development, Tourism, Recreation, and Housing plans.

Accordingly the 12 state plans were examined, with emphasis on the six mentioned above. Those policies and implementing actions which are relevant to the proposed Princeville Phase Two project are discussed under each proposed plan's title.

5.2.1 State Agricultural Plan

Prepared by the Hawai'i State Department of Agriculture (October 1982), this functional plan is not intended to mandate County or private sector actions. However, the plan does intend to control private actions through "a more assertive State role in land and water use regulation (which) is mandated by the constitution" (p. I-7).

Private sector involvement is called for in only a few areas of responsibility, and the only areas of relevance to the proposed project are reflected in some of the "B. Land" policies and implementing actions.

Policy B(4): Encourage productive agricultural use of the most suitable agricultural lands.

Implementing Action B(4)(a): Propose amendment to the State Land Use Law to provide more uniform and equitable criteria relating to County approval of agricultural subdivisions and monitoring of permissible uses within the State Agricultural Districts, and to replace references to the Land Study Bureau Detailed Land Classification with references to important agricultural lands.

Discussion: The agricultural suitability of the Princeville Phase Two lands, and its various soil/land classifications are discussed in Section 4.3 of this EIS. This Policy and Implementing Action might affect Princeville Development Corporation if: (1) their request for redistricting to urban is denied, and (2) the functional plan is adopted in its present form and (3) a bill providing for such an amendment to the State Land Use Law is passed by the Legislature. If these all occurred, the use for the land might be more restricted than at present. This is because the present references in the Land Use Law to the Land Study Bureau's (LSB) classification concern only Class A and B land. None of the Phase Two site is classified A or B land by the LSB. However, it is not known how the "important agricultural lands," referred to in Implementing Action B (4)(a), might be defined. The 1983 Legislature passed "a bill creating a State of Hawaii Land Evaluation and Site Assessment Commission to identify important agricultural lands pursuant to the Hawaii State Constitution" (Hawaii, State of, Department of Agriculture; May 4, 1983). This is related to the House of Representatives revision of Implementing Action B(5)(b) discussed below.

Policy B(5): Provide greater protection to agricultural lands in accordance with the Hawaii State Constitution.

Implementing Action B(5)(a): Propose amendment to the State Land Use Law to provide standards and criteria to conserve and protect important agricultural lands.

Implementing Action B(5)(b): Include important agricultural lands in County General Plans and/or Development Plans, pursuant to the State Agriculture Plan.

Implementing Action B(5)(c): In implementing the State Land Use Law and County zoning ordinances, important agricultural lands shall be classified in the State Agricultural District and shall be zoned for agricultural use, except where substantial injustice or inequity will result, or where overriding public interest exists.

Discussion: This policy and its implementing actions are clearly aimed at discouraging conversion of property designated "important agricultural lands" to non-agricultural uses. Since the Legislature has now set up a new Commission (see discussion above) to define "important agricultural lands," it is not possible to state whether these implementing actions would affect the proposed project. Given the

ALISH system's designations of the site, there is a possibility that Implementing Action B(5)(c) could influence zoning of the property. Even assuming the site is designated "important agricultural land" no effect could occur before the Legislature adopted the State Agriculture Plan and amended the Land Use Law, or before Kaua'i County incorporated "important agricultural lands" into their General Plan and Development Plans (*Ibid.*). Even if all these were to transpire, the phrasing of B(5)(c) does "allow competing public interests for use of agricultural lands to be weighed on a case-by-case basis" (Hawai'i, State Department of Agriculture; October 1982:p. I-11). The public benefits of the Princeville Phase Two project, such as its employment generation, would have to be weighed against its impacts, including those on agricultural productivity, in reaching a decision on this General Plan amendment petition.

The Hawai'i Department of Agriculture (May 4, 1983) informs us that the House of Representatives revised Implementing Action B(5)(b) to read:

Propose establishment of an Agricultural Land Study Commission to identify important agricultural lands.

While explicit references to County General Plans (GPs) and Development Plans (DPs) are deleted, GPs and DPs are still prerequisites to zoning mentioned in Action B(5)(c).

5.2.2 State Transportation Plan

The Hawai'i State Department of Transportation (October 1982) prepared this functional plan on transportation in response to two legislative mandates: Chapter 279A, HRS required a new statewide Transportation Plan and Chapter 226, HRS required this and the eleven other state functional plans.

In the functional plan, there are general highway policies and implementing actions about repair and improvement which are applicable to highways serving Princeville Phase Two. Traffic impacts of the proposed project are discussed in Section 4.4. The implementing action which most specifically affects the Princeville Phase Two development relates to airports and land use.

Implementing Action B(1)(a): Update airfield master plans and land use maps for the surrounding areas to...assure compatible surrounding land use with airport operations.

Discussion: Princeville Airport is privately-owned and managed and "not within the jurisdiction of the (Hawai'i State) Department of Transportation" (August 26, 1982). However, DOT did suggest assessing the development in the vicinity of the airport in terms of existing and projected noise levels generated by aircraft. This has been done in Section 4.6.4 of this EIS.

5.2.3 State Water Resources Development Plan

This functional plan, prepared by the Hawai'i State Department of Land and Natural Resources (May 3, 1982), "primarily affects State operations, (but) it also involves some actions of...the private sector. It points out where...private industry coordination will be required...(to) achieve water resources objectives" (p. 1). Like the other state functional plans it "does not mandate private sector actions."

The policies and implementing actions of relevance to the proposed project are discussed below.

Policy B(2): Manage surface drainage areas and groundwater aquifers to prevent contamination of sources of water supply.

Implementing Action B(2)(b): Allow subsurface or injection well disposal of sewage or industrial wastes only where it will not pose a hazard to existing or potential sources of groundwater supply.

Discussion: A test injection well for sewage effluent disposal is located near the existing sewage treatment plant at Princeville. As discussed in Section 4.5.5.3, the well was drilled and tested in 1970. Results indicate it is isolated from both fresh and ocean waters. Furthermore, the well location is makai of the State's Underground Injection Control line. Therefore, if injection wells are chosen as a back-up effluent disposal method (see discussion of other alternatives in Section 7.1.2) they would pose no hazard to groundwater supplies.

Policy E(2): Increase the use of treated sewage effluent and other nonpotable water for irrigation purposes.

Discussion: The sewage generated by the Phase Two development would receive secondary treatment and the effluent would be used for golf course irrigation. Whenever effluent supply exceeds golf course irrigation demand, the injection well or another back-up effluent disposal method would be used. See Sections 4.5.5.3, 4.11.2 and 7.1.2.

Policy G(1): Protect streams...from uses which may degrade their ecological, aesthetic, and recreational values.

Implementing Action G(1)(b): Initiate appropriate measures, such as the collection of fish habitat...information,...to protect and enhance freshwater and estuarine environments, while still allowing the widest opportunity for beneficial economic development.

Discussion: A survey of aquatic fauna in Anini Stream was conducted by Dr. Amadeo Timbol and descriptions of the macrofauna are presented in Section 4.7.2.3. Probable impacts are discussed in Section 4.7.3.3. The proposed project would include mitigation measures designed to minimize degradation of the stream's ecological, aesthetic, or recreational values. Anini Stream's existing quality was discussed by Dr. Timbol (December 1982), who concluded that it was of "moderate to low quality".

5.2.4 State Tourism Plan

The Hawai'i State Department of Planning and Economic Development (October 1982) authored this functional plan and considers it a "guide to help coordinate the various sectors of government and private industry toward achieving statewide objectives of the Hawaii State Plan" (p. 2). The role of government in tourism is seen not only as protecting the economic health of the industry but also as "advancing the social goals of the community" (p. 7). The policies and implementing actions which are most relevant to the private sector, and particularly to the proposed project, are those concerning physical development.

Policy B(3): Encourage greater cooperation between the public and private sectors in developing and maintaining well-designed and adequately serviced visitor industry and related developments.

Implementing Action B(3)(a): Assure that adequate infrastructure and amenities, such as roads, water, drainage and parks, are provided through a reasonable distribution of financial responsibilities between governmental and private parties.

Discussion: All of the roads, water infrastructure, drainage system and parks for the proposed Phase Two project would be provided by the developer. Princeville Phase Two, like Phase One, would be a "well-designed and adequately serviced" development.

Implementing Action B(3)(c): Encourage private development of designated visitor destination areas where capital improvements have been made or are planned before encouraging development of other possible visitor destinations.

Discussion: Princeville is a designated visitor destination area. The Phase One improvements have been made and most of the land sold. Some of the improvements for Phase One, such as the sewage treatment plant, would also serve Phase Two. All water lines and wells, sewer lines, and collector roads for the Princeville Phase Two project would be built and financed by the developer. As the Technical Reference Document (Hawai'i State Department of Planning and Economic Development; October 1981:p. 181) of the tourism functional plan states:

The only public costs (in relation to Princeville are) associated with planned road improvements (i.e. the Kaua'i Belt Road). These, however, are needed not only as a result of resort development at Princeville, but also because of the age of the existing facilities and increases in visitor and resident traffic to the Hanalei and Haena areas.

Thus, DPED indicates that the proposed project is consistent with the above implementing action.

Implementing Action B(3)(d): Encourage the clustering of hotels and resort condominium developments to provide open space and promote energy conservation.

Discussion: The resort condominium units in Phase Two would be clustered in two locations (see Figure II-4), so as to leave the stream gullies in open space.

Implementing Action B(3)(e): Encourage the use of regional sewerage systems by hotel and visitor condominium developments rather than use of individual private systems.

Discussion: The sewerage system which serves Phase One, and which would be expanded to serve Phase Two, is operated and maintained by the Kaua'i County Public Improvement Corporation (KCPIC). In March 1984, KCPIC must offer the system to the County government, which it now appears the County will accept.

Policy B(4): Ensure that visitor facilities and destination areas are carefully planned and sensitive to existing neighboring communities and activities.

Implementing Action B(4)(a): Restrict the redistricting of land to "Urban" classification where resort uses are proposed outside of designated visitor destination areas.

Implementing Action B(4)(e): Resort development shall take place within designated visitor destination areas.

Discussion: Princeville is a designated visitor destination area, as identified by the State and Kaua'i County. The nearest neighbor to the proposed Phase Two project is Phase One of the resort, and obviously planning for Phase Two would be sensitive to and similar to Phase One.

Implementing Action B(4)(c): Ensure the construction, as necessary in connection with both new hotel and large resort condominium projects, of affordable dwelling units adequate to accommodate employee households.

Discussion: Princeville Development Corporation (PDC) has a policy of helping employees purchase lots through a substantial price discount. PDC also owns and maintains rental units which are discounted for employees.

Implementing Action B(4)(b): Ensure that new hotel and condominium projects be set back from the shoreline for access which facilitates and encourages public use of those areas.

Implementing Action B(4)(d): Plan development of resorts in a coordinated manner to minimize loss of public recreational opportunities in designated visitor destination areas.

Discussion: The whole Phase Two development would be on the plateau areas well behind and above the shoreline. Therefore, no direct loss of public recreational opportunities is foreseen. However, the population rise due to the development would obviously increase beach park usage in the area.

5.2.5 State Recreation Plan

Prepared by the Hawai'i State Department of Land and Natural Resources (May 3, 1982), this functional plan states that it "outlines the responsibilities and roles of public and private sectors in meeting recreation and open space needs" (p. 5). However, almost all of the policies and implementing actions are for government recreation agencies. A few are aimed at private recreation organizations but none are applicable to development projects such as Phase Two of Princeville.

5.2.6 State Housing Plan

This State functional plan summarizes the results of the Hawai'i Housing Authority (Hawai'i State Department of Social Services and Housing; October 1982) study "to formulate a comprehensive plan for the development, operation and management of housing within the State" (p. iii).

Again, most of the policies and implementing actions apply to the government sector. There is one implementing action which affects the Princeville Phase Two development, although the State Housing Plan lists only government agencies as the lead and assisting organizations.

Implementing Action B(1)(c): Encourage and assist in the development of rental housing for employees of large businesses and industries outside of urban areas.

Discussion: The Princeville Phase Two developer would construct the infrastructure and sell only improved lots, with no buildings. Therefore no rental housing would be constructed by PDC in the Phase Two area. However, lots would be sold to employees at a substantial discount. Appropriately zoned land is available within Phase One for construction of additional employee rental units, if and when needed.

5.27 State Health Plan

This functional plan, prepared by the Hawai'i State Department of Health (October 1982), "focuses primarily on public health programs under (their) jurisdiction" (p. 5). However, there are some implementing actions under the "Environmental Health" section of the plan which would be applicable to the Princeville Phase Two project. Three of these actions relate to the permits the project would have to obtain from the Department of Health (DOH).

Implementing Action A(1)(f): Administer permit program for discharges to the air, all surface and groundwater, and for treatment and disposal of solid wastes.

Implementing Action B(1)(b): Review plans for new sources of drinking water and ensure that all public water systems meet drinking water standards.

Implementing Action D(1)(a): Review and approve plans for air conditioning and mechanical ventilation systems for buildings that are used by the public.

Discussion: For the Phase Two development, injection wells may be used as a back-up sewage effluent disposal system. These would require DOH permits. Some additions to the water source facilities are also planned. Plans would be submitted to DOH for their review. While Princeville Development Corporation would not construct any buildings, the developer of the condominium parcels would have to gain approval from DOH for their air conditioning/ventilation systems, under Chapter 28 of the Public Health Regulations.

Implementing Action H(1)(a): Detect, measure and evaluate noise levels from various sources and in different locations and areas; investigate complaints and recommend corrective measures; control noise from stationary sources and construction activities by use of permits...

Discussion of noise levels expected on the project site is found in Section 4.6. DOH has not yet set up a construction noise permit system for the neighbor islands. They will encourage the counties to develop their own noise regulations.

5.2.8 State Higher Education Plan

There are no policies or implementing actions in this functional plan, prepared by the University of Hawai'i (October 1982), of direct relevance to the Princeville Phase Two project.

5.2.9 State Education Plan

This functional plan "presents high priority recommended implementing actions for education" (Hawai'i, State of, Department of Education, May 3, 1982:p. 5). All of the actions are to be undertaken by the Department of Education. Therefore, they are not applicable to the Princeville Phase Two project.

5.2.10 State Energy Plan

Of the five areas of concern in this functional plan, prepared by the Hawai'i State Department of Planning and Economic Development (May 3, 1982), the one regarding land use and support facility systems planning is most relevant to the proposed project. One biomass energy implementing action specific to Kaua'i is also pertinent to Princeville Phases One and Two.

Implementing Action B(1)(g): Continue to implement the Kauai Municipal Solid Waste Utilization Program.

Discussion: The County Department of Public Works had planned to replace the Hanalei landfill, which is located on Phase Two land, with a municipal transfer station. Solid wastes from the area were to have been hauled to an island-wide landfill in Kekaha. Transportation costs for this plan were determined to be too high, at least for the North Shore area. If the option under study, of co-firing solid wastes and bagasse in the Lihu'e Plantation boilers, is pursued, energy use for transportation would be reduced, as Lihu'e is basically the island's center of population, while Kekaha is far from the centroid of waste generation. However, it is not certain that private haulers, such as those which serve Princeville, would be allowed to use such a solid waste-to-energy facility.

Policy D(1): Wherever feasible, direct future urbanization into easily serviceable, more compact, concentrated developments, next to existing urban areas.

Implementing Action D(1)(a): Integrate energy efficiency considerations early in the process of land and water use planning relative to: (1) the review of non-urban lands to identify suitable areas for future housing; (2) the review of State and County reclassification and rezoning applications; and (3) the initial review of the orientation and physical design concepts of new development proposals.

Discussion: Princeville is a designated visitor destination area (VDA). While Phase Two is adjacent to Phase One which is in the State's urban district, neither Phases One or Two are compact, concentrated urban areas. However, in a resort community, it is appropriate for the design to incorporate a great deal of open space.

As regards energy efficiency and land use planning, Princeville's distance from Lihue airport results in longer arrival trips for tourists staying at Princeville, compared to those staying elsewhere, if they disembark at that facility. Conversely, if they arrive on Kaua'i via Princeville airport, they have a shorter distance to travel. Since a large proportion of visitors to Kaua'i usually tour the entire island by road, the exact location of accommodations probably has little effect on gasoline consumption by visitors. Therefore, Princeville Phase Two is as suitable as other designated VDA's for resort-related housing.

The types of review intended under (2) and (3) in the implementing action are not specified. However, at present, the design plans for Phase Two are too general to conduct any meaningful energy impact review.

5.2.11 State Conservation Lands Plan

The coverage of this functional plan is not limited to Conservation-designated lands but also includes resources such as "watersheds, terrestrial habitat, ocean habitat and resources, areas with endangered species, natural streams, shoreline, open space, natural areas, and historic and cultural sites" (Hawaii State Department of Land and Natural Resources; May 3, 1982:p. 4). While there is no Conservation-designated land on the proposed project site, some of the resources mentioned above are present. The policies and implementing actions in this plan of relevance to Princeville Phase Two are discussed below.

Policy B(1): Protect and preserve habitats of rare and endangered wildlife.

Discussion: The implementing actions under this policy call for DLNR to survey populations, establish sanctuaries, and operate propagation facilities. Although no private sector actions are called for, surveys of aquatic and terrestrial fauna have been commissioned by Princeville Development Corporation (see Section 4.7). The stream and gully areas on the Phase Two land, which are possibly used by the endangered Koloa duck (Anas wyvilliana) for feeding and nesting, would be preserved.

Implementing Action B(2)(a): Survey sites likely to contain endangered plants.

Discussion: A vegetation survey was conducted on the Princeville Phase Two lands. No endangered plants species were observed (see Section 4.7.2.1).

Implementing Action C(4)(c): Maintain scenic and natural open space areas as part of a statewide system of parks.

Discussion: The gullies between the plateau areas of the Phase Two site would be maintained as natural open space, although not as State parkland. PDC has dedicated approximately eleven acres in the coastal area to the County for a beach park, which with other acreage and facilities in Phase One, more than fulfilled their park dedication requirements for that Phase.

PDC proposes to provide additional park land in the Kalihikai area, mauka of the beach park, to fulfill a portion of the park dedication requirement for the Phase Two project. The remaining requirement would be met with private park acreage in each plateau development area. However, as discussed in Chapter VII, it is still unresolved if the County would accept the public park acreage in the PDC-proposed location.

5.2.12 State Historic Preservation Plan

Essentially all of the policies and implementing actions in this functional plan are directed at State agencies, especially the Hawai'i State Department of Land and Natural Resources (May 3, 1982) who authored the plan. In the case of the Princeville Phase Two project, there are no prehistoric archaeological sites or historic structures on the plateau areas slated for development (see Section 4.9). Therefore there is no relationship between this functional plan and the proposed project.

5.3 STATE COASTAL ZONE MANAGEMENT PROGRAM

The Hawai'i Coastal Zone Management (CZM) Act (188/SLH 1977) establishes goals for actions affecting the coastal zone. The Hawai'i State Department of Planning and Economic Development (September 1, 1982), which is the lead agency for the CZM program, has indicated that six CZM policies are relevant to the Princeville Phase Two project. These policies are listed below; accompanying each is a brief discussion of the proposed project's consistency with it.

Policy: Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas; providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value.

Discussion: No formal access trails are planned from the Phase Two plateau to the Anini and Kalihikai beaches, because the logical access to the coast below Phase Two is via Anini Road. Discussion will have to be held with the County Planning Department and Department of Public Works on where Princeville Development Corporation should dedicate land for park development. This will depend on what kind of park facilities they decide are most appropriate in this area. The proposed Phase Two development would be confined to the plateau areas and, as Chapter IV indicates, would not adversely affect coastal resources.

Policy: Insure 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.

Policy: Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources.

Discussion: The Phase Two condominiums, as well as a Phase One Hotel, may be visible from the Anini Beach area but setbacks and landscaping would tend to screen them. It is unlikely that the single-family development on the plateau behind Kalihikai Beach would be visible from the shoreline. See further discussion in Section 4.8.3.

Policy: Preserve valuable coastal ecosystems of significant biological or economic importance.

Policy: Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate State water quality standards.

Discussion: Potential impacts of erosion and runoff from the Phase Two development on stream and marine biota are discussed in Section 4.7.3.3.

Policy: Concentrate in appropriate areas the location of coastal dependent development necessary to the State's economy; insure that coastal dependent development such as harbors and ports, visitor industry 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 direct the location and expansion of coastal dependent development 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: utilization of presently designated locations is not feasible; adverse environmental effects are minimized; and important to the State's economy.

Discussion: Princeville Development Corporation (PDC) has essentially completed its role in the development of Phase One. The step of constructing buildings on lots improved by PDC will be conducted by others. The expansion of the Princeville Resort, which PDC believes is necessary for its long-term viability, requires urbanization of lands outside areas presently designated for urban uses. Furthermore, the proposed project is designed to minimize adverse environmental effects. The project's potential economic impacts of importance to the State (employment, visitor spending, and tax revenues) are discussed in Sections 3.7-3.9. The market assessment for Princeville Phase Two is presented in Section 2.5.

5.4 COUNTY SPECIAL MANAGEMENT AREA

Pursuant to Chapter 205A, Hawai'i Revised Statutes (HRS), Kaua'i County adopted Special Management Area (SMA) Rules and Regulations in December 1979. These outline the procedures to be followed in granting permits for development within the SMA and establish guidelines to be used in deciding upon the acceptability of a proposed development. Maps delineating the SMA are filed with the Kaua'i County Planning Commission and the County Clerk's office. The portion of the SMA map that covers the Phase Two land is shown on Figure V-1.

As is evident from the figure, some of the Phase Two development areas do fall within the SMA. Although there are no building site plans yet, it may be that no building would be within the SMA zone. However, because the Phase Two parcel does extend into the SMA, and development on the plateaus could affect the shoreline area, Kaua'i County Planning Department (Mike Laureta; November 22, 1982) indicated that an SMA permit for the development would be required.

Policy: Preserve valuable coastal ecosystems of significant biological or economic importance.

Policy: Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate State water quality standards.

Discussion: Potential impacts of erosion and runoff from the Phase Two development on stream and marine biota are discussed in Section 4.7.3.3.

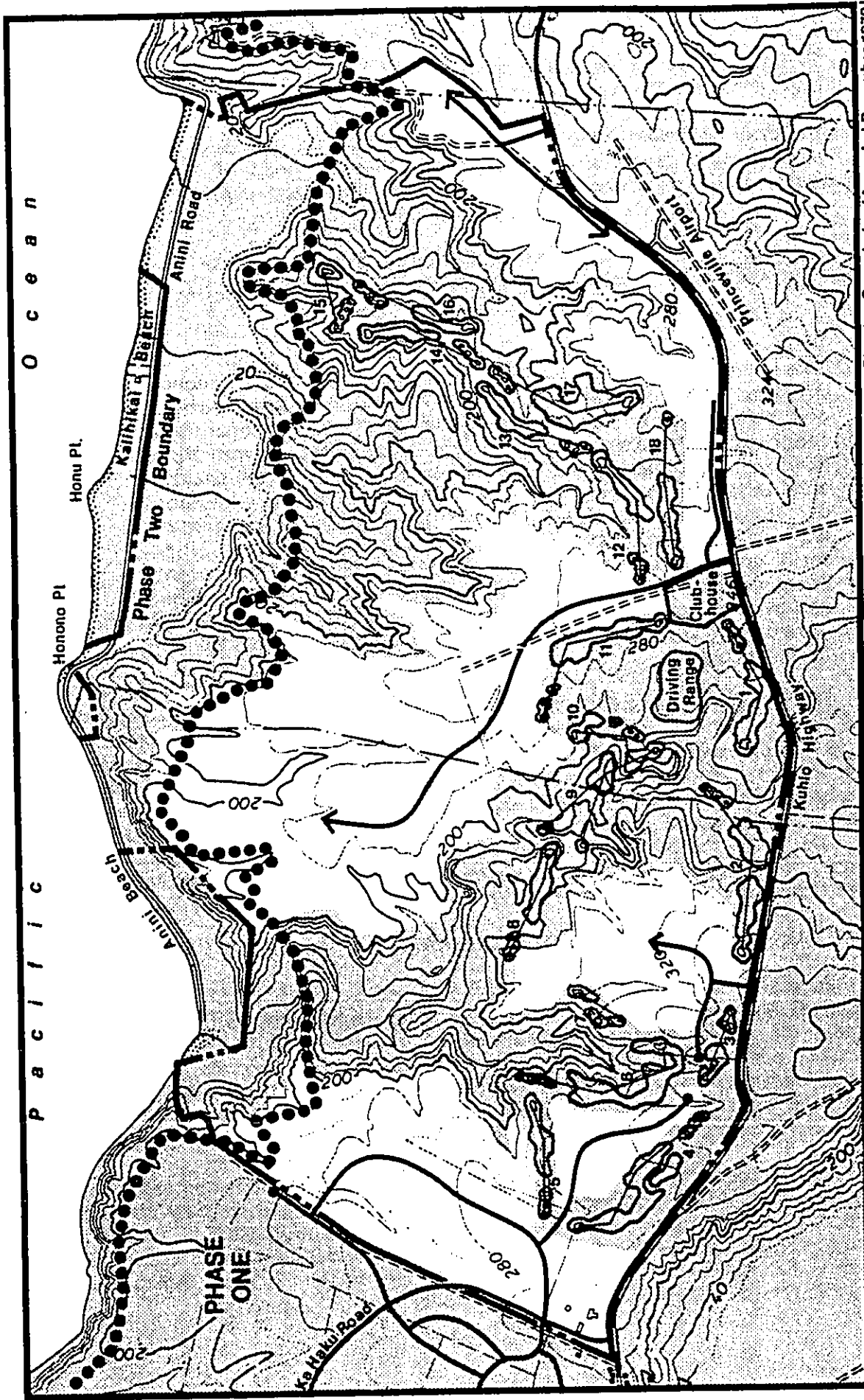
Policy: Concentrate in appropriate areas the location of coastal dependent development necessary to the State's economy; insure that coastal dependent development such as harbors and ports, visitor industry facilities, and energy generating facilities are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and direct the location and expansion of coastal dependent development 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: utilization of presently designated locations is not feasible; adverse environmental effects are minimized; and important to the State's economy.

Discussion: Princeville Development Corporation (PDC) has essentially completed its role in the development of Phase One. The step of constructing buildings on lots improved by PDC will be conducted by others. The expansion of the Princeville Resort, which PDC believes is necessary for its long-term viability, requires urbanization of lands outside areas presently designated for urban uses. Furthermore, the proposed project is designed to minimize adverse environmental effects. The project's potential economic impacts of importance to the State (employment, visitor spending, and tax revenues) are discussed in Sections 3.7-3.9. The market assessment for Princeville Phase Two is presented in Section 2.5.

5.4 COUNTY SPECIAL MANAGEMENT AREA

Pursuant to Chapter 205A, Hawai'i Revised Statutes (HRS), Kaua'i County adopted Special Management Area (SMA) Rules and Regulations in December 1979. These outline the procedures to be followed in granting permits for development within the SMA and establish guidelines to be used in deciding upon the acceptability of a proposed development. Maps delineating the SMA are filed with the Kaua'i County Planning Commission and the County Clerk's office. The portion of the SMA map that covers the Phase Two land is shown on Figure V-1.

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Source: Kauai County Planning Commission (Amended December 1979)

V-1 Special Management Area

Phase Two Development Areas
 Special Management Area (SMA) Boundary

0' 625' 1250' NORTH
 PRINCEVILLE
 PHASE TWO
 Environmental Impact Statement
 By: Bell, Collins & Associates

5.4.1 Objectives and Policies

The SMA Rules and Regulations include the objectives and policies of the State's Coastal Zone Management Act (Chapter 205A, HRS). The policies relevant to the proposed project are discussed in Section 5.3.

5.4.2 Guidelines

The concerns of each guideline are listed below in the left-hand column, while a brief comment in the right-hand column addresses the guideline and/or refers the reader to the section of the EIS where the subject is discussed.

<u>Guideline</u>	<u>Comment</u>
A(1). Access to beaches, recreation areas, and natural reserves.	Phase Two development is on plateau lands only. Access to these areas would not be affected.
A(2). Reserve recreation areas and wildlife preserves.	In conformance with the County Park Dedication Requirements, Princeville Development Corporation will dedicate land for recreation use. The vegetation in the gullies between plateaus will be preserved and would continue to support wildlife there.
A(3). Manage solid and liquid wastes to minimize adverse impacts.	The existing landfill on Phase Two lands will probably be closed by the County in a few years. This will curtail a source of contamination of Anini Stream and nearshore waters. See Sections 4.5.5.3 and 4.11.2 for discussions of sewage, and Sections 4.11.4 and 7.1.3 for discussions of solid waste.
A(4). Minimize adverse effect to: - water resources - scenic amenities - recreational amenities Minimize danger of: - floods - landslides - erosion - siltation - failures due to earthquakes	- See Sections 4.5.4 and 4.5.5 - See Section 4.8 - See Sections 3.10.5.9 and 4.11.8 - See Sections 4.5.3 and 4.12.3 - See Section 4.12.5 - See Sections 4.3.3 and 4.5.5.1 - See Sections 4.5.5.1 and 4.7.3.3 - See Section 4.12.5
B(1). No approval unless development will not have any substantial adverse environmental effect.	As this EIS demonstrates, the adverse effects likely to result from development of Princeville Phase Two are relatively minor.

Guideline	Comment
B(2). Consistency with objectives and policies of Chapter 205A, HRS.	See Section 5.3
B(3). Consistency with: <ul style="list-style-type: none"> - County general plan - Zoning ordinance - Subdivision ordinance - Other applicable ordinances 	<ul style="list-style-type: none"> - See Section 5.5 - See Section 5.8 - Project would conform. - Project would conform to all applicable ordinances; see Section 7.2
C(1). Minimize alterations to any bay, estuary, salt marsh, river mouth, slough, or lagoon.	Development of the Phase Two project would not alter any such water body.
C(2). Minimize development which would reduce size of any beach or other area usable for public recreation.	The Princeville Phase Two project would not reduce beach or public recreation areas. New park land would be dedicated in accordance with the Park Dedication ordinance.
C(3). Minimize development which reduces access to beach or shoreline areas or streams in the SMA.	The proposed development is restricted to the plateau areas and would not affect access to these resources.
C(4). Minimize development which interferes with views to sea from State Coastal Highway or public views to and along shoreline.	See Section 4.8
C(5). Minimize development which would adversely affect: <ul style="list-style-type: none"> - water quality - areas of open water free of structures - fishing grounds - wildlife habitats and estuarine sanctuaries - agricultural uses of the land 	<ul style="list-style-type: none"> - See Sections 4.5.4 and 4.5.5 - No construction in or near the water is involved. - See Section 4.7.3.3 - See Section 4.7 - See Sections 4.3 and 3.10.5.8

5.5 KAUAI COUNTY GENERAL PLAN

5.5.1 Existing Plan

A General Plan for the Island of Kauai was prepared by the joint venture of Eckbo, Dean, Austin & Williams and Muroda, Tanaka & Itagaki, Inc. in 1970. It was adopted by ordinance in 1971.

The plan contains planning maps for six areas of the island as well as objectives stated by local-area and island-wide planning committees, and recommendations of the planning team. The relationship of the proposed Phase Two development at Princeville is discussed below in terms of the Hanalei area map and relevant objectives and recommendations.

5.5.1.1 Hanalei Planning Area Map

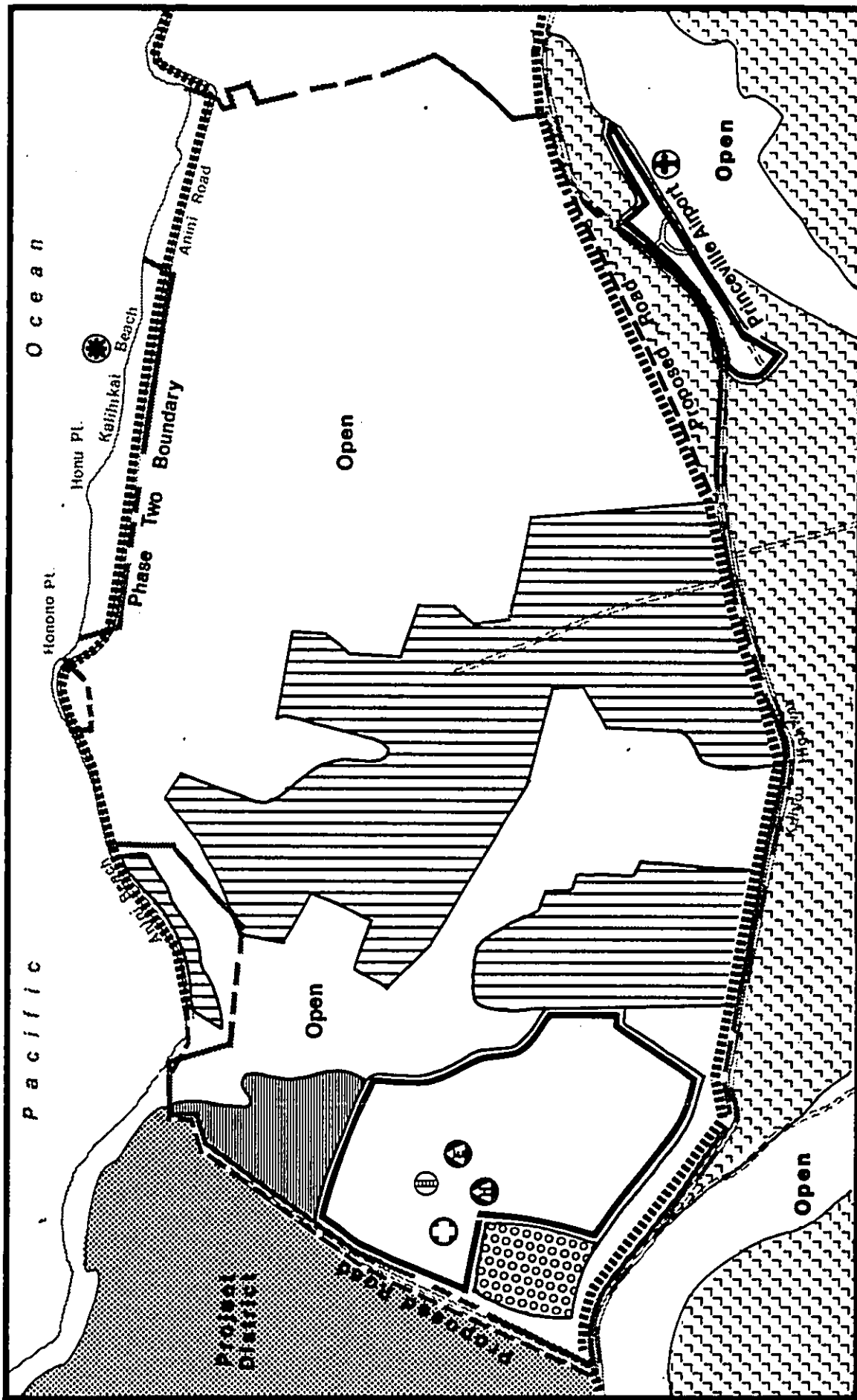
Land uses on the Phase Two project site, indicated on the Hanalei Planning area map (dated March 14, 1971 and adopted by the County Council on July 20, 1971), include single- and multi-family residential uses, open space, a small commercial area, and four public facilities--fire station, clinic, elementary school and high school. No interest has been expressed by the concerned agencies in developing these facilities on Phase Two land. For example, the Hawai'i State Department of Education (Thompson; May 25, 1982) decided it would "not need land in Phase II at Princeville for an elementary, intermediate or high school site." It did request that 1½ acres be dedicated to the Department for a public library site. A fire station site was developed in Phase One in conjunction with a police station.

The Hanalei Planning Area (HPA) General Plan map is shown in Figure V-2. Comparing it to the proposed Phase Two project (see Figure II-4), the main difference is that the Phase Two master plan includes development of single-family homes on the eastern plateau while the HPA map shows this as open. The Phase Two project also plans for two resort condominiums, one each at the makai ends of the western and central plateaus. The HPA map shows a multi-family residential designation at the end of the western plateau.

Obviously some amendment to the General Plan map for the area would be required. It is interesting that land uses in the Phase Two area are designated with greater specificity than in Phase One, all of which is designated a "Project District." This is even more surprising in light of what the General Plan (Eckbo, Dean, Austin & Williams and Muroda, Tanaka & Itagaki, Inc.; March 1970:95) stated under the heading "Project Districts":

An inherent flaw in the traditional long-range planning process is the inability to provide for the flexible and creative design of large parcels of land under single ownership that lie in a logical path of expansion. General plan establishment of use relationships, and resultant land use patterns within these parcels are usually premature and lacking in adequate development detail. This preclusion of design flexibility becomes even more unsatisfactory in the light of the recent State Supreme Court decision relative to general plan amendments.

Two proposed roads on the HPA map should be noted. A section of Kuhio Highway across from the airport is shown as straightened by cutting across a section of Phase Two land. The Hawai'i State Department of Transportation's (September 1979) present plans for improvements to the Kaua'i Belt Road in the Princeville area (although they are preliminary and subject to change) call for only a slight change from the existing roadway's centerline. The other proposed road is shown as running along the Phase One/Phase Two boundary and down the steep bluff to connect to Anini Road. The need for such a connection, when compared to the construction and environmental costs, make this road project unlikely.



