

BEFORE THE LAND USE COMMISSION  
OF THE STATE OF HAWAII

In the Matter of the Petition of )  
PUAKO HAWAII PROPERTIES )  
To Amend the Agricultural Land )  
Use District Boundary into the )  
Urban Land Use District for )  
Approximately 1,060 Acres of )  
Land Situate at Waikoloa, South )  
Kohala, Island, County and State )  
of Hawaii, Tax Map Key Nos.: )  
6-8-01: Portion 25, Portion 36, )  
Portion 37, Portion 38, Portion )  
39, Portion 40 )  
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DOCKET NO. A87-617

PUAKO HAWAII PROPERTIES

**This is to certify that this is a true and correct  
copy of the Decision and Order on file in the office  
of the State Land Use Commission, Honolulu Hawaii.**

JUL - 9 1991 by *Robert Leake*  
Date Executive Officer

AMENDED FINDINGS OF FACT,  
CONCLUSIONS OF LAW, AND DECISION AND ORDER

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AMENDED FINDINGS OF FACT,  
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SIGNAL PUAKO CORPORATION, a Hawaii corporation, (hereinafter referred to as "Signal"), filed a Petition on November 25, 1987, and amendments to the Petition on March 3, 1988 and on July 11, 1988, pursuant to Chapter 205, Hawaii Revised Statutes, as amended ("HRS"), and Title 15, Subtitle 3, Chapter 15, Hawaii Administrative Rules, as amended (hereinafter "Commission Rules"), to amend the Land Use District Boundary to reclassify approximately 1,060 acres of land from the Agricultural District into the Urban District, situate at Waikoloa, South Kohala, Island, County and State of Hawaii, identified as Hawaii Tax Map Key Nos.: 6-8-01: portion of 25, portion of 36, portion of 37, portion of 38, portion of 39, and portion of 40 (hereinafter referred to as "Property")

to develop a residential community along with support facilities and recreational amenities including a commercial center, golf course, club house, parks and community facilities. The Land Use Commission (hereinafter "Commission"), having heard and examined the testimony and evidence presented during the hearings, the stipulation of the Office of State Planning and Signal to proposed findings of fact, conclusions of law, and decision and order, the proposed findings of fact, conclusions of law and decision and order of the County of Hawaii Planning Department (hereinafter "County"), and Signal's response to the County's proposed findings of fact, conclusions of law and decision and order, issued its Findings of Fact, Conclusions of Law and Decision and Order granting the reclassification of the petition area from the Agricultural District into the Urban District on January 17, 1989.

PUAKO HAWAII PROPERTIES, a Hawaii limited partnership, (hereinafter referred to as "Petitioner"), successor-in-interest to Signal, filed a Motion to Amend Findings of Fact, Conclusions of Law and Decision and Order on April 1, 1991. The Commission, having heard and examined the testimony and evidence presented during the hearings on the Motion, and the amendments to the Findings of Fact, Conclusions of Law and Decision and Order prepared by the parties, hereby makes the following amended findings of fact:

## FINDINGS OF FACT

### PROCEDURAL MATTERS

1. On November 25, 1987, Signal filed its Petition for Land Use District Boundary Amendment.
2. On March 3, 1988, Signal filed an amendment to its Petition to clarify the correct tax map key designations for the Property under petition.
3. On July 11, 1988, Signal filed another amendment to the Petition to revise the land use plan for the proposed project.
4. The Commission held hearings on the Petition on April 26, 1988, July 21 and 22, 1988, and September 29, 1988, pursuant to notice published in the Hawaii Tribune Herald and the Honolulu Advertiser on March 21, 1988.
5. On April 6, 1988, Elizabeth Ann Stone, President, Honest Citizens' Against Progress, filed a Petition for Intervention. On May 26, 1988, the Commission issued an Order Denying Elizabeth Ann Stone's Petition for Intervention.
6. On June 20, 1988 the Commission received Elizabeth Ann Stone's June 15, 1988 letter requesting reconsideration of the Commission's denial of her request to intervene. The Commission subsequently denied the reconsideration request on July 21, 1988.
7. On July 8, 1988 a prehearing conference was held.