V-2 Existing County General Plan

	Single Family		Public		Agriculture
	Multi Family		Fire Station		Scenic Site
	Commercial		Hospital/Clinic		Scenic Road
			High School		Proposed Road
			Elementary School		

0' 625' 1250'

PRINCEVILLE
PHASE TWO

Environmental Impact Statement
By: Bell, Collins & Associates

Source: Eckbo, Dean, Austin & Williams (March 1970)

5.5.1.2 General Plan Objectives and Recommendations

For the most part, the proposed Phase Two project would be compatible with the objectives and recommendations of the General Plan. The most significant potential conflict appears to be with "Objective 14: Conservation of Agricultural Land" and "Recommendation 3: Maintain prime agricultural land." There are several complicating factors involved. First, the General Plan map for the area does show most of the project site in urban uses. Second, there is the question of the classification of the land in regards to agricultural suitability. As discussed in Section 4.3.2, the Land Study Bureau gives the land low ratings while the State Department of Agriculture has designated it Prime Agricultural Land. The Agricultural Potential map in the General Plan (Eckbo, Dean, Austin & Williams and Muroda, Tanaka & Itagaki, Inc.; March 1970:14) shows all of the Princeville Phases One and Two land as having low agricultural potential. It thus appears that the General Plan decided that Phase Two lands can be urbanized because of their low agricultural potential.

Phase Two's consonance or conflict with other objectives and recommendations of the General Plan is discussed below. In most cases the objectives have been paraphrased to make them syntactically consistent with the recommendations.

<u>Objective 1:</u>	Conserve natural, scenic and historic resources
<u>Objective 19:</u>	Maintain existing scenic drives and develop new ones
<u>Objective 54:</u>	Document and protect visual resources
<u>Recommendation 12:</u>	Protect and improve visual access to scenic areas

Discussion: The gullies on the Phase Two lands would be retained in their natural state. Scenic views from and along the shoreline would be protected. View opportunities to the shoreline from the plateaus would be increased due to development. See discussion of impacts on views from Kuhio Highway in Section 4.8.2. Visual resources around Phase Two lands are documented in Figures IV-13 and IV-14. No pre-contact archaeological sites were discovered in the Phase Two development areas.

<u>Objective 4:</u>	Carry through existing beautification programs
<u>Objective 6:</u>	Set up architectural control program

Discussion: Protective covenants would control the architecture and landscaping of the houses built on Phase Two lots. Existing covenants for Phase One dictate natural materials for exterior surfaces, earth-tone roofs, pitch and height of roof, attractive walls or fences, and landscaping requirements.

Objective 5: Install sewers...as soon as practical

Discussion: One of the first steps in developing Phase Two would be the installation of sewers to serve all lots.

Objective 11: Require off-street parking new areas...

Discussion: Off-street parking is required by both the zoning code and the Princeville protective covenants.

Objective 18: Preserve existing beach parks and develop new ones

Discussion: Anticipating additional demand for beach use, Princeville Development Corporation (PDC) has deeded 10.9 shoreline acres to the County as an addition to Anini Beach Park. The County park dedication requirements state that at least half of the land dedicated must be for public park use. PDC has proposed to dedicate acreage just across the road from the beach park for public use. The location of this park land has not yet been resolved with the County--see Chapter VII.

Objective 20: Require subdivisions to provide land for playgrounds

Discussion: Up to three acres for a park/playground would be provided on each plateau of Phase Two.

Objective 21: Develop multi-family units

Discussion: The condominiums would be largely oriented to the resort market. However, the market analyses by Peat, Marwick, Mitchell & Co. indicates that at least 15 percent of the units (see Table III-6) would be used by full-time owner occupants and long-term rental residents.

Objective 27: Develop erosion control program

Discussion: Princeville Development Corporation would have to submit a satisfactory erosion control program to the Department of Public Works in order to obtain a grading permit.

Objective 30: Require underground wiring, where possible

Discussion: Underground wiring would be installed throughout the Phase Two development.

Objective 34: Guarantee beach access

Discussion: Princeville Phase Two would in no way limit access to Kalihikai or Anini Beaches.

Objective 36: Diversify economy, avoid single crop or single industry base

Objective 52: Increase tourism

Discussion: Tourism and agriculture are the two major economic bases of the North Shore. Removing the Phase Two lands from grazing use would not adversely affect the cattle ranching operation (see Objective 59 discussion). However, the Phase Two project would increase the viability of Princeville Resort. The market analyses by Peat, Marwick, Mitchell & Co. demonstrate that there is sufficient demand for additional resort facilities at Princeville that tourism to Kaua'i would be increased.

Objective 51: Increase permanent resident population

Discussion: The majority of the 1,240 single-family lots to be developed in Phase Two would eventually have houses constructed on them for use by permanent residents. Approximately 15 percent of the 420 condominium units would also be used by permanent residents (see Objective 21 discussion). Since these dwelling units would be an addition to the existing housing stock, they would tend to increase the permanent resident population.

Objective 59: Develop and encourage ranching...

Discussion: The Princeville Cattle Company (PCC) presently uses the suitable acreage of the Phase Two lands for cattle grazing. Loss of this acreage would not affect PCC's viability as a ranching operation. Because they have recently negotiated a lease on over 3,000 acres of Princeville Development Corporation land mauka of Kuhio Highway through the year 2003, PCC has an incentive to make improvements such as fencing and fertilization. The increase in productivity of this land could offset the loss of the Phase Two acreage.

Objective 70: Use Hawaiian street names

Discussion: Phase Two would be consistent with Phase One in its use of Hawaiian street names.

Objective 79: Urban areas should be contiguous

Discussion: Phase Two, proposed for urban, is contiguous to the urban-designated Phase One.

Recommendation 4: Protect ecological systems

Recommendation 6: Protect the shoreline

Discussion: Impacts of Phase Two on biological systems, including the marine community, are discussed in Section 4.7. The proposed project's relationships to the State and County's shoreline area management plans are outlined in Sections 5.3 and 5.4. Based on the marine survey conducted for this EIS, no adverse effects are anticipated.

Recommendation 7: Insure water quality

Recommendation 8: Protect water resources

Discussion: Section 4.5 discusses water quality and water resource issues in relationship to the Phase Two project.

Recommendation 35: Recognize social structure

Discussion: A social impact analysis of the proposed project and the existing community's social structure was undertaken by the Community Resources division of SMS Research, Inc. Their study is summarized in Section 3.10.

5.5.2 Proposed General Plan Update

The County of Kaua'i commissioned a team of consultants headed by Planners Collaborative to update the 1970 General Plan. The team has published a summary of their findings and recommendations (Planners Collaborative et al.; June 1982). They recommended simplifying the land use designations on the General Plan maps. They explained that the detail on the 1970 General Plan maps was necessary because there was no zoning then, but is an unnecessary duplication now. They also recommended deleting the existing General Plan objectives and recommendations because they "are expressed and addressed in subsequent plans, policies, and ordinances" (Ibid.:18). The general goals, which the objectives and recommendations addressed more specifically, were reworded slightly in some instances; and three goals were recommended for addition. These are addressed in Section 5.5.2.2. This leads into a discussion of the growth allocations found in the 1982 Kauai General Plan Update.

5.5.2.1 Proposed General Plan Map for the North Shore

This proposed map indicates Resort use only on the western and central plateaus of the Phase Two lands (with the rest of Phase Two land designated Open). In comparison, the Hanalei Planning Area map of the existing General Plan (see Figure V-1) shows four categories of use (commercial, public, and multi- and single-family) on the same plateaus. The proposed map deliberately simplifies the land use designations of the existing plan "to make the General Plan function as an overall policy plan rather than a land use map" (Planners Collaborative et al.; June 1982:31). The update also states that the "intent of the general boundaries of the map is to differentiate relative general classifications and functions and is not intended to be a precise graphic definition (Ibid.:69).

The land uses allowed under the "Resort" designation, in the proposed General Plan Ordinance (Ibid.:71) are given as follows:

Resort. Lands included within the Resort classification shall be used predominantly for visitor and transient-related facilities including hotels, apartments, employee housing and vacation homes. Commercial and public facilities necessary to support and complement such primary functions may also be included within this classification.

It is not clear from this definition whether permanent residences are included under this land use classification. Many of the lots in Phase Two are projected to eventually have houses for permanent residences built on them. If the proposed General Plan Ordinance is adopted, the specific zoning categories allowed under the "Resort" designation will have to be clarified.

5.5.2.2 Proposed Additional General Plan Goals

The following three goals were recommended for addition to the General Plan (Planners Collaborative, et al.; June 1982:18).

- o To manage growth according to established population growth targets.
- o To manage implementation (of the General Plan) through development of social and physical infrastructure based on growth targets, priorities and efficient utilization of facilities and services.
- o To encourage and support efforts to approach self sufficiency in food production and energy.

The Phase Two project would not contribute toward the last proposed goal. To discuss the first two, the consultants' proposed "growth targets" must be examined.

First, the 1982 Kauai General Plan Update explains that the County has already set limits to growth on Kaua'i, but that these "should be more explicit so that they need less interpretation, are more easily understood, and more readily measured" (Planners Collaborative et al.; June 1982:23). The report then gives 10-year growth targets and preliminary allocations by community.

Although the numbers set explicit limits, it is not clear how certain types of development, especially in the case of the proposed Phase Two project, would be defined. For instance, would condominiums and single-family units rented by visitors be defined as hotel rooms or housing units? The allocations for Princeville are 1,000 residential units and 700 resort units. Yet the proposed General Plan map designates land at Princeville only for "Resort" units. As discussed in the previous section it is not yet clear exactly what zoning categories would be allowed under the "Resort" designation.

Before the allocations are accepted, the back-up data or statement of the assumptions used to derive the numbers should be widely distributed. There was no explicit statement of the methodology and assumptions which demonstrated that a reasonable, unbiased methodology was used to arrive at the allocation numbers. Distribution of the back-up work is especially important, considering that the proposed ordinance does not appear to allow landowners to petition for a change in the allocation.

The 10-year allocations are given in two columns: "Based on Current Infrastructure" and "Based on Improved Infrastructure." This second column appears to relate only to County-planned improvements. Planned infrastructure to be provided by private developers is not addressed in the report. Even if the private developers' plans are not considered, the second column total of 8,645 for residential units (p. 26) far exceeds the "additional housing units" target of 3,750 shown on page 25. It is not clear what the implications of this are.

Development of the single-family lots in Phase Two could presumably proceed under the provision of Section 3.02 E of the proposed ordinance.

- E. The subdivision of land to create residential parcels where no permit for building construction is sought may be permitted in addition to the allocated quantities of dwelling units.

Sections 3.4 and 3.10.5.1 discuss the Phase Two project in relation to the proposed General Plan Update population allocations. However, how these limits would be applied to Phase Two is an unresolved issue (see Section 7.1.1).

5.6 NORTH SHORE DEVELOPMENT PLAN

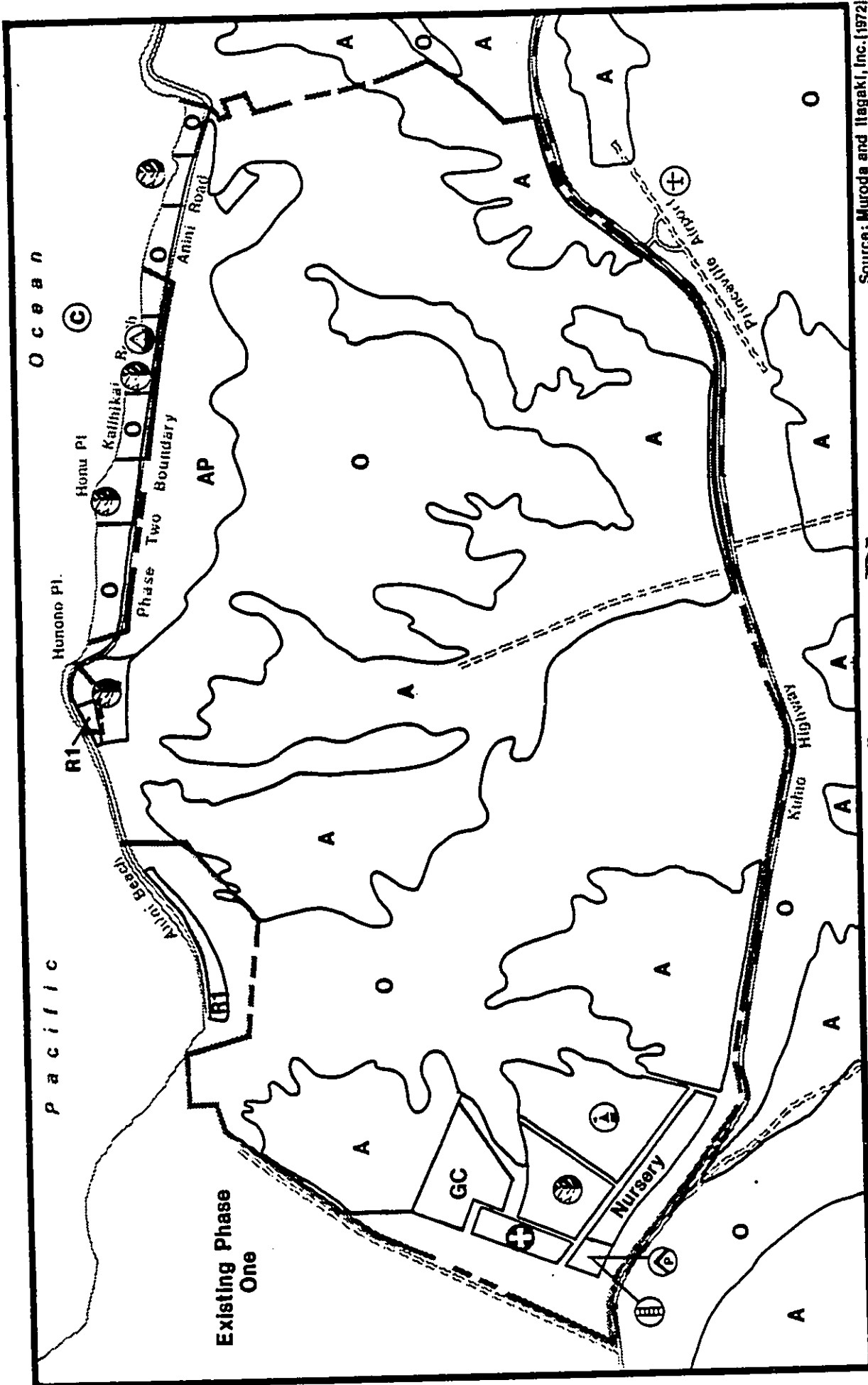
5.6.1 Existing Plan

The joint venture of Muroda and Itagaki, Inc. and Eckbo, Dean, Austin & Williams, Inc. submitted the North Shore Special Planning Area study to the Kauai County Planning Commission on September 30, 1972. Ordinance 239, the "North Shore Development Plan Ordinance," was adopted on December 27, 1974. Together these form the North Shore Development Plan.

The map included in the North Shore Ordinance became the zoning map for the area and is discussed in Section 5.8. It should be noted here, however that the basis for the zoning map is the Development Plan (DP) map in the Muroda and Itagaki, Inc. and Eckbo, Dean, Austin & Williams (September 30, 1972) report. This Development Plan allowed for a population of 2,000 people in 1982. This number was derived in the University of Hawai'i (UH) Department of Agricultural and Resource Economics' study, Hanalei Development Plan - A Socio-Economic Prelude. (The summary of the Social and Economic sections of the UH study was reprinted in the North Shore Special Planning Area study—pp. 7-9.) Since 1982 was the time horizon for the plan the DP map shows no development of dwelling units on Princeville Phase Two land. It does show a general commercial district, a nursery, a day use recreation site, a school, a police/fire station site and a medical facility site (see Figure V-3) on a portion of the western plateau. The other plateau areas are designated for agriculture and the gullies are shown as open.

As discussed in Section 5.5.5.1 no interest has been expressed by concerned agencies in using Phase Two lands for these public facilities (the police/fire station was developed in Phase One). A five-acre site is planned for public/office/retail uses at the intersection of Kuhio Highway and Ka Haku Road. The State Department of Education has requested that 1.5 acres of this land be set aside for a community library site. The remaining acreage would be maintained as open space until demand for additional facilities is expressed. The park shown on this map near the corner of the western plateau would be provided somewhere on Phase Two lands, although its location is not yet resolved (see Section 7.1.4). The nursery shown on Phase Two land has been developed within Phase One. No additional area for a nursery would be needed for development of Phase Two.

Two objectives in the existing North Shore Development Plan (NSDP) stress the preservation of agricultural uses, and the NSDP map designates essentially all of the development areas of the proposed project as agricultural. These conflicts with the current plans for further development at Princeville are not critical considering the horizon for the existing NSDP was only until 1982. No development in the Phase Two area was planned by Princeville Development Corporation before 1982. The need to update the NSDP was recognized by the County, which commissioned Wilson Okamoto & Associates to prepare a new development plan in 1980. However, for several reasons, the update was never made official. Before reviewing the relationship of the proposed project to the updated NSDP, it should be noted that Phase Two, except as regards the objectives of agricultural uses preservation, does not conflict with any of the goals and objectives of the existing NSDP. All of these goals and objectives are found in the proposed update of the NSDP, which also adds a few objectives from the County General Plan. See the discussion in the next section.



Source: Muroda and Itagaki, Inc. (1972)

V-3 Existing North Shore Development Plan

- A Agricultural District
- AP Agricultural Preserve
- GC General Commercial
- R1 Residential District
- Open District
- Nature Conservation
- Airstrip
- School
- Fire Station
- Police Station
- Medical Facility
- Day Use Recreation
- Camping



PRINCEVILLE
PHASE TWO

Environmental Impact Statement
By: Bell, Collins & Associates

5.6.2 Proposed North Shore Development Plan Update

A "General Conclusion" section of the 1972 NSDP stated: "Future development of hotels and condominiums should be limited to the existing Urban District at Princeville" (Muroda and Itagaki, Inc. and Eckbo, Dean, Austin & Williams, Inc.; September 30, 1982:19). However, in response to changing needs and conditions, the "Summary of Findings and Recommendations" of the updated NSDP would allow "expansion of Princeville Resort area if a need can be demonstrated, and potential environmental impacts adequately mitigated" (Wilson Okamoto & Associates, Inc.; December 1980:6). (The market demand for the Phase Two project was studied by Peat, Marwick & Mitchell and their analyses are summarized in Section 2.5 of this EIS. The mitigation of impacts is discussed in Chapters III and IV of the EIS.)

The updated NSDP thus recommends the western and central plateaus of the Phase Two lands be zoned Project Districts (see Figure V-4). This designation would allow the County to strictly control development through the Project District review requirements of the Zoning Code, yet allow flexibility in the layout of the project. Concerns voiced in the updated NSDP are:

1. Provisions to maintain view and access corridors must be included. Site orientation, design, incrementing, and landscaping must be appropriate for the area.
2. Building heights and visual impact from neighboring public spaces must be carefully evaluated for new development.
3. Smaller scale structures appropriately integrated with the natural terrain and landscaped (sic) are preferred over larger structures that are overpowering and out of scale with the neighboring communities (Wilson Okamoto & Associates, Inc.; December 1980:90).

These concerns would be addressed in the review of specific lotting, landscaping and building plans.

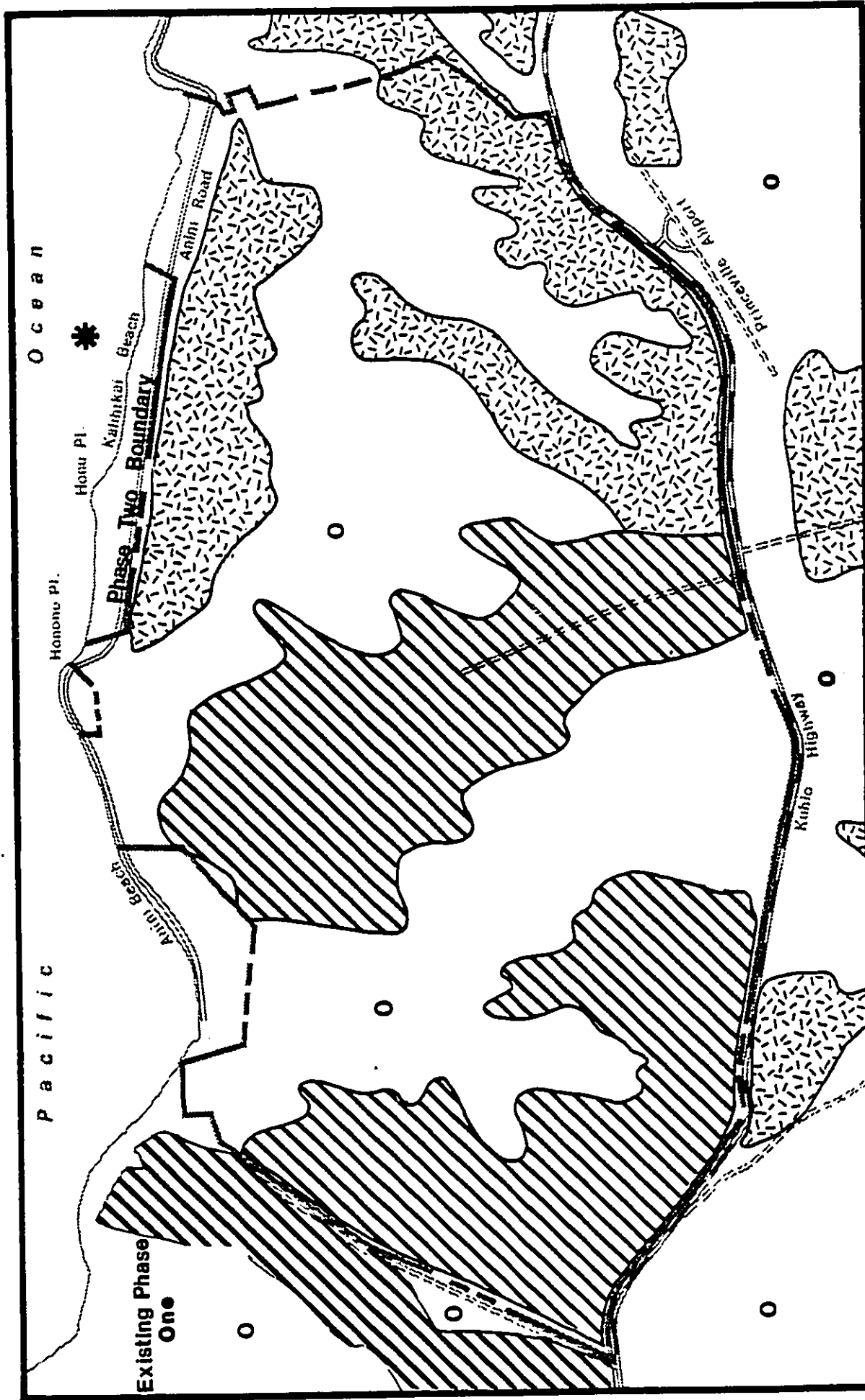
A discussion of the goals and objectives presented in the NSDP update that are most relevant to the proposed Phase Two project follows.

GOAL A: To preserve the unique natural beauty of the North Shore Planning Area.

Discussion: The proposed project would be designed to minimize adverse visual impacts, as the preservation of the area's beauty is important to the resort's success. See discussion in Section 4.8.

Third Objective of GOAL A: Prevent development, especially hotels, from bordering on public beaches, fishing and other recreational areas.

Discussion: The development would not border any public beaches, fishing or other recreational areas. All development would be confined to the plateaus, 200-plus feet above sea level. Setbacks from the edge of the plateaus and landscaping would tend to screen development in Phase Two from the view lines along the beaches.



V-4 Proposed North Shore Development Plan Update

-  Project District
-  Agriculture
-  Open
-  Scenic Site



PRINCETONVILLE
 PHASE TWO
 Environmental Impact Statement
 By: Bell, Collins & Associates

Source: Wilson Okamoto & Associates, Inc. (December 1980)

GOAL B: To preserve the special rural charm of the North Shore Planning Area.

- o To provide for the development of man-made features that do not visually overwhelm the existing small structures and the prevailing plant materials and soft ground-cover (landscape treatment).
- o To provide for the development of man-made features that will not require extensive services or modifications to the landscape, not in harmony with the rural character.
- o To maintain agricultural uses and the existing visual mix of plant materials and structures within the urban land use boundary.
- o To prevent regimentation and repetition that so often results from standards that emphasize conformance, not performance.
- o To provide for the preservation of agricultural uses and encourage County and State governments to initiate methods for this preservation.
- o To provide for the dedication of land for open space and recreation uses.

Discussion: The extent to which Princeville Phase Two would preserve the rural charm of the North Shore area will undoubtedly be a subject of debate. Certainly residential use of the parcel would remove the land irrevocably from its present agricultural/rural use: cattle grazing. In matters of aesthetics, which seem to be the major concern of Goal B, Phase Two would feature largely single-family development mixed with significant amounts of plant materials. The natural landscape of the gullies would not be altered but set aside as permanent open space. Because all lot owners would choose their own building plans, there would be a notable lack of regimentation and repetition. The Princeville Development Corporation would dedicate public park land to the County in conformance with the Park Dedication Ordinance. In addition, small parks would be developed on each plateau for use by residents and guests.

Second Objective of GOAL C: To provide for public services in the North Shore Planning Area such as police, fire, medical, ambulance, communication, schools, sewage disposal systems, water systems, electrical power systems, etc.

Discussion: See Section 4.11 regarding the project's impacts on public utilities, services and facilities.

Sixth Objective of GOAL C: To provide a desirable house or living quarters for all residents in all income levels.

Discussion: The Princeville Resort is not designed to provide low-cost housing, which is unavailable almost anywhere within the North Shore area. However, house lots in the area are few and now sell at a premium. Phase Two would make developed house lots (with full infrastructure and other amenities) available at competitive prices. Further, Princeville Development Corporation has a policy of discounting lots for purchase by employees.

Third Objective of GOAL D: Study the feasibility and consequences of tourist recreational facilities within the North Shore Planning Area.

Discussion: Although it is not clear exactly what is meant by "tourist recreational facilities," this EIS studied and reports the consequences (impacts) of the expansion of the Princeville Resort (which may be considered "tourist recreational facilities").

Fourth Objective of GOAL D: Provide economic opportunities which would enable youth to remain and support families in the area after high school.

Discussion: By 1990, an estimated 310 people would be employed to operate and maintain the facilities in the proposed project. An additional 210 jobs would be created in construction and other support industries. With such a need for employees, it seems likely that all qualified and willing North Shore youths would be eligible for employment in, or as a result of, Phase Two.

Eighth Objective of GOAL D: Retain agricultural workers.

Discussion: A letter from Harry Collins (July 25, 1979) of Princeville Cattle Company stated that withdrawal of 150 acres for the second golf course would not affect employment within the company. At most three workers would be affected by withdrawal of the 420 acres for the Phase Two project. It is also possible that no agricultural workers would be affected if the more intensive operations in the mauka pastures make up for the loss in acreage.

GOAL E: To preserve the wildlife and flora of the North Shore, recognizing man's dependence upon this preservation for his own health and welfare.

- o Identify the habitats of birds, fish and animal life, and present programs for the preservation of endangered species.
- o Identify the major vegetation patterns and develop programs for the preservation of significant forests or particular species or plant associations.

- o Develop a comprehensive body of regulations that will safeguard reefs and off-shore ecology.

Discussion: Flora and fauna on the proposed Phase Two project site, as well as the marine ecosystem of the off-shore reefs are identified in this EIS. The call for a comprehensive body of regulations regarding reef ecology and programs for preservation of endangered fauna species and significant plants or forests is directed at public agencies. However, the project's possible impacts on flora, fauna, and marine ecosystems and proposed mitigation measures are discussed in Section 4.7.

GOAL F: To insure the preservation of the historic-archaeological sites in the North Shore Planning Area.

- o Identify and catalog the archaeological sites within the North Shore Planning Area and provide for their protection and appropriate future inspection by the public.
- o Identify the historic sites, trails, plant materials, buildings, water systems and other items of historic interest to the people and provide for their protection.

Discussion: An archaeological survey of the Phase Two lands was conducted and no significant sites were encountered in the development areas (see Section 4.9).

5.7 STATE LAND USE LAW

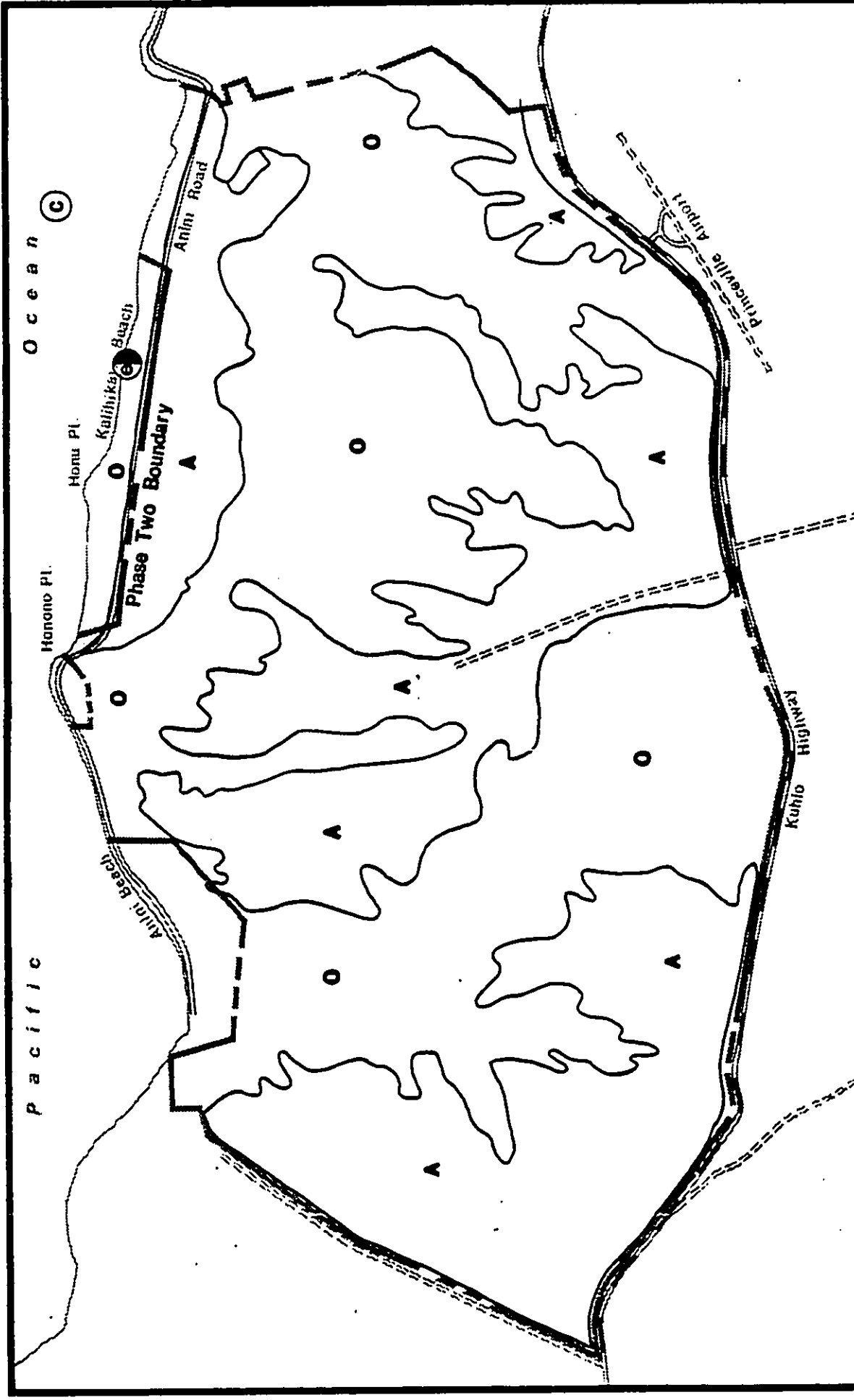
The State of Hawai'i adopted a statewide land use law in 1961 (Act 187/SLH 1961). The law, which underwent major revisions in 1975, forms Chapter 205 of the Hawai'i Revised Statutes. It establishes a State Land Use Commission which classifies all land into one of four land use districts: Urban, Rural, Agricultural, and Conservation.

All of the Phase Two areas that would be developed lie within the State Agricultural District. An application for amendment to the urban classification will be filed in 1983. The law states that in "establishing the boundaries of the districts in each county, the commission shall give consideration to the master plan or general plan of the county." That is the major reason the application for the Kaua'i General Plan Amendment is being made first.

5.8 COUNTY COMPREHENSIVE ZONING ORDINANCE

Ordinance 164 of the County of Kaua'i zones the County into various use districts that regulate the type of activities and construction permissible within their boundaries. The ordinance was adopted to "implement the intent and purpose of the adopted General Plan."

The ordinance zones the Phase Two lands into four Agricultural districts and one large open district (see Figure V-5). The areas to be developed under the proposed project generally fall in the Agricultural Districts but also overlap portions of the Open District. However, construction would avoid those areas with constraints, such as steep slopes or unsuitable soils, as shown on the Constraint District maps



V-5 Existing Zoning

Source: Special Planning Area North Shore Zoning Map, Ord. 239 (12-27-74/Amended 4-22-74)

- A Agriculture
- O Open

- Ⓒ Nature Conservation
- Ⓔ Existing Park



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which overlay zoning. If development does occur in the special constraint district, regulations in the zoning code allow the County to "modify the manner in which uses regulated under the Use Districts may be developed or may require special performance in such development" (Zoning Code, Section 1.03/L).

The plans for the proposed project are too preliminary at this point to know exactly what rezoning would be sought. The overall density of the development is approximately six units/acre, based on 314 acres of residential development and 1,660 units. Residential zoning would be sought for the single-family areas. Resort district zoning would probably be required for the condominium parcels. Neighborhood Commercial designation would probably be most appropriate for the five-acre parcel at the corner of Ka Haku Road and Kuhio Highway.



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CHAPTER VI
ALTERNATIVES TO THE PROPOSED PROJECT

6.1 INTRODUCTION

The Princeville Development Corporation (PDC) has as its twin goals the creation of a self-sustaining resort community at Princeville and the assurance of a reasonable return on its substantial capital investment in land and infrastructure there. PDC has stated that the proposed Phase Two project as now configured represents the lowest level of development that would generate an acceptable rate of return. According to the firm's representatives, a significant further reduction in the number of units allowed would make the project financially infeasible. Eventually, this would lead the company to dispose of its property at Princeville and quit the island.

While a project of a reduced scale is not financially viable from the point of view of the developer, it has been suggested that plans for Phase Two might be adjusted so that approximately the same number of units are constructed on a more limited land area. More specifically, the eastern plateau area might be left undeveloped and the units concentrated on the central and western plateaus. This configuration is generally consistent with existing public land use plans for the area. A schematic land use plan based on this proposal was prepared as part of this study and constitutes the first of the alternatives examined below. It is the only alternative to the proposed project which has the potential of being financially viable from the point of view of PDC. However, it should be noted that even this alternative contains features (primarily high density/small lot sizes) that the company feels will adversely affect its ability to market the property as intended. Hence, it is not certain that it would be pursued even if all necessary land use approvals were granted.

The "no-action alternative" is not feasible for PDC in the sense that it would not provide a financial return to the company. While public agencies can avail themselves of this alternative, a private company such as PDC cannot. If the property cannot be put to a financially productive use, the company must sell it or eventually terminate its operations in bankruptcy.

PDC has made a long-term commitment to the Princeville area, but company spokespersons have indicated that a failure to obtain approval for further development of its lands would eventually force it to dispose of the lands still under its control. This might be done via a bulk sale to a single buyer. Alternatively, the Phase Two area could be divided into a number of large lots as permitted by the Kaua'i County Subdivision Ordinance and sold.

If the land is sold, either in bulk or following subdivision into large lots, the new owners would be able to use it either for intensive agriculture or for cattle grazing. (It is assumed that a decision by either the County or the State to prevent urban development of the land by PDC would preclude urban use by subsequent buyers as well, and our analysis was based on that understanding.)

In view of the foregoing, it was decided that three different alternatives would be examined for the purposes of this EIS:

- o Development of the central and western plateaus of approximately the same number of units as now proposed by PDC for all three plateau areas combined.
- o Subdivision of the land into large lots with subsequent agricultural use.
- o No-action, i.e., continuation of the present grazing operations on the Phase Two area following sale of the property by PDC to a single buyer.

The remainder of this chapter describes these alternatives in more detail and discusses the environmental effects of each.

6.2 ALTERNATIVE 1: RESORT DEVELOPMENT ONLY ON THE WESTERN AND CENTRAL PLATEAUS

6.2.1 Description

Urban land use plans for the western and central plateaus at Princeville could follow any one of a large number of different patterns. Specific design variations have little effect on the overall impact of the project, however. Hence, the assumptions that are made in this regard are not critical. Our analysis assumed a plan which retains a large number of single-family lots and has multi-family densities similar to those found in Phase One. This seemed reasonable in view of the proven marketability of the multi-family parcels there.