8. On July 11, 1988, Signal filed an Addendum to Petition for Land Use Boundary Amendment to delete the industrial uses that had been proposed in the original petition.

9. The Commission received into evidence on July 21, 1988, the untimely written testimonies of public witnesses Barry K. Taniguchi, Herbert Segawa, Matthew Bailey and Fred Deurr.

10. On April 1, 1991, Petitioner filed a Motion to Amend Findings of Fact, Conclusions of Law and Decision and Order.

11. On April 8, 1991, Petitioner filed a Motion to Change the Name of the Petitioner in this petition from Signal Puako Corporation to Puako Hawaii Properties.

12. The Commission held hearings on the Motions on May 2, 1991.

13. On May 9, 1991, the Commission issued an Order granting Petitioner's Motion to Change the Name of the Petitioner.

#### DESCRIPTION OF PROPERTY

14. The Property is located at Waikoloa, South Kohala, Hawaii. The Property is situated mauka of the Queen Kaahumanu Highway, approximately one-half mile north of the Waikoloa Road/Queen Kaahumanu Highway intersection. The entrance to the Mauna Lani Resort is located across Queen Kaahumanu Highway from the Property.

15. Petitioner owns the Property in fee simple.

16. The Property is currently vacant.

17. Lands immediately to the north, east, and south of the Property are owned by the Petitioner, and together with the petition area encompass the 3,000-acre master planned area. These lands are presently vacant. Lands further to the east of the Property contain the existing Waikoloa Village development. Lands to the west of the Property contain the existing Mauna Lani Resort.

18. The Property ranges in elevation from 200 to 600 feet above sea level.

19. Annual median rainfall in this area is about 9 inches. The average annual temperature is 75 degrees Fahrenheit, with an extreme high of 98 degrees Fahrenheit, and an extreme low of 52 degrees Fahrenheit.

20. The prevailing wind pattern on the Property is diurnal -- onshore winds in the morning and early afternoon, returning to offshore breezes in the late afternoon and evening. Typical wind velocities range between 7 to 8 miles per hour.

21. Approximately 80 percent of the soils located on the Property are Aa lava (rLV), which has practically no soil covering and is bare of vegetation, except for mosses, lichens, ferns, and a few small ohia trees. The U.S. Department of Agriculture Soil Conservation Service rates Aa lava agricultural capability as subclass VIIIs, nonirrigated: the

soils and landforms have limitation (stony shallow soils, along with drought conditions) which preclude their use for commercial plants. These rLV soils are not rated as to their pasture capabilities.

22. About 10 percent of the soils on the Property are Puu Pa which is extremely stony, very fine sand loam, of 6 to 20 percent slope (PVD). In a representative profile, the surface layer is very dark brown, extremely stony, very fine sandy loam about 6 inches thick. The next layer is dark brown and dark yellowish brown, very stony, very fine sandy loam about 34 inches thick. It is underlain by fragmented Aa lava. The agricultural capability subclass of PVD is VIIIs, nonirrigated: the soils have severe limitations (stony shallow soils, along with drought conditions) which make them generally unsuitable for cultivation and limit their use largely to pasture or range,...or wildlife. PVD is in Pasture group 2, which is among the lowest quality pasture land in the State.

23. Another 10 percent of the soils on the Property are Kawaihae extremely stony, very fine sandy loam, 6 to 12 percent slopes (KNC). In a representative profile, the surface layer is a dark reddish-brown, extremely stony, very fine sandy loam having a depth of about 2 inches. Below this is dark reddish-brown and dusky-red stony silt loam and loam. Hard pahoehoe lava bedrock is at a depth of about 33 inches. About 10 to 20 percent of the area is underlain by fragmented Aa lava. The agricultural capability subclass of KNC is VIIIs,

nonirrigated: the soils have severe limitations (stony shallow soils, along with drought conditions) which make them generally unsuited to cultivation and limit their use largely to pasture or range, ... or wildlife. KNC is in Pasture Group 1, which is among the lowest quality pasture lands in the State.

24. The Property is not classified by the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawaii classification system.

25. The Land Study Bureau rated the soils of the Property as Class E (very poor).

#### PROPOSAL FOR DEVELOPMENT

26. Signal had proposed to develop the Property as Phase I of a 3,000-acre master-planned community. Signal proposed Phase I to consist of single-family residential units, low-density apartments, commercial uses, a golf course and club house, parks and community facility areas ("Project").

27. A full array of services and amenities were planned to be provided to develop a self-contained community. These include a major shopping complex, community facilities such as schools and churches, neighborhood parks, a network of walking and cycling paths, and natural open space buffers.

28. Signal estimated the Project would include approximately 600 low-rise apartments and townhouses priced between \$80,000 and \$110,000 covering 50 acres, 1,440 single-family homes on an average of 4,500 square foot lots priced between \$100,000 and \$140,000 covering 180 acres, and



another 720 single-family homes on lots of 7,500 square feet and 10,000 square feet priced between \$130,000 and \$160,000 on up covering another 180 acres. The projected prices were given in 1988 dollars.

29. Signal proposed to develop a 25-acre multi-purpose town center consisting of retail and service outlets and principal community facilities. The retail areas would surround a two-acre town square.

30. Signal's original master plan had included a 50-acre light industrial park located near Queen Kaahumanu Highway. The industrial area was deleted pursuant to said amendment to Petition filed on July 11, 1988 due to concerns about visual impacts.

31. Community facilities such as government offices, medical offices and churches were proposed to be centrally located within the town center. Recreational community facilities would be located adjacent to some of the proposed park sites.

32. Petitioner's revised plan proposes a low density residential development containing its own small village commercial center. Instead of one golf course, two world class championship golf courses will meander through the residential areas providing golf frontage for nearly all of the single-family lots and multi-family units.

33. The revised project will include 970 multi-family units priced between \$200,000 and \$450,000 covering

approximately 122 acres, and approximately 580 single-family lots ranging in size from 15,000 to 20,000 square feet priced between \$100,000 and \$375,000 on up covering approximately 249 acres. Projected prices were given in 1991 dollars.

34. The golf courses will be supported by a single golf clubhouse which will include dining facilities, locker rooms and other amenities. In addition, a golf teaching academy will be provided and will include three golf holes, as well as a putting green and driving range.

35. A commercial village center will be located adjacent to the clubhouse and teaching academy. This commercial area is planned for approximately 20 acres, and will contain 100,000 square feet of retail shops and restaurants. The commercial acreage together with the clubhouse and the teaching academy form the nucleus of activity for the community.

36. The revised plan also includes two parks within the single-family residential area. The parks will provide areas for active recreation and leisure activity primarily for the single-family residents, since similar amenities will be provided within the multi-family sites.

37. The revised plan incorporates a 1,200 foot wide natural open space buffer strip along the boundary of the petition area that fronts the Queen Kaahumanu Highway. This buffer area will serve as a visual transition zone from the highway to the community. The buffer area will remain in its natural state with exposed lava, grass and scattered trees.

38. The revised project will contain approximately 5 acres of park area. Approximately 613 acres will be allocated to open space uses such as parks, golf courses (383 acres) and natural open space buffer areas (225 acres).

39. The revised plan proposes portions of two 18-hole golf courses for the Property. Due to the golf courses' layouts, some holes of both courses and the golf academy do extend outside of the petition area into the remainder of the master planned area. Portions of the golf courses would traverse the dry gulches on the site, thus making it possible to retain and enhance the natural setting of the dry gulches without compromising their importance as drainage ways. A portion of the golf course would be developed mauka of the natural open space buffer area that fronts Queen Kaahumanu Highway, thus adding to the open space vistas along the highway corridor.

40. The Project would have two access points to Queen Kaahumanu Highway - a southern access directly opposite the entrance to the Mauna Lani Resort, and a northern access near the northern boundary of the Property. Major roadways in the Property will include a path system for pedestrians and cyclists.

41. Petitioner anticipates that it will take approximately one year, or until 1992 to obtain necessary governmental approvals. It is anticipated that: additional

off-site water source development would occur in 1991-1992; engineering and architectural plans will be finalized and the development of major on-site infrastructure and the golf courses could begin during 1993 - 1994; single-family lots would be completed and multi-family home construction would begin in 1995; it would take six years to complete construction within the Property.