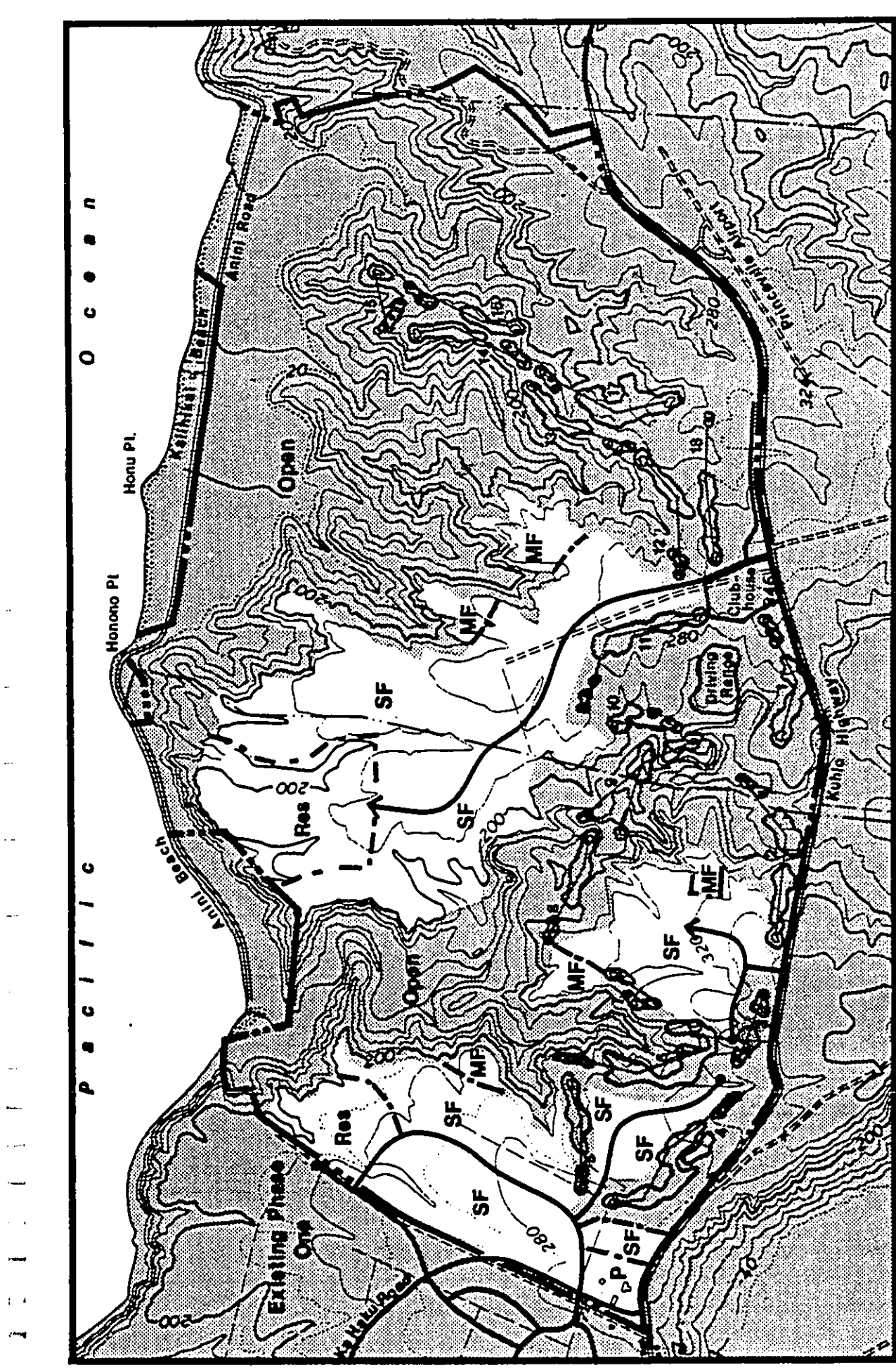
In order to achieve an overall increase in density without drastically increasing the number of multi-family units, it was necessary to move to smaller single-family lots than have been used in Phase One. The average would be about four units per acre. Given the topography, this may necessitate creation of cluster units in the steeper portions of the development area. In addition, it would be necessary to convert several areas on the promontories of both plateaus from single-family to multi-family units at a density of about 10 units per acre.

A site plan illustrating such a development concept is shown in Figure VI-1. The land use breakdown for the illustrated plan is presented in Table VI-1. It must be stressed that the layout shown is hypothetical and should be used only as the basis of rough comparisons between the different alternatives.

As shown in Table VI-1, this alternative involves the development of 230 more multi-family units (and 230 less single-family units) than would the Phase Two project as it is now proposed. According to market analyses conducted for the project, the demand for multi-family units would still exceed the projected supply.

6.2.2 Socio-Economic Impacts

Table VI-2 compares the population and economic impacts of restricting development to the western and central plateaus with those that would be produced by the proposed Phase Two project. It indicates that the increase in density (but not in total unit count) would probably mean that proportionately more of the units would be used by visitors. This, in turn, implies a higher level of job creation and income than is expected from the current proposal. On the other hand, the housing is less likely to attract local residents or to meet their perceived housing needs.



VI-3

VI-1 Alternative Resort Site Plan

- SF Single Family
- MF Multi Family
- Res Resort
- P Public



Phase Two Development Areas



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Table VI-1. Alternative Land Use for Resort Development Only on the Western and Central Plateaus.

<u>Location/Use</u>	<u>Approximate Acreage</u>	<u>Approximate Number of Units</u>
<u>WESTERN PLATEAU</u>		
Resort Condo	19	120
Single-Family	107	510
Multi-Family	10	100
Public	5	--
Collector Roads	<u>10</u>	<u>--</u>
Sub-total	151	730
<u>CENTRAL PLATEAU</u>		
Resort Condo	41	300
Single-Family	135	480
Multi-Family	15	150
Collector Roads	<u>6</u>	<u>--</u>
Sub-total	197	930
<u>EASTERN PLATEAU</u>		
Cattle Ranch	<u>73</u>	<u>--</u>
Sub-total	73	--
<u>OTHER AREAS</u>		
Golf Course ¹	300	--
Unplanned and Permanent Open Space	<u>464</u>	<u>--</u>
Sub-total	764	--
GRAND TOTAL	1,185	1,660

¹ The second Princeville golf course is being developed in conjunction with the Phase One hotel, even though it is physically located on Phase Two lands.

Source: Based on same number of units as Belt, Collins & Associates site plan dated November 27, 1981.

Table VI-2. Comparison of the Ultimate Population and Economic Impacts of Alternative 1 With Those Produced by the Proposed Phase Two Project.

Impact	Proposed, Phase Two ¹	Alternative 1: Resort on Western and Central Plateaus Only
Residents	2,380	2,030
Average Daily Visitors	830	1,020
De Facto Population	3,210	3,050
Employment ²	310	370
Annual Direct Visitor Expenditures ³	\$21.7 million	\$25.3 million
Total Direct and Indirect Visitor Expenditures ⁴	\$43.6 million	\$50.8 million
Household Income	\$14.6 million	\$16.8 million
Taxes ⁵	\$ 2.3 million	\$ 2.7 million

Figures above based on Peat, Marwick, Mitchell & Co. (October 1982) economic impact analysis.

¹ Population estimates from Table III-10.

² From Table III-11.

³ From Table III-14 extended to account for development past 1995.

⁴ From Table III-15 extended to account for development past 1995.

⁵ From Table III-18 extended to account for development past 1995.

Source: Belt, Collins & Associates site plan dated November 27, 1981.

While the shift in the proportion of the total development devoted to multi-family units would have some effect, the small number of units that are involved means that the impact of such a change would be limited. For all practical purposes, then, the socio-economic impacts of this alternative are the same as those for the current Phase Two proposal.

6.2.3 Physical Impacts

The impacts on the physical environment that would result from this alternative would be very similar to those produced by the proposed Phase Two project. The most obvious difference would be that there would be no disturbance to the eastern plateau and, consequently, no change in vegetation, wildlife, and storm runoff there.

Elimination of this eastern arm of the development would do away with the need for one of the new Kuhio Highway intersections now proposed. At the same time, however, it would lead to slightly higher traffic volumes on the remaining roads. The differences would not be substantial. Hence, traffic noise, air quality, and other environmental factors influenced by vehicular traffic would be affected in much the same way as they would by the current Phase Two proposal.

6.3 **ALTERNATIVE 2: LARGE LOT OR AGRICULTURAL SUBDIVISION**

6.3.1 Description

The large lot or "agricultural" subdivision alternative developed for this analysis provides for the maximum number of lots permitted under the Kaua'i County Subdivision Ordinance. It assumes that the second golf course planned for Princeville will be designed to fit within the boundaries stated in the Agricultural District Special Use Permit previously granted to PDC by the State Land Use Commission and, therefore, that no additional action by the Commission would be required. The Phase Two land is already zoned for agriculture by the County; hence, no further discretionary land use approvals would be required in order to implement this alternative.

The agricultural subdivision alternative calls for the eastern plateau to be subdivided into ten lots, each ranging in size from five to seven acres. The western plateau would be subdivided into seven 25-acre lots and one 31-acre lot which would be surrounded on all sides by the golf course. The central plateau would not be subdivided.

The development density in this alternative is much lower than what is proposed for Phase Two. As a result, the required infrastructure improvements are minimal. On the eastern plateau, the existing road to the Anini Vistas Subdivision would be extended roughly parallel to Kuhio Highway in order to provide access to the ten subdivided lots. This frontage road would intersect Kuhio Highway at two points--one at the existing Anini Vistas Road and the other at the entrance to the central plateau. As plans already call for water to be extended to the Anini Vistas Subdivision (see Section 4.11.1), these ten lots could easily obtain water from this source. Cesspools would be used to dispose of sewage from the homes constructed on these parcels.

Six of the lots on the western plateau would be accessed via Ka Haku Road. The other two lots would be entered directly from Kuhio Highway. Water is already available from the mains on Ka Haku and Kuhio Highway. As on the central plateau, cesspools would be used for sewage disposal.

The ten smaller lots on the eastern plateau would have unrestricted panoramic views of the golf course and the ocean. For this reason they are suitable for marketing as luxury retreat sites. However, if the larger lots were to be marketed at a per acre price even approaching that of the smaller lots, their price would be extremely high, and it is unknown whether or not they could be sold. In view of the large investment that PDC has made in already-constructed infrastructure sized for the full development of Princeville, the return from all of these large lot sale alternatives would be far below the break-even point for PDC. This is true even though they presume a residential use (and residential land prices) for the agriculturally zoned land. If the property were to be sold at a price that would make agriculture economically viable, nearly all of Princeville Development Corporation's investment in this land would have to be written off.

6.3.2 Socio-Economic Impacts

The large-lot subdivision alternative would generate virtually no population or employment impacts. Assuming one dwelling per parcel, an average of three to four persons per household, and 100 percent occupancy, the resident population of the Hanalei District would be increased by 50 to 75 persons. Construction employment would be very limited, probably amounting to no more than a few person-years per home. Even this would be spread over many years, so that its effect on employment levels would be indiscernible. If the parcels are used solely for residential purposes, which seems highly probable, they would generate very little long-term employment. Should working farms be established, some jobs would be created, but it is impossible to project the number without knowing what kind of crops might be involved. However, employment multipliers for agriculture tend to be low. For similar reasons, household income and tax revenues cannot be estimated.

6.3.3 Physical Impacts

In general, the large lot subdivision alternative would have far less impact on those elements of the environment sensitive to population density than would the Phase Two plan now proposed. If the lots are put to residential use, the overall impact on the physical environment (assuming no large-scale land clearing) would be less as well. However, if intensive agriculture were to be undertaken on the subdivided lots, views, soil erosion, surface water runoff volumes and quality, and other factors could be substantially altered. Depending upon the irrigation practices that are used, other hydrologic factors could be affected as well.

Perhaps the most significant positive attribute of the agricultural subdivision alternative is that it preserves 390 acres designated as prime agricultural land from urban development. This does not, however, mean that the preserved land would actually be used for agricultural purposes. And in fact, there is a strong likelihood that many, if not all, of the "agricultural" lots created by the subdivision would, for reasons of economics, never be actively used for agriculture.

An "agricultural" subdivision of the type and magnitude discussed here would involve so little development that there would be virtually no change in air or water quality, noise levels, traffic volume, views, or demands on public utilities and public services in comparison to what one might expect without it. On the other hand, this alternative would provide few, if any, of the employment, public revenue, and other benefits that would be produced by the proposed Phase Two project. If the owners of the subdivided land do actively cultivate it, we may expect a number of adverse results. The nature of these depends on the exact crop and cultivation

techniques that are employed. However, the most likely are increased (relative to existing) atmospheric particulate concentrations, higher noise levels, greater soil erosion, and the introduction of chemicals such as pesticides, herbicides, and inorganic fertilizers.

6.4 ALTERNATIVE 3: NO-ACTION (CONTINUED CATTLE RANCHING)

As noted elsewhere in this report, the lands slated to receive the Phase Two project are currently leased by PDC to the Princeville Cattle Company. This company uses them, together with a larger area mauka of Kuhio Highway, for cattle grazing. If the proposed project is implemented, this use would gradually be eliminated from the Phase Two area; it would continue on the mauka lands.

The Princeville Development Corporation has clearly stated that it will attempt to dispose of the Phase Two area if permission for urban development is not granted. Thus, permanent (or long-term) use of the land for cattle grazing is not viewed as a viable option by PDC. Failure to obtain the necessary changes in land use designation would, of course, prevent it from implementing its present Phase Two plan. However, insofar as the large lot subdivision alternative offers both a much greater return on investment and is permitted under existing land use controls, it is extremely unlikely that Princeville Development Corporation would pursue Alternative 3. It has been included here only because it comes closest to the "no project alternative" referred to in the EQC regulations.

As part of its development planning, PDC contracted with Economist Robert N. Anderson for an analysis of the economic implications of withdrawing the Phase Two land from its current pasture use. The study was conducted in mid-1979 when the Phase Two project was first under consideration. While the figures cited in Anderson's final report are now a few years old, no substantial change in agricultural economics has occurred in the last few years that would alter his conclusion. Hence, his findings are used as the basis for the discussion which follows.

For a number of years cattle operations on PDC lands were greatly influenced by the absence of a long-term lease agreement between PDC and the Princeville Cattle Company (PCC). Because of the uncertainty of its tenure, PCC was reluctant to take steps which would optimize the long term productivity of the pasture land which it leased.

Recent agreements between PDC and PCC have greatly reduced the uncertainty, particularly with respect to the mauka lands. However, PDC still retains the right to withdraw lands in the Phase Two project area on short notice. While it is impossible to quantify the effect of this provision, it probably limits the extent of the pasture improvements which PCC is willing to make in the Phase Two area.

If the Phase Two project were abandoned and an agreement concluded which ensured that the land would remain in pasture use for an extended period, there would be much more incentive for PCC to implement improved range management practices. These include pasture fertilization, fencing that would permit rotation in accord with established herd management procedures, and brush control to maintain the grasslands. These steps would make the pasture land more productive than it is at present. Moreover, they would also result in increased utilization of employees and supplies from within the Kauai economy.

The present operation ships most of its cattle to Honolulu for fattening and slaughter. Hence, it is an export business in terms of the Kaua'i economy. For the purposes of Anderson's analysis, it was assumed that this marketing pattern would continue in the future.

Based on the quality of the Phase Two land as estimated by the Land Study Bureau and the Soil Conservation Service and on information regarding the productivity of similar land elsewhere in Hawai'i, Anderson estimated that the improved pasture would have a productivity rating of at least 1.0 animal unit per acre. (For comparison, the productivity under current management practices is estimated at no more than 0.6 animal units.) Anderson also posited that a "steady-state" condition of production in Hawai'i results in the equivalent of about one steer sold per year for every three animal units in the herd. This allows for herd replacements, infertility, and varying sales price per type of animal.

Historically, the average weight of a steer entering O'ahu feedlots is estimated at about 750 pounds. Prices over the period 1974 through 1977 were fairly constant on Kaua'i at about \$33.00 per hundredweight, or about \$250.00 per animal. A check with the State of Hawai'i Agricultural Reporting Service late in 1982 revealed that real price (i.e., corrected for inflation and cyclical factors) had increased since then. In view of this, an estimated long-term price of \$50.00 (in 1980 dollars) per hundredweight was used for the calculations which follow.

Approximately 530 acres of land within the Phase Two boundary could be used for cattle grazing. Efficient cattle operations would result in about 175 head of cattle being sent to market each year from this acreage. At 750 pounds per steer and \$.50 per pound, this would result in a total gross income of about \$66,000 per year. The cattle operation and supporting industries would employ about three persons.

This alternative would result in no substantial physical changes to the property. The amount of fencing would be increased somewhat, there would be a slight reduction in the amount of shrub vegetation on the site as a result of improved shrub control measures, and the addition of fertilizer could result in higher levels of nutrients entering nearshore waters than is currently the case. Herbicides used in weed control could also find their way into Anini Stream and nearshore waters, but compliance with manufacturers' instructions should ensure that the concentrations remain low. Soil loss would continue at its current rate.

Production function studies for cattle raising suggest that about one quarter of the cost of production is attributable to the land. Based on this factor, it appears that \$16,000 is a reasonable annual lease rent for PCC to pay to the Princeville Development Corporation. This is far too little to justify such a use for the land on which PDC proposes to develop Phase Two unless no viable alternatives were available.



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CHAPTER VII

UNRESOLVED ISSUES AND NECESSARY APPROVALS

7.1 UNRESOLVED ISSUES

At this time, several issues relative to the proposed Phase Two project have yet to be resolved. One concerns the consistency of the development with the Kaua'i County General Plan Update program. Other issues have to do with the exact way in which necessary public facilities and utility services will be provided. Another issue involves the agricultural value ratings for the land. Brief summaries of these issues follow below. It is believed that all can be satisfactorily resolved during the normal development process.

7.1.1 Relationship of Phase Two to the Proposed Kaua'i General Plan Update

Kaua'i County is now in the process of updating its General Plan. A draft of the plan was released in June 1982 and has aroused considerable controversy. No deadline has been established for its review and adoption by the County Council, and it does not seem likely that final legislative action will be taken soon.

The draft of the General Plan Update contains ten-year land use allocations for Princeville and the remainder of the North Shore. However, as discussed in Chapter V of this report, it is unclear as to how these limits would be applied to Phase Two. Because of this, and because it is also uncertain whether the proposed June 1982 update will be adopted in its present form, it is impossible to determine whether or not the present proposal will be found consistent with the revised General Plan. Hence, the Princeville Development Corporation has decided to seek a General Plan amendment for the project before completion of the County-initiated General Plan Update program.

PDC has completed subdivision and improvements on nearly all of the land in Phase One of the Princeville Resort. Given the length of time needed to secure land use changes (County General Plan amendment, State Land Use District Boundary amendment, zoning changes, etc.), subdivision approval, and various construction-related permits, PDC believes that it must begin to seek the first of these at this time. To delay further in the hope that some of the questions surrounding the General Plan might be resolved would delay the development of the project and add unnecessarily to its cost, costs which are ultimately borne by buyers, many of whom are expected to be residents of the island.

7.1.2 Water Supply and Sewage Treatment

The Kaua'i County Public Improvements Corporation (KCPIC) owns and operates the water distribution and sewage collection and disposal systems serving the Phase One portion of the Princeville Resort. This is a quasi-public corporation, and the majority of the members on its Board of Directors are government officials. The water source (wells situated on the mauka portions of the Princeville lands) and rights to the water are owned by the Princeville Water Systems, Inc. (PWS), a private company which is a subsidiary of PDC.

Pursuant to its agreement with the County, KCPIC is obligated to offer the water distribution and sewerage collection and disposal system to the County government in mid-1984. The Department of Public Works and Department of Water are now reviewing the feasibility of incorporating the facilities operated by KCPIC into their respective municipal systems. The County of Kaua'i Department of Public Works (May 5, 1983) has indicated that several issues would have to be resolved before the County would consider acceptance of the sewerage system. Probably the most critical of these concern easements, effluent disposal rights, and financial arrangements. In the event that the County decides not to assume responsibility for water supply and/or wastewater collection and disposal, KCPIC would continue to perform that function, unless another group agreed to take over its responsibilities.

An additional effluent disposal system will be installed at the Princeville STP, but it is not yet resolved what method will be used. Injection wells seemed the most likely alternative but because of their high cost PDC is investigating other alternatives--including surcharge storage in existing irrigation ponds, land disposal on California grass in an area graded to control overflow, and expanded golf course irrigation use.

Sludge disposal is an unresolved issue only for the future. The nursery is expected to operate for at least fifteen years and could handle all of the sludge generated by Phases One and Two. After PDC completes development of Princeville Resort, the nursery may continue to be operated by some other organization. If it is not, other alternatives, including landfill or agricultural application, would be feasible. It is not necessary to resolve this issue at present.

Based on information now available, PDC anticipates that KCPIC and/or the agency/group which might succeed it will be able to extend services to Phase Two. Wastewater collection facilities within Phase One have been sized to permit this, and the treatment plant and water source are readily expandable to meet the increased demand. Princeville Development Corporation has not yet submitted a formal application for such connections, but plans to do so before subdividing the land if the necessary land use changes are granted. It is expected that the cost issue would be negotiated at that time and that the Phase Two project would be assessed a connection fee for the privilege of utilizing a portion of the existing plant's excess capacity.

In the event that the Phase Two area is denied connection to the STP, a separate wastewater collection system and treatment plant would be provided for Phase Two. This would be much less efficient than a single-plant system, however, and would be pursued only if it is impossible to reach agreement on linking Phase Two with the Phase One system. A separate water distribution network in Phase Two could be managed by the Princeville Water Systems, Inc., with no major difference in cost or operational impacts.

7.1.3 Solid Waste Disposal

Solid waste generated in the Hanalei District is currently disposed of in the County's Hanalei Landfill. The landfill is situated on land now scheduled for development as a second golf course. (The course is being developed in response to demands expected from Phase One and so is considered part of the Phase One project.) The Department of Public Works had planned to replace it with a transfer station and to haul the area's solid waste to an island-wide landfill. Since the recommended location for such a facility is Kekaha, the haul is now considered prohibitively expensive (Kaua'i County Department of Public Works; May 5, 1983). Therefore, the County is reevaluating its plans for solid waste disposal for this area. A transfer

station may still be part of the plan but ultimate disposal (at a new landfill or energy recovery facility) would have to be at a location closer than Kekaha. The other major alternative is to locate a new landfill in the North Shore area. The solid waste disposal issue for the area is not yet resolved; however, it is expected to be resolved before the Phase Two project is implemented. Princeville Development Corporation will continue to cooperate with the County in assuring that adequate collection and disposal services are made available to Princeville residents and commercial establishments.

7.1.4 Location of Land to be Dedicated to Meet the Requirements of the Park Dedication Ordinance.

The Park Dedication Ordinance requires that at least half of the park land dedicated be for public use. Initial plans for Phase Two called for this requirement of the Park Dedication Ordinance to be met through the dedication of land located on the mauka side of Anini Road opposite Anini Beach Park. Subsequently, the County indicated that this location was no longer satisfactory. Conversations aimed at establishing a location acceptable both to the County and to PDC are continuing.

Other suitable sites are available, both on the plateau area of Phase Two and in the vicinity of the existing Anini Beach Park, to satisfy the Park Dedication Ordinance requirements. The plateau site, like the PDC-proposed site, would be appropriate for game fields and other extensive recreational facilities suitable for a community park (i.e., both Princeville and other North Shore communities). The other coastal site is makai of Anini Road and is more suitable for use as a beach park. A final decision on this matter will depend largely on the preference of the County. In any case, smaller recreational facilities such as swimming pools, tennis courts, and play yards are proposed on each plateau for private use by Phase Two residents and guests.

7.1.5 Value of Princeville Phase Two Lands for Agriculture

There is a conflict between the present agricultural suitability ratings for the Phase Two development areas, as was discussed in Section 4.3. Maps in the Land Study Bureau's (LSB) report and the Kaua'i General Plan show low agricultural potential, while the ALISH map designates a great proportion of the plateau land as "prime." The State Department of Agriculture had proposed in the May 1982 version of the State Agricultural Plan to substitute the ALISH for the LSB as the system to be referenced in the State Land Use Law. However, a more general reference to "important agricultural lands" was incorporated into the October 1982 version of the plan. To identify such lands, the Legislature has passed a bill creating a State of Hawai'i Land Evaluation and Site Assessment Commission, "rather than relying on the ALISH system" (Hawai'i, State of, Department of Agriculture). Thus, it is not resolved how much the State might value these lands for agricultural use. Perhaps the Commission will be able to resolve some of the current inconsistencies in ratings.

7.2 LIST OF NECESSARY APPROVALS

This environmental impact statement has been prepared for submission in conjunction with a request for an amendment to the Kaua'i County General Plan. This is the very first step in the long approval and permitting process that must be followed before the Phase Two project can be implemented. Following is a list of the major approvals which must be obtained. While most of these would be sought only after an appropriate General Plan designation is granted, it is expected that an application for a State Land Use District boundary amendment will be filed by PDC within the next few months.

<u>Approval Needed</u>	<u>Approving Agency or Body</u>
<u>For subdivision and infrastructure development</u>	
Kaua'i County General Plan Change	Planning Commission/ County Council/Mayor
State Land Use Urban Designation	State Land Use Commission
Rezoning	Planning Commission/ County Council/Mayor
Shoreline Management Area Permit	Planning Commission/ County Council/Mayor
Subdivision Approval	Planning Commission
1) Preliminary Plat	Public Works Department
2) Preliminary Engineering Drawings	State Department of Health
3) Final Engineering Drawings	State Department of Transportation Services
4) Final Subdivision Plat	Kaua'i Electric Co. State Surveyor Land Court Department of Water Supply
Grading Permit	Public Works Department
Building Permit	Building Department
Access to work on State Highway	State Department of Transportation
Park Dedication	County Planning and Public Works Departments
Water System Approvals	County Department of Water and State Department of Health
Approval of Additional Effluent Disposal System	State Department of Health and County Department of Public Works
Conservation District Use Permit (possibly for drainage discharge into ocean waters)	State Department of Land and Natural Resources
<u>For specific projects within the overall development</u>	
Class 4 Zoning Permit	Planning Commission
Shoreline Management Area Permit (if applicable)	Planning Commission/ County Council/Mayor
Grading Permit	Public Works Department
Building Permit	Building Department



Princeville Phase Two

Environmental Impact Statement

CHAPTER VIII

THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

8.1 SHORT-TERM GAINS

The short-term gains that could be attributed to the expansion of Princeville by the development of Phase Two would primarily be the positive aspects of the construction phase of the project -- i.e., opportunities for increased construction employment and increased opportunities for local businesses that support construction. An additional short-term gain would be an increase in the supply of developed building sites for single-family and multi-family dwellings. This would benefit those involved in marketing the land and local investors. Princeville Development Corporation would benefit with an opportunity for an economic return on its investment.

8.2 SHORT-TERM LOSSES

Short-term losses that could be attributed to the development of Princeville Phase Two are also related primarily to the construction phase of the project. The construction effort would increase the number of heavy trucks and other vehicles on Kuhio Highway, would cause increased dust and noise levels in the area, and would allow more sediment runoff into the ocean until the disturbed groundcover can be re-established. An additional short-term loss related to condominium construction activity could be the pressure put on the local housing market and other facilities by any construction employees migrating to the North Shore area for the term of the construction period. Finally, the increased supply of resort-residential houselots during a period of projected increased demand could slow the growth in value of existing North Shore houselots; this represents a partial loss of potential short-term income to current investors.

8.3 LONG-TERM GAINS

The long-term gains that would result from the ongoing operation of the Princeville Phase Two development are: (1) an increase in the County tax base that is larger than the additional expenditures the County would be required to make to support the development; (2) opportunities for employment in the various segments of the project; (3) an increase in the stature of Princeville as one of the designated resort areas on the island of Kaua'i; (4) new recreation facilities available to area residents in the form of a new park; and (5) a five-acre parcel designated for public use to fill any future public need for the area (a community library being the most likely immediate facility).

8.4 LONG-TERM LOSSES

The implementation of Phase Two development would cause some direct impacts in the area and it would also foreclose future options for alternative uses of the land as well as limit uses on adjacent lands by its presence. The major direct impacts would be as follows: (1) a new supply of high-quality building sites would encourage migration into the area, eventually increasing pressures on existing public recreational

facilities such as beaches and parks; (2) the in-migrants would probably be predominantly affluent Mainland-born Caucasians, contributing to an ongoing shift in the social structure of the area; and (3) the visual character of the area would shift from open range land to recreational/residential development. It should be noted that only some people would call these impacts "losses," while others might regard one or more of them as "gains."

Future options that would be foreclosed by the project might include alternative use of the land for other urban uses or for agriculture purposes such as grazing or orchards. Furthermore, resources committed to the development -- such as water, power, and investment capital -- would no longer be available for other uses.



Princeville Phase Two

Environmental Impact Statement

CHAPTER IX

ORGANIZATIONS AND PERSONS CONSULTED AND THOSE WHO PARTICIPATED IN THE PREPARATION OF THIS EIS

9.1 CONSULTED PARTIES

The notice of availability of the EIS Preparation Notice (EISPN) for the proposed Princeville Phase Two project was published in the Environmental Quality Commission Bulletin on July 23, 1982. The agencies and organizations below were sent copies of the EISPN and asked to comment on the project. Everyone who we believed might have an interest in the project or who requested consulted party status was included.

In addition to those who received the EISPN, other groups and individuals were contacted by Community Resources in the process of its social impact assessment. Those additional contacts are listed in Table III-19.

Following are those to whom the EISPN was sent.

Federal Agencies

U.S. Department of Agriculture, Soil Conservation Service
U.S. Department of the Interior, Fish and Wildlife Service
U.S. Department of Transportation, Federal Aviation Administration

State Agencies

Department of Accounting and General Services
Department of Agriculture
Department of Education
Department of Health
Board of Land and Natural Resources
Department of Land and Natural Resources, Division of State Parks
Department of Planning and Economic Development
Department of Transportation
Office of Environmental Quality Control

County Agencies

Fire Department
Police Department
Public Works Department
Water Department

Utilities

Kaua'i Electric
Hawaiian Telephone Company

Community Organizations and Public Interest Groups

Kaua'i Community Research Group
Life of the Land
North Shore Belt Road Citizen's Advisory Committee
North Shore Improvement Advisory Committee
Princeville Community Association
1000 Friends of Kaua'i

Individuals

Mr. George Toyofuku, State Senate
Mr. Dennis Yamada, State House of Representatives
Mr. Tony Kunimura, State House of Representatives
Mr. Richard Kawakami, State House of Representatives
Mr. Jeremy Harris, Kaua'i County Council
Mr. Robert Yotsuda, Kaua'i County Council
Mr. Jerome Hew, Kaua'i County Council
Mr. Rodney Yadao, Kaua'i County Council
Mr. William Asing, Kaua'i County Council
Mr. Jesse Fukushima, Kaua'i County Council
Mr. Edward Sarita, Kaua'i County Council
Ms. JoAnn Yukimura
Mr. Donald Graf

9.2 ORGANIZATIONS AND INDIVIDUALS WHO ASSISTED IN THE PREPARATION OF THIS EIS

The Environmental Impact Statement was prepared for Princeville Development Corporation by Belt, Collins & Associates. The following individuals were involved:

Belt, Collins & Associates

Nancy Jo Cranmer, Perry J. White, Ann K. Yoklavich	- Planners
Ed Iida, John Camara	- Engineers
Nancy Brown, Lisa Andes, Karen Fassler	- Graphics
Lynn Fukuhara, Linda Tajiri	- Word Processing

Sub-Consultants/Sub-Contractors

Community Resources	- Social Impacts
Peat, Marwick, Mitchell & Co.	- Economic Impacts
Dr. Richard Grigg and Steven Dollar	- Marine Survey
Dr. Amadeo Timbol	- Anini Stream Survey
Bishop Museum (Paul L. Cleghorn)	- Archaeological Survey
Phillip Bruner	- Avifaunal Survey



Princeville Phase Two

Environmental Impact Statement

CHAPTER X
COMMENTS AND RESPONSES DURING THE CONSULTATION PERIOD

The agencies and organizations listed in Chapter IX were all sent copies of the Environmental Impact Statement Preparation Notice (EISPN) with a transmittal letter requesting comments. Those listed below responded to the request for comments. Copies of the transmittal letters sent to them are reproduced along with copies of comment letters received from consulted parties and copies of our responses to them.

	<u>Page</u>
<u>Federal Agencies</u>	
U.S. Department of the Interior, Fish and Wildlife Service	X-2
U.S. Department of Transportation, Federal Aviation Administration	X-4
<u>State Agencies</u>	
Department of Accounting and General Services	X-7
Department of Agriculture	X-9
Department of Education	X-12
Department of Health	X-15
Department of Land and Natural Resources	X-19
Department of Planning and Economic Development	X-22
Department of Transportation	X-26
Office of Environmental Quality Control	X-29
<u>Kaua'i County Agencies</u>	
County Council	X-31
Department of Public Works	X-33
Fire Department	X-36
Police Department	X-39
Water Department	X-46
<u>Other</u>	
Kaua'i Electric Company	X-49

**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

Mr. Ernest Kosaka
Office of Environmental Services
Fish and Wildlife Service
U.S. Department of the Interior
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Kosaka:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISPN) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISPN issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISPN supercedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

You/your organization commented on the project as it was previously conceived in a letter dated March 17, 1980. To the extent that they are still applicable, the concerns you expressed in it will be addressed in the EIS.

If there are any additional comments you wish to make at this time, we would appreciate hearing from you.

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the

6406 Canal Street, Honolulu, Hawaii 96813 Telephone: (808) 522-5161 Telex: 881116 2410474
B.C.A. LTD. Principals: James R. Belt, Paul M. Hanna, Raymond F. Cain, Joseph Verra, R. Thomas P. Papadimitriou
Founded in 1953 by Robert M. Belt and Walter K. Cullin

request unless this is extended by the accepting agency . . . upon good cause shown . . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Abner Qo Goummer
Nancy Jo Cramer

NJC:st
Attachment
cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation



United States Department of the Interior

FISH AND WILDLIFE SERVICE
100 ALA MIANA BOULEVARD
P. O. BOX 50167
HONOLULU HAWAII 96850

BELT, COLLINS
& ASSOCIATES
Engineering • Planning
Landscape Architecture

March 14, 1983
83-285

Ms. Nancy Jo Cramer
Belt, Collins & Associates
606 Coral Street
Honolulu, Hawaii 96813

Mr. Ernest Kosaka
Office of Environmental Services
Fish and Wildlife Service
U.S. Department of the Interior
P. O. Box 50167
Honolulu, Hawaii 96850

Re: EA - Proposed Phase II
Expansion of Princeville
Resort, Kauai

Dear Ms. Cramer:

Thank you for forwarding a copy of the environmental assessment for Princeville Phase II for our review. The concerns and recommendations expressed in our letter of March 17, 1980 remain valid, and we ask that you address these thoroughly in the EIS. Surveys of aquatic resources and resource uses should include Anini Stream and reef, and those portions of the Hanalei River which may be affected.

Thank you for this opportunity to comment.

Sincerely yours,

Ernest Kosaka
Ernest Kosaka
Project Leader
Office of Environmental Services

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Thank you for your letter of August 3, 1982 (reference ES Room 6307) regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kauai. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

In our meeting with John Ford of your office in October 1982, we reviewed the concerns expressed in the U.S. Fish & Wildlife Service's letter of March 17, 1980. We also discussed what sort of survey of freshwater aquatic fauna would be appropriate. Based on the agreement reached at this meeting, Dr. Amadeo Timbol was hired to undertake the necessary field work and analysis. His study has subsequently been completed and is summarized in the EIS. This is in addition to the survey of marine biota conducted earlier, which is also discussed in the EIS.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,
Berry J. White
Berry J. White

PJW/BK:1c

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

606 Coral Street, Honolulu, Hawaii 96813 Telephone (808) 521-5161 Telex 8111117410474
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**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
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July 22, 1982
82-1238

Mr. George Harvey, Area Coordinator
Federal Aviation Administration
U.S. Department of Transportation
P.O. Box 50109
Honolulu, Hawaii 96850

Dear Mr. Harvey:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISPN) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISPN issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISPN supercedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

It is our intention to explore all aspects of the project's probable effects in the EIS, but we would like to devote the bulk of our effort towards those issues that are of greatest concern. The list of concerns provided by the Planning Department in the EIS Notice of Determination provides a starting point, but you could help us concentrate on truly significant issues by indicating in writing the questions and topics you believe should be addressed. The more specific you can be, the better the chance that the EIS will provide the information you desire.

In addition to identifying any particular concerns you may have regarding the proposed Phase Two expansion, I would also appreciate it if you would

answer the following questions relative to your Department's activities and/or responsibilities in the area. The information you provide will be used to assess the potential impacts of the proposed Phase Two.

1. We understand that Princeville Airport is privately owned. What jurisdiction does the FAA have over its operation?
2. What restrictions, if any, are there to expansion of the operation or facilities at Princeville Airport?

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the request unless this is extended by the accepting agency "... upon good cause shown. . ." It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

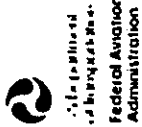
Sincerely,

Nancy Jo Cranmer

Nancy Jo Cranmer

MJC:st

Attachment
cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation



Federal Aviation
Administration

P.O. Box 50246
Honolulu, HI. 96850

We trust the foregoing provides the information you desired. If there are any questions, please feel free to call us on 546-7129.

Sincerely,

AUG 19 1982

Ms. Nancy Jo Cranmer
Belt, Collins & Associates
606 Coral Street
Honolulu, Hawaii 96813

DAVID S. YOKOYAMA
Planning Engineer

JAMES M. COX
Manager, Airports District Office

Dear Ms. Cranmer:

This responds to your letter 82-1238 dated July 22, 1982, concerning the proposed Phase II expansion of Princeville Resort on the island of Kauai.