42. Petitioner estimates that major "backbone" infrastructure costs for the proposed development would be approximately \$25.6 million. Total development costs, including off-site infrastructure development, are estimated to approach \$40-50 million.

43. Petitioner plans to build four additional courses and approximately 500 residential lots in the remaining portion of the master planned area outside of the petition area.

PETITIONER'S FINANCIAL CAPABILITY  
TO UNDERTAKE THE PROPOSED DEVELOPMENT

44. Petitioner is a Hawaii limited partnership that is comprised of Nansay Hawaii, Inc. as general partner and Signal Puako Corporation as limited partner. Nansay Hawaii, Inc. has offices located in Japan, California, Micronesia, Guam and Hawaii. Major projects that Nansay is involved with in Hawaii include: Kohanaiki Resort; Lands of Kau Residential Community, Ouli Country Club; and the Waikoloa Village Affordable Housing Project.

45. Nansay Hawaii, Inc.'s unaudited balance sheet indicates total assets and liabilities of \$342,302,233 as of December 31, 1990.

46. Signal is a subsidiary of Signal Landmark Properties, Inc., which in turn is a subsidiary of the parent company, The Henley Group, Inc. The Henley Group has assets of approximately \$7 billion.

47. The operations of Signal Landmark Properties, Inc. are primarily carried out by three subsidiary firms: Signal Landmark, Inc., which is responsible for all residential and community development; Signal Development Corporation, which is responsible for commercial, industrial and office development; and Lake Superior Land Company, which manages forest lands and mineral holdings in Michigan and Wisconsin.

48. Signal Landmark, Inc. and Signal Development Corporation have over 3,000 acres in various stages of development. Signal Landmark, Inc. has built and sold over 13,000 homes during the last 20 years.

49. The audited financial statements of Signal Landmark Holdings, Inc. prepared by Kenneth Leventhal and Company, the auditors of Signal Landmark Holdings, Inc., as of December 31, 1987 showed assets and stockholder's equity in excess of \$500 million and \$400 million, respectively.

50. Signal Puako Corporation's balance sheet as of September 30, 1987 and June 30, 1987 indicates total assets of \$7,233,014 and \$7,203,542, respectively. Liabilities and

stockholder's equity were listed at \$7,233,014 and \$7,203,542 for September 30 and June 30, 1987, respectively.

COUNTY AND STATE PLANS AND PROGRAMS

51. The Property is located within the State Land Use Agricultural District, as reflected on Land Use District Boundary Map H-15, Puu Hinai.

52. The County of Hawaii's General Plan currently designates the Property for Urban Expansion.

53. The Property is currently zoned Unplanned, which allows a subdivision density of one lot for every five acres of land. A zoning amendment would be required to implement the Project.

54. No County regional plans have been prepared for South Kohala.

However, County regional plans have been prepared for nearby communities. The North Kohala Community Development Plan ("Plan") makes numerous references to the employment opportunities and economic base which the South Kohala Resorts provide for North Kohala residents. The Plan mentions that additional residential housing is expected in North Kohala for visitor industry employees.

55. The State's West Hawaii Regional Plan identifies the Mauna Lani/Waikoloa area as a resort destination node. The petition area is identified as a support community and is included in the larger Kawaihae to Waikoloa subregional planning area.

56. The Property is not designated within the County's Special Management Area ("SMA").

NEED FOR THE PROPOSED DEVELOPMENT

57. The Hallstrom Appraisal Group, Inc. prepared a market study in September of 1987 for the project that had been proposed by Signal ("1987 market study"). This study found that in 1987 there was a resident population in North Kona and South Kohala of slightly over 33,000 persons. The 1987 market study projected that the population for this region would grow to 89,000 persons by the year 2005 and to 103,000 persons by the year 2010. The forecast was an increase of almost 200 percent over the next 22 years and was consistent with the state and county population forecasts for the same period of time.

58. The 1987 market study forecasted a need for 49,600 residential units in West Hawaii by the year 2010. Since there were approximately 17,000 existing units, it would require the development of approximately 32,500 new units over the next 22 years to meet the projected demand.

59. The 1987 market study found that approximately 26,000 residential units were currently being planned for development in West Hawaii. According to Hallstrom, about 78 percent of these planned projects still had to be either approved or marketed over the next 22 years, which may be an unrealistic occurrence. Hallstrom also anticipated that

several of the planned projects would not be completely built by the year 2010.