The Phase II development does not appear to have an impact on aeronautical interest in the area and we have no comments. Concerning your specific questions on the extent of federal involvement in the operations at Princeville Airport, we furnish the following:

1. Although Princeville Airport is a privately owned, private use airport, it is served by Princeville Airways, Inc., under an operating certificate covered by Federal Aviation Regulations (FAR) Part 135 - Air Taxi Operators and Commercial Operations. As such, Princeville Airways, Inc., must be in conformance with all these regulations.
2. FAA recommended design and operation standards for establishing (and expansion) of an airport such as Princeville are covered in Advisory Circular 150/5300-48. Since Princeville Airport is a private facility, conformance with these standards is not mandatory. However, as stated above, Princeville Airport is served by a carrier operating under FAR Part 135. We wish to point out that FAR Part 135.69 states that "...if a certificate holder or pilot in command knows of conditions, including airport and runway conditions, that are a hazard to safe operations, the certificate holder or pilot in command, as the case may be, shall restrict or suspend operations as necessary until those conditions are corrected." Although these recommended design standards and obstruction standards defined in FAR Part 77 are not directly applicable to a private airport, compliance with these safety standards is indirectly applicable through the operating certificate issued to the carrier under FAR Part 135.

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

March 14, 1983
83-286

Mr. James M. Cox, Manager
Airports District Office
Federal Aviation Administration
U.S. Department of Transportation
P. O. Box 50244
Honolulu, Hawai'i 96850


Dear Mr. Harvey:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kaua'i

Thank you for your letter of August 19, 1982 regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kaua'i. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,

Perry J. White

PJM/JMK:lt

cc: Planning Department, County of Kaua'i
Environmental Quality Commission
Princeville Development Corporation

606 Coast Street, Honolulu, Hawaii 96813 Telephone (808) 521-5310 Telex: 811111 741474
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Founded in 1953 by Robert M. Belt and Walter K. Collins

**BULL, COLLINS
& ASSOCIATES**

Environmental Planners
1001 Kalia Road, Suite 1000, Honolulu, Hawaii 96813

July 22, 1982
RP-1220

Mr. Hideo Murakami, State Comptroller
Department of Accounting and General Services
State of Hawaii
P.O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Murakami:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISPN) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISPN issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISPN supersedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

It is our intention to explore all aspects of the project's probable effects in the EIS, but we would like to devote the bulk of our effort towards those issues that are of greatest concern. The list of concerns provided by the Planning Department in the EIS Notice of Determination provides a starting point, but you could help us concentrate on truly significant issues by indicating in writing the questions and topics you believe should be addressed. The more specific you can be, the better the chance that the EIS will provide the information you desire.

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses

to requests for comments must be made within 30 days of the receipt of the request unless this is extended by the accepting agency. . . upon good cause shown . . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project or do not fully understand the kinds of input which would be most helpful, please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cramer
Nancy Jo Cramer

NJC:st
Attachment

cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation

This document contains information that is exempt from disclosure under the provisions of the Freedom of Information Act, 5 U.S.C. 552, and the Hawaii Information Access Law, H.A.R. 10-10, and is not to be disseminated outside the agency.

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
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GENERAL INFORMATION
1-800-368-2872

WORLD HEADQUARTERS
1000 KALANANĀHUI DRIVE
HONOLULU, HAWAII 96813

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P. O. BOX 110, WASHINGTON SQUARE, HONOLULU, HAWAII 96813
181118 HW (P) 1786.2

March 14, 1983
83-287

AUG 26 1982

Ms. Nancy Jo Cranmer
Belt, Collins and Associates
606 Coral Street
Honolulu, Hawaii 96813

Dear Ms. Cranmer:

Subject: Proposed Phase II Expansion of
Princeville Resort, Kauai
EIS Notice of Determination

We have reviewed the subject notice of determination and
have no comments to offer at this time.

Thank you for the opportunity to review the subject notice
of determination.

X-3

Very truly yours,

Hideo Murakami
HIDEO MURAKAMI
State Comptroller

Mr. Hideo Murakami, State Comptroller
Department of Accounting and General Services
State of Hawaii
P. O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Murakami:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Thank you for your letter of August 26, 1982 -- Letter No. (P)1786.2 in
your reference system -- acknowledging receipt of the Environmental Impact
Statement Preparation Notice for the Proposed Phase Two development of the
Princeville Resort on the North Shore of Kauai. While your agency had no
comments to make on this matter, we do appreciate the time spent by you and
your staff in reviewing the document.

The draft Environmental Impact Statement for this project will be filed
within the month. We look forward to your further participation in the EIS
process and to any comments you may have on the forthcoming draft EIS.

Sincerely,

Perry J. White
Perry J. White

PJW/JMK:lt

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

606 Coral Street, Honolulu, Hawaii 96813 Telephone (808) 521-5161 Telex BE1111 7410474
BCA LTD. Principals: James R. Belt, Paul M. Hruska, Raymond F. Cain, Joseph Verna, Jr., Thomas P. Papanikolaou
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**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

July 22, 1982
82-1236

Mr. Jack K. Suwa, Chairman
Department of Agriculture
State of Hawaii
1428 South King Street
Honolulu, Hawaii 96814

Dear Mr. Suwa:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kaula

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kaula County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kaula County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISPN) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISPN issued by the Kaula County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISPN supercedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

It is our intention to explore all aspects of the project's probable effects in the EIS, but we would like to devote the bulk of our effort towards those issues that are of greatest concern. The list of concerns provided by the Planning Department in the EIS Notice of Determination provides a starting point, but you could help us concentrate on truly significant issues by indicating in writing the questions and topics you believe should be addressed. The more specific you can be, the better the chance that the EIS will provide the information you desire.

In addition to identifying any particular concerns you may have regarding the proposed Phase Two expansion, I would also appreciate it if you would

answer the following questions relative to your Department's activities and/or responsibilities in the area. The information you provide will be used to assess the potential impacts of the proposed Phase Two.

1. The predominant soils on the plateau areas of Phase Two are of the Makopili series. The Soil Conservation Service indicates capability classes ranging from II (moderate limitations) to IV (severe limitations), depending on slope. The Land Study Bureau classifies most of the plateau land as C (average). These two classifications seem to indicate more limitations on the agricultural capability of the soils than the prime designation by the Agricultural Lands of Importance to the State of Hawaii (ALISH). What are the differences attributable to? When such differences between classifications of a piece of land occur, are any of the three classification systems considered to take precedence over the others? Please explain.

2. Are there any economically viable agricultural uses for the site that should be explored in the EIS as an alternative to the proposed resort expansion?

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the report unless this is extended by the accepting agency. . . . upon good cause shown. . . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cramer

Nancy Jo Cramer

MJC:st
Attachment
cc: Kaula County Planning Department
Environmental Quality Commission
Princeville Development Corporation

GEORGE R. ANIYOSHI
GOVERNOR



JACK K. SUWA
CHAIRMAN, BOARD OF AGRICULTURE

SUZANNE D. PETERSON
DEPUTY TO THE CHAIRMAN

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 So. King Street
Honolulu, Hawaii 96814

MAILING ADDRESS:
P. O. Box 22159
Honolulu, Hawaii 96822

August 24, 1982

Ms. Nancy Jo Cramer
Belt, Collins & Associates
606 Coral Street
Honolulu, Hawaii 96813

Dear Ms. Cramer:

Re: Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

The Department of Agriculture has reviewed the subject Preparation
Notice and offers the following comments in response to the questions posed
in the cover letter.

The Soil Conservation Service Soil Survey (1972 and 1973) was done by
soil scientists who classified and named the soils according to nationwide
uniform procedures. Capability classes and subclasses are given for each
soil type which shows the suitability of soils for most kinds of crops in
a general way. The groups were made according to the limitations of the
soils when used for crops, the risk of damage when they are used, and the
way they respond to treatment.

The Land Study Bureau (LSB) Detailed Land Classification utilized the
1955 Soil Survey for the Territory of Hawaii as well as several other sources
for data on geology, topography, climate, water resources, and crops. The
reports grouped lands into homogeneous units (Land Types). (2) described
their condition and environment. (3) delineated the areas on aerial photo
base maps, (4) rated the lands on their overall quality (productivity) in
relation to other lands, and (5) appraised their performance under selected
alternative uses. The productivity evaluations were based on statewide
standards of crop yields and levels of management at the time the classifica-
tion was done.

The Agricultural Lands of Importance to the State of Hawaii (ALISH)
system differs from the LSB system in that (1) it is based on the more
recent soil survey (1972 and 1973) which extensively revised the soil
characteristic data in the 1955 survey used as a basis for the LSB system;
(2) the classification is based on interpretation of soil and other environ-
mental data and is not influenced by current crop yield and existing
management practices; (3) the classification system and criteria are tied
into a nation-wide effort to identify the best lands for crop production;
and (4) the system can be interpreted, revised, and updated by an existing
government agency (the U.S. Soil Conservation Service).

"Support Hawaiian Agricultural Products"

Ms. Nancy Jo Cramer
Belt, Collins & Associates
Page -2-
August 24, 1982

The differences in the classifications of any particular parcel of
land may be attributable to any one of the differences in the way the land
was classified, since the three systems take different data or combinations
of data into consideration. We, therefore, consider all three classifications
when we look at a particular site. The Soil Survey is the most specific for
the soils themselves. The LSB Detailed Land Classification System continues
to form a legal basis for restrictions and conditions on permissible uses
of Class A and B lands within the State Agricultural District, pursuant to
Section 205-4.5, Hawaii Revised Statutes. The ALISH system is more current
than the LSB and generalizes the soils information contained in the Soil
Survey into a more easily used form. If more detailed information is needed
on the technical differences, a soil scientist at the U.S.D.A. Soil Conser-
vation Service should be contacted.

As far as which system takes precedence over the others, legally, the
LSB Detailed Land Classification would, as far as Class A and B lands are
concerned.

The plateau areas are suited for pasture and in some areas, taro. In
the past, these lands have been used for pasture. A discussion of the removal
of these lands from pasture use should be included as was done in the Environ-
mental Assessment, Princeville at Hanalei-Phase Two, State Land Use Urban-
Boundary Change, County General Plan Change dated August 13, 1979.

While the assessment states that the agricultural lands mauka of the
highway are currently planned for continued agricultural use, the LIS should
address any impacts of the proposed development on these activities. We also
suggest that the Department of Land and Natural Resources be consulted since
there has been some State interest in the mauka parcel.

Thank you for the opportunity to comment.

Suzanne D. Peterson
for JACK K. SUWA
Chairman, Board of Agriculture

cc: DLNR
USDA-SCS

**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

March 14, 1983
83-288

Mr. Jack K. Suwa, Chairman
Department of Agriculture
State of Hawai'i
1428 South King Street
Honolulu, Hawai'i 96814

Dear Mr. Suwa:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kaua'i

Thank you for your letter of August 24, 1982 regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kaua'i. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,

Perry G. Witt

PJM/JMK:lt

cc: Planning Department, County of Kaua'i
Environmental Quality Commission
Princeville Development Corporation

606 Canal Street, Honolulu, Hawaii 96813 Telephone: (808) 521-5161 Telex: BELH11 2410174
BCA LTD, Principals: James R. Bell, Paul M. Harris, Raymond F. Cain, Joseph Venz, M., Thomas P. Papasiderow
Founded in 1953 by Robert M. Bell and Walker K. Collins

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

Dr. Donnis H. Thompson, Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Thompson:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

As you are aware from recent correspondence, Princeville Development Corporation is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville Phase II project would involve the creation of improved lots for approximately 1,240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISP/N) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISP/N issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISP/N supersedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

Based on your letter to us dated May 25, 1982, we have planned for a one and a half acre public library site across from the existing Princeville Center. This site would be located in the unplanned area shown in Figure 2 on page 6 of the enclosed Environmental Assessment. Is this location acceptable to the Department? When do you project that you will build the library?

Also based on the same letter, we expect students from Phase II to attend Hanalei or Kilauea Elementary Schools and Kapaa Intermediate and High Schools. What are the present and projected enrollments at these schools through the year 2000?

If you have any issues that you would like to see addressed in the EIS, please let us know in writing. The more specific you can be in stating your

6455 Central Street, Honolulu, Hawaii 96811 Telephone: (808) 521-5161 Telex: BE111 7410474
BCA LTD Principals: James K. Bell, Paul A. Florida, Raymond L. Carr, Joseph Verra, Jr., Thomas P. Papadimitriou
Financed in part by Robert M. Bell and Walter K. Collins

Dr. Donnis H. Thompson
Page 2 - 82-1198
July 22, 1982

concerns, the better the chance that the EIS will provide the information you desire.

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the request unless this is extended by the accepting agency. . . . upon good cause shown. . . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

Thank you very much for your cooperation and continuing assistance. If you have any questions regarding the project or do not fully understand the kinds of input which would be most helpful, please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Grammer
Nancy Jo Grammer

MJC:st
Attachment
cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation
Peat, Marwick, Mitchell & Company



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 346
HONOLULU, HAWAII 96813

August 13, 1982

OFFICE OF THE SUPERINTENDENT

Belt, Collins & Associates
August 13, 1982
Page 2

The assignment of the 7-12 grade students will be made to Kapaa High and Intermediate. Although, Kapaa High and Intermediate is operating at capacity, requests for funds have been submitted in the 1983-85 biennium budget to construct additional classroom facilities. Favorable consideration by the Legislature will enable the Department to provide the classroom facilities to accommodate the enrollment increase.

Should there be any questions, please contact Mr. Howard Lau at 737-5231.

Sincerely,
Lloyd K. Trigitte
Donny H. Thompson
Superintendent of Education

Belt, Collins & Associates
606 Coral Street
Honolulu, Hawaii 96813

Attn: Ms. Nancy Jo Cranmer

Dear Ms. Cranmer:

SUBJECT: EIS for Proposed Phase II Expansion
of Princeville Resort, Kauai, Hawaii

DHT:HL:j1
cc: Mr. James E. Edington
Kauai District

In response to your inquiry to the student enrollment impact on our schools by the proposed Phase II expansion of the Princeville Resort, our review indicates the following projected enrollment:

SCHOOL	GRADE	APPROXIMATE ENROLLMENT
Hanalei/Kilauea El. Schools	K-6	50 - 100
Kapaa High/Int. School	7-12	30 - 70

The above enrollment projections are based on the expectation that the lots and condominiums will be purchased primarily by investors and vacation home buyers and to a lesser extent by locals for their occupancies as indicated by the marketing study conducted by the consultant, Peat, Marwick, Hitchell and Company.

The assignment of the K-6 grade students will be made to either Hanalei or Kilauea schools. Both Hanalei and Kilauea schools are operating at capacity and would require additional facilities to accommodate the projected increase.

AN EQUAL OPPORTUNITY EMPLOYER

**BELT, COLLINS
& ASSOCIATES**
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March 14, 1983
83-289

Dr. Dennis H. Thompson, Superintendent
Department of Education
State of Hawaii
P. O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Thompson:

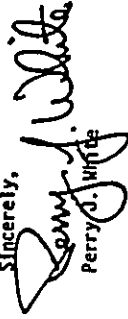
Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Thank you for your letter of August 13, 1982 regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kauai. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,


Perry J. White

PJM/JMK:lt

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

606 Coval Street, Honolulu, Hawaii 96813 Telephone: (808) 521-5161 Telex: B11111 7430474
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& ASSOCIATES**
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July 22, 1982
82-1199

Mr. Melvin K. Koizumi
Deputy Director for Environmental Health
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Koizumi:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

As you are aware from recent correspondence, Princeville Development Corporation is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1,240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISP/N) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISP/N issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISP/N supercedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

In the EIS we plan to have a full discussion of the anthrax burial sites based on your letter of June 2, 1982, and an inter-office memo from Dr. John Gooch to Mr. Brian Choy dated June 2, 1982.

If you have any additional concerns that you would like to see addressed in the EIS, please let us know in writing. The more specific you can be, the better the chance that the EIS will provide the information you desire. As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the request unless this is extended by the accepting agency . . . upon good cause shown . . . It is our hope that you will make every effort to initiate your contact with us

Mr. Melvin K. Koizumi
Page 2 - 82-1199
July 22, 1982

within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

Thank you very much for your cooperation and continuing assistance. If you have any questions regarding the project or do not fully understand the kinds of input which would be most helpful, please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Grammer
Nancy Jo Grammer

HJC:st
Attachment
cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

March 14, 1983
83-290

Mr. Melvin K. Koizumi
Deputy Director for Environmental Health
Department of Health
State of Hawai'i
P. O. Box 3378
Honolulu, Hawai'i 96801

Dear Mr. Koizumi:

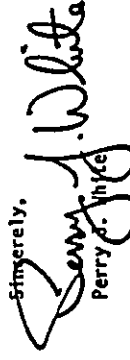
Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Thank you for your letter of August 24, 1982 (reference EPHSD-SS) regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kauai. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

In regard to your comments about pertinent rules and regulations governing development of the project, please be assured that all appropriate ordinances and administrative regulations will be followed and that the Department of Health will be given the opportunity to review specific plans.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.


Sincerely,

Perry J. White

PJM/JMK:lt

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

606 Coral Street, Honolulu, Hawaii 96813 Telephone (808) 531-5161 Telex BELHII 740424
BCA LTD. Principals: James R. Bell, Paul M. Hinda, Raymond F. Cain, Joseph Verra, Jr., Thomas P. Pajunbrow
Founded in 1953 by Robert M. Bell and Walter K. Collins

CHARLES G. CLARK
DEPARTMENT OF HEALTH
STATE OF HAWAII
P.O. BOX 3378
HONOLULU, HAWAII 96801


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

August 24, 1982

Nancy Jo Cranmer
Belt, Collins & Associates
606 Coral Street
Honolulu, Hawaii 96813

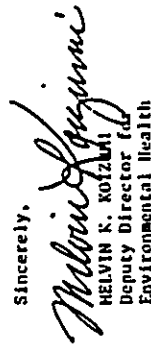
Dear Ms. Cranmer:

Subject: Request for Comments on Proposed Environmental Impact Statement (EIS) for the Proposed Phase Two Expansion of Princeville Resort, Kauai

Thank you for allowing us to review and comment on the subject proposed EIS.

We submit the following comments for your information and consideration:

1. Disposal of effluent from the sewage treatment plant: The present golf course irrigation system is unreliable during wet weather periods and has resulted in discharges of effluent through the project drainage system to the ocean. The provision of a back-up disposal system such as the injection well(s) mentioned in the environmental assessment are recommended.
2. Drinking water system: Any alterations to the existing system or additions of new sources shall meet the minimum requirements of Chapter 20, "Potable Water Systems."
3. The Hanalei Landfill site is located on the Phase II property. No building should be constructed over the landfill site after it is discontinued. Flies, odor and smoke nuisances may arise if the landfill is still in operation after Phase II is constructed.
4. Effective soil erosion and dust control measures shall be employed during all phases of development.
5. Grub material shall be disposed at a Department of Health approved site. Open burning is not permitted.

Sincerely,

MELVIN K. KOIZUMI
Deputy Director for
Environmental Health

BC:jh

GEORGE B. ARTHUR
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3318
HONOLULU, HAWAII 96813

CHARLES L. CLARK
DIRECTOR OF HEALTH

JOHN F. CHAMBERS, M.D.
DEPUTY DIRECTOR OF HEALTH

ROBERT M. FROST, M.D.
DEPUTY DIRECTOR OF HEALTH

WALTER B. SCHUMER
DEPUTY DIRECTOR OF HEALTH

ADDITIONAL ASSISTANT SECRETARIES
DEPUTY DIRECTOR OF HEALTH

DEPARTMENT OF HEALTH
P.O. BOX 3318
HONOLULU, HAWAII 96813

August 26, 1982

Ms. Nancy Jo Crammer
Belt, Collins and Associates
606 Coral Street
Honolulu, Hawaii 96813

Dear Ms. Crammer:

This letter is in response to notice of the Princeville Phase II Environmental Impact Statement Preparation Notice in the July 23, 1982 edition of the EQC Bulletin. It is our understanding that the Phase II development calls for the addition of resort units, single family units, parks and public facilities to the existing Princeville complex. Department of Health records show that the water system supporting the presently existing facilities is owned and operated by the Princeville Development Corporation. The size and nature of the water system qualify the system as a public water system as defined by Chapter 20, Title 11, Administrative Rules, and therefore make the system subject to all applicable terms and conditions of Chapter 20.

A review of the description of the proposed project indicates the possible need for an expansion of the water distribution system to support the additional facilities. Please be aware that Section 11-20-30 of Chapter 20, Title 11, Administrative Rules requires that all new or substantially modified distribution systems of public water systems be approved by the Director of Health prior to their use to serve potable water. Approval in this instance is dependent upon several factors, among them Departmental review of plans and specifications prior to construction, and the demonstration that the new or modified system is capable of delivering water meeting the water quality standards set down in Chapter 20.

In the event that additional sources of water are to be developed to meet additional demand, please be advised that Section 11-20-29 of Chapter 20, Title 11, Administrative Rules requires that all new sources of potable water serving public water systems be approved by the Director of Health prior to their use to serve potable water. Approval is primarily dependent upon the submission of an engineering report satisfactorily addressing all concerns set down in Section 11-20-29, Chapter 20. This report must be prepared by a registered professional engineer and bear his or her seal upon submittal.

Ms. Nancy Jo Crammer
Page 2
August 26, 1982

Should you have any questions regarding the requirements of Chapter 20, Title 11, Administrative Rules, please contact the Drinking Water Program at 548-2233.

Sincerely,
Thomas E. Arizumi

THOMAS E. ARIZUMI
Supervisor
Drinking Water Program
Sanitation Branch
Environmental Protection and
Health Services Division

MJH:dmn

cc: Chief Sanitarian, Kaula DHO
Princeville Development Corp.

**BELT, COLLINS
& ASSOCIATES**
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March 14, 1983
83-291

Mr. Thomas Arizumi, Supervisor
Drinking Water Program
Sanitation Branch
Environmental Protection and
Health Services Division
Department of Health
State of Hawaii
P. O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Arizumi:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

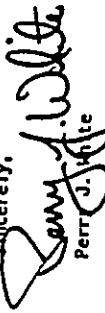
Thank you for your letter of August 26, 1982 (reference EPSD/SAN) regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kauai. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

In regard to your comments about pertinent rules and regulations governing development of the project, please be assured that all appropriate ordinances and administrative regulations will be followed and that the Department of Health will be given the opportunity to review specific plans.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,



Perry J. White

PJW/JMK:lt

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

606 Coral Street, Honolulu, Hawaii 96813 Telephone (808) 521-5161 Telex B11117410474
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Founded in 1953 by Robert M. Bell and Walter K. Collins

BELL, COLLINS
& ASSOCIATES
INCORPORATED
1415 KALANANĀ'ŪHOU DRIVE
HONOLULU, HAWAII 96813

July 22, 1982
82-1230

Mr. Susumu Ono, Chairman
Board of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ono:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISP/N) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISP/N issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISP/N supercedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

You/your organization commented on the project as it was previously conceived in a letter dated February, 1, 1980. To the extent that they are still applicable, the concerns you expressed in it will be addressed in the EIS.

If there are any additional comments you wish to make at this time, we would appreciate hearing from you.

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the

request unless this is extended by the accepting agency. . . upon good cause shown. . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cramer

Nancy Jo Cramer

NO:st
Attachment
cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 511
HONOLULU, HAWAII 96809

SUKUMU (LAND) KUPUNAHUA
P. O. BOX 511, HONOLULU, HAWAII 96809
LOCAL OFFICES:
AGRICULTURE DEVELOPMENT
COAST PROTECTION AND
RECREATION
FORESTRY AND WILDLIFE
LAND MANAGEMENT
PLANNING AND DEVELOPMENT

Ms. Nancy Jo Cranmer
Page 2

CPO-469

REF. NO.: CPO-469

Ms. Nancy Jo Cranmer
Belt, Collins & Associates
606 Coral Street
Honolulu, Hawaii 96813

Dear Ms. Cranmer:

We have completed our review of the Environmental Assessment for the expansion of Princeville Resort on Kauai and have the following comments to offer:

The developer proposes to expand the existing Princeville resort onto an additional 1,170 acres of relatively flat pasture lands, situated makai of Kuhio Highway (between Anini Stream and Kalihi Mai Bay). Expansion would be primarily "improvement and subdivision of land for resort units and single-family units. Also included are plans for...parks and improved sites for public facilities such as a library or a medical clinic."

1. Our concern is the protection of the water resources of the area and as such we would like to be kept informed on the further development of the existing and new well sources to meet the water requirement for the expansion of Princeville Resort.
2. As the report indicates that the irrigation water would be obtained from the County domestic water system, this water requirement should be closely coordinated with the County Water Department. However, we reiterate our earlier comment in that we support the proposal of sewage effluent for irrigation use and that the proposal should be further addressed in the preparation of the EIS for the project.
3. The Department of Health should be given an opportunity to review the proposal for sewage disposal by injection wells.

4. Due to the extensive development, appropriate erosion/sedimentation control measures should be considered and discussed further in the preparation of the EIS.
5. The Department of Agriculture should be given an opportunity to review the subject proposal in respect to the agricultural potential of the area and to DOA's agricultural program.
6. We suggest the EIS fully discuss the following aspects of the proposed project, particularly as they apply to Anini Stream and its tributaries, to the watercourses of other watersheds in which sitework would be performed, and to potentially affected coastal marine areas such as Anini County Beach Park and the expanse of coral reefs off Anini Beach:
 - a. specific boundaries of river, stream, and ocean shoreline areas which would be affected by sitework activities and by subsequent use;
 - b. inventory of existing aquatic resources in the above river, stream, and inshore ocean environments;
 - c. inventory of existing and anticipated public and private uses of the above resources;
 - d. short-term, temporary effects of sitework (grading, construction, and so forth) on these resources and measures to mitigate such impacts which may be adverse;
 - e. long-term, persistent effects of site occupation (resort use and residential occupation), such as drainage changes and wastewater disposal, and measures to mitigate such impacts which may be adverse; and
 - f. effects of project design, construction, and use on public access to and use of aquatic resources.
7. Historic Sites Concerns:
A review of our records indicates that this project does not occur on historic properties that are listed on the Hawaii Register or the National Register of Historic Places, or that have been determined eligible for inclusion

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

March 14, 1983
83-292

Mr. Susumu Ono, Chairman
Board of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ono:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Thank you for your letter of October 7, 1982 (reference CPO-469) regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kauai. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

In regard to your recommendation that a qualified archaeologist conduct a reconnaissance survey within the area, this has been undertaken through the Bishop Museum. A copy of that survey report is attached.

The final point in your letter concerned the Anini and Kaihikali Beach areas and associated developable flood plains. You noted these shoreline areas are not part of the development proposal and recommended they be deleted from the Phase Two proposal because of their high public recreational value. To provide some clarification on this matter, these lands are currently "unplanned" -- that is, not earmarked for any development. They are included in maps and descriptions of Phase Two only because they are part of the original "Parcel Two" identified on the Princeville Master Plan which has long been the basis of discussion between Kauai County planners and the Princeville Development Corporation.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

PJM/JMK:lt
Attachment
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

Sincerely,
Raymond F. Carr
Raymond F. Carr

606 Coast Street, Honolulu, Hawaii 96813 Telephone (808) 521-5161 Telex BE1111 7430474
BCA LTD. Principals: James R. Belt, Paul M. Hinds, Raymond F. Carr, Joseph Vieira, Jr., Thomas P. Pajandrew
Founded in 1933 by Robert M. Belt and Walker K. Collins

on the National Register of Historic Places. However, survey(s) conducted in the vicinity reveals the existence of resources that may meet the criteria for listing on either register. These include such sites as the old Russian Fort and the old fishpond. Thus, it is likely that previously unidentified resources also exist in the proposed project area.

Therefore, we recommend that, prior to any project activity that may have an effect on resources, a reconnaissance survey be conducted by a qualified archaeologist within the proposed area, and that the survey results be forwarded to our office for evaluation. Should the existence of significant resources be substantiated, we may provide additional recommendations to avoid, mitigate, or negate any adverse effects.

8. Recreation Concerns:

There are no known recreation opportunities of significant public recreation value in the upland plateau area where development is proposed. However, the Anini and Kaihikali Beach areas and their associated developable flood plains are of high public recreation value since the offshore reef provides protected water and rich fishing opportunities. Since these shoreline areas are not part of the proposal development, we recommend they be deleted from the Phase II development proposal.

Thank you for allowing us to comment on this proposal.

Very truly yours,

Susumu Ono
SUSUMU ONO, Chairman
Board of Land and Natural Resources

**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

July 22, 1982
82-1239

Mr. Hideto Kono, Director
Department of Planning and
Economic Development
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Kono:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kaula

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kaula County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kaula County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISP) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISP issued by the Kaula County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISP supersedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

It is our intention to explore all aspects of the project's probable effects in the EIS, but we would like to devote the bulk of our effort towards those issues that are of greatest concern. The list of concerns provided by the Planning Department in the EIS Notice of Determination provides a starting point, but you could help us concentrate on truly significant issues by indicating in writing the questions and topics you believe should be addressed. The more specific you can be, the better the chance that the EIS will provide the information you desire.

In addition to identifying any particular concerns you may have regarding the proposed Phase Two expansion, I would also appreciate it if you would

606 Coral Street, Honolulu, Hawaii 96813 Telephone (808) 521-5261 Telex BELFH 7430474
BCA LTD Principals: James R. Bell, Paul A. Florida, Raymond F. Cain, Joseph Verma, Jr., Thomas P. Papandrew
Founded in 1953 by Robert M. Bell and Walter K. Collins

answer the following questions relative to your Department's activities and/or responsibilities in the area. The information you provide will be used to assess the potential impacts of the proposed Phase Two.

1. Based on Section 59 of the Hawaii State Planning Act, which states that "Functional plans shall not be used as a guide or to implement state policy unless said plans shall have been approved by the legislature", we do not plan to address in the EIS the relationship between the functional plans and the proposed Phase Two project. Is this decision acceptable to the Department?
2. Do you foresee any possible conflicts between the proposed Phase Two and the policies and objectives of the Hawaii State Plan or the State's Coastal Zone Management Program? If so, would you please describe them?

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the request unless this is extended by the accepting agency. . . upon good cause shown. . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cranmer

Nancy Jo Cranmer

MJC:st
Attachment
cc: Kaula County Planning Department
Environmental Quality Commission
Princeville Development Corporation



DEPARTMENT OF PLANNING
AND ECONOMIC DEVELOPMENT

FROM: B. A. MOORE
HONOLULU, HAWAII
DATE: SEPTEMBER 1, 1982

Ms. Nancy Jo Cranmer
Page 2
September 1, 1982

September 1, 1982

Ref. No. 6480

Ms. Nancy Jo Cranmer
Belt Collins and Associates
606 Coral Street
Honolulu, Hawaii 96813

Dear Ms. Cranmer:

Subject: Environmental Impact Statement Preparation Notice
for Princeville Phase II, Princeville, Kauai

We have reviewed the subject preparation notice and have the following comments to offer with respect to the objectives and policies of the Hawaii Coastal Zone Management (CZM) Program.

Recreational Resources

CZM Policy: Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas; providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value.

The site plan depicts the development of a community park, near Kalihikai beach, which appears to be accessible only from an offsite road. The EIS should discuss potential impacts, particularly user conflicts, upon existing recreational uses of both Kalihikai and Anini beach that can be expected from the development of this new park, as well as any envisioned access improvements to it. We also support the proposal to assess potential impacts of increased beach and park uses from a regional perspective.

Scenic and Open Space Resources

CZM Policy: Insure 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.

CZM Policy: Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources.

The preparation notice discusses potential measures to protect scenic views from the highway and beaches. The EIS should elaborate upon any visual impacts of structural designs currently under consideration.

Coastal Ecosystems

CZM Policy: Preserve valuable coastal ecosystems of significant biological or economic importance.

CZM Policy: Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate State water quality standards.

The preparation notice suggests that anticipated impacts of the development on stream and marine biota will be minor because the area has historically been subjected to the severe impacts of agricultural uses. Currently, however, the site is in pasture use rather than active cultivation. Accordingly, the EIS should address the potential impacts of erosion and runoff from the initial and subsequent development phases upon existing stream and marine biota.

Economic Uses

CZM Policy: Concentrate in appropriate areas the location of coastal dependent development necessary to the State's economy; insure that coastal dependent development such as harbors and ports, visitor industry 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 direct the location and expansion of coastal dependent development 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: utilization of presently designated locations is not feasible; adverse environmental effects are minimized; and important to the State's economy.

The proposal will urbanize lands outside of areas presently designated for such use. The EIS should, therefore, substantiate why development of any presently designated urban lands in the region, which are owned by the Princeville Development Corporation, is unfeasible. Further,

Ms. Nancy Jo Cranmer
Page 3
September 1, 1982

some discussion should be devoted to assessing the potential economic importance of the project to the State. Such assessment might include the intended markets for the various units, and alternative ownership and management schemes especially as they relate to long term employment opportunities.

With respect to the two questions in your letter of July 22, 1982, concerning The Hawaii State Plan, we offer the following comments for your consideration:

Question 1: "Based on Section 59 of the Hawaii State Planning Act, which states that 'Functional plans shall not be used as a guide or to implement state policy unless said plans have been approved by the Legislature,' we do not plan to address in the EIS the relationship between the functional plans and the Phase two project. Is this decision acceptable to the Department?"

Response: It is true that State Functional Plans become effective only upon adoption by the Legislature. The provision in question [Sec. 226-59(a), HRS] serves to emphasize this point. It does not, however, necessarily preclude applicants from addressing, in an EIS, relevant provisions set forth in the State Plans approved by Governor Ariyoshi for use by State agencies. Subpart E, Section 1-42.d. of the State Environmental Impact Statement Regulations specifically requires that EIS' include:

"... Discussion of how the proposed action may conform or conflict with objectives and specific items of approved or proposed land use plans, policies, and controls, if any, for the area affected ..." (emphasis added)

Further, it should be noted that the Governor on May 3 of this year issued a proclamation establishing the 12 plans proposed for adoption by the 1982 Legislature as interim guidelines until such time that the Legislature adopted the functional plans. Accordingly, the plans are now being utilized by State agencies in the execution of their respective programs and activities. In view of the foregoing, we believe it would be appropriate for the EIS to examine the proposed Phase II project not only with respect to the goals, objectives, and policies, and Priority Directions of The Hawaii State Plan but also in terms of the approved 12 State Plans. While all of the plans may have some bearing on the project, our review of the Environmental Assessment indicates that the plans dealing with Agriculture, Transportation, Water Resources Development, Tourism, Recreation and Housing may relate to the proposal more directly than others. Attached are copies of the 12 plans.

Question 2: "Do you foresee any possible conflicts between the proposed Phase two and the policies and objectives of The Hawaii State Plan or the State's Coastal Zone Management Program? If so, would you please describe them?"

Ms. Nancy Jo Cranmer
Page 4
September 1, 1982

Response: In the preparation of this EIS, it is recommended that particular attention be focused on Part III of The Hawaii State Plan, Priority Directions. The proposed Phase II project, as described, is potentially in accord with a number of Priority Direction statements, particularly those set forth under Section 226-103(b), priority actions for the visitor industry, e.g.:

Section 226-103(b)(3) - Maintain or enhance the quality of existing and future hotels and resort destination areas which conform with regional carrying capacities and state policies providing for adequate shoreline setbacks and beach access.

Section 226-103(b)(10) - Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.

At the same time, the project -- which involves a major conversion of lands to urban classifications to accommodate the proposed use -- may be at odds with other State Plan Priority Directions, such as those relating to regional growth distribution [Section 226-104(c)] and the use of Hawaii's land resources [Section 226-105], e.g.:

Section 226-105(c) - Seek to accommodate urban growth in existing urban areas while maintaining agricultural lands in agricultural designation.

Section 226-104(c)(4) - Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimal.

Hopefully, the EIS can present a balanced discussion as to how the proposed action may complement as well as potentially "conflict" with these policy guidelines provided in The Hawaii State Plan. In areas where the project could possibly be at variance with the State Plan, additional discussion should be provided as to whether some differences can be reconciled and, if not, why the proposal should proceed notwithstanding such differences.

Thank you for this opportunity to comment. Should any questions arise, please feel free to contact us at any time.

Sincerely,

Hiideto Kono

Enclosures

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

March 14, 1983
83-293

Mr. Hideto Kono, Director
Department of Planning and
Economic Development
P. O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Kono:

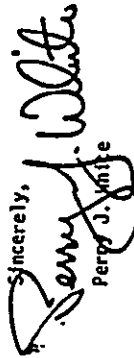
Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Thank you for your letter of September 1, 1982 (reference 6480) regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kauai. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

As per your request, the draft EIS does include an analysis of the proposed project's consistency with various provisions of the 12 functional plans, as well as with provisions of the Hawaii State Plan and the State's Coastal Zone Management Program.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,

Perry J. White

PJM/JMK:tt

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

606 Coral Street, Honolulu, Hawaii 96813 Telephone (808) 521-5161 Telex B1111 7410274
BCA LTD. Principals: James R. Bell, Paul M. Hama, Raymond F. Cam, Joseph Vieira, Jr., Thomas P. Papanikolaou
Founded in 1953 by Robert M. Bell and Walter K. Collins

July 22, 1982
82-1237

Mr. Ryokichi Higashionoma, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISPN) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISPN issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISPN supersedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

It is our intention to explore all aspects of the project's probable effects in the EIS, but we would like to devote the bulk of our effort towards those issues that are of greatest concern. The list of concerns provided by the Planning Department in the EIS Notice of Determination provides a starting point, but you could help us concentrate on truly significant issues by indicating in writing the questions and topics you believe should be addressed. The more specific you can be, the better the chance that the EIS will provide the information you desire.