60. The 1987 market study found that a substantial portion of the new residential development in West Hawaii had been aimed at the upper end of the market. Residential lots at the Waikoloa Village Community had ranged from \$45,000 to \$60,000, exclusive of house. Improved residences at the Village had ranged in price from \$97,500 to \$295,000. Resales of lots at Kona Bay Estates had ranged from \$200,000 to \$260,000. Vacant lots at Puako Beach Lots subdivision had ranged from \$125,000 to several hundred thousand dollars while improved lots had ranged from \$115,000 to \$435,000. Vacant lots at the Fairways at Mauna Kea started at approximately \$325,000, while improved residences were in excess of \$440,000 to in excess of \$1,000,000.

61. The 1987 market study found that the most expensive residential market sector in the mauka areas of West Hawaii had been the "gentlemen/equestrian" estates. The prices that were being obtained for these sites were for vacant "residential-use" lots that ranged from \$50,000 to in excess of \$400,000. Major projects of this nature that were either on-going or proposed, included Kohala Ranch, Maliu Ridge, The Estates at Waimea, Halelio Estates, Puakea Bay Ranch, Puu Lani Ranch, Waiwailani Farms and Waikii Ranch.

62. The 1987 market study estimated that an additional 4,589 acres of urban land would be needed to meet



the projected housing demand. This additional residential acreage would be required by the year 2010, in addition to the total current undeveloped supply of housing units, to fulfill the need for additional residential housing.

63. The U.S. Department of Housing and Urban Development had estimated the 1988 annual median income for a family of four in the County of Hawaii to be \$28,000. Based on this median income figure, Signal had estimated that "affordable" ranges of sales prices, based on an interest rate of 10% would be as follows: 80-120% of median income - \$67,611-\$107,620; and 120-140% of median income - \$107,620-\$127,751.

64. The 1987 market study estimated that should a significant share of the Project be priced in the low to moderate cost category, some 250 lots and 50 multi-family units would be readily absorbed by the market annually. Hallstrom estimated that the residential portion of the Property would be absorbed within ten years.

65. Hallstrom also prepared a market study in March of 1991 for the Petitioner's revised project ("1991 market study"). The 1991 market study found that approximately 30,700 residential units would be required in the South Kohala and North Kona Districts over the next twenty years, or 1,535 new units annually during this timeframe, in order to meet all market level demands. This figure includes the demand for

28,208 units to service "new" residents and investors coming into the region and 2,500 units for existing unmet market demand.

66. According to the 1991 market study, many of the proposed projects are many years away from achieving final approvals and completing initial infrastructure capital outlays. Many of the projects also anticipate absorption extending beyond the next twenty years. In addition, more than one-third of the units will be located in ultra-luxury destination resorts, well out of reach of a significant portion of the residential and investor market. Hallstrom concludes that the cumulative unmet demand for units as the projects are spread-out over time is a shortfall of more than 1,927 total units during the projected period.

67. Hallstrom forecasts that there remains a periodic residual market demand in the West Hawaii residential sector and anticipates that the proposed project will capture a significant share of this residual demand. Based on this residual analysis, the residential units in the proposed project could be absorbed within a ten to twelve year period.

68. The Petitioner anticipates a supply shortfall in five of the first eight years of the anticipated offering period, 1993 to 2000. The undue delay of one or more major projects could result in a substantial short-term inventory supply shortfall, further exacerbating the critical scarcity of housing presently plaguing the region.

69. Using a market share analysis, the proposed project would have to garner a market share of only 5.05% in order to achieve total absorption: Annual market share rates of four to sixteen percent are regularly anticipated for competitive projects. Based on this market share technique, the residential units in the proposed project would be absorbed within nine to fourteen years.

70. Hallstrom concludes that, although there are substantial numbers of residential units proposed for West Hawaii, it is doubtful that these projects can fully meet an expanding market demand on both an annual and aggregate. Approval timing, infrastructure requirements and investment concerns could generate extreme cyclical supply shortages. Given these factors, there is sufficient long-term market demand to absorb the residential units in the proposed project within a nine to fourteen year period.

71. The revised project will add approximately 1,550 units to the residential inventory in West Hawaii. In addition, the Petitioner has offered to provide affordable units off-site, in a number equal to 60% of its unit count on the Property. These affordable units would be offered in the following manner: 30% of the units would be offered at prices which families with an income range of up to 120% of the County of Hawaii's median income can afford, and an additional 30% of the units would be offered at prices which families with an

income range of 120-140% of the County of Hawaii's median income can afford.

72. The 1987 market study found that the existing amount of major "Class A" commercial floor space in West Hawaii was about 275,000 square feet. It was anticipated that new or planned commercial space would add another 455,000 square feet of leasable commercial space. This equated to a supply of 88.87 square feet of commercial space in West Hawaii per existing household. If the same level of demand was applied to Signal's proposed Project, the Project would generate a demand for a minimum of 257,723 square feet of retail, restaurant and service space. Using conservative construction ratios, the total demand for commercial acreage would be 17.75 acres during the development of the Property and an additional 17.75 acres for the development of areas beyond the Property.

73. The 1991 market study found that since 1984, nearly 350,000 square feet of retail/service commercial space has been offered in the West Hawaii market with virtually all space being absorbed in a rapid manner. Given the successful absorption rates, rental levels, interest in additional construction and sales being experienced by shops in quality projects, there is strong support for further retail/service space within the Property.

74. Long-term demand for commercial space is favorable with the explosive projections of residential and tourism growth. There is an increasing scarcity of desirable

sites within Kailua-Kona, and absorption of finished space has been historically high in recent years with vacancy rates exceptionally low relative to other locales.

75. In the 1991 market study Hallstrom anticipates that there will be a need for 2,014,000 square feet of "Class A" commercial space in West Hawaii from 1990 to 2010. The residents of the proposed project will create a demand for approximately 90,000 to 115,000 square feet of finished retail/service space. In addition, demand from passersby at the Property is estimated at 20,000 to 35,000 square feet. It is estimated that the commercial space within the proposed project would be fully absorbed within approximately seven years, however, more rapid absorption could take place through adroit large-scale development.

76. The 1991 market study found that there are currently 13 existing golf courses on the Island of Hawaii with a total of 216 holes available for play. The equivalent of seven full courses, or 126 holes, are located in the high-demand West Hawaii golf play market. Based on market indicators, the existing courses in West Hawaii are at maximum capacities.

77. There are 24.5 new courses or 441 holes being proposed or under development in the region. If all of these proposed developments are actualized, West Hawaii will have the equivalent of 31.5 full courses or 567 holes of golf by the turn of the century. However, despite the unprobable scenario

that all of these courses are developed, it is not anticipated that supply will surpass the escalating level of demand in West Hawaii.

78. Hallstrom estimates that based on National Golf Foundation figures, by the year 2010 the region will require just over 33 courses in order to minimally service the anticipated levels of demand created by tourists and the local population. This will require, at a minimum, an additional 26 full courses to be developed over the next 20 years if stable pricing and supply/demand relationships are to be maintained.

79. Based on its analysis, Hallstrom anticipates that the two golf courses being proposed for the Property could readily achieve full absorption, growing to the desired stabilized level of operation within three years after opening. The planned golf teaching academy will be a unique facility in the Statewide market, and will further enhance the region's reputation for golf. The analysis did not include the four additional courses being proposed in the remainder of the master planned area.

#### IMPACT UPON RESOURCES OF THE AREA

##### Agricultural Resources

80. The State Department of Agriculture does not foresee adverse impacts upon the agricultural resources of the area.

81. The Project will not impact existing agricultural activities since none exist on the Property. The Project will

not adversely affect the growth of diversified agriculture, given the extremely poor quality of the soils, lack of rainfall, and the lack of low-cost agricultural water.

#### Flora and Fauna

82. The Property is characterized by introduced trees such as kiawe and koa-haole and various grasses. A recent biological survey of adjacent lands found no native dry land forest remnants.