In addition to identifying any particular concerns you may have regarding the proposed Phase Two expansion, I would also appreciate it if you would

answer the following questions relative to your Department's activities and/or responsibilities in the area. The information you provide will be used to assess the potential impacts of the proposed Phase Two.

1. We are aware of the proposed improvement of Kuhio Highway from Kaliahwal to the Hanalei fire station and of the proposed Hanamaulu cutoff road. Given the fact that peak-hour traffic is approaching the highway capacity in the Waialua area, does the Department have any plans for road improvements in this area or elsewhere on Kuhio Highway? If so, would you please describe the planned improvements and give us the proposed construction time frame?
2. Please refer to Figure 2 on page 6 of the enclosed Environmental Assessment for a preliminary layout of the proposed intersection with Kuhio Highway. We plan to construct a simple T-intersection with the existing Kuhio Highway near the proposed golf clubhouse. When the State improves Kuhio Highway, we assume that the State will construct left-turn storage, acceleration, and deceleration lanes as necessary for all three proposed intersections. The temporary T-intersection would be abandoned when the improvements are made. Is this assumption correct?
3. Has the State made any traffic studies on Kuhio Highway? If so, would you please send us a copy?
4. What are the most recent air traffic counts at Princeville Airport?
5. What is the estimated capacity of Princeville Airport? How is the capacity determined?
6. Would you also please provide a brief description of the existing facilities and operational characteristics of the airport?
7. Are there any restrictions, policies, or special conditions that you are aware of that would limit expansion of Princeville Airport?

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the request unless this is extended by the accepting agency. . . . Upon good cause shown . . . it is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cranmer

Nancy Jo Cranmer

MJC:st
Attachment
cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation

REVIEWS
SEP - 1982



311, COLLINS & ASSOCIATES
1405 KALANANAKU DRIVE
HONOLULU, HAWAII 96813
SEP 21 1982

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
1405 KALANANAKU DRIVE
HONOLULU, HAWAII 96813

STP 8.8518

August 26, 1982

Ms. Nancy Jo Cranmer
Belt, Collins and Associates
606 Coral Street
Honolulu, Hawaii 96813

Dear Ms. Cranmer:

Consultation Phase EIS, Proposed
Phase II, Expansion of Princeville Resort, Kauai

The following is in response to your letter of July 22, 1982. It is our understanding that you are in the consultation phase and that the stipulation of 30 days is not applicable.

The following are in response to your questions:

1. The Department is proposing construction of a passing lane from Hanamaulu to Waialua, construction being scheduled to start in late 1984.
2. The T-intersection referred to in your letter should be channelized at the time it is constructed. The developer must provide the left-turn storage, acceleration, and deceleration lanes. It is not correct to assume that the T-intersection would be abandoned when the improvements are made.
3. Traffic data are contained in the Draft EIS and the Final EIS for the proposed Kauai Belt Road, Kalihiwai to Princeville Section. A copy of each of the documents was previously transmitted to "Princeville at Hanalei".
4. Princeville Airport is a privately owned and managed airport and is not within the jurisdiction of the Department of Transportation. Questions regarding the airport should be directed to the officials at Princeville.

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

STP 8.8518

Ms. Nancy Jo Cranmer
August 26, 1982
Page 2

March 14, 1983
83-294

One item presented in the EA which may require further analysis in the EIS is aircraft noise and land use compatibility. Developments in the vicinity of Princeville Airport should be assessed in terms of their compatibility with the noise levels generated by current and future aircraft operations at the Airport.

Very truly yours,

Ryokichi Higashionna

Ryokichi Higashionna
Director of Transportation

Mr. Ryokichi Higashionna, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Higashionna:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Thank you for your letter of August 26, 1982 (reference STP 8.8518) regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kauai. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,
Perry J. White
Perry J. White

PJM/JMK:lt

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

608 Coral Street, Honolulu, Hawaii 96813 Telephone (808) 521-5361 Telex BELL117410474
BCA LTD. Principals: James R. Bell, Paul M. Honda, Raymond F. Cain, Joseph Verria, Jr., Thomas P. Pajonin
Founded in 1953 by Robert M. Belt and Walter K. Collins

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

Ms. Jacqueline Parnell, Director
Office of Environmental Quality Control
State of Hawaii
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Parnell:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISPN) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISPN issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISPN supersedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

You/your organization commented on the project as it was previously conceived in a letter dated March 13, 1980. To the extent that they are still applicable, the concerns you expressed in it will be addressed in the EIS.

If there are any additional comments you wish to make at this time, we would appreciate hearing from you.

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the

request unless this is extended by the accepting agency. . . upon good cause shown . . . it is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cranmer
Nancy Jo Cranmer

HJC:st
Attachment
cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

Jacqueline Parnell
Director
TELEPHONE NO
548 8815



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
540 HALEKUAUWA ST
ROOM 201
HONOLULU, HAWAII 96813

August 17, 1982

Ms. Nancy Jo Cranmer
Belt, Collins & Associates
606 Coral Street
Honolulu, Hawaii 96813

Dear Ms. Cranmer:

Subject: Environmental Assessment for the Proposed Phase Two
Expansion of Princeville Resort, Kauai

We have reviewed your environmental assessment and submit
our comments for your consideration:

1. A project of this magnitude will have great social and
economic impact and we believe an expansion of the
discussion in this area is warranted. Of primary concern
is how this development will affect surrounding land
values and consequently the price of housing.
2. The environmental assessment does not cover the method
of household refuse removal that will be utilized. We
trust that the draft environmental impact statement will
cover this problem.

Thank you for the opportunity to comment on your environmental
assessment. We look forward to reviewing your draft EIS.

Sincerely,

Jacqueline Parnell
Director

March 14, 1983
83-295

Ms. Jacqueline Parnell, Director
Office of Environmental Quality Control
State of Hawaii
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Parnell:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Thank you for your letter of August 17, 1982 regarding the Environmental
Impact Statement Preparation Notice for the proposed Phase Two development of
the Princeville Resort on the North Shore of Kauai. We appreciate the time
spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in
preparing the draft Environmental Impact Statement, which should be filed
within the month. We urge you to read the draft EIS carefully to evaluate the
adequacy with which we have addressed issues and concerns raised in your
letter and/or of interest to your agency.

We look forward to your further participation in the EIS process and to
your comments on the draft EIS.

Sincerely,
Perry J. White
Perry J. White

PJM/MK:lt

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

606 Coral Street, Honolulu, Hawaii 96813 Telephone: (808) 521-5361 Telex: BILHII 7410474
BCA LTD, Principals: James R. Belt, Paul M. Hirono, Raymond F. Cain, Joseph Verra, Jr., Thomas P. Pajunen
Founded in 1953 by Robert M. Belt and Walter K. Collins

**BILL COLLINS
& ASSOCIATES**

Engineers - Planners
Architects - Interiors

July 23, 1982
92-1209

Mr. Jeremy Harris, Chairman
Kauai County Council
4396 Rice Street
Lihue, Hawaii 96766

Dear Mr. Harris:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISPN) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISPN issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISPN supersedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

It is our intention to explore all aspects of the project's probable effects in the EIS, but we would like to devote the bulk of our effort towards those issues that are of greatest concern. The list of concerns provided by the Planning Department in the EIS Notice of Determination provides a starting point, but you could help us concentrate on truly significant issues by indicating in writing the questions and topics you believe should be addressed. The more specific you can be, the better the chance that the EIS will provide the information you desire.

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses

to requests for comments must be made within 30 days of the receipt of the request unless this is extended by the accepting agency. . . upon good cause shown . . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project or do not fully understand the kinds of input which would be most helpful, please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cranmer
Nancy Jo Cranmer

NJC:st
Attachment
cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation



COUNTY COUNCIL

County of Kauai
4396 Rice Street
Lihue, Hawaii 96766 — Tel. 245-4771

SELEMY HARRIS, Chairman
DUNNIE B. YASUDA, Vice Chairman
BILL KAPO ASING
JESSE FUKUSHIMA
FERDIE HEW
EDWARD SARITA
ROBERT YOTSUDA

August 5, 1982

Ms. Nancy Jo Crummer
Belt, Collins & Associates
606 Coral Street
Honolulu, Hawaii 96813

Dear Nancy:

Thank you for sending me a copy of the Environmental Impact Statement for Phase II of the Princeville development.

I've informed my colleagues about this matter and they will contact you should they have any questions or comments at this time.

X-32

Mahalo,

JEREMY HARRIS
Council Chairman

BELT, COLLINS
& ASSOCIATES
Engineering • Planning
Landscape Architecture

March 14, 1983
83-296

The Honorable Raymond Duvauchelle
Chairman, Kauai County Council
4396 Rice Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Duvauchelle:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Last July, Belt, Collins & Associates wrote to all members of the Kauai County Council, advising them of the Princeville Development Corporation's desire for a General Plan amendment to develop the proposed 420-acre Phase Two of the Princeville Resort. A copy of the Environmental Impact Statement Preparation Notice (EISP) was also sent to members at that time.

We would like to take this opportunity both to thank the Council members for reviewing the EISP and also to inform them that the draft Environmental Impact Statement for the proposed Princeville Phase Two project will soon be available.

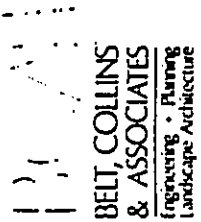
We look forward to the Council's further participation in the EIS process and to Council members' comments on the forthcoming draft EIS.

Sincerely,

PJW/JMK:lt

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation
Mr. Jeremy Harris, Kauai County Council

606 Coral Street, Honolulu, Hawaii 96813 Telephone: (808) 521-5363 Telex: B11117410474
BCA LTD. Principals: James R. Belt, Paul M. Harris, Raymond F. Carr, Joseph Ventra, Jr., Thomas P. Papadon
Founded in 1953 by Robert M. Belt and Walter K. Collins



**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

July 22, 1982
82-1242

Mr. Henry Morita, County Engineer
Kauai County Department of Public Works
3021 Uni Street
Lihue, Hawaii 96766

Dear Mr. Morita:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISPN) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISPN issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISPN supersedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

It is our intention to explore all aspects of the project's probable effects in the EIS, but we would like to devote the bulk of our effort towards those issues that are of greatest concern. The list of concerns provided by the Planning Department in the EIS Notice of Determination provides a starting point, but you could help us concentrate on truly significant issues by indicating in writing the questions and topics you believe should be addressed. The more specific you can be, the better the chance that the EIS will provide the information you desire.

In addition to identifying any particular concerns you may have regarding the proposed Phase Two expansion, I would also appreciate it if you would

answer the following questions relative to your Department's activities and/or responsibilities in the area. The information you provide will be used to assess the potential impacts of the proposed Phase Two.

1. What is the status of the proposed trash transfer station at Princeville? If a preliminary site plan is available, would you please send us a copy? What will be the capacity of the transfer station and where will the waste ultimately be disposed of? What areas is it intended to serve?
2. What is the existing waste load being handled at the Princeville sanitary landfill? Would you please list the solid waste generation factors (cu. yd. per person or unit) used by your department to project solid waste disposal loads?
3. In preliminary discussions with Princeville Development Corporation (PDC), the Planning Department indicated that a community park facility at Princeville would better serve local recreational needs than another beach-oriented park. To meet the County's park dedication requirements, therefore, PDC is proposing to set aside the appropriate acreage for a community park on the mauka side of Anini Road; refer to Figure 2 on page 6 of the Environmental Assessment for the location. Is the proposed location acceptable to the Parks Division? If not, would you please suggest other acceptable locations and provide a brief explanation of the criteria used to select such locations?

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the request unless this is extended by the accepting agency. . . upon good cause shown. . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

SEP 15 1982

SEP 15 1982

BILLYE BUNNING-KIRK
COUNTY ENGINEER
HONOLULU 96813
CLAY BAGAWA
SFP COUNTY ENGINEER
HONOLULU 96813



EDUARDO E MALANI
SFP

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
4376 KICE STREET
LIPAA, KAUAI, HAWAII 96744
August 30, 1982

Belt, Collins & Associates, Ltd.
606 Coral Street
Honolulu, HI 96813

ATTENTION: Ms. Nancy Jo Cranmer

RE: ENVIRONMENTAL IMPACT STATEMENT FOR PROPOSED
PHASE II EXPANSION OF PRINCEVILLE RESORT, KAUAI

We have completed our review of your EIA dated June 28, 1982 and offer the following comments:

1. The report mentions that the streets in Phase II will be constructed to conform to the standards of the Phase I Development. County Subdivision Ordinance requires streets, whether public or private, to be constructed to County standards. The statement is inappropriate since the street standard used in the Phase I Development does not conform to the required standard.
2. The report mentions that Kuhio Highway would be at capacity between Kalihiva Bridge and Kahaku Road which is the frontage of the Phase II Development. The EIS should discuss this matter in detail. Among the items of concern are as follows:
 - a. Traffic generation rates and its impact to Kuhio Highway especially with regards to capacity.
 - b. Mitigating measures to alleviate capacity problems.
 - c. The proposed street system for Phase II utilizes Kuhio Highway as the circulatory roadway to obtain access to the various homesites within the development. Traffic that is generated from the development impacts on the capacity of Kuhio Highway. Also, new intersections provide points of traffic conflict which affect motorist safety as well as congestion which reduces street capacity.

We believe that measures must be considered to alleviate traffic congestion and capacity problems along Kuhio Highway rather than to aggravate the traffic problem. Alternatives besides upgrading of

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cranmer
Nancy Jo Cranmer

NJC:st
Attachment
cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation

Kuhio Highway may be to develop a circulation system within the Princeville Development. This network of road minimizes the usage of Kuhio Highway especially to various destination areas within the Princeville Complex. Our recommendation is to pursue the development of a roadway circulation system that connects the entire Princeville Development.

3. In planning for the siting of the existing Princeville Sewage Treatment Plant, it was our understanding that the consultant for Eagle County Corp. projected a sewage flow of 1.5 mgd from Phase I. Your EIA mentions a fully developed Phase I flow of 0.9 mgd. This reduction in flow must be addressed and documented in the EIS.

As noted in your EIA, the existing sewerage facilities are operated and maintained by KCPIC. It is our understanding that the KCPIC also owns the facilities. We would, therefore, question Princeville's rights if extension of the sewerage system to encompass Phase II is made without the concurrence of the KCPIC. This issue must be addressed in the EIS.

4. Design of a municipal refuse transfer station has been initiated and should be completed by the end of 1982. When constructed and in use, the station will most likely have two (2) 75 cubic yard capacity trailers to receive incoming refuse. When filled, each trailer will be moved out and an empty one left in its place. The full trailers will then be hauled to our island-wide landfill, which to date has not been selected but which will most likely be at Kekaha. The station will accommodate the North Shore area (Kaena to Kilauea) and is designed to accommodate a population projection of 9,000 people in the year 2000.

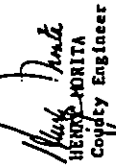
Hanalei Landfill is handling approximately 25 tons of refuse a day excluding demolition/construction debris. Per capita generation rates vary from 4 lb./day to 5.5 lb./day.

Although the refuse quantities and projection include those that are handled by Kaunoi Disposal, current policies prohibit private refuse haulers from disposing at the transfer station. Construction debris are also prohibited at the transfer station.

5. Regarding the community park mentioned in your letter and as shown on page 6 of your EIA, the proposed location is not appropriate for a community type park. A community park should be closer to the population center for which the park is intended.

Additional park space within the proximity of the existing Anini Beach Park should be beach-oriented. Extension of the existing park eastward may be an option.

Thank you for the opportunity to comment on your EIA. We apologize for the lengthy review period.


HENRY ADRITA
County Engineer

March 14, 1983
83-297

Mr. Lawrence Kitamura, County Engineer
Kauai County Department of Public Works
3021 Umi Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Kitamura:

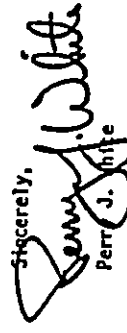
Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Thank you for your department's letter of August 30, 1982 regarding the Environmental Impact Statement Preparation Notice for the Proposed Phase Two development of the Princeville Resort on the North Shore of Kauai. We appreciate the time spent in reviewing this document.

The comments and information which were provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

Several points raised in your letter merit reply at this time, as well as in the EIS. The statement about the standards of the Phase Two streets was well taken: these streets will be constructed to County standards and not to Phase One standards. Regarding the issue of park land dedication, this has yet to be resolved, and the Princeville Development Corporation will be negotiating further with the County on this matter.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,

Perry J. Rife

PJM/JMK:lt

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

July 22, 1982
82-1241

Chief Paul Silva
Kauai County Fire Department
4223 Rice Street
Lihue, Kauai, Hawaii 96766

Dear Chief Silva:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville Phase II project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISP/N) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISP/N issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISP/N supercedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

It is our intention to explore all aspects of the project's probable effects in the EIS, but we would like to devote the bulk of our effort towards those issues that are of greatest concern. The list of concerns provided by the Planning Department in the EIS Notice of Determination provides a starting point, but you could help us concentrate on truly significant issues by indicating in writing the questions and topics you believe should be addressed. The more specific you can be, the better the chance that the EIS will provide the information you desire.

In addition to identifying any particular concerns you may have regarding the proposed Phase Two expansion, I would also appreciate it if you would

KAIHAWAII COUNTY, HAWAII
Kauai County Planning Department
4223 Rice Street, Lihue, Kauai, Hawaii 96766
Telephone: (808) 335-5101
Fax: (808) 335-5102
E-mail: kcp@kai.net

answer the following questions relative to your Department's activities and/or responsibilities in the area. The information you provide will be used to assess the potential impacts of the proposed Phase Two.

1. Would you provide a description of the Princeville fire station's primary service area, of the number of people who staff it, its hours of operation, and of the equipment that is based there?
2. Do you foresee any problems serving the proposed Phase Two? If so, would you please describe them and indicate any measures that might be taken to either avoid or remedy them?

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the request unless this is extended by the accepting agency. . . upon good cause shown. . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cranmer

Nancy Jo Cranmer

HJC:st

Attachment

cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation
Peat, Marwick, Mitchell & Co.

EDUARDO E. MANAPIT
Mayor



COUNTY OF KAUAI
FIRE DEPARTMENT
4396 ANTE STREET
1908, KAUAI, HAWAII 96744

September 1, 1982

PAUL SILVA
Fire Chief

Ms. Cramer
September 1, 1982
Page 2

Ms. Nancy Jo Cramer
Belt, Collins, & Associates
606 Coral Street
Honolulu, Hawaii 96813

Re: Environmental Impact Statement
for the Proposed Phase Two Expansion
of Princeville Resort, Kauai

Dear Ms. Cramer:

This is in reply to your letter of July 22 concerning the above subject and the questions you had.

Hanalei Fire Station is manned twenty-four hours a day by a four man crew working a fifty-six hour work week over a nine week cycle. The fire company is responsible for all fire and rescue incidents from Ke'e Beach Park in Haena (including Lumsdai, Hanalei, Princeville, Kilauea) to north of Holoua Road. In addition, the fire company responds to all advance life support medical incidents with the ambulance stationed at the Princeville Employee Housing.

The station is assigned two engine pumps, a 1976 American La France 1500 gallon per minute pumper and a 1945 Seagrave 750 gallon per minute pumper. The Seagrave pumper is in serviceable condition, but outdated by today's standards. It is utilized as a back up unit and relocated to Hanalei Town whenever flood conditions threaten to render the highway between Princeville and Hanalei town impassable.

The proposed Phase II development at Princeville will increase the population in the area and would definitely increase the need for additional public service from the Fire Department.

1. A combination pumper/ladder truck should be made available to the Fire Department for structural fires in condominiums and hotels. The ladder pipe at the top of the ladder can be used to protect exposures as well as combatting fires above the second floor buildings.

2. The Fire Department has submitted a justification for a mini-pumper and is presently awaiting approval for fifty percent funding for rural fire protection from the Federal Government. This pumper can be utilized in the Hanalei district because of its size and maneuverability to combat incipient brush fires or to initially combat small structural fires. It can also be equipped and used as an emergency rescue vehicle.
3. A fiberglass or Zodiac rubber boat is needed in this district to respond to all water rescue incidents from Holoua to the Napali Coast.
4. Manpower will have to be increased to include at least twelve additional personnel to operate the proposed equipment and for rescue work.
5. The Hanalei Fire Station apparatus bay presently can accommodate two engine pumps. The proposed equipment will require the expansion of the bays to house all these equipment.

It is my desire that the projection for the Hanalei district be completed within the next ten years and no more than fifteen years. All items will be budgeted according to the goals and objectives of the Fire Department.

If you have any questions, please write or call me at 245-4721.

Yours truly,

Paul F. Silva
Fire Chief

ME:lp

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

March 14, 1983
83-298

Chief Paul Silva
Kaua'i County Fire Department
4223 Rice Street
Lihue, Kaua'i, Hawaii 96766

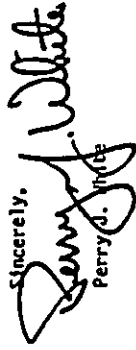
Dear Chief Silva:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kaua'i

Thank you for your letter of September 1, 1982 regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kaua'i. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,

Perry J. White

PJW/JMK:lt

cc: Planning Department, County of Kaua'i
Environmental Quality Commission
Princeville Development Corporation

606 Canal Street, Honolulu, Hawaii 96813 Telephone (808) 521-5361 Telex BE1111 7430474
BCA LTD Principals: James R. Belt, Paul M. Hume, Raymond F. Cain, Joseph Verro, Jr., Thomas P. Papunkeow
founded in 1953 by Robert M. Belt and Walter K. Collins

**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

Chief Roy Hiram
Kauai County Police Department
3060 Uai Street
Lihue, Kauai, Hawaii 96766

Dear Chief Hiram:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISPN) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISPN issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISPN supersedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

It is our intention to explore all aspects of the project's probable effects in the EIS, but we would like to devote the bulk of our effort towards those issues that are of greatest concern. The list of concerns provided by the Planning Department in the EIS Notice of Determination provides a starting point, but you could help us concentrate on truly significant issues by indicating in writing the questions and topics you believe should be addressed. The more specific you can be, the better the chance that the EIS will provide the information you desire.

In addition to identifying any particular concerns you may have regarding the proposed Phase Two expansion, I would also appreciate it if you would

answer the following questions relative to your Department's activities and/or responsibilities in the area. The information you provide will be used to assess the potential impacts of the proposed Phase Two.

1. Would you give a brief comparison of crime in the Princeville/North Shore area with the rest of Kauai? Would you please describe any changes in the crime characteristics of the North Shore that you might expect from expansion of Princeville resort in Phase Two?
2. What police protection is currently available at Princeville in terms of staff, facilities, hours of operations, etc.?
3. Do you foresee a need for expansion of police protection with the future growth of the area without the Phase Two project? If so, please specify your projected needs.
4. Do you foresee a need for expanded staff or operations because of the Phase Two project? If so, please specify your projected needs.

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the request unless this is extended by the accepting agency. . . upon good cause shown. . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cranmer

Nancy Jo Cranmer

Attachment
cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation
Peat, Harwick, Mitchell & Co.



POLICE DEPARTMENT

COUNTY OF KAUAI
3080 UMI STREET
LIHUE, HAWAII 96768
TELEPHONE 248-4721

OUR REFERENCE
YOUR REFERENCE



ADDRESS ALL
COMMUNICATIONS TO
ROY K. HIRAH
CHIEF OF POLICE

property as our jurisdiction does not extend into private roadways. Perhaps some concerns might be considered to expand a private security firm for the area.

We hope the information provided is adequate to help make a proper assessment. Call on us again should further information be required.

Sincerely yours,

Belt, Collins, & Associates
Attention: Nancy Jo Cramer
606 Coral Street
Honolulu, Hawaii 96813

Dear Ms. Cramer:

We have reviewed the project proposal and Environmental Assessment for the Princeville Phase II project and am happy to provide you with information to help assess the potential impact of the project.

Generally, our comparative figures do not reflect incidents confined to Princeville alone, but rather, the entire judicial district of Ikahele. The district is comprised of a population of approximately 2,664 (1980 census) and encompasses approximately 90 square miles. In crime trend statistics, our 1981 data indicates a comparative average monthly crime rate of 12 percent. A graph chart is attached to reflect the trend of our five judicial districts with Ikahele. The crime trend in Ikahele with an 18.8 per capita ratio may appear higher than other districts with a larger populace. However, the Phase I project is not the sole contributor to any rising trends.

It is difficult for us to project if the Phase II expansion will cause any change to crime characteristics in the North Shore area. We submit that some variables are predictable because of the expansion, however, crime trends are difficult to measure until more substantial factors are evaluated and become predictable.

Currently, a police substation is situated on land dedicated to the County of Kauai by the Princeville Corporation. It is operated on a 24 shift schedule and is accessible to the general public from Kuhio Highway. Patrol officers are dispatched to complaints from central headquarters in Lihue, via police radio communications. The substation is staffed by twelve police officers and three civilian personnel who attend to clerical duties. Their patrol responsibility encompasses approximately 150 square miles.

We do not foresee a need for expansion in the immediate future as our current service appears to be more than adequate. We express some concern about traffic enforcement within the confines of the Princeville

attachments

cc: Peat, Marwick, Mitchell & Co.

ROY K. HIRAH
Chief of Police

DISTRIBUTION OF ACTUAL OFFENSES BY DISTRICT

DECEMBER, 1981

	TOTAL	LIHUE	WAIHEA	KOLOA	KAPAHAU	HANAIEI
Murder & Non-negligent Manslaughter						
Manslaughter by Negligence	1			1		
Forcible Rape	1				1	
Robbery	3	1	1			1
Aggravated Assault	71	16	6	9	29	11
Burglary--Breking & Entering	133	35	28	24	27	19
Larceny-Theft	7	2	1		1	3
Motor Vehicle Theft	216	54	36	34	58	34
Total - Part I						
Other Assaults	63	14	9	6	21	13
Arson	4	3	1			
Forgery & Counterfeiting	27	14	1	4	6	2
Fraud						
Embezzlement						
Stolen Property: Buying, Receiving, Possessing	25	8	1	5	10	1
Vandalism	2		1		1	
Weapons	1					
Prostitution & Commercialized Vice	4	1				
Sex Offenses	34	10	6	2	1	1
Narcotic Drug Laws	2			4	14	
Gambling			1	1		
Offenses Against Family & Children	28	7	1	2	16	2
Driving Under The Influence	4				3	1
Liquor Laws						
Drunkennes	2	1			1	
Disorderly Conduct						
Vagrancy						
All Other Offenses	65	23	14	6	16	6
Total - Part II	261	81	35	30	89	26
TOTAL - Parts I & II	477	135	71	64	147	60

COMPARATIVE SUMMARY OF ACTUAL OFFENSES

DECEMBER, 1981

PART I OFFENSES	ACTUAL OFFENSES				PERCENT CLEARED	
	This Month	Same Month Last Year	This Year to Date	Same Period Last Year	This Year to Date	Same Period Last Year
1. CRIMINAL HOMICIDE						
a. Murder and Non-negligent Manslaughter				1	+100.0	200.0
b. Manslaughter by Negligence						
TOTAL	1	2	10	21	-52.4	33.3
2. FORCIBLE RAPE						
a. Rape by Force	1	1	5	15		
b. Attempts to Commit Forcible Rape	1	1	5	6		
TOTAL	2	2	10	21		
3. ROBBERY						
a. Firearm	1	1	29	15	+93.3	40.0
b. Knife or Cutting Instrument			9	7		
c. Other Dangerous Weapon			5	2		
d. Strong arm (Hands, Fists, Feet, etc.)	1	1	10	4		
TOTAL	2	2	44	28		
4. ASSAULT						
a. Firearm	66	75	849	658	+29.0	28.4
b. Knife or Cutting Instrument	2	1	13	16		
c. Other Dangerous Weapon	1	1	13	14		
d. Hands, Fists, Feet, etc. - Aggravated Injury			24	16		
e. Other Assaults - Simple, Not Aggravated	63	75	797	600		
TOTAL	71	51	667	730	-8.6	14.5
5. BURGLARY						
a. Forcible Entry	36	35	344	432		
b. Unlawful Entry - No Force	28	13	270	242		
c. Attempted Forcible Entry	7	3	53	56		
TOTAL	71	51	667	730		
6. LARCENY - THEFT						
a. Autos	133	117	1,660	1,672		
b. Motor Vehicle Theft	7	15	85	140	-39.3	22.9
c. Trucks and Buses	7	9	58	90		
d. Other Vehicles	6	6	13	16		
TOTAL	153	147	1,816	1,918	+2.0	17.2
7. GRAND TOTAL	261	261	3,302	3,237		

12

ACTUAL OFFENSES AND CLEARANCE

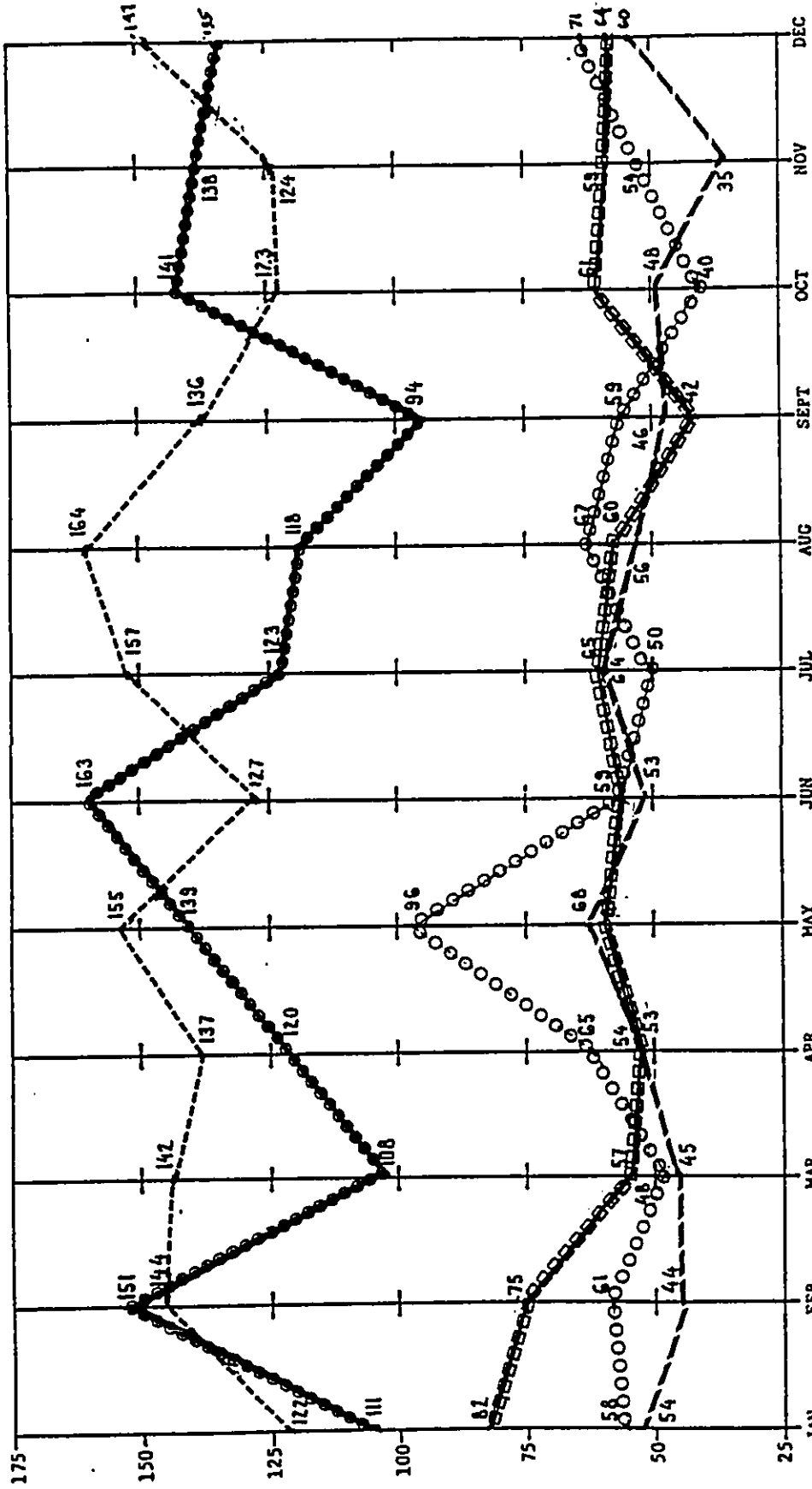
DECEMBER, 1981

PART I OFFENSES	Actual Offenses	Offenses Cleared	Percent Cleared
Murder and Non-negligent Manslaughter	0	0	0.0
Manslaughter by Negligence	0	0	0.0
Forcible Rape	1	1	100.0
Robbery	1	0	0.0
Aggravated Assault	3	*4	133.3
Burglary--Breaking or Entering	71	5	7.0
Larceny-Theft	133	24	18.0
Motor Vehicle Theft	7	4	57.1
Total	216	38	17.6
PART II OFFENSES			
Other Assaults	63	40	63.5
Arson	4	0	0.0
Forgery & Couterfeiting	0	0	0.0
Fraud	27	5	18.5
Embezzlement	0	0	0.0
Stolen Property; Buying,Receiving,Possessing	0	0	0.0
Vandalism	25	3	12.0
Weapons; Carrying, Possessing, etc.	2	2	100.0
Prostitution & Commercialized Vice	1	0	0.0
Sex Offenses	4	2	50.0
Narcotic Drug Laws	34	23	67.6
Gambling	2	0	0.0
Offenses Against Family & Children	0	0	0.0
Driving Under the Influence	28	28	100.0
Liquor Laws	4	4	100.0
Drunkness	0	0	0.0
Disorderly Conduct	2	2	100.0
Vagrancy	0	0	0.0
All Other Offenses	65	39	60.0
Total	261	148	56.7
GRAND TOTAL	477	186	39.0

*PREVIOUS MONTH'S CLEARANCE

CRIME TREND BY DISTRICTS

1981
YEAR



LEGEND: (1) Lihue:----- (2) Waimea:----- (3) Koloa:----- (4) Kauai:----- (5) Hanalei:-----

**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

March 14, 1983
83-299

Chief Roy Hiram
Kaua'i County Police Department
3060 Umi Street
Lihue, Kaua'i, Hawai'i 96766

Dear Chief Hiram:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kaua'i

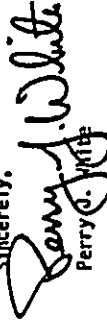
Thank you for your letter of July 30, 1982 regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kaua'i. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

In your letter, you mentioned the advisability of a private security firm being hired to enforce traffic rules within the proposed Phase Two, since your jurisdiction does not extend to private roads. This would be a matter for decision by the new Phase Two community association; however, it is currently expected that residents and property owners there would be likely to desire the sort of private security force which you suggested.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,


Perry J. White

PJM/JMK:lt

cc: Planning Department, County of Kaua'i
Environmental Quality Commission
Princeville Development Corporation

606 Coral Street, Honolulu, Hawaii 96813 Telephone (808) 521-5161 Telex 811711 7411174
BCA LTD. Principals: James R. Belt, Paul M. Collins, Raymond E. Cain, Joseph Verrill, Jr., Thomas P. Pajuniew
Founded in 1953 by Robert M. Belt and Walker K. Collins

**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

July 22, 1982
82-1243

Mr. Raymond Sato,
Manager and Chief Engineer
Kauai County Water Department
4398 Pua Lake
Lihue, Kauai, Hawaii 96766

Dear Mr. Sato:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC), a wholly-owned subsidiary of Consolidated Oil and Gas, Inc. of Denver, Colorado is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase I area. This Princeville "Phase II" project would involve the creation of improved lots for approximately 1240 single-family and 420 resort condominium units.

Most of the Phase II area is already designated for urban use by the Kauai County General Plan. However, in order to implement the project as it is now configured, a General Plan amendment is being sought. On July 7, 1982 the Kauai County Planning Department determined that an environmental impact statement (EIS) would be necessary for the undertaking and filed an Environmental Impact Statement Preparation Notice (EISPN) with the State Environmental Quality Commission as provided for by Chapter 343, Hawaii Revised Statutes and the Commission's EIS Regulations.

Copies of the EISPN issued by the Kauai County Planning Department and the environmental assessment on which it was based are attached to this letter. Please note that the EISPN supercedes an earlier notice dated October 30, 1979 which covered much of the same land but which involved a significantly different type and scale of development. The environmental assessment provides a brief description of the proposed Phase II project and the existing environment which it would affect; it also summarizes the major impacts which must be addressed in the EIS.

It is our intention to explore all aspects of the project's probable effects in the EIS, but we would like to devote the bulk of our effort towards those issues that are of greatest concern. The list of concerns provided by the Planning Department in the EIS Notice of Determination provides a starting point, but you could help us concentrate on truly significant issues by indicating in writing the questions and topics you believe should be addressed. The more specific you can be, the better the chance that the EIS will provide the information you desire.

In addition to identifying any particular concerns you may have regarding the proposed Phase Two expansion, I would also appreciate it if you would

answer the following questions relative to your Department's activities and/or responsibilities in the area. The information you provide will be used to assess the potential impacts of the proposed Phase Two.

1. Would you please provide a brief description of the County's existing water system--its capacity, the land uses it currently serves, current water demand, and any future water commitments?
2. On pages 7 and 21 of the enclosed Environmental Assessment, it notes that irrigation water for the proposed community park would be taken from the County's water system. Would you please confirm that the County's system can service this additional water demand?

As you probably know, the State Environmental Quality Commission's Environmental Impact Statement Regulations stipulate that written responses to requests for comments must be made within 30 days of the receipt of the report unless this is extended by the accepting agency. . . upon good cause shown. . . It is our hope that you will make every effort to initiate your contact with us within the prescribed time period. This will insure that no issues are given short shrift simply because they are raised belatedly.

If all goes as planned, it is expected that the environmental impact statement will be available in December, 1982. At that time, the document will be circulated for public review and comment. If this consultation process works as we intend it should, the report will provide all of the technical information necessary for a judgment to be made regarding the acceptability of the proposed project on environmental grounds. If, however, you find there are issues that have not been covered in sufficient depth, this final review process will provide you with an opportunity to have the omissions corrected in the revised EIS.

If you have any questions regarding the project please call me at 521-5361. I would be more than happy to provide any information that I can.

Sincerely,

Nancy Jo Cranmer

Nancy Jo Cranmer

HJC:st

Attachment

cc: Kauai County Planning Department
Environmental Quality Commission
Princeville Development Corporation

DEPARTMENT OF WATER

COUNTY OF KAUAI
P. O. BOX 1700
LIHUE, HAWAII 06760

Belt, Collins & Associates -2- August 12, 1982

August 12, 1982

Belt, Collins & Associates
745 Fort Street, Suite 514
Honolulu, HI 96813

Attention: Ms. Nancy Jo Cranmer

RE: Environmental Impact Statement for the Proposed Phase
Two Expansion of Princeville Resort, Kauai

As requested in your July 22, 1982 letter, we offer the
following comments:

The existing Anini Water System serves 30 residential consumers
and a 1.6 acre County park which utilizes approximately 15,000
gallons of water per day. The water used is purchased from
the Princeville Water System, Inc. It is transported through
its mains to the Kauai County Public Improvements Corporation's
(KCPIC) distribution system and is transported to the Department
of Water's distribution intake.

The Anini Water System consists of approximately 11,300 LF of
three- and four-inch water mains beginning at the KCPIC's
distribution system. It runs along the Anini Beach Road and
terminates near the old Weinberg residence. There are no
County-owned storage facilities within the Anini Water System.
The necessary storage facilities are available from Princeville.

Presently being considered for the water system improvement is
a main extension along Anini Beach Road, which will connect
the Anini Water System to Princeville's Phase II water main
along Kuhio Highway.

There are no water service commitments presently pending for
the Anini Water System.

Because we are purchasing water from Princeville, it will be
Princeville's responsibility to provide the irrigation water
for the proposed community park.

We will be interested in reviewing the water general plan for
the Princeville's Phase I and Phase II developments addressing
water source, water storage, transmission and distribution mains
(routes and sizes) service pressure zones, etc.

Raymond H. Sato

Raymond H. Sato
Manager and Chief Engineer

WH:rs

**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

March 14, 1983
83-300

Mr. Raymond Sato
Manager and Chief Engineer
Kaua'i County Water Department
4398 Pua Lake
Lihue, Kaua'i, Hawaii 96766

Dear Mr. Sato:

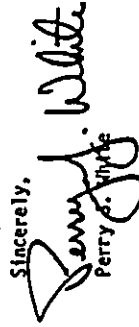
Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kaua'i

Thank you for your letter of August 12, 1982 regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kaua'i. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

In regard to your request for details of the proposed Phase Two water distribution system, these are not available at this time. However, please be assured that the plans will be submitted for review by your department when they are finalized and ready for approval and implementation.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,

Perry C. White

PJM/DMK:lt

cc: Planning Department, County of Kaua'i
Environmental Quality Commission
Princeville Development Corporation

606 Coral Street, Honolulu, Hawaii 96813 Telephone: (808) 521-5361 Telex: B1111 7490474
BCA LTD. Principals: James R. Belt, Paul M. Horne, Raymond F. Cain, Joseph Verra, Jr., Thomas P. Pajankew
Founded in 1953 by Robert M. Belt and Walker K. Collins

August 9, 1982
82-1629

Kauai Electric Company
Page two

5. Would you please list energy conservation features that might be suitable for the Phase Two project and an estimate of the extent to which they may lower energy consumption?
6. If you have any other concerns related to the Phase Two project or there are other conditions we should be aware of, we would appreciate hearing them.

It would be helpful if we could receive this information by August 23. If you have any questions about the project or need to clarify my questions to you, please call me at 321-5361.

Thank you for your cooperation and assistance.

Sincerely,

Nancy Jo Cranmer
Nancy Jo Cranmer
Planner

NJC:ist
Attach.

August 9, 1982
82-1629

Kauai Electric Company
Engineering Division
P.O. Box 278
Elele, Kauai, Hawaii 96705

Dear Sirs:

Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kauai

Princeville Development Corporation (PDC) is proposing to expand the Princeville Resort by developing an additional 420 acres to the east of the existing Phase One area (see attached map for location). This Princeville Phase Two project would involve the creation of improved lots for approximately 1,240 single-family and 420 resort condominium units plus an 8,500-square foot public library.

To implement the proposed project, PDC is seeking an amendment to the Kauai County General Plan. The Kauai County Planning Department has determined that an environmental impact statement (EIS) would be necessary for the undertaking, and PDC has hired Belt, Collins & Associates to prepare the EIS.

In order to help us determine the probable impacts of the proposed Phase Two project, I would appreciate it if you would answer the following questions relative to your company's activities in the area.

1. Would you please describe the existing electrical generation and transmission system serving the site? Are there any plans to expand or change the system without the Phase Two project? If so, would you please describe them and indicate the expected completion date?
2. As PDC plans to build only improved lots, leaving the design and construction of actual buildings to others, the energy consumption of the project must be estimated using generalized energy use rates. What factors, in terms of both KWH/month and peak KW demand, do you use for single-family homes, resort condominiums (studio, 1, and 2-bedroom apartments), and libraries?
3. Can the existing electric system as planned accommodate the proposed Phase Two project? If not, what improvements must be made to the system to adequately service Phase Two?
4. I am interested in determining the extent to which Phase Two would use non-renewable resources to obtain electric power. Would you please indicate your best guess as to what percentage of the power generated in 1983, 1990, 1995, and 2000 would be obtained from various sources (burning bagasse, fossil fuels, hydroelectric, etc.)? Also on the average, how many KWH of electricity do you get from a barrel of oil?

X 1 49

**CITIZENS UTILITIES
COMPANY**

P. O. BOX 778 ELEIHA, KAUAI, HAWAII 96705

September 30, 1982
In reply refer to:
File #82-8-105DM

Belt, Collins & Associates
606 Coral Street
Honolulu, Hawaii 96813

ATTENTION: Nancy Jo Cranmer

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED PHASE TWO
EXPANSION OF PRINCEVILLE RESORT, KAUAI

Dear Ms. Cranmer:

We acknowledge receipt of your letter dated August 9, 1982. We are happy to assist you in your preparation of the Environmental Impact Statement for the Phase Two Expansion of the Princeville Resort at Hanalei. We will answer your questions in the same numerical sequence as outlined in your letter:

1. The Hanalei, Princeville and Kilauea areas are supplied electricity from the Princeville Substation located adjacent to the Kuhio Highway near the Princeville Shopping Center. We are in the process of expanding the Princeville Substation to increase our load capacity and flexibility to serve the growing needs of the above areas. The Substation expansion is projected to be completed by December, 1982. The Princeville Substation is tied to the Kauai Electric 57 KV system grid. All of Kauai Electric's generation resources are in effect available to serve Princeville via this Substation.

We are also extending a major 12 KV distribution line paralleling Kuhio Highway to the Princeville Airport. The line extension which is scheduled for completion in December, 1982 would be of adequate capacity to serve the future customers in the Phase Two Expansion area.

2. We presently estimate a monthly consumption of 580 kwh per month and 2.5 kw demand for a typical all-electric family housing unit. We do not have data to support different energy consumption estimates for resort condo-

Belt, Collins & Associates
September 30, 1982

File #82-8-105DM
Page Two

miniums. Currently, we average approximately 462 kwh/bbl of oil on our own generation.

We estimate an 8,500 square foot public library would have approximately a 60 kw demand for an air-conditioned building and a 25 kw demand for a non-air-conditioned building. We estimate the monthly kwh consumption of the library would be approximately 12,000 kw hours and 5,000 kw hours, respectively.

3. Although the existing electrical system does not have sufficient capacity or facilities to accommodate the Phase Two Expansion as of this date, the improvements outlined in Item #1 will provide the additional capacity and facilities required.

4. Approximately 47% of Kauai Electric's electric power is generated from alternate energy sources (non-fossil fuel). Based on our latest resource projections, we presently expect this figure to increase to 50% by 1985 and then decrease to 45% by 1990, 40% by 1995 and 35% by the year 2000. Please note that the above estimates are based on our knowledge of the present construction plans for the sugar companies and Kauai Electric.

5. It is difficult for us to evaluate possible energy conservation measures and to what extent each measure will lower your energy consumption. We suggest that you maximize your use of fluorescent and high-pressure sodium lighting and the utilization of heat pumps for hot water heating, and minimize your air-conditioning requirements. A more comprehensive evaluation may be performed after the design of the Phase Two project is initiated.

6. Thank you for the opportunity to comment on your project. Kauai Electric should be kept advised of the development of your project so that service can be provided in an orderly and efficient manner.

If we may be of further assistance, or if you have any questions regarding the above, please call Dean Mizumura at 335-6226.

Very truly yours,

ALTON H. MIYAHOTO
Manager, Engineering

AHM:km

KAUAI ELECTRIC

A DIVISION OF CITIZENS UTILITIES COMPANY
ELECTRIC, TELEPHONE, WATER AND GAS SERVICE TO CUSTOMERS IN OVER 300 COMMUNITIES IN MANY STATES ACROSS THE NATION

BELT, COLLINS
& ASSOCIATES
Engineering • Planning
Landscape Architecture

March 14, 1983
83-301

Mr. Alton H. Miyamoto
Manager, Engineering Division
Kaua'i Electric Company
P. O. Box 278
Eie'eie, Kaua'i, Hawai'i 96705

Dear Mr. Miyamoto:

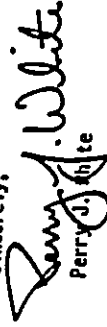
Environmental Impact Statement for the Proposed
Phase Two Expansion of Princeville Resort, Kaua'i

Thank you for your letter of September 30, 1982 (File #82-8-105DM) regarding the Environmental Impact Statement Preparation Notice for the proposed Phase Two development of the Princeville Resort on the North Shore of Kaua'i. We appreciate the time spent by you and your staff in reviewing this document.

The comments and information which you provided were valuable to us in preparing the draft Environmental Impact Statement, which should be filed within the month. We urge you to read the draft EIS carefully to evaluate the adequacy with which we have addressed issues and concerns raised in your letter and/or of interest to your agency.

We look forward to your further participation in the EIS process and to your comments on the draft EIS.

Sincerely,


Perry J. White

PJM/JMK:lt

cc: Planning Department, County of Kaua'i
Environmental Quality Commission
Princeville Development Corporation

606 Canal Street, Honolulu, Hawaii 96813 Telephone: (808) 521-5361 Telex: 881111 7430424
BCA LTD, Principals: James R. Bell, Paul A. Jirouk, Raymond F. Cam, Joseph Vienna, Jr., Thomas P. Pajumehiw
Founded in 1933 by Robert M. Bell and Walter K. Collins



Princeville Phase Two

Environmental Impact Statement

CHAPTER XI

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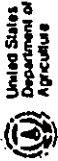


Princeville Phase Two

Environmental Impact Statement

CHAPTER XII
COMMENTS AND RESPONSES ON THE ENVIRONMENTAL IMPACT STATEMENT

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Soil Conservation Service

P.O. Box 50004
Honolulu, Hawaii
96850

April 22, 1983

Mr. Avery Youm
Director, Department of Planning
County of Kauai
4396 Rice St.
Lihue, HI 96766

Dear Mr. Youm:

Subject: EIS for the Proposed Princeville Phase Two Development
Hanalei, Kauai

We have reviewed the subject environmental impact statement and have no comments to make.

Thank you for the opportunity to review this document.

Sincerely,

FRANCIS C.H. LUM
State Conservationist

XII-2

cc: Princeville Development Corporation
c/o Belt, Collins & Associates
606 Coral Street
Honolulu, HI 96813

Environmental Quality Commission
State of Hawaii
550 Halekuanila St., Room 301
Honolulu, HI 96813

The Soil Conservation Service
is a part of the
Department of Agriculture



**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

Mr. Francis C.H. Lum
State Conservationist
Soil Conservation Service
U.S. Department of Agriculture
P.O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Lum:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of April 22, 1983, addressed to the director of the Kauai County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to comment letters. We appreciate the time spent by you and your staff in reviewing the document. We understand you have no comments on the report.

Sincerely yours,

Perry J. White

PJW/aky/1sf
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

1486 Coral Street, Honolulu, Hawaii 96813, Tel: (808) 531-2400, FAX: (808) 531-2404
1111 A Street, Honolulu, Hawaii 96813, Tel: (808) 531-2400, FAX: (808) 531-2404
1111 A Street, Honolulu, Hawaii 96813, Tel: (808) 531-2400, FAX: (808) 531-2404

May 11, 1983
83-618



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 15TH AIR BASE WING (PAFACAF)
HICKAM AIR FORCE BASE, HAWAII 96813

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

REPLY TO DEEV
ATTN: DE

6 APR 1983

SUBJECT: Environmental Impact Statement for the Proposed Princeville Phase Two Development

to: Planning Department
County of Kauai
4396 Rice Street
Lihue, Kauai, HI 96766

1. This office has reviewed the subject EIS and has no comment to render relative to the proposed project. The EIS is returned for your file.
2. We greatly appreciate your cooperative efforts in keeping the Air Force apprised of your project and thank you for the opportunity to review the document.

Robert M. Okazaki
ROBERT M. OKAZAKI
Chief, Engrg & Envtl Plng Div
Directorate of Civil Engineering

1 Atch
EIS nc

Cy to: Princeville Development Corp w/ Atch
c/o Belt, Collins & Associates
606 Coral Street
Honolulu, HI 96813

XII-3

May 11, 1983
83-619

Mr. Robert Okazaki, Chief
Engineering and Environmental Planning Division
Directorate of Civil Engineering
Department of the Air Force
Headquarters 15th Air Base Wing
Hickam Air Force Base, Hawaii 96813

Dear Mr. Okazaki:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of 6 April 1983, addressed to the Kauai County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to comment letters. We appreciate the time spent by you and your staff in reviewing the document. We understand you have no comments on the report.

Sincerely yours,

Benny J. White
Benny J. White

PJM/ARY/lst
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

606 Coral Street Honolulu, Hawaii 96813 Telephone: (808) 521-5161 Telex: H0111 7410174
Dr. A. J. P. Pringle James R. Bell Paul A. Dinda Raymond J. Cain Joseph Vento Jr. Thomas P. O'Connell
Founded in 1945 by Robert M. Belt and Walter K. Collins

BELT, COLLINS & ASSOCIATES
Engineering • Planning
Landscape Architecture

BELT, COLLINS & ASSOCIATES
Engineering • Planning
Landscape Architecture

March 30, 1983
Directorate of Facilities Engineering

May 11, 1983
83-644

Mr. Maurice H. Fujimoto
Acting Director of Facilities Engineering
U.S. Army Support Command, Hawaii
Fort Shafter, Hawaii 96858

Dear Mr. Fujimoto:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of March 30, 1983, addressed to the Kauai County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to comment letters. We appreciate the time spent by you and your staff in reviewing the document. We understand you have no comments on the report.

Sincerely yours,
Perry J. White
Perry J. White

PJW/AMY/lst
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

646 Canal Street, Honolulu, Hawaii 96813 Telephone: (808) 521-5161 Telex: B111174 HBTZ
R.A.I.D. P.O. Box 4111, Honolulu, Hawaii 96811 (San Joseph Vista in Honolulu)
Founded in 1951 by Robert M. Bell and Walter K. Collins

Planning Department
County of Kauai
4396 Rice Street
Lihua, Kauai 96756

Gentlemen:

The Environmental Impact Statement (EIS) for the Proposed Princeville Phase Two Development at Hanalei, Kauai has been reviewed and we have no comments to offer. There are no Army installations or activities in the vicinity of the proposed project.

Thank you for the opportunity to comment on the EIS.

Sincerely,

Alvin K. ...
Alvin K. ...
Acting Director of Facilities Engineering

Alvin K. ...
Princeville Development Corporation
c/o Belt, Collins & Associates
506 Canal Street
Honolulu, Hawaii 96813



DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FT SHAFTER HAWAII 96858

ATTN:
ARCHITECT

May 3, 1983

BELT, COLLINS
& ASSOCIATES
Engineers - Planners
Architects - Architects

May 11, 1983
83-626

Mr. Brian K. Nishimoto, Director
Planning Department
County of Kauai
4396 Rice Street
Lihue, Hawaii 96766

Dear Mr. Nishimoto:

Thank you for the opportunity to review the Environmental Impact Statement (EIS) for the Proposed Princeville Phase II Development, Hanalei, Kauai, Hawaii. Based on our review we have the following comments:

- a. Any work in Anini Stream may require a Department of the Army (DA) permit pursuant to Section 404 of the Clean Water Act.
- b. Under the Flood Insurance Study for the County of Kauai, a portion of the area designated as the Princeville Phase II project site is subject to a 100-year tsunami inundation (Zones V19 and A4) which indicates there is a one percent chance of being equalled or exceeded in any given year. The proposed development areas within the project limits, however, as identified by Exhibit II-4, Phase II Master Plan on page II-8 of the EIS, are also designated zone C or areas of minimal flooding. See attached flood hazard maps for the Hanalei area prepared as part of the flood study (enclosure 1), showing the approximate project limits relative to the tsunami-prone areas along the northern coast of Kauai.

Sincerely,

Kisuk Cheung
Chief, Engineering Division

Enclosure

Copy Furnished:
Princeville Development Corporation
C/O Belt, Collins and Associates

Mr. Kisuk Cheung, Chief
Engineering Division
Pacific Ocean Division
Corps of Engineers
Department of the Army
Fort Shafter, Hawaii 96858

Dear Mr. Cheung:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of May 3, 1983, addressed to the director of the Kauai County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to comment letters. We appreciate the time spent by you and your staff in reviewing the document.

In response to your comment about the Department of the Army Permit -- we did not list this permit in Chapter VII as a necessary approval because no work in Anini Stream is contemplated as part of the Phase Two development. Your comments on the flood zone designations were helpful and we have revised the wording in Section 4.12.3 on page IV-86 of the final EIS.

Sincerely yours,

Berry J. White
Perry J. White

PJM/AYY/Isf
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

1404 Canal Street Honolulu Hawaii 96813 Telephone: (808) 521-1560 Telex: 881111 7414124
HAWAIIAN ENGINEERING ARCHITECTURE PLANNING CORPORATION
Incorporated in Hawaii 1965
President: Robert M. Bell, Vice President: Robert M. Bell, Secretary: Robert M. Bell, Treasurer: Robert M. Bell, Chairman: Robert M. Bell



HEADQUARTERS
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860

**BELT, COLLINS
& ASSOCIATES**
ENGINEERING - PLANNING
LANDSCAPE ARCHITECTURE

IN REPLY OFFER TO:
002A:QLB:jam
Ser 628

Planning Department
County of Kauai
4396 Rice Street
Lihue, Kauai 96766

May 11, 1983
83-620

Gentlemen:

**Environmental Impact Statement
Proposed Princeville Phase Two Development**

The EIS for the Proposed Princeville Phase Two Development has been reviewed and the Navy has no comments to offer. As this command has no further use for the EIS, the EIS is being returned to the Environmental Quality Commission, by copy of this letter.

Thank you for the opportunity to review the EIS.

Sincerely,

Captain M.M. Dallam
Facilities Engineer
Headquarters, Naval Base Pearl Harbor
Box 110
Pearl Harbor, Hawaii 96860

Dear Captain Dallam:

**Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii**

Thank you for your letter of 29 March 1983 (your reference 002A:QLB:jam/Ser 628), addressed to the Kauai County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to comment letters. We appreciate the time spent by you and your staff in reviewing the document. We understand you have no comments on the report.

Enclosure

Copy to:
Princeville Development Corporation
Environmental Quality Commission

Sincerely yours,

Berry J. White
Berry J. White

PJM/AY/Isf
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

1486 Local Street, Hanalei, Hawaii 96721
HAWAIIAN TELEPHONE SYSTEMS, INC. (Hawaii) 3-1011
HAWAIIAN TELEPHONE SYSTEMS, INC. (Kauai) 3-1011
HAWAIIAN TELEPHONE SYSTEMS, INC. (Niihau) 3-1011
HAWAIIAN TELEPHONE SYSTEMS, INC. (Oahu) 3-1011
HAWAIIAN TELEPHONE SYSTEMS, INC. (Maui) 3-1011
HAWAIIAN TELEPHONE SYSTEMS, INC. (Molokai) 3-1011
HAWAIIAN TELEPHONE SYSTEMS, INC. (Kauai) 3-1011
HAWAIIAN TELEPHONE SYSTEMS, INC. (Niihau) 3-1011
HAWAIIAN TELEPHONE SYSTEMS, INC. (Oahu) 3-1011
HAWAIIAN TELEPHONE SYSTEMS, INC. (Maui) 3-1011
HAWAIIAN TELEPHONE SYSTEMS, INC. (Molokai) 3-1011

RECEIVED

APR 28 1983

WILDLIFE SERVICE

U.S. FISH & WILDLIFE SERVICE
P.O. Box 51117
Honolulu, Hawaii 96811

MS
Room 6307

APR 27 1983

Planning Department
County of Kauai
4396 Rice Street
Lihue, Kauai 96766

Dear Gentlemen:

The Service has reviewed the Environmental Impact Statement (EIS) for the proposed Princeville Phase Two Development which was forwarded to us with the Environmental Quality Commission's letter of March 22, 1983. Major Service concerns have been resolved by appropriate aquatic and terrestrial surveys of the project area. The following specific comments should be addressed in the Final EIS:

Section 4.5.5.6, paragraph 1. Indicate which mitigative measures will be used to control erosion. A combination of temporary sediment basins and other effective control measures are recommended.

Section 4.7.2.3, paragraph 1. 50 CFR 17.11 and 17.12 listing federal endangered and threatened species, was reprinted in 1982.

Page IV-43, Table IV-11. The table should include native birds reported in Dr. Bruner's survey.

Section 4.7.3.2, paragraph 3. The provision to fence off the stream area should be implemented.

Section 4.7.3.3, paragraph 4. The EIS should note that long-term leaching may continue after a landfill is "closed".

Section 4.7.3.3, paragraph 7. The comparison between the existing county landfill operation and Phase Two Development is highly speculative and is not appropriate here.

Section 4.10.3, paragraph 4. Clarify which methods will be used to control dust.

Appendix A. The EIS would be enhanced by inclusion of the scientific reports on aquatic and terrestrial surveys in the appendix.

In summary, we feel the EIS has adequately addressed significant fish and wildlife resources. We appreciate this opportunity to comment.

Sincerely,

13

John I. Verd
Acting Project Leader
Office of Environmental Services

cc: MMS - WPPD
HDF&H
EDAR
EPA, San Francisco
POC

Native Birds have been added to the list in Table IV-11.

Section 4.7.3.2, Paragraph 3.

The Phase Two project would be confined to the plateau areas. Hence, any impact on the stream valley ecosystem would be indirect and, we believe, extremely limited. As indicated in the EIS, the only endangered species which has been sighted in the area is the Koloa. The available evidence regarding the intensity with which Koloa use the area is limited. However, what little data there is suggests that their presence is infrequent. Fencing of the stream would be costly, both in terms of the initial construction and ongoing maintenance effort required. Unless additional information is presented which demonstrates a need for fencing, PDC does not intend to erect such a barrier at this time.

Section 4.7.3.3, Paragraph 4.

Your statement that leaching can continue long after a landfill is closed is correct. The discussion will be revised to recognize this. At the same time, it should be noted that use of the landfill will cease in the near future, while Phase Two would not be fully developed for many years.

Section 4.7.3.3, Paragraph 7.

The comparison of the probable impact of the Phase Two project with the effects of the existing landfill was intended to put the effects of the proposed project into perspective. Existing conditions are anything but "pristine, and this should be understood by readers. The statements are "speculative" only in the sense that no detailed scientific study has been conducted aimed at quantifying the effects of the landfill. Nevertheless, in response to your comment the last sentence in the paragraph will be removed.

Section 4.10.3, Paragraph 4.

In the absence of detailed site plans for individual development areas it is impossible to specify dust control methods at this time. If the land use changes being requested are granted, subdivision and infrastructure improvements will be undertaken. At that time the details of the grading plan and dust control measures will be determined and submitted to the County for approval.

May 12, 1983
83-676

Mr. John Ford
Acting Project Leader
Office of Environmental Services
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawai'i 96850

Dear Mr. Ford:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kaua'i, Hawai'i

Thank you for your letter of April 27, 1983 (your reference ES/Room 6307), addressed to the Kaua'i County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to comment letters. We appreciate the time spent by you and other members of the U.S. Fish and Wildlife Service staff in reviewing the document.

Your letter indicates that the major concerns of the Service were resolved by the aquatic and terrestrial surveys that were conducted in the project area. Responses to your specific comments are presented below.

Section 4.5.5.4, Paragraph 1.

As you note in your letter, the mitigation measures discussed in this sub-section are representative of those which could be used. A more definitive description of the erosion control plans for the project is not possible at this time. When engineering plans are developed, the Princeville Development Corporation and/or developers of significant sub-areas within the Phase Two area must obtain County approval of grading plans. A commitment to specific erosion control measures will be made at that time.

Section 4.7.2.3, Paragraph 1.

As you pointed out, the most recent listing of endangered and threatened species was issued in 1982. The Revised EIS will reflect this.

Mr. John Ford
May 12, 1983 -- 83-676
Page Three

Appendix A.

The EIS is already an extremely bulky document. The bulk not only makes it expensive to reproduce, it also tends to discourage persons in the general public from reading the report. Inclusion of the scientific reports on aquatic and terrestrial surveys would add further to its size, and it was our decision not to do so. At the same time, we believe that the basis for the statements made in the EIS should be available to all who request it. Hence, I have attached copies of the final reports for the three studies mentioned in your letter. I hope the information proves useful to you.

Conclusion

Thank you again for the time spent reviewing the EIS. We are pleased that it adequately addressed your concerns. If there is any additional information that we could provide regarding the proposed project, either now or in the future, please do not hesitate to call me at 521-5361.

Sincerely,


Perry White

PJM/lst

Attachments: Terrestrial Survey
Marine Survey
Freshwater Survey

cc: Planning Department, County of Kaua'i
Environmental Quality Commission
Princeville Development Corporation



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

COMMANDER (dpj)
Fourteenth Coast Guard District
Prince Kalmouale Federal Bldg
300 Ala Moana Bldg
Honolulu, Hawaii 96810
(808) 546-2861

11000
Serial 530
30 March 1983

Planning Department
County of Kauai
4396 Rice Street
Lihue, Kauai 96766

Dear Sir:

The Fourteenth Coast Guard District has reviewed the Environmental Impact Statement on the Proposed Princeville Phase Two Development and has no objection or constructive comments to offer at the present time.

Sincerely,

J. E. Schwartz
J. E. SCHWARTZ
Commander, U. S. Coast Guard
District Planning Officer

By direction of

Commander, Fourteenth Coast Guard District

ELI, COLLINS
ASSOCIATES
Planning - Planning
Risk-Appr. Architect

Commander J.E. Schwartz
District Planning Officer
U.S. Coast Guard
Department of Transportation
Federal Building
Honolulu, Hawaii 96850

Dear Commander Schwartz:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of 30 March 1983 (your reference 11000/Serial 530), addressed to the Kauai County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to comment letters. We appreciate the time spent by you and your staff in reviewing the document. We understand you have no comments on the report.

Sincerely yours,

Perry J. White
Perry J. White

PJM/AYY/lst
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

Local Survey Honolulu Hawaii Telephone: (808) 521-1161 Telex: H11117410474
EIS: Plans and James R. Bell, Paul M. Thoma, Raymond J. Cas, Joseph Vavra Jr., Thomas P. Papadimitriou
Sheet as P13 by Robert A. Bell and Walter K. Collins

**BELT, COLLINS
& ASSOCIATES**
Engineering • Planning
Landscape Architecture

(P)1322.3

April 4 1983

May 11, 1983
83-622

Mr. Avery Youn, Director
Planning Department
County of Kauai
4280 Rice Street
Lihue, Hawaii 96766

Dear Mr. Youn:

Subject: Proposed Princeville Phase Two
Development, Hanalei, Kauai
Environmental Impact Statement

We have reviewed the subject environmental impact
statement and have no comments to offer.

Thank you for the opportunity to review the subject
environmental impact statement.

Very truly yours,

HIDEO MURAKAMI
State Comptroller

HI:jm
cc: Princeville Development Corp.
c/o Belt, Collins & Associates

Mr. Hideo Murakami
Department of Accounting and General Services
State of Hawaii
P.O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Murakami:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of April 4, 1983 (your reference (P) 1322.3) addressed to the director of the Kauai County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to comment letters. We appreciate the time spent by you and your staff in reviewing the document. We understand you have no comments on the report.

Sincerely yours,
Perry J. White
Perry J. White

PJM/AKY/lst
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

McCauley Street, Honolulu, Hawaii 96813 Telephone: (808) 521-5101 Telex: HHI 111 74 H4274
A 1111 Puna Road, Kaneohe, Hawaii 96741 Telephone: (808) 235-1111
located on U.S. Highway 111, Kaneohe, Hawaii 96741

GEORGE R. ARYOSIII
GOVERNOR



JACK K. SUMA
CHAIRMAN, BOARD OF AGRICULTURE

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 So. King Street
P. O. Box 22159
Honolulu, Hawaii 96822
May 4, 1983

Mr. Avery Youn
Page -2-
May 4, 1983

The State Agriculture Plan (October 1982) as submitted to the 1983 Legislature contained some word changes from the May 1982 version. Implementing Action B(4)(a) now reads:

Propose amendment to the State Land Use Law to provide more uniform and equitable criteria relating to County approval of agricultural subdivisions and monitoring of permissible uses within the State Agricultural Districts, and to replace references to the Land Study Bureau Detailed Land Classification with references to important agricultural lands.

Action B(5)(b) was also modified in the October 1982 Plan and reads as follows:

Include important agricultural lands in County General Plans and/or Development Plans, pursuant to the State Agricultural Plan.

The House of Representatives, in its consideration of the State Agriculture Plan during the 1983 Session, further revised Action B(5)(b) to read:

Propose establishment of an Agricultural Land Study Commission to identify important agricultural lands.

These changes allow for the designation of important agricultural lands rather than relying on the ALISH system. The 1983 Legislature did pass a bill creating a State of Hawaii Land Evaluation and Site Assessment Commission to identify important agricultural lands pursuant to the Hawaii State Constitution.

Thank you for the opportunity to comment.

Jack K. Suma
JACK K. SUMA
Chairman, Board of Agriculture

cc: Princeville Development Corp.
c/o Salt Collins & Associates

MEMORANDUM

TO: Mr. Avery Youn, Director
Planning Department
County of Kauai

SUBJECT: Environmental Impact Statement
Proposed Princeville Phase Two Development
Hanalei, Kauai

The Department of Agriculture has reviewed the subject statement and offers the following comments.

While we feel that our concerns have been adequately addressed, we would like to offer some comments for clarification.

The Agricultural Lands of Importance to the State of Hawaii (ALISH) classification system (as discussed on pages IV-6 and 9) was developed by an ad hoc committee comprised of representatives from the Soil Conservation Service, the University of Hawaii's College of Tropical Agriculture, the State Rural Development Committee, and the State of Hawaii Departments of Agriculture, Planning and Economic Development, and Land and Natural Resources. The classification system and criteria developed by the committee was adopted by the Board of Agriculture in 1977.

The State Agriculture Plan (as discussed on pages V-3 and 4), although adopted as an interim set of plans for administrative purposes by proclamation of the Governor, has not been adopted by Concurrent Resolution of the Legislature. Since the plans are to be adopted by Resolution rather than by an Act, the Implementing Actions B(4)(a) and B(5)(a) would not have effect until bills providing for such amendments were passed by the Legislature and enacted into law. Implementing Action B(5)(b), likewise, would not have effect until the Counties included "important agricultural lands" in their respective General Plans and/or Development Plans. Implementing Action B(5)(c) thus could not be implemented until Action B(5)(a) and B(5)(b) have been implemented. Therefore, even if the State Agriculture Plan had been adopted by the Legislature, the subject actions would not have an effect on the project unless accompanying bills, had been drafted and enacted into law.

"Support Hawaiian Agricultural Products"

**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

May 11, 1983
83-643

Mr. Jack K. Suwa, Chairman
Board of Agriculture
State of Hawaii
P.O. Box 22159
Honolulu, Hawaii 96822

Dear Mr. Suwa:

**Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii**

Thank you for your letter of May 4, 1983, addressed to the director of the Kauai County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to comment letters. We appreciate the time spent by you and your staff reviewing the document. Your comments were useful in preparing the Revised EIS.

The discussion of the ALISH classification system on page IV-6 was reworded based on the information you provided. The first two sentences of the last paragraph of section 4.3.2 now read:

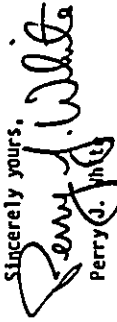
The Agricultural Lands of Importance to the State of Hawaii (ALISH) classification system, adopted by the State Board of Agriculture in 1977, rates virtually all of the proposed development area as Prime Agricultural Land (see Figure IV-4). This is the highest of the three ratings in the system.

The fifth paragraph in section 4.3.3 was also revised to refer readers to section 5.2.1.

The quoted policies and implementing actions in section 5.2.1 now reflect the latest (October 1982) version of the State Agriculture Plan. The Discussion paragraphs were revised in accordance with the information in your letter.

We are pleased that you found that the EIS adequately addressed your concerns.

Sincerely yours,


Perry D. White

PJW/AYY/lst
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

14th Street Honolulu Hawaii 96813 Telephone: 808-531-5400 Telex: 801111
BX 37117 Post Office, Jones K. Bell, Chief of Office, Honolulu, Hawaii 96813
Forwarded at 10:53 AM, Robert S. Bell and Walter K. Coffin

**BELT, COLLINS
& ASSOCIATES**
Engineers - Planners
Landscape Architects

State of Hawaii
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 Diamond Head Road
Honolulu, Hawaii 96816

May 11, 1983
83-623

8 APR 1983

UJZNG

Captain Jerry M. Matsuda
Contracting and Engineering Officer
Office of the Adjutant General
Department of Defense
State of Hawaii
3949 Diamond Head Road
Honolulu, Hawaii 96816

Planning Department
County of Kauai
4396 Rice Street
Lihue, Kauai 96766

Gentlemen:

Proposed Princeville Phase Two

Thank you for providing us the opportunity to review the proposed project,
"Princeville Phase Two" Environmental Impact Statement.

We have completed our review and have no comments to offer at this time.

Yours truly,

JERRY M. MATSUDA
Captain, USMC
Contr & Engr Officer

cc: Belt, Collins & Assoc.
Env. Quality Commission w/EIS

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of 8 April 1983, addressed to the Kauai County
Planning Department, regarding the Princeville Phase Two Environmental Impact
Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are
responding to comment letters. We appreciate the time spent by you and your
staff in reviewing the document. We understand you have no comments on the
report.

Sincerely yours,
Berry J. White
Perry J. White

PJM/aky/lst
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

6406 Local Street, Honolulu, Hawaii 96816 (808) 521-5101 Telex: 81111-241024
Belt, Collins & Associates, Inc. - 1000 Kalia Road, Honolulu, Hawaii 96813
Founded in 1953 by Robert W. Belt and Walter K. Collins

GEORGE B. SANTOS
Commissioner of Water



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 431
HONOLULU, HAWAII 96808

April 19, 1982



Honorable Avery Youn
Planning Director
County of Maui
4396 Rice Street
Lihue, Hawaii 96766

Dear Mr. Youn:

We have reviewed the environmental impact statement for the phase two development of Princeville from a number of standpoints and have these comments to add to our October 7, 1982 letter to Ms. Cramer of Belt and Collins.

Wildlife

The proposed development would have no serious adverse impacts upon native or exotic wildlife. Development of an additional golf course or courses with the usual water hazards may in fact increase endangered waterbird habitat, as was found to be the case with Princeville Phase I development. Early coordination between the developer and a State or Federal wildlife agency during the stages of gold course design (with regard to water hazards) could maximize the utility of the area by endangered waterbirds. Such planning could provide a beneficial impact as a result of the development of the area.

Water Resources

Our Division of Water and Land Development should be kept informed on further development of existing wells and development of new well sources to meet the requirement for the Princeville expansion.

Potential impact of offsite flooding of areas adjacent to Anini Stream remains unknown; four existing structures near the stream mouth may be affected by the increased runoff (EIS pg. IV-27).

Very Yours

-2-

April 19, 1983

Flow and Aquatic Resources

The only perennial stream on the property is Anini Stream. On the basis of 20-m² transects examined by a consultant, the stream is characterized as modified/degraded (p. IV-51); its poor quality attributed to remaining streamflow into the existing Princeville (Irrigation) Ditch (much leaks, p. IV-28) and to leachate from the county dump (p. IV-51). On the basis of observations made while snorkeling in Anini Stream, one of our aquatic biologists concurred with this characterization but suggested that the diversity of resource organisms in the lower stream may have been estimated by as much as a factor of four. He also observed subsistence fishing taking 15 pounds of prawns (*Macrobrachium* sp.) with 15 minutes of effort.