83. A botanical survey conducted on the Property in February of 1991 found that there are three main vegetation types on the site - Prosopis/Fountain grass, Prosopis/grass and Savanna. Prosopis/Fountain grass vegetation type covers most of the site and includes Prosopis trees, Fountain grass, 'Ilima, wild red zinnias, Wiliwili trees and a species of a U.S. Fish and Wildlife Service category 1 taxon fern, Ophioglossum consinum. It is estimated that over 20,000 of these ferns are distributed throughout the Property.

84. The Petitioner proposes to preserve the category 1 taxon fern in undeveloped areas of the site, and since the plants have been known to withstand transplantation with a fairly high survival rate, Petitioner also proposes to transplant the plants off-site, to undeveloped areas of the Property, or to use the plants for landscaping within the development.

85. The fauna inhabiting the area include several introduced species of birds which commonly nest in the open

grassland such as the Japanese quail, warbling silverbill, gray francolin, and zebra dove. The endemic Hawaiian owl has also been observed in the vicinity. Common animals include the house mouse, mongoose, feral goats and cats.

86. A fauna study was conducted on the Property in January of 1991. The survey confirmed that there are no rare or endangered animal species on the Property. The only native bird species found on the site were the migratory Pacific Golden Plover and the Ruddy Turnstone. These two species are not considered endangered and are the most common migrants to upland grassland habitat.

87. The Project will not have a significant impact on flora and fauna on the Property since the existing flora and fauna are not threatened, rare or endangered.

88. The Property is located in the general area that is subjected to cyclic invasions by field mice. When this occurs, massive control measures including aerial treatments are necessary.

#### Historical/Archaeological Resources

89. Petitioner's consultant, Archaeological Consultants of Hawaii, Inc. ("ACHI"), conducted a literature search and a reconnaissance survey for the entire Property. The literature search did not reveal any significant sites in the area. The field survey resulted in the discovery of a single site that is not believed to be significant since it is



of recent construction and is possibly associated with contemporary hiking or hunting activities.

90. Petitioner anticipates no impacts from the Project on significant archaeological sites since none were found on the property.

91. ACHI concluded that based on their findings, an intensive survey of the remainder of the 3,000-acre master-planned community could not be justified. However, ACHI recommended that Petitioner conduct a selective archaeological monitoring program to be carried out during the early stages of site construction.

92. In their memorandum to the Department of Business and Economic Development dated January 20, 1988, the Department of Land and Natural Resources recommended that Petitioner have an archaeologist on-call in case lava tubes containing historic remains are found.

#### Visual Resources

93. The Property extends along the mauka side of the Queen Kaahumanu Highway for a distance of approximately 2.3 miles and inland for approximately 1.8 miles.

94. Petitioner believes the proposed Project will have little, if any, visual impact on views seen from Queen Kaahumanu Highway, and that the Project will be a visually appealing community with approximately 619 acres, or a majority of the Property, allocated to parks, golf courses and a natural open space buffer.

95. Petitioner proposes to provide a natural open space buffer area along the boundary of the Property fronting the Queen Kaahumanu Highway right-of-way. This buffer area will preserve and protect natural open space and scenic views. The buffer area will be comprised of approximately 225 acres, and extend inland from the highway to a depth of approximately 1,200 feet.

96. This natural open space buffer area will be retained in perpetuity by Petitioner.

#### Air Quality

97. The leeward side of the island of Hawaii has no air quality monitoring stations.

The worst air pollution episodes experienced on the island are due to periodic volcanic eruptions. Visibility is affected by the presence of fine particulates, and substantial increases in ambient concentrations of mercury and sulfur dioxide have been recorded during eruptions.

98. In 1988, the State Department of Health (hereinafter "DOH") was concerned about the long-term cumulative impacts on the ambient air quality caused by increased traffic volumes from all projects in the area. DOH recommends that an air quality impact study be conducted based on the traffic impact assessment report and the recommendations proposed by Petitioner.

99. Petitioner anticipates that construction activity will cause short-term impacts in the form of dust, and that the dust can be controlled by adequate mitigation measures.

100. The primary source of long-term air pollution is anticipated to come from automotive emissions due primarily to queuing of vehicles attempting to make turning movements at the Mauna Lani Drive and Queen Kaahumanu Highway intersection.