The environmental impact statement maintains that the flow of Anini Stream would not be affected significantly. It is calculated that development of impermeable surfaces to the land (e.g. streets and buildings) such as would be the case with Princeville Phase I development, would reduce the flow by only 6% (p. IV-27). However, these calculations are based on average annual data; information on increases above normal flows and directly after storms would be relevant, but is not provided. More episodic storm flows, aquatic organisms in perennial Hawaiian streams are likely to be adversely affected by minimum flows (e.g. in times of drought). Although the proposed project would lead to the consumption of 100,000 gallons per day of groundwater, the environmental impact statement states that the effects of streamflow on the basis of a study which isolated the water supply source from draining groundwater (p. IV-27) would be negligible. Improvement to enhance the value as a pasture of agricultural land to development (p. V-21). Minimum flow in Anini Stream would be further affected if such improvements include diversion of groundwater or stream water for irrigation of livestock. While the unquestionably diminished resource value of Anini Stream may benefit from adequately controlled drainage discharges, and will improve from closure of the county dump, the developer should be able to maintain the existing rate of minimum flow in Anini Stream.

Quality

Aside from direct modification of aquatic environments, or reduction of nutrients into Anini Stream, the proposed project could affect aquatic resources by discharge of sediment eroded from lands cleared of their existing vegetation. The environmental impact statement asserts that clearing and grading "would be negligible" (p. IV-2). However, the site consists primarily of silty clays, which constitute severe erosion hazards on slopes of more than 15% (p. IV-5), and average annual rainfall on the property ranges from 100 to 150 inches (p. IV-28). Consequently, there already exists an erosion hazard on the property and adjacent coastal waters experience "red water"

Although the property includes portions of the county road on the seashore, and all of Anini Stream makai of Kuhio Highway, the environmental impact statement consistently maintains that development would be confined to the upland plateau and that public access to beaches would not be affected. We concur. We note that negotiations are in progress between proponent and county over location of the five-acre site to be dedicated as public parkland, and that both upland and coastal locations are being considered; we wish to suggest that proximity to the shores of both the sea and Anini Stream would be desirable from the standpoint of public access to aquatic resources.

Historic Sites


After reviewing the archaeological report for the proposed project area, we concur that the results of the archaeological reconnaissance were generally negative. However, we stress the recommendations made in the report be followed:

1. If any cultural materials or features are located during construction, our historic sites office should be notified immediately at 548-7460 (Honolulu). If materials are uncovered, a qualified archaeologist will be contacted to inspect the site and there should be some allowance for immediate salvage.
2. The adjacent cemetery should be fenced to avoid any disturbance during construction as well as afterwards.
3. Any development in the area of Pu'u Po'oku would require archaeological investigations at Po'oku Heiau.
4. Any construction activities in lower Anini Gulch would require archaeological investigations prior to construction.

Permits

While it is possible that "there is no Conservation-designated land on the proposed project site" it appears that the northwest corner of the subject property includes a portion of the Conservation District Limited Subzone (it is not possible to determine from the maps provided whether or not such lands would be affected by the proposed development); furthermore, use of State waters (within a Resource Subzone of the Conservation District) to receive drainage discharges may require approval of a Conservation District Use Application, and a National Pollution Discharge Elimination System permit.

Very truly yours,


SUSUMU ONO
Chairman of the Board

conditions after storms (Fukunaga & Associated, Inc. 1980. Statewide Silt Basin Investigation. Department of Land and Natural Resources Division of Water and Land Development, Honolulu: Plates VI-3 and -4). The environmental impact statement provides an extensive list of erosion-control measures which "may" be employed (p. VI-3); emphasis added). In view of the existing problem, we strongly urge that a firm commitment, or requirement or both, be made to ensure that erosion is effectively prevented.

Furthermore, there is proposed no change from the existing pattern of surface drainage via existing stream and gullies (p. IV-24), except for an undescribed "system" to collect surface waters from the developed portions (p. IV-27). However, "intermediate" developers (including contractors) would necessarily conduct considerable sitework after temporary erosion-control measures may no longer function. It seems imperative that the proposed storm-drainage "system" therefore be designed and installed with provisions adequate to prevent transport of eroded sediments, construction materials, petroleum products, wastes and debris into Anini Stream or the ocean.

With respect to long-term discharge of other anthropogenic contaminants, we note that domestic wastewaters would be pumped to an existing facility for secondary treatment, and that treated effluent would be used for irrigation or discharged into injection wells (pp. 11-14, IV-31). Coinciding with the proposed development would be closure of the existing dump which pollutes Anini Stream (p. 11-17). These provisions appear salutary for aquatic organisms. The environmental impact statement maintains that, since development and operation of "Princeville Phase One" have had little if any apparent effect on the resource value of adjacent coastal waters, "Phase Two" as proposed will likewise have no adverse effects (pp. IV-51 to -52). While this reasoning neglects the possibility of cumulative effects, the North Shore of Kauai is noted for strong surf and nearshore currents--as evidenced by a general paucity of inshore coral development and a regrettable rate of water fatalities (KICRI pp. 7-1 to -5). It appears therefore likely that, with adequate "temporary" and long-term precautions, the above assessment will prove correct.

Shoreline

The shoreline fronting the property consists primarily of two sandy beaches: Kalihikai Beach, which is the site of Anini County Beach Park, and Anini Beach itself, next to the mouth of Anini Stream. Access is furnished by an existing county road which enters from Kalihikai and parallels the shoreline as far as Anini Beach. These shores and adjacent waters support considerable recreational use by the public -- for "squidding," shorecasting, throw- and gillnetting, fish trapping, limu picking, as a torching ground famous statewide, for swimming, snorkeling, and diving, for picnicking, camping and boat-launching (at an existing ramp and across the beach), and for nature study by public-school classes (KICRI p. 7-4) -- as acknowledged in the environmental impact statement (p. III-73).

KICRI: Kauai Island Coastal Resource Inventory. Aecos, Inc. 1982. U. S. Army Engineer Division Pacific Ocean.

May 12, 1983
83-692

Mr. Susumu Ono, Chairman
Board of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ono:

Environmental Impact Statement for the Proposed
Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Your letter of April 19, 1983 to the Kauai County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS), was forwarded to us for a response. We appreciate the time you and your staff spent reviewing the document. Answers to the specific points raised in your letter are presented below.

Wildlife

We are pleased to see that you concur with our finding that the proposed project would have no serious effect on native or exotic wildlife. Possible enhancement of waterbird habitats resulting from construction of water hazards on the second golf course was not mentioned in the EIS because that golf course is being developed independently of the Phase Two project. However, your desire for early coordination between the golf course designers and Federal and State wildlife agencies has been passed on to the engineers in charge of planning for the second golf course.

Water Resources

The Princeville Development Corporation and engineers working under its direction will comply with your request that the Division of Water and Land Development be kept informed of plans for further development of wells for the Princeville Resort.

Stream Flow and Aquatic Resources

As a result of the additional information provided in your letter, the following statement will be added to the end of the first paragraph on page IV-51:

An aquatic biologist on the staff of the Hawaii State Department of Land and Natural Resources has concurred with this assessment. However, it was suggested that Timbol may have underestimated the density of the resource organisms in the lower stream.

In addition, the following sentence regarding the presence of Macrobrachium lar will be added to the end of the first paragraph on page IV-47:

An aquatic biologist on the staff of the State Department of Land and Natural Resources has observed subsistence fishermen who reported taking 15 pounds of prawns (Macrobrachium lar) in a single night with 15 traps.

Your observation that it is the magnitude of low flows that is most critical to the health of aquatic organisms in most Hawaiian streams is correct. The potential for this type of effect is discussed on page IV-28 and elsewhere.

As you noted in your letter, the EIS concludes that withdrawal of an average of 700,000 gallons per day of potable water from the wells serving the Phase Two project would not affect base flow in Anini Stream. The reasoning behind this is summarized below. In essence, it revolves around the fact that Anini Stream is fed by groundwater from lavas in the Koloa series whereas the wells are drilled into the deeper, and hydrologically distinct, Waimea lavas.

As noted above, the wells which supply potable water to Princeville tap groundwater contained in lavas of the Waimea series. The piezometric head in these wells is approximately 31 feet above mean sea level. It is therefore certain that no water from the Waimea series lavas contributes to base flow above this elevation in the stream.

The bed of Anini stream is at or below the 31-foot elevation only for the last 1,800 feet of its length. Drilling logs from the exploratory well near the existing Princeville wastewater treatment plant indicate that the Koloa lavas in which the bed of Anini Stream is located are separated from the Waimea lavas by relatively impermeable alluvium at least 500 feet thick. In view of the foregoing, withdrawals of potable water from the Princeville wells are very unlikely to reduce base flow in the lower reaches of Anini Stream.

The "improvements" to the pasture in the mauka areas that are mentioned on page V-21 involve fencing and fertilization, not irrigation. Hence, they would not affect streamflow.

The information currently available indicates that the Phase Two project would not result in a noticeable decrease in the base flow of Anini Stream. However, should evidence of such reduction appear following development of

Mr. Susumu Ono, Chairman
May 12, 1983 -- 83-692
Page three

Phase Two, measures such as storage and controlled release of impounded water could be taken to augment flow during dry periods to the point where the current base flow is maintained.

Water Quality

The discussion of grading on page IV-2 (not II-2 as referenced in your letter) is based on the fact that the plateau land is gently rolling grass-lands and the fact that most of the proposed project involves the development of improved lots on which custom-built single-family homes would be constructed. Hence, little cut and fill would be required, and at any one time only scattered lots would be bared. This minimizes the erosion hazard. In response to your comment, the sentence on page IV-2 has been changed to read:

"Because these plateaus consist of gently rolling grasslands, grading and clearing required for the development of residential lots would be minor."

As noted in your letter, the soils do belong to the Makapili series, but the great majority of the area that would be developed slopes less, not more, than 8 percent. As stated on page IV-5, the erosion potential of the soil in such areas is considered moderate, not severe by the SCS. Their relative freedom from excessive erosion problems is also indicated by the designation of much of the Phase Two plateaus as "Low Erosion Potential" on Plate VI-6 (page 30) of the State Department of Land and Natural Resources publication referenced in your letter, Statewide Silt Basin Investigation. As shown on Plate IV-4 (page 28) of the report, the Phase Two lands have the same designation as a large portion of the coastal land shown on that "Existing Erosion Areas" map. However, the lands mauka of Kuhio Highway (above Phases One and Two) are designated "Lands Requiring a Conservation Program"; and these lands probably are a more significant source of the "red water" phenomenon in the coastal waters of this area.

This does not imply that erosion is not a concern or that no steps will be taken to control soil erosion during the construction of the Phase Two project. On the contrary, it is the Princeville Development Corporation's intent to see that all measures necessary to comply with State water quality and County grading regulations will be taken. "Intermediate developers" will be subject to the same set of laws and regulations, and it is our belief that the review powers of public agencies will insure that adequate provisions are taken to protect Anini Stream and coastal waters from the adverse effects of eroded sediments, construction materials, petroleum products, wastes and debris.

Mr. Susumu Ono, Chairman
May 12, 1983 -- 83-692
Page four

Finally, we note your concurrence with our conclusion that, for a variety of reasons, the Phase Two project is not likely to have a serious adverse impact on the nearshore marine environment. With respect to your concern that cumulative effects may have been overlooked, we would also like to point out that runoff from Phase Two would not enter the ocean at the same point as that from the Phase One area. Because of this, the only mechanism that would result in significant cumulative effect is if sediment in runoff drifted slowly and with little dispersion along the coast into areas with sensitive biota. As you stated in your letter, this is not the case. Hence, we did not discuss cumulative effects in the EIS.

Shoreline

No response required.

Historic Sites

Recommendations contained in the EIS and in your letter regarding steps to be taken to protect archaeological resources will be followed.

Permits

The maps contained in the EIS are general in nature. After comparing the State Land Use District boundary maps with the limits of the proposed Phase Two project, we believe it lies entirely outside the Conservation District. This, of course, will be confirmed at the time the Princeville Development Corporation appears before the State Land Use Commission.

Your letter suggests that because runoff from the site eventually enters Anini Stream and other drainages that eventually carry it into coastal waters claimed by the State and which lie in the Conservation District, then a Conservation District Use Permit may be required. We do not believe this is the case. If it were, then all development in the state would require such a permit because all create runoff which eventually enters coastal waters. Nevertheless, we will identify this as possible "necessary approval" in Chapter VII of the Revised EIS. The Department of Health (May 18, 1983) confirmed that a National Pollution Discharge Elimination System permit would not be required for drainage discharges.

Sincerely,



Perry J. White

PJW:jt



DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

George A. Sweeney
Kent M. Keith
PLANNING AND ECONOMIC DEVELOPMENT

Ref. No. 7385

May 5, 1983

COPY

Mr. Avery H. Youn
Director
Planning Department
County of Kauai
4396 Rice Street
Lihue, Hawaii 96766

Dear Mr. Youn:

Subject: Proposed Princeville Phase II EIS, Hanalei, Kauai

We have reviewed the environmental impact statement (EIS) for the proposed Princeville Phase II development and have comments on the following sections of the EIS.

Section 2.5.1.5: Projected Hotel/Condominium Hotel Unit Requirements

The EIS refers to a range of desired occupancy levels for hotel/condominium hotel units on Kauai. These occupancy levels range from 75 percent to 85 percent. Based upon these desired occupancy levels, the number of required hotel/condominium hotel units have been projected on page 11-21.

The EIS should explain the basis for the selection of these three occupancy levels (i.e., 75 percent, 80 percent and 85 percent). These occupancy levels should be further assessed with regard to the hotel occupancy levels necessary for the economic viability of the development, as well as what is desired by the County of Kauai to maintain a healthy visitor industry.

Section 2.5.1.6: Projected Hotel Room Inventory

This section contains numerical estimates of existing hotel rooms on Kauai and the projected inventory of hotel rooms on Kauai to the year 1997.

The source for compiling the inventory of existing hotel rooms on Kauai should be cited in the EIS. This islandwide hotel room figure should also be broken down for each judicial district or region of Kauai.

The source for determining the projected supply of additional hotel units on Kauai (i.e., 1294 units) should be cited. This figure should be broken down by specific hotel project.

Mr. Avery Youn
Page 2
May 5, 1983

Previous testimony by the County of Kauai Planning Department under Land Use Commission Docket A82-550-Aefac Property Development Corp., indicates the potential availability of an additional 2,276 hotel units on Kauai. According to the Planning Department's testimony, there are 56.9 acres of undeveloped land on Kauai which are currently General Planned and zoned for resort use. These lands are situated within the Urban District and have the potential of providing an additional 2,276 hotel units on the island. According to the County, public services and facilities are available to these sites. The bulk of these lands are situated in the Malua-Kapas area (38.9 acres) and the remainder in Princeville (18.0 acres). The EIS should discuss the need for the additional hotel units in light of these other vacant and existing resort areas.

Section 2.5.1.7: Estimated Need for Hotel/Condominium Hotel Rooms

The estimates of need in this section should be discussed in relationship to the hotel occupancy level desired by the County of Kauai.

Section 2.5.1.8: Market Support for Condominium/Hotel Development at Princeville

Based upon previous assumptions of supply and demand this section asserts that by the year 1987 approximately 450 units may be needed at the desired hotel occupancy level of 75 percent. The EIS further states that this could warrant the development of a 300-unit resort condominium hotel project at Princeville. Information regarding Princeville's historical market share of the island's hotel rooms should be provided.

Section 2.5.2.4: Princeville Condominium Development Assessment

The need for the proposed 120-unit condominium development requires further substantiation. The discussion of past and projected condominium sales and absorption rates at Princeville is in itself insufficient to justify the need for the 120-unit condominium project. Projections of the estimated supply of condominium units along with the projected demand for condominium units on Kauai need to be presented. Princeville's anticipated share of the market then needs to be estimated.

According to the EIS approximately 1,100 additional condominium units are planned in Phase I of Princeville. Based upon this projected supply of units at Princeville and along with condominium developments proposed in other areas of Kauai, the EIS states that market support for condominium development in Princeville Phase II during the next five year period is limited. However, the EIS goes on to state that a sufficient demand could exist to develop and market the proposed 120 units in Phase II by around 1987. There are no facts to support this statement.

Mr. Avery Youn
Page 4
May 5, 1985

Also, this EIS adequately addresses our comments for the Coastal
Zone Management Program in the previously circulated preparation notice.

Thank you for the opportunity to review this document.

Very truly yours,

Kent M. Keith
Kent M. Keith

cc: Princeville Development Corp.
c/o Belt, Collins & Associates
Office of Environmental Quality Control

Mr. Avery Youn
Page 3
May 5, 1985

Testimony of the County of Kauai Planning Department on Land Use
Commission Docket A82-550-Afac Property Development Corporation indicates the
existence of 2,016 multi-family units approved but as yet unbuilt on the island
of Kauai. These include the following:

Area	Units	Projects
Princeville/North Shore	654	Kamahana II, Ka Eo Kai III, Luana, Sandpiper II, Pukana La, Creare
Anahola/Kapea/Mailuu	204	White, Royal Plantation Gardens, Maipouli Assoc.
Ilanamulu/Lihue/Puhi	287	Kalapaki Villas, Limu Gardens
Poipu/Kukuiula/Koiaa/Kalahoo	859	Ho'ovi, Kanua Partners, Alnako, Noelani Kai, Keoni Loo, Moana Golf Village, Kahala II, Manuatoa II

The EIS should address the need for the proposed 120 condominium
units at Princeville, in view of these proposed multi-family developments
throughout the island of Kauai.

Section 2.5.3: Projected Market Support for Resort Single-Family Lot
Development

The projected demand for resort residential lots is principally
based upon prior sales trends experienced on Kauai. This projection does not
account for other factors influencing the future demand for resort residential
lots (i.e., prices, available financing, competitive developments outside of
Kauai). The distinction between the proposed demand for resort residential
lots and the projected demand for resort condominium units is also not clear.
The factors distinguishing and influencing the demand for residential lots
versus condominium units are not described.

The projected supply of resort residential lots on Kauai includes
projections from only two developments: Princeville Phase I and Kiahuna at
Poipu. To account for other unknown additions to supply, 10 additional lots
per year have been added as a contingency. This projection does not account
for other projects which may be equally competitive in supplying residential
lots to the market. Residential lots in other areas of Kauai which may be
equally competitive in attracting the investor and vacation home markets
should be evaluated in this analysis.

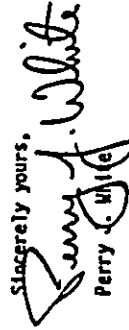
**BELT, COLLINS
& ASSOCIATES**
Engineering - Planning
Landscape Architecture

Mr. Kent M. Keith, Director
Department of Planning and
Economic Development
P. O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Keith:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of May 5, 1983 (your reference number 7385) addressed to the director of the Kauai County Planning Department. Because we prepared the EIS, Belt, Collins & Associates and its subconsultants are responding to comment letters. Because all of your comments concerned the portion of the report which was summarized from Peat, Harwick, Mitchell & Company's market analysis, we have asked them to prepare responses. A copy of their letter is attached.

Sincerely yours,

Perry J. White

PJM/AMY/lst
Attachment

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

1486 Local Street, Honolulu, Hawaii 96813 Telephone: (808) 521-5161 Telex: B1111 2810374
BCA Ltd, Principals: James R. Belt, Paul M. Harada, Raymond J. Collins, Joseph Varia, Jr., Thomas P. Papadimitriou
Founded in 1951 by Robert M. Belt and Walter K. Collins

May 18, 1983
83-693


Peat, Marwick, Mitchell & Co.

Financial Plaza of the Pacific
P.O. Box 4150
Honolulu, Hawaii 96813
808-531-7286

May 19, 1983

Mr. Perry J. White, Senior Planner
Belt Collins & Associates
606 Coral Street, 1st Floor
Honolulu, Hawaii 96813

Dear Mr. White:

As you requested, this letter responds to the comments raised by the Hawaii Department of Planning and Economic Development (DPED) in its letter of May 5, 1983, regarding our market assessment of the proposed Princeville Phase Two development.

1. Section 2.5.1.5: Projected Hotel/Condominium Unit Requirements

"The EIS should explain the basis for the selection of these three (hotel) occupancy levels (i.e., 75 percent, 80 percent and 85 percent)."

The range in occupancy levels reflects a desired planning level of occupancies in order for the hotels to accommodate peak season requirements and to operate on a financially viable basis. The occupancy levels were also selected to reflect historical ranges of occupancies achieved on Kauai and in the State and levels that could be expected to be achieved in the future. These levels also reflect occupancies that hotel management companies, developers, financial lenders and investors generally seek when becoming involved in a project.

2. Section 2.5.1.6: Projected Hotel Room Inventory

"The source for compiling the inventory of existing hotel rooms on Kauai should be cited in the EIS. This islandwide hotel room figure should also be broken down for each judicial district or region of Kauai."

As stated in our report, the source of the hotel room inventory is the Hawaii Visitors Bureau, Visitor Plant Inventory. The geographic distribution of the hotel room inventory is presented in Attachment 1.

Team, Marvin, Mitchell & Co

Mr. Perry J. White
May 19, 1983
3

4. Section 2.5.1.8: Market Support for Condominium/Hotel Development at Princeville

"Based upon previous assumptions of supply and demand, this section asserts that by the year 1987, approximately 450 units may be needed at the desired hotel occupancy level of 75 percent. The EIS further states that this could warrant the development of a 300-unit resort condominium hotel project at Princeville. Information regarding Princeville's historical market share of the island's hotel rooms should be provided."

A market share approach, as utilized in evaluating the market support for the other land uses, would be appropriate if Princeville had a demonstrable hotel market experience. Unfortunately, Princeville does not have a hotel upon which a historical market share analysis could be conducted. In fact, as shown in Attachment I, the Hanalei district has very limited hotel facilities.

Condominium and vacation home usage provides an indication as to the overall demand for visitor accommodations. In this regard, the demand for hotel rooms was extracted from the overall visitor accommodations demand. A market share analysis based on condominium usage, however, was not conducted as the two types of accommodations cater to different market segments. Further, the significant proportion of condominiums at Princeville (30%) may overstate the total market share for hotel usage.

Further, similar to the experience of other hotels on Kauai, a hotel developed at Princeville could be expected to directly compete with other quality hotels on the island. Thus, an assessment of overall hotel market on Kauai provides a perspective as to whether there is sufficient market support to justify the development of the 300-unit resort condominium hotel at Princeville.

5. Section 2.5.2.4: Princeville Condominium Development Assessment

"The discussion of past and projected condominium sales and absorption rates at Princeville is in itself insufficient to justify the need for the 120-unit condominium project. Projections of the estimated supply of condominium units along with the projected demand for condominium units on Kauai need to be presented. Princeville's anticipated share of the market then needs to be estimated."

As the major residential resort on Kauai, the historical condominium market performance of Princeville provides an indication of the market support for the 120-unit condominium development in Phase II. As described in our report, the methodology used in estimating the demand for this project included an overall demand and supply analysis for condominium development on Kauai and then an assessment of the potential Princeville market share of the condominium demand.

Team, Marvin, Mitchell & Co

Mr. Perry J. White
May 19, 1983
2

"The source for determining the projected supply of additional hotel units on Kauai (i.e., 1294 units) should be cited. This figure should be broken down by specific hotel project."

As also stated in our report, the source for the planned additional hotels on Kauai is Hawaii Visitors Bureau, Visitor Plant Inventory, the Hawaiian Telephone Co., Building Digest and published articles. Attachment II provides a listing of the planned hotel rooms by project.

"Previous testimony by the County of Kauai Planning Department under Land Use Commission Docket AR2-530-Arfac Property Development Corp., indicates the potential availability of an additional 2,276 hotel units on Kauai. The bulk of these lands are situated in the Maunaloa-Kapaa area (39.9 acres) and the remainder in Princeville (18.0 acres). The EIS should discuss the need for the additional hotel units in light of these other vacant and existing resort areas."

The estimated hotel room need was based on the projected relationship of the hotel room demand to the existing and planned hotel room inventory. By 1997 Kauai is projected to support or need 1,920 to 2,800 hotel rooms in addition to those that are currently being planned to be developed. The portion of land availability to develop 2,276 hotel rooms could address a portion of this long term additional room need on Kauai. Further, it should be realized that the Princeville hotel projects, as stated in the previous testimony, are already included in the potential 2,276 hotel units on lands that could be developed for resort use.

3. Section 2.5.1.7: Estimated Need for Hotel/Condominium Hotel Rooms

"The estimates of need in this section should be discussed in relationship to the hotel occupancy level desired by the County of Kauai."

To our knowledge, the County of Kauai has not formally expressed a "desired" hotel occupancy level. However, the State Tourism Plan, prepared by DPED, has utilized an occupancy level of 80% in estimating the State's hotel room requirements. Thus, the selected occupancies of 75%, 80% and 85% appear to represent a reasonable range of occupancy levels upon which to base the overall hotel room requirements for Kauai.

Mr. Perry J. White
May 19, 1983
2

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The estimated hotel room need was based on the projected relationship of the hotel room demand to the existing and planned hotel room inventory. By 1997 Kauai is projected to support or need 1,920 to 2,800 hotel rooms in addition to those that are currently being planned to be developed. The potential land availability to develop 2,276 hotel rooms could address a portion of this long term additional room need on Kauai. Further, it should be realized that the Princeville hotel projects, as stated in the previous testimony, are already included in the potential 2,276 hotel units on lands that could be developed for resort use.

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Mr. Perry J. White
May 19, 1983
3

4. Section 2.5.1.8: Market Support for Condominium/Hotel Development at Princeville

"Based upon previous assumptions of supply and demand, this section asserts that by the year 1987, approximately 450 units may be needed at the desired hotel occupancy level of 75 percent. The EIS further states that this could warrant the development of a 300-unit resort condominium hotel project at Princeville. Information regarding Princeville's historical market share of the island's hotel rooms should be provided."

A market share approach, as utilized in evaluating the market support for the other land uses, would be appropriate if Princeville had a demonstrable hotel market experience. Unfortunately, Princeville does not have a hotel upon which a historical market share analysis could be conducted. In fact, as shown in Attachment I, the Hanalei district has very limited hotel facilities. Condominium and vacation home usage provides an indication as to the overall demand for visitor accommodations. In this regard, the demand for hotel rooms was extracted from the overall visitor accommodations demand. A market share analysis based on condominium usage, however, was not conducted as the two types of accommodations cater to different market segments. Further, the significant proportion of condominiums at Princeville (30%) may overstate the total market share for hotel usage.

Further, similar to the experience of other hotels on Kauai, a hotel developed at Princeville could be expected to directly compete with other quality hotels on the island. Thus, an assessment of overall hotel market on Kauai provides a perspective as to whether there is sufficient market support to justify the development of the 300-unit resort condominium hotel at Princeville.

5. Section 2.5.2.4: Princeville Condominium Development Assessment

"The discussion of past and projected condominium sales and absorption rates at Princeville is in itself insufficient to justify the need for the 120-unit condominium project. Projections of the estimated supply of condominium units along with the projected demand for condominium units on Kauai need to be presented. Princeville's anticipated share of the market then needs to be estimated."

As the major residential resort on Kauai, the historical condominium market performance of Princeville provides an indication of the market support for the 120-unit condominium development in Phase II. As described in our report, the methodology used in estimating the demand for this project included an overall demand and supply analysis for condominium development on Kauai and then an assessment of the potential Princeville market share of the condominium demand.

Post, Marnett, Mitchell & Co.

Mr. Perry J. White
May 19, 1983
4

In regards to the condominium supply, at the end of 1981, Kauai had about 3,807 condominium units, of which 1,150 units, or 30%, of the total condominium inventory were located in Princeville. As stated in our report, 28 condominium projects including about 2,900 units are planned over the next five years. If all projects are completed as scheduled, the condominium inventory would increase to 4,355 units by 1984 and to about 6,710 units by 1988, presuming completion of projects with indefinite construction dates, as shown in Attachment III.

In regard to the demand for condominium units and as discussed in our report, the number of condominium units sold from 1972 to 1981 fluctuated from 63 to 961 units per year. Condominium sales peaked in 1974 with 210 units sold and then subsequently declined to 58 condominium sales in 1975. Coupled with a substantial rise in unit completions, this resulted in about 400 units being unsold in 1975. Thereafter, the condominium sales rate sharply increased and peaked with 961 units being sold in 1980. In 1981, due to depressed economic conditions and the unavailability of attractive financing, condominium sales decreased to 551 units.

Using a three-year moving average, new condominium sales were estimated to increase about 29% per year for 1975 to 1981 with recent increases amounting to 43% in 1976, 45% in 1979, 66% in 1980 and then declining to 15% in 1981. For 1982, new condominium sales were estimated to decline to about 350 units. From 1983 to 1997, new condominium sales were estimated to increase about 10% annually to about 560 units in 1987, to 900 units in 1992 and to 1,500 units in 1997. The lower growth rate in condominium unit sales reflects the expected decline in the growth of visitors to the State and Kauai and the fact that few quality sites for condominium development are readily available. Further, the estimated lower growth in the condominium absorption rate reflects the philosophy of the county of more moderate economic growth, at that time.

Attachment IV presents the overall demand and supply relationship of condominiums developed on Kauai for the period 1982 to 1997. As shown, a surplus of condominium units is projected for 1982 and 1983, but a shortage of units is projected for 1984 and subsequent years. Overall, the analysis indicates that Kauai could support an additional 1,900 units during the fifteen year period than currently planned or assumed to be developed.

Post, Marnett, Mitchell & Co.

Mr. Perry J. White
May 19, 1983
5

"According to the EIS, approximately 1,100 additional condominium units are planned in Phase I of Princeville. Based upon this projected supply of units at Princeville and along with condominium developments proposed in other areas of Kauai, the EIS states that market support for condominium development in Princeville Phase II during the next five-year period is limited. However, the EIS goes on to state that a sufficient demand could exist to develop and market the proposed 120 units in Phase II by around 1987. There are no facts to support this statement."

The market support for resort condominium development at Princeville was based on the relative market position of new condominium sales at the resort in relation to the overall market performance of new condominium units on Kauai. The historical relationship of condominium sales at Princeville averaged about 28% of all Kauai sales as a whole from 1975 to 1980. For the next 15-year period, new condominium sales at Princeville were estimated to represent 30% of all new condominium sales on Kauai. Based on this estimated market position, average annual new condominium sales at Princeville could be about 105 units in 1982, increasing to 170 units by 1987, 270 units by 1992 and 450 units by 1997.

The projected condominium demand at Princeville could support the development of the 1,100 condominium units planned for Princeville Phase One over the five-year period but limits other condominium development at Princeville during this period. In subsequent years, however, when the planned additional supply is absorbed, there appears to be sufficient demand to develop and market the 120 units around 1989 or 1990. Attachment V presents this analysis for Princeville.

"Testimony of the County of Kauai Planning Department on Land Use Commission Docket AB2-530-Arafac Property Development Corporation indicates the existence of 2,016 multi-family units approved but as yet unbuild on the island of Kauai. The EIS should address the need for the proposed 120 condominium units at Princeville, in view of these proposed multi-family developments throughout the island of Kauai."

As shown in Attachment IV, the analysis of the overall demand and supply for new condominium units on Kauai for the period 1982 to 1997 includes 316 unsold but existing units; 548 units that are definitely planned; 2,355 units that are planned but have no definite completion date and 7,395 units that are unknown. Accordingly, the analysis not only includes the 2,016 multi-family units approved but not as yet built, but also provides for some 8,598 additional condominium units. Further, it should be realized that about 654 units of the 2,016 approved but as yet unbuild units are mostly located in Princeville and, as such, are reflected on the Phase One and Two development plans for the resort. Thus, the analysis to support the 120 unit condominium development at Princeville not only fully takes into consideration the 2,016 approved but as yet unbuild units but also provides for additional condominium development on Kauai.

Mr. Perry J. White
May 19, 1983
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6. Section 2.5.3: Projected Market Support for Resort Single-Family Lot Development

"The projected demand for resort residential lots is principally based upon prior sales trends experienced on Kauai. This projection does not account for other factors influencing the future demand for resort residential lots (i.e., prices, available financing, competitive developments outside of Kauai)."

The historical sales levels not only reflect the market performance of resort residential lots on Kauai but also provides a perspective as to the relative market attractiveness of Kauai for resort residential lot development compared to the other major resorts in Hawaii. For this reason, and as presented in our report, the analysis included an assessment of resort residential lot development throughout the state including the resorts of Wailea, Kapalua and Keenapali on the island of Maui and the resorts of Mauna Kea, Keauhou, Sea Mountain and Waikoloa on the island of Hawaii. This assessment for other resort lot developments included such factors as existing and planned development, lot sizes, location, lot improvements, buyer characteristics, sales prices, financing and the sales rate. Our assessment for lots at Princeville was based on these determinants of demand for resort residential lots in comparison to resort lot subdivisions on other islands.

"The distinction between the proposed demand for resort residential lots and the projected demand for resort condominium units is also not clear. The factors distinguishing and influencing the demand for residential lots versus condominium units are not described."

Our analysis of the historical and potential markets for resort condominium development and resort residential lot development indicates that the markets for the two uses are significantly different in terms of end use, holding periods, investment outlook and financial requirements. This analysis was provided in a section of our report discussing the buyer characteristics, lot sales, prices and financing of resort residential lots at selected resort areas in the state.

Mr. Perry J. White
May 19, 1983
7

"The projected supply of resort residential lots on Kauai includes projections from only two developments; Princeville Phase I and Kiahuna at Poipu. To account for other unknown additions to supply, 10 additional lots per year have been added as a contingency. This projection does not account for other projects which may be equally compatible in supplying residential lots to the market. Residential lots in other areas of Kauai which may be equally competitive in attracting the investor and vacation home markets should be evaluated in this analysis."

Resort residential lots were defined as residential lots located within a master planned and self-supporting resort community, that is oriented towards recreational amenities, such as golf or tennis. The reason for this is that our analysis of the motivation of resort residential lot purchasers indicated that although the resort lot purchasers are primarily interested in a vacation home, future retirement home or an investment; the pride of home-ownership within a successful resort area is believed to be a strong motivating factor. As a result, resort residential lots generally achieve a price premium in relation to standard residential lots. Thus, standard residential lots are not believed to be directly competitive with resort residential lot development at Princeville and were not included in either estimating the demand for or supply of resort residential lots.

In regard to the supply of resort residential lots, in 1982 about 535 lots were planned or potentially estimated to be developed. The potential supply of lots included lot developments at Kiahuna and Princeville as well as a provision for 210 unknown future additions. Thus, the projected supply of resort residential lots included not only planned, lot development but also potentially developed resort residential lots. Our analysis indicated that the other resorts on Kauai, at that time, either were not considering resort residential lot development or did not have land potential available for such development.

* * * * *

We are pleased to respond to any questions or comments that may be raised by interested parties regarding our market analysis and economic assessment of the planned Phase II development at Princeville Resort.

Very truly yours,
PEAT, MARWICK, MITCHELL & CO.
Malcolm J. Tom
Malcolm J. Tom, Partner

MJT/lmj

Composition of Kauai Visitor Hotel Inventory
October 1981

Area	Visitor units		Percentage of condominium units to total units	Estimated completion date	Hotel	Location	Number of rooms
	Hotel units(1)	Condominium units					
Lihue	709	70	9.0%	1983	Sheraton Kauai	Poipu-Kukulu	232
Waimea-Kapaa	1,779	484	21.4	1985	Princeville Hotel	Hanalet-Haena	300
Hanalet-Haena	6	690	99.1	Indefinite	Coco Palms (expansion)	Waimea-Kapaa	89
Poipu-Kukulu	783	668	46.0		Unnamed Pacific Holiday, Inc. hotel	Waimea-Kapaa	297
Kokee-Kalaheo	32	-	-		Kauai Hilton	Lihue	350
	<u>3,309</u>	<u>1,912</u>	<u>36.6%</u>		Waipahoehoe (expansion)	Poipu-Kukulu	<u>26</u>
							<u>1,294</u>

(1) Includes apartment hotels and cottages.

Source: Hawaii Visitors Bureau, Visitor Plant Inventory, October 1981.

Source: Hawaiian Telephone, Building Digest, October 1981; Hawaii Visitors Bureau, Visitor Plant Inventory, October 1981 and published articles.

Attachment III

Under Construction and Planned
Condominium Units on Kauai

1981 to 1986

Estimated year of completion	Number of projects	Number of units	Cumulative total	Compound annual percent change
Existing - 1981	60	3,807	-	-%
Planned:				
1982	6	338	4,145	8.9
1983	1	144	4,289	3.5
1984	1	66	4,355	1.5
Indefinite(1)	20	2,355	6,710	24.1
	<u>28</u>	<u>2,903</u>		

(1) Presumed completed by 1988.

Source: Compiled by Peat, Marwick, Mitchell & Co. based on State of Hawaii horizontal property regime (condominium) registrations; Hawaii Visitors Bureau, Visitor Plant Inventory, October 1981; discussions with developers; and published reports.

Attachment IV

Projected Kauai Resort Condominium

Demand and Supply

Year	Projected demand	Projected supply (1)	Projected shortage (surplus) Annual	Projected shortage (surplus) Cumulative
1982	350	654(2)	(314)	(314)
1983	385	144	241	(73)
1984	425	66	359	286
1985	465	450	15	300
1986	510	500	10	310
1987	560	550	10	320
1988	615	600	15	335
1989	675	650	25	360
1990	745	700	45	405
1991	820	750	70	475
1992	900	800	100	575
1993	990	850	140	715
1994	1,090	900	190	905
1995	1,200	950	250	1,155
1996	1,320	1,000	320	1,475
1997	1,500	1,050	450	1,925

(1) Based on known additions from 1982 to 1984. Thereafter, an allowance for unknown additions is assumed at 450 units in 1985, increasing by 50 units annually.

(2) Includes 316 unsold units.

Attachment V

Projected Princeville Resort Condominium

Demand and Supply

Year	Projected demand	Projected supply (1)	Projected shortage (surplus) Annual	Projected shortage (surplus) Cumulative
1982	105	132(2)	(27)	(27)
1983	115	40	75	48
1984	130	66	64	112
1985	140	300	(160)	(48)
1986	155	300	(145)	(193)
1987	170	394	(224)	(417)
1988	185	--	185	(230)
1989	205	--	205	(30)
1990	225	--	225	200
1991	245	--	245	445
1992	270	--	270	715
1993	300	--	300	1,015
1994	330	--	330	1,345
1995	360	--	360	1,705
1996	400	--	400	2,105
1997	450	--	450	2,555

(1) Based on known additions from 1982 to 1984. Thereafter, the 994 units are assumed to be completed by 1987 representing 300 units in 1985, 300 units in 1986 and 394 units in 1987.

(2) Includes 132 unsold units.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HONOLULU, HAWAII

May 6, 1983

HONOLULU, HAWAII 96813

DIVISION

DEPUTY DIRECTOR
WAYNE J. YAMAGUCHI

JAMES B. MCCORMACK
JOHNATHAN K. SIMMONS, PH.D.

INTERFIER ID

STP
8,9032

**BELT, COLLINS
& ASSOCIATES**
ENGINEERING - PLANNING
LANDSCAPE ARCHITECTURE

May 12, 1983
83-675

Mr. Avery Youn, Director
Planning Department
County of Kauai
4396 Rice Street
Lihue, Kauai 96766

Dear Mr. Youn:

EIS for Proposed Princeville Phase Two
Development, Hanalei, Kauai

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

The traffic assessment presented in the EIS appears to
be conservative but adequate.

Please be informed that the estimated completion date
for our Kuhio Highway project, from Kalihiwai to Princeville,
has been revised to 1986. Also, our project, Kauai Belt
Road, Hanalei Bridge and Approaches, which was deferred in
1980, has been recently reactivated. An EIS Preparation
Notice for this project is being prepared and will be issued
shortly.

Very truly yours,

Ryokichi Higashionna
Ryokichi Higashionna
Director of Transportation

cc: Princeville Development Corps.

Mr. Ryokichi Higashionna
Director of Transportation
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Higashionna:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of May 6, 1983 (your reference STP/8.9032),
addressed to the director of the Kauai County Planning Department, regarding
the Princeville Phase Two Environmental Impact Statement (EIS). Because
Belt, Collins & Associates prepared the EIS, we are responding to comment
letters. We appreciate the time spent by you and your staff in reviewing the
document.

The estimated completion date given on page IV-10 of the EIS for the
Kalihiwai-to-Princeville Kuhio Highway project has been changed to 1986 as
per your letter.

We understand that you found the traffic assessment in the EIS to be
adequate. If there is any additional information that we could provide
regarding the proposed project please call me at 521-5361.

Sincerely yours,

Randy Perry
Randy Perry

PJP/AKY/tst
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

1986 Local Street Planning Division (EIS) - 1986-1987 - 1988 - 1989 - 1990 - 1991 - 1992
H.A. 1991 - 1992 - 1993 - 1994 - 1995 - 1996 - 1997 - 1998 - 1999 - 2000 - 2001 - 2002
Established in 1953 by Robert M. Bell and Walter K. Collins

ELT COLLINS ASSOCIATES
PLANNING • PLANNING
ARCHITECTURE

JACQUELINE PARNELL
DIRECTOR
TELEPHONE NO
540 6813



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

340 HALEKAUWILA STREET
ROOM 301
HONOLULU, HAWAII 96813

May 2, 1983

May 11, 1983
83-625

Mr. Perry White
Princeville Development Corp.
c/o Belt, Collins & Associates
606 Corral Street
Honolulu, Hawaii 96813

Dear Mr. White:

Subject: Draft Environmental Impact Statement for the
Proposed Princeville Phase Two

We have reviewed your draft EIS and have no additional
comments to make at this time.

Sincerely,

Jacqueline Parnell
Jacqueline Parnell
Director

cc: Kauai Planning Department

Ms. Jacqueline Parnell, Director
Office of Environmental Quality Control
550 Halekaunila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Parnell:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of May 2, 1983 regarding the Princeville Phase
Two Environmental Impact Statement. We appreciate the time spent by you and
your staff in reviewing the document. We understand you have no additional
comments on the project at this time.

Sincerely yours,

Perry R. White
Perry R. White

PJW/ARY/lst
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

Local News: Honolulu Hawaiian Advertiser (808) 521-5100, Honolulu Advertiser (808) 521-5100
1111 Pineapple Lane, Suite 201, Honolulu, Hawaii 96813
Fax: (808) 521-5100, Telex: 521-5100, Cable: 521-5100



University of Hawaii at Manoa

Environmental Center
Crawford 317 - 2550 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 946-7361

May 6, 1983
RE:0374

Mr. Brian K. Nishimoto, Director
Planning Department
County of Kauai
9280 Rice Street
Lihue, Kauai 96766

Dear Mr. Nishimoto:

Draft Environmental Impact Statement
Proposed Princeville Phase Two Development
Hanalei, Kauai, Hawaii

The Environmental Center review of the above cited document has been prepared with the assistance of Luciano Minerbi and Peter Nakamura, Urban and Regional Planning; Marshall Mock, Kauai Community College; Matthew Spriggs, Anthropology; Jacquelin Miller and Pamela Halnsen, Environmental Center.

In general, our reviewers have found this DEIS to be a comprehensive document that adequately describes the potential environmental impacts associated with the development of Princeville Phase Two. The preparers of the DEIS are to be particularly commended for their individualized requests for comments during the consultation phase. We would, however, like to make a few comments and raise a few questions.

Sewage Effluent

We note that, "The effluent of the secondary treatment process would...be used for golf course irrigation..." (II-14 and also, IV-30-31, 67). What permits or water quality standards and monitoring provisions are required for the re-use of sewage effluent for irrigation?

Traffic Impacts

Although mitigative measures are proposed (IV-17), with regard to the increased traffic volumes at the Kahalo Highway/Ala Haka Road intersection, there does not appear to be any clear line of responsibility indicated. Who will provide the funding to carry out these mitigative measures for Kahalo Highway?

Mr. Brian K. Nishimoto

-2-

May 6, 1983

Kauai's General Plan Amendment

Perhaps the most serious concern raised by our reviewers is one not pertaining to any question of adequacy of the DEIS, but a question as to the appropriateness of the timing of the proposed land-use change requested.

We note that this Environmental Impact Statement was initiated by Princeville Development Corporation's request for an amendment to the Kauai's General Plan (II-1). We further note that this same Plan is presently being updated (I-8, V-1, V-22-29), along with the North Shore Development Plan (V-26-30). Recognition of the possible incompatibility of these plans with the proposed amendment is clearly indicated on page VII-1:

"The draft of the General Plan Update contains ten-year land use allocations for Princeville and the remainder of the North Shore. However, it is unclear as to how these limits would be applied to Phase Two. Because of this, and because it is also uncertain whether the proposed June 1982 update will be adopted in its present form, it is impossible to determine whether or not the present proposal will be found consistent with the revised General Plan."

Considering the transitional phase of the aforementioned plans for this area of Kauai and the magnitude of the proposed project (1,185 acres in total-Phase Two; 1,101 acres included in the General Plan amendment request) it would seem most appropriate to delay any further individual amendments to the Kauai's general plan until the overall update procedures of the GP and North Shore Development Plan are completed.

In addition, we also note that there is a conflict in agricultural designations for the subject parcel: "...the Land Study Bureau gives the land low ratings while the State Department of Agriculture has designated it Prime Agricultural Land. The Agricultural Potential map in the General Plan...show all of the Princeville Phases One and Two land as having low agricultural potential" (V-19). This added confusion in land-use designation seems to be further justification for delaying individual land use amendments until a clear plan for Kauai, and in particular for the North Shore, has been established.

We appreciate the opportunity to comment on this DEIS and hope that you will find our comments useful in the preparation of the revised document.

Yours truly,

Doak C. Cox
Doak C. Cox
Director

cc: OEQC
Princeville Development Corporation
Luciano Minerbi
Peter Nakamura
Marshall Mock
Matthew Spriggs
Jacquelin Miller
Pamela Halnsen

May 12, 1983
83-677

Dr. Doak C. Cox
Director, Environmental Center
University of Hawaii
Crawford 317
2550 Campus Road
Honolulu, Hawaii 96822

Dear Dr. Cox:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter dated May 6, 1983 (your reference RE:0374), addressed to the director of the Kauai County Planning Department, regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to comment letters. We appreciate the time spent by you and your colleagues in reviewing the report. We are, of course, pleased that the EIS was found to contain a generally adequate description of the project's potential environmental effects. Responses to your specific comments are given below.

Sewage Effluent

Construction and operation of wastewater treatment plants (WWTP) such as Princeville's require at least two separate approvals from the State Department of Health (DOH). Before construction begins the Department of Health must approve the plans and before the plant starts operation a "permit to operate" must be obtained from DOH. If an effluent irrigation system is to be used, a third, separate, approval is required. All three approvals have already been obtained for the existing facility at Princeville and allow it to operate up to a rated capacity of 1.5 million gallons per day without further approval. As indicated on page IV-67 of the EIS, the projected load on the plant following the completion of Phase Two would be 1.45 mgd, or about 50,000 gallons per day less than its capacity. Hence, no modification to the existing permits will be required.

Effluent from the wastewater treatment plant is used for golf course irrigation. Hence, State water quality standards are not applicable. However, effluent quality is governed by Chapter 38 of the State Public Health Regulations. Monitoring of effluent quality at the Princeville WWTP is conducted on a weekly basis as prescribed in those regulations. The director of the Department of Health, under the authority granted by Chapter 342 of

State of Hawaii Department of Health, Division of Environmental Health, 521 S. King Street, Honolulu, Hawaii 96813
Belt, Collins & Associates, Inc., 1000 Ala Moana Boulevard, Suite 1000, Honolulu, Hawaii 96813
Prepared for the University of Hawaii, Department of Environmental Health, Honolulu, Hawaii

Dr. Doak C. Cox
May 12, 1983 -- 83-677
Page Two

Hawaii Revised Statutes, has required submission of quarterly reports on the results of the sampling program at the Princeville WTP. The Department of Health reviews these reports to ascertain the facility's compliance with legal standards.

Traffic Impacts

The State Department of Transportation (DOT) has indicated that it would be responsible for improvements at existing intersections along the Kuhio Highway-widening project corridor in the vicinity of the Phase Two lands. This means that it would undertake necessary improvements to the Ka Haku/Kuhio Highway intersection. All new intersections with Kuhio Highway would be the responsibility of the Princeville Development Corporation. PDC will coordinate with DOT on the design of these intersections so as to adequately mitigate traffic impacts and insure safe intersection design.

Kauai General Plan Amendment

As noted in your letter, this comment has to do with the timing of the request for a change in the General Plan designation of the Phase Two land, not with the adequacy of the EIS. Hence, no revision to the document is required.

While the topic is beyond the scope of this report, there are at least two development considerations that led the Princeville Development Corporation to proceed with its General Plan amendment petition at the same time the County was conducting its General Plan Update program. These are outlined below in the hope that they will prove useful to you.

As you may know, Princeville Development Corporation's original plans to develop the Phase Two area were prepared in the late 1970s. At that time, the County's North Shore Development Plan (NSDP) was being prepared, and a decision was made to wait until it had been completed before proceeding with plans for Phase Two. A draft of the NSDP was published in 1980, but Council action on the Plan was deferred pending completion of the County Charter-mandated General Plan Review and Update program.

Work on the General Plan Update was initiated in 1981 with the expectation that a revised plan would be adopted within twelve months. As of May 1983, no action has been taken by the County Council, and it is impossible to determine when or if changes to the General Plan recommended by the County Planning Department will be enacted. And adoption of an NSDP before the General Plan itself has been finalized is unlikely.

In view of the absence of a predictable completion date for the General Plan Update and adoption of a revised North Shore Development Plan, the Princeville Development Corporation decided to proceed with its independent

Dr. Deak C. Cox
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Page three

Dr. Deak C. Cox
May 12, 1983 -- 83-677
Page four

application for a General Plan amendment. In addition, it expects to submit an application to the State Land Use Commission for a State Land Use District boundary amendment from Agriculture to Urban within the next two months. We believe that the detailed information contained in the EIS regarding the Phase Two lands will be helpful to decision-makers as they consider appropriate General Plan designations regardless of whether this occurs as part of the overall General Plan Review Program or is limited to the Princeville-specific General Plan amendment request submitted by the Princeville Development Corporation.

Agricultural Designations

As noted in your letter, there are significant differences between the various agricultural land rating classifications that have been developed. To help rectify this, Action B.(4)(a) of the proposed State Agriculture Plan (October 1982) submitted to the 1983 Legislature by the Department of Agriculture calls for amendments to the State Land Use Law which would:

"... replace references to the Land Study Bureau Detailed Land Classification with references to important agricultural lands."

In its consideration of the proposed State Agriculture Plan during the 1983 legislative session, the State House of Representatives revised the plan to read:

"Propose establishment of an Agricultural Land Study Commission to identify important agricultural lands."

According to the Department of Agriculture:

"These changes allow for the designation of important agricultural lands rather than relying on the ALISH system. The 1983 Legislature did pass a bill creating a State of Hawaii Land Evaluation and Site Assessment Commission to identify important agricultural lands pursuant to the Hawaii State Constitution."

We expect that this new Commission will work to eliminate the current inconsistencies relating to agricultural suitability ratings. This will resolve the conflict identified in your comment. In the meantime, we will add a discussion of this point to the unresolved issues section of the EIS.

Thank you again for your comments. If you have any further questions, please contact me at 521-5361.

Sincerely yours,


Perry J. White

PJW/AVY/lst
cc: Planning Department, County of Kaua'i
Environmental Quality Commission
Princeville Development Corporation



University of Hawaii at Manoa

Water Resources Research Center
Holmes Hall 200 - 2540 Dole Street
Honolulu, Hawaii 96822

BELT, COLLINS
& ASSOCIATES
Engineering - Planning
Landscape Architecture

12 April 1983

May 11, 1983
83-624

Planning Department
County of Kauai
4296 Rice Street
Lihue, Kauai, HI 96766
Gentlemen:

Mr. Edwin T. Murabayashi
EIS Coordinator
Water Resources Research Center
University of Hawaii at Manoa
Holmes Hall
2540 Dole Street
Honolulu, Hawaii 96822

Subject: Environmental Impact Statement for the Proposed
Princeville Phase Two Development, March 1983

We have reviewed the subject EIS and have no comment to offer. Thank you
for the opportunity to comment. This material was reviewed by WRRRC personnel.

Sincerely,

Edwin T. Murabayashi

Edwin T. Murabayashi
EIS Coordinator, WRRRC

ETH:jmn

cc: Princeville Development Corp.

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kauai, Hawaii

Thank you for your letter of 12 April 1983, addressed to the Kauai
County Planning Department, regarding the Princeville Phase Two Environmental
Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS,
we are responding to comment letters. We appreciate the time spent by you and
your staff in reviewing the document. We understand you have no comments on
the report.

Sincerely yours,
Perry J. White
Perry J. White

PJW/AMY/lst
cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation

The County of Kauai, Hawaii, shall indemnify and hold the County harmless from and against all claims, damages, losses, and expenses, including reasonable attorneys' fees, that may be asserted against or incurred by the County, its officers, employees, agents, contractors, independent contractors, or any other person or entity in connection with the performance of the County's duties and responsibilities.

AN EQUAL OPPORTUNITY EMPLOYER

FURUY I. KUHIMURA
Mayor



COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
4396 RICE STREET
LILUOKE, HAWAII 96746

LAWRENCE KITAHARA
County Engineer
Telephone 245-3118
CLAY KAGAWA
County Director
Telephone 245-3800

Mr. Avery Youn, Director

May 5, 1983
Page 2

May 5, 1983

Mr. Avery Youn, Director
Planning Department
County of Kauai
4396 Rice Street
Lilue, HI 96766

Dear Mr. Youn:

RE: ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED PHASE TWO PRINCEVILLE DEVELOPMENT

We have reviewed the subject Environmental Impact Statement
(EIS) and submit our concerns for your consideration:

Sewerage System

- a. Paragraph 1 of Section 2.4.4 Sewage System mentions the likelihood of the County accepting the sewerage system from the KCPIC upon the redemption of the revenue bond used to construct the system. We do not believe that the above will be the case as there are too many issues, such as listed below, that must be resolved before the County will consider acceptance:
1. Easements for all sewer lines, sewage pump stations, etc., to be turned over.
 2. Effluent disposal rights into golf course irrigation ponds.
 3. "As Built" plans for all facilities.
 4. Acceptability of completed facilities.
 5. Operation and Maintenance Costs, Staffing, etc.

- b. Paragraph 2 of Section 2.4.4 Sewage System mentions the existing secondary treatment process to be "extended aeration". It is our understanding that the plant uses the "conventional" process which will generate much more sludge than the "extended aeration" process. Disposal of the sludge should be addressed, more so in view of the possible conversion of the County's landfill to a transfer station.
- c. Paragraph 3 of Section 2.4.4 Sewage System mentions that the existing 1.5 mgd sewage treatment plant is large enough to handle the expected flow from Phase I and the projected 0.50 mgd from Phase II. This may not be the case if Phase I is permitted in the future to build up to the densities allowed under the CZO rather than the densities currently allowed by Princeville.

In any case, whether or not the 1.5 mgd is sufficient for Phase I only or for both Phases I and II, the issue of cost sharing should be addressed as the KCPIC was established and revenue bonds floated for Phase I only.

Solid Waste Collection and Disposal

- a. Section 2.4.7 The schedule for a County refuse transfer station was based on previous County furnished information. At that time, the planning for an island-wide sanitary landfill indicated a potential site between Kapaa and Anahola which made a transfer station at Hanalei cost effective. Subsequently, the recommended plan is now to locate the landfill at Kekaha, due to environmental considerations of the other sites. The long haul for transfer trailers from Hanalei to Kekaha becomes prohibitively expensive; thus, there is a need to reconsider our plans for solid waste disposal for the North Shore area.
- Being that Princeville Phase II refuse will impact tremendously on the County's disposal efforts, the developer should resolve with the County the problems of solid waste disposal before additional refuse is allowed to be generated from the project.

Mr. Avery Youn, Director

May 5, 1983
Page 3

May 16, 1983
83-691

- b. Section 4.11.4 As noted above, the County's plan for solid waste disposal for the Hanalei area need to be re-evaluated; thus, the transfer station is not definite at this time.

The alternative of the developer establishing a private landfill is not considered viable (Page IV-71). However, the developer establishing a landfill for County operation should be pursued.

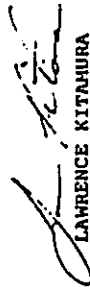
Sewage Effluent

- a. Section 4.5.5.5 The total effluent production from Phases I and II is projected to exceed golf course irrigation requirements. The requirements should be quantified, especially the surplus volume to be pumped into the injection well(s).

The last paragraph indicating findings of the test well does not definitely state that injection wells can accommodate the projected flows. This should be determined beforehand, not at the time flows reach a critical stage for the need of an alternate means of disposal.

XII-36

Very truly yours,


LAWRENCE KITAMURA
County Engineer

/sb

cc: Princeville Development Corporation,
c/o Belt, Collins & Associates

Mr. Lawrence Kitamura
County Engineer
Department of Public Works
County of Kaua'i
4396 Rice Street
Lihue, Kaua'i, Hawaii 96766

Dear Mr. Kitamura:

Environmental Impact Statement
for the Proposed Princeville Phase Two Development
Hanalei District, Kaua'i, Hawaii

Thank you for your letter of May 5, 1983 to the Kaua'i County Planning Department regarding the Princeville Phase Two Environmental Impact Statement (EIS). Because Belt, Collins & Associates prepared the EIS, we are responding to the comment letters. We appreciate the time you and your staff spent reviewing the document and preparing comments. Responses to the issues you raised are presented below.

Sewerage System

(a) When Chapter II of the EIS was first written, it was our understanding that the County was likely to accept the sewerage system from KCPIC upon redemption of the revenue bonds. As we became more familiar with the details of the case, it became apparent that there are many issues to be resolved before the County would consider acceptance. This understanding is reflected in the discussion of unresolved issues which appears in Section 7.1.2 of the EIS. As a result of an oversight on our part, the discussion in Section 2.4.4 was not revised accordingly.

The discussions of the sewerage system in Sections 2.4.4 and 7.1.2 of the Revised EIS reflect the position expressed in your letter. We agree that it is a more accurate representation of the current situation.

(b) At the wastewater treatment plant's current flow rate, the wastewater treatment plant should be termed a "conventional" process, not extended aeration as reported in the EIS. The Revised EIS correctly refers to it as "conventional". Thank you for calling this to our attention.

Mr. Lawrence Kitamura
May 16, 1983 -- 83-691
Page two

It is estimated that the conventional process employed in the Princeville wastewater treatment plant generates (before digestion) between 2,000 and 2,500 pounds of dry solids per million gallons treated. Hence, when operating at its 1.5 million gallon per day capacity, the facility would produce between 3,000 and 3,750 pounds per day of dry solids before digestion. Based on an assumed digester solids reduction efficiency of 40 percent, it is estimated that the facility, when operating at design capacity, will need to dispose of approximately 1,800 to 2,250 pounds per day of dry sludge.

After drying, the sludge is expected to contain about 60 percent water (by weight) and to have a specific gravity of 1.2. Using these factors, it is estimated that the treatment plant would produce from 2.3 to 2.9 cubic yards of sludge per day when operating at its 1.5 million gallon per day capacity. A sentence to this effect has been added to Section 4.11.2.

At present, sludge from the wastewater treatment plant is used in the nursery operation at Princeville. The nursery operator has indicated that he could utilize all of the sludge that would be produced by the WWP operating at capacity (Princeville Development Corporation; May 18, 1983). Because the nursery provides landscaping plants for the resort area, it is possible that it may be closed after full development of Phases One and Two. However, this disposal method can be utilized for at least fifteen years; and there are alternative sludge disposal techniques which could be used subsequently.

(c) As indicated in the EIS, the capacity of the wastewater treatment plant is adequate for existing and planned development in Princeville Phases One and Two. While it is true that the capacity would be inadequate if all of Princeville were to be developed and redeveloped at the maximum density allowed under the Kauli County Zoning Ordinance, it is not Princeville Development Company's intention to do so. Deed covenants subject developers to design controls that have become increasingly stringent in recent years, and we believe it highly improbable that development in excess of that shown as "planned" would actually occur. To insist that the wastewater treatment plant be designed to accommodate such unrealistically high flows would result in excessive costs. In this respect, it is worth noting that there is sufficient space on the treatment plant site to allow for more than doubling its capacity.

It is recognized that KCPIC was established and revenue bonds floated only for the Phase One portion of Princeville. It is expected that Princeville Development Corporation will be required to pay a connection charge for the privilege of utilizing a portion of the existing plant's excess capacity. It is expected that formal negotiations concerning the terms of any connection would begin if and when preliminary land use approvals for the project have been obtained.

Mr. Lawrence Kitamura
May 16, 1983 -- 83-691
Page three

Solid Waste Collection and Disposal

(a) and (b) Thank you for informing us about the possible change in the County's solid waste disposal plans for the North Shore. The discussions in Sections 1.4.9, 2.4.7, 4.11.4, and 7.1.3 have been revised to indicate the change in plans. We appreciate the difficulty you have faced in securing an alternative to the temporary disposal site that the Princeville Development Corporation (PDC) has provided; we also understand the cost problems with transporting the area's solid waste to Kekaha.

It is important to note that the need for a permanent solution to the solid waste problem in the North Shore area is independent of the Phase Two project. The latter would contribute only a fraction of the solid waste handled by a regional facility, and it will be necessary to secure a new site regardless of the disposal system that is finally agreed upon. Nevertheless, we have been informed that the Princeville Development Corporation intends to cooperate fully with the Department of Public Works in its effort to find an alternative disposal site. At present, two possible locations have been suggested, and discussions between the County and PDC are continuing. We fully expect the problem to be resolved before the Phase Two project is implemented.

Sewage Effluent

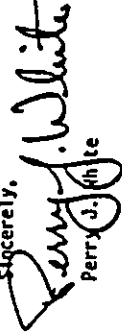
(a) During extended periods of rainy weather, disposal of the treated effluent via golf course irrigation is not possible. Hence, either the well disposal system must have sufficient capacity to accommodate all of the treated effluent or adequate on-site storage must be provided.

Based on information from the test well, it has been determined that injection is a technically feasible alternative. However, two wells would have to be drilled to more than 490 feet and would cost over \$300,000. Because of this high cost, Princeville Development Corporation is still investigating alternative means of sewage disposal during periods when effluent volume exceeds the irrigation needs of the golf course. These alternatives include: surcharge storage in existing irrigation ponds, land disposal on California grass in an area graded to control overflow, and expanded golf course irrigation use.

Mr. Lawrence Kitamura
May 16, 1983 -- 83-691
Page four

Thank you again for your thoughtful comments. We appreciate the corrections you provided. If you have any additional questions, please call me at 521-5361.

Sincerely,


Perry J. White

PJM:lt

cc: Planning Department, County of Kauai
Environmental Quality Commission
Princeville Development Corporation



Princeville Phase Two

Environmental Impact Statement

APPENDIX A

MARINE SPECIES LIST AND DISTRIBUTION

PRINCEVILLE MARINE ASSESSMENT - CORAL SPECIES OCCURRENCE

Species	Offshore Reef Stations							
	I	II	III	IV	V	VI	VII	VIII
Scleractinia (Stony Corals)								
<i>Cyphastrea ocellina</i>			0					
<i>Fungia (Pleuractis) scutaria</i>	0			0	0			0
<i>Montipora flabellata</i>	0	0	0	0	0	0	0	0
<i>Montipora patula</i>	0	0	0	0	0	0	0	0
<i>Montipora verrucosa</i>	0	0	0	0	0	0	0	0
<i>Pavona duerdeni</i>	0	0	0	0	0	0	0	0
<i>Pavona varians</i>		0	0		0		0	0
<i>Pocillopora damicornis</i>								
<i>Pocillopora eydouxi</i>	0	0		0	0	0	0	0
<i>Pocillopora meandrina</i>	0		0	0	0	0	0	0
<i>Porites brighami</i>		0	0				0	
<i>Porites compressa</i>	0	0		0	0	0	0	0
<i>Porites lobata</i>	0	0		0	0	0	0	0
<i>Psammocora (Stephanaria) stellata</i>				0				
<i>Leptastrea purpurea</i>			0					
Zoanthinaria (Soft Corals)								
<i>Palythoa tuberculosa</i>	0	0	0	0	0	0	0	0
<i>Zoanthus pacificus</i>			0					

Offshore Reef Stations								
Species	I	II	III	IV	V	VI	VII	VIII
Alcyonacea								
<i>Anthelia edmondsoni</i>	0	0	0	0	0	0	0	0
Total	11	11	12	12	12	9	12	12

Inshore Reef Flat Stations				
Species	IX	X	XI	XII
<i>Cyphastrea ocellina</i>	0		0	
<i>Montipora verrucosa</i>		0	0	
<i>Pocillopora damicornis</i>	0	0	0	
<i>Psammocora (Stephanaria) stellata</i>			0	
<i>Palythoa tuberculosa</i>				0
Total	2	2	4	1

PRINCEVILLE MARINE ASSESSMENT - ALGAE SPECIES OCCURRENCE

Stations

Family	Species	Offshore								Inshore Reef Flat			
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Chlorophyta (Green seaweeds)	<i>Caulerpa</i>		0			0							
	<i>Codium</i>							0	0				
	<i>Dictyosphaeria versluysi</i>									0			
	<i>D. cavernosa</i>						0						
	<i>Enteromorpha</i>												
	<i>Halimeda apuntia</i>	0	0	0	0	0	0	0	0	0		0	0
	<i>Microdictyon</i>											0	0
	<i>Neomeris</i>	0	0			0	0						
	<i>Valonia</i>												
	<i>Chlorophodopsis luxurians</i>										0		
Cyanophyta (Blue-Green Seaweeds)	<i>Lyngbya majuscula</i>			0		0	0	0	0				
Phaeophyta (Brown Seaweeds)	<i>Dictyopteris</i>	0						0	0				
	<i>Dictyota acutiloba</i>		0	0	0			0	0	0	0	0	0
	<i>Lobophora variegata</i>						0	0					
	<i>Padina japonica</i>	0			0	0			0	0	0	0	0
	<i>Ralfsia pangoensis</i>	0	0	0									

Family	Species	Offshore								Inshore Reef Flat			
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	<i>Rosenvingea intricata</i>						0						
	<i>Sargassum polyphyllum</i>												
	<i>Spacelaria furcigera</i>			0								0	
	<i>Styopodium hawaiiensis</i>	0											
	<i>Turbinaria ornata</i>				0							0	
	<i>Zonaria</i> sp.	0		0				0					
Rhodophyta (Red Seaweeds)	<i>Acanthophora spicifera</i>												
	<i>Actinotricha fragilis</i>			0									
	<i>Amansia glomerata</i>												
	<i>Asparagopsis taxiformis</i>	0	0		0	0	0	0	0				
	<i>Cladymenia pacifica</i>			0									
	<i>Corallina</i> sp.												
	<i>Dasyopsis</i> sp.		0			0							
	<i>Desmia hornemannii</i>												0
	<i>Dotyella hawaiiensis</i>	0	0		0	0	0	0	0				
	<i>Galaxaura</i> sp.						0	0	0				
	<i>Grateloupia</i> sp.			0									
	<i>Gibbsiithsia hawaiiensis</i>			0		0	0	0	0				

Family	Species	Offshore								Inshore Reef Flat			
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	<i>Halymenia formosa</i>												
	<i>Hydrolithon</i> sp.												
	<i>Hypnea</i> sp.												
	<i>Jania</i> sp.			0	0	0							
	<i>Laurencia</i> sp.	0	0		0	0		0	0				
	<i>Liagora</i> sp.	0	0	0		0	0	0	0				
	<i>Lithophyllum kotschyannum</i>		0	0	0	0	0	0	0			0	0
	<i>Martensia fragilis</i>	0	0			0		0	0				
	<i>Mesophyllum mesomorphum</i>		0	0				0					
	<i>Neogoniolithon frutescens</i>	0		0	0		0						
	<i>Peyssonelia rubra</i>		0			0						0	
	<i>Flocamium sandvicense</i>	0	0		0	0	0	0	0				
	<i>Porolithon gardneri</i>		0	0		0	0	0	0				
	<i>P. onkodes</i>	0	0	0	0	0	0	0	0	0	0		0
	<i>Predaea weldii</i>			0				0					
	<i>Scinaia hormoides</i>				0		0						
	<i>Spyridia filamentosa</i>												
	<i>Tenarea tessellatum</i>							0					

Family	Species	Offshore								Inshore Reef Flat			
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	<i>Trichoglea requieni</i>						0						
	<i>Wrangelia penicillata</i>			0			0		0				
	<i>Amphiroa fragilissima</i>									0	0	0	0
	<i>Hemitrema flabelliformis</i>	0		0	0	0		0		0	0	0	0
	Total	17	17	20	15	19	19	23	19	9	5	8	10

PRINCEVILLE MARINE ASSESSMENT - FISH SPECIES OCCURRENCE

Family	Species	Station							
		I	II	III	IV	V	VI	VII	VIII
Holocentridae (Squirrel fish)	<i>Myripristis</i> sp.	0					0		
	<i>Flammeo sammara</i>	0						0	
Priacanthidae (Big Eye)	<i>Priacanthus cruentatus</i>			0					
Lutjanidae (Snappers)	<i>Lutjanus kasmira</i>			0			0		0
	<i>Aprion virescens</i>	0	0						
Sparidae (Porgy)	<i>Monotaxis grandoculis</i>					0			0
Mulidae (Goat Fish)	<i>Parupeneus bifasciatus</i>	0	0					0	0
	<i>P. multifasciatus</i>	0			0	0		0	0
	<i>P. porphyreus</i>	0		0				0	0
	<i>Mulloidichthys samoensis</i>		0	0	0	0	0	0	0
	<i>Parupeneus chryserydus</i>						0		
Kyphosidae (Rudder Fish)	<i>Kyphosus cinersescens</i>			0					0
Chaetodontidae (Butterfly Fish)	<i>Centropyge potteri</i>	0	0	0	0	0	0	0	0
	<i>Forcipiger flavissimus</i>								0

Family	Species	Station							
		I	II	III	IV	V	VI	VII	VIII
	<i>Chaetodon auriga</i>								0
	<i>C. fremblii</i>		0	0	0	0			
	<i>C. lunula</i>		0				0		
	<i>C. miliaris</i>			0			0		
	<i>C. multicoloratus</i>	0	0	0	0	0	0	0	0
	<i>C. ornatissimus</i>				0	0			0
	<i>C. quadrimaculatus</i>	0					0	0	
	<i>C. unimaculatus</i>	0	0	0	0	0	0	0	0
Pomacentridae (Damselfish)	<i>Dascyllus albisella</i>						0		
	<i>Abudefduf abdominalis</i>				0	0			0
	<i>Plectoglyphidodon johnstonianus</i>	0	0	0	0		0		
	<i>Stegastes fasciolatus</i>	0	0	0	0	0		0	0
	<i>Chromis leucurus</i>								
	<i>C. ovalis</i>		0		0		0		
	<i>C. vanderbilti</i>		0		0	0		0	0
	<i>Abudefduf imparipennis</i>			0		0			
Labridae (Wrasses)	<i>Anampses cawleri</i>	0	0	0	0	0	0	0	0

Family	Species	Station							
		I	II	III	IV	V	VI	VII	VIII
	<i>Bodianus bilunulatus</i>	0	0	0	0	0	0	0	0
	<i>Labroides phtirophagus</i>			0		0	0		0
	<i>Pseudocheilirus octotaenia</i>			0	0	0		0	
	<i>Thalassoma ballieui</i>		0			0		0	0
	<i>T. duperrey</i>	0	0	0	0	0	0	0	0
	<i>Gomphosus varius</i>		0	0					0
	<i>Coris ballieui</i>				0				
	<i>C. flavovittata</i>					0		0	
	<i>Halichoeres ornatissimus</i>	0	0	0	0	0	0	0	0
	<i>Stethojulis albovittata</i>	0					0		
Scaridae (Parrot Fish)	<i>Scarus perspicillatus</i>	0	0	0	0	0	0	0	0
	<i>S. sordidus</i>		0	0	0	0		0	0
Cirrhitidae (Hawk Fish)	<i>Paracirrhites arcatus</i>	0	0	0	0	0	0	0	
	<i>P. forsteri</i>								
	<i>Cirrhitus pinnulatus</i>	0	0		0				
	<i>C. alternatus</i>		0	0	0	0		0	
Acanthuridae (Surgeon Fish)	<i>Acanthurus dussumieri</i>	0	0	0	0	0			0
	<i>A. leucopareius</i>	0	0	0	0	0		0	0

Family	Species	Station							
		I	II	III	IV	V	VI	VII	VIII
	<i>A. nigrofuscus</i>	0	0	0	0	0	0	0	0
	<i>A. nigrorus</i>	0	0	0	0	0		0	
	<i>A. olivaceus</i>	0	0	0	0	0	0	0	0
	<i>A. triostegus</i>	0	0	0	0	0	0	0	0
	<i>Ctenochaetus strigosus</i>	0	0	0	0	0		0	0
	<i>Zebrasoma flavescens</i>			0	0				
	<i>A. achilles</i>								0
	<i>Naso brevirostris</i>		0	0		0		0	0
Zanclidae (Moorish Idol)	<i>Zanclus cornutus</i>	0	0		0	0			0
Scorpaenidae (Scorpion Fish)	<i>Scorpaenodes hirsutus</i>						0		
Carangidae (Jacks)	<i>Caranx melampygus</i>	0							
	<i>Decapterus pinnulatus</i>				0				
Balistidae (Trigger Fish)	<i>Melichthes niger</i>		0						
	<i>Balistes capistratus</i>								0
	<i>Sufflamen bursa</i>	0	0	0	0	0	0	0	
	<i>Melichthys vidua</i>		0		0				
Monacanthidae (File Fish)	<i>Pervagor spillosona</i>	0			0		0		

Family	Species	Station							
		I	II	III	IV	V	VI	VII	VIII
	<i>Cantherines dumerili</i>	0						0	
Canthigasteridae (Puffer Fish)	<i>Canthigaster jactator</i>	0			0	0	0	0	
	<i>C. cinctus</i>	0			0				
Antennaridae (Angler Fish)	<i>Antennarius</i> sp.					0			
Scombridae	<i>Katsuwonus pelamis</i>							0	
Gymnothorax (Moray Eels)	<i>Gymnothorax</i> sp.	0							
Sphyraenidae (Barracuda)	<i>Sphyraena barracuda</i>			0					
Fistularidae (Trumpet Fish)	<i>Fistularia petimba</i>					0			
Totals		34	34	34	37	35	27	35	35