101. An air quality study was performed by B.D. Neal and Associates in February 1991 for the revised project. The study confirmed that short term impacts will be associated with construction activities. It also concluded that, in the long term, impacts on air quality will be generated by the increase in motor vehicles, drift from herbicides and pesticides, and stationary sources such as the generation of electrical power and solid waste disposal. However, State and National air quality standards will not be exceeded.

102. During construction, dust control measures will be implemented in accordance with the Department of Health regulations to mitigate impacts on air quality. According to the air quality study, adverse impacts on air quality are anticipated in the near term due to the increase in traffic. The study indicates that adverse impacts on air quality will eventually decrease because motor vehicles will be equipped with new emission control devices in the future. Improvements that are planned at the intersection of the project roadway and Queen Kaahumanu Highway will reduce idling time and carbon

monoxide emissions and will further mitigate air quality impacts from motor vehicles. Drift from herbicides and pesticides can be mitigated by following proper application methods and using a coarse spray.

#### Noise Impact

103. The primary noise generator in the vicinity of the Property is anticipated to be vehicular traffic. A previous study prepared in 1985 by Y. Ebisu & Associates, measured noise levels during peak traffic hours. The noise level measured below 55 Ldn beyond 110 feet from the centerline of Queen Kaahumanu Highway, and below 55 Ldn along the internal roadways of the Mauna Lani Resort.

104. Petitioner anticipates the Project will increase noise in the short-term due to construction activities. Construction noises may be reduced by the use of mufflers and the operation of machinery during normal daytime hours and the regular work week.

105. Petitioner states that long-term noise increases are anticipated to occur from increased traffic that is generated by the proposed Project. Noise impacts along the Queen Kaahumanu Highway will be mitigated by the natural open space buffer zones and by establishing appropriate building setbacks.

#### Fertilizer and Pesticide Management

106. A fertilizer and pesticide management study was prepared for the revised project by Environmental Impact

Consultants in March of 1991. The report found that the chemicals normally used for turfgrass fertilization include nitrogen, phosphorus and potassium. To control weeds, insects and pests, herbicides, insecticides and fungicides are also used on golf courses.

107. The primary fertilizer elements of concern for contamination of ground and surface waters are phosphorus and nitrogen. In areas where the groundwater is shallow, there is a greater tendency for groundwater contamination. The study finds that the groundwater is deep at the project site, 200 to 600 feet, and that with proper management and application techniques, the contamination of surface and groundwater is unlikely.

108. Management practices, application techniques and monitoring programs will be used to ensure protection of the surface and groundwaters. Management programs should include the use of individuals certified by the Hawaii Department of Agriculture as pesticide applicators, proper pesticide and herbicide storage facilities, and a stringent fertilizer and pesticide application schedule.

#### ADEQUACY OF PUBLIC SERVICES AND FACILITIES

##### Water Service

109. Petitioner estimates that full development of the Property will require an average day demand of approximately 0.777 million gallons per day ("mgd") or a

maximum day demand of 1.2 mgd of potable water and approximately 1.5 to 2.0 mgd of irrigation water for the golf courses.

110. There is no existing water supply system on the Property. The County's Lalamilo well system consists of three deep wells located approximately three miles north of Waikoloa Village. This system has a small reservoir and a 24-inch line that supplies water to the shoreline community of Puako and to the Mauna Kea, Mauna Lani, and Waikoloa Resorts.

111. Potable water for the proposed project will be supplied from a water supply system being developed on other property owned by the Petitioner and located six miles northeast of the project site at Ouli, at an elevation of 1,300 feet. According to a water resources and supply study prepared by Water Resource Associates in March 1991, the existing well (Ouli Well 1) was successfully drilled and tested in June of 1989. The well was pumped at a constant rate of 1.49 mgd for about 70 hours during a four-day period. The drawdown was 5.2 feet and the chloride content was about 50 ppm.

112. In addition to its existing well, the Petitioner has permits to drill three more wells on its Ouli property. A second well is currently being drilled and is expected to produce 1.5 mgd, similar to the first well. The first two wells will have a total pump capacity of 3.0 mgd, providing sufficient capacity to meet the maximum day demand and requirement for a standby source.

113. The Petitioner is exploring alternate water transmission routes from the Ouli site. One alternative would be to construct the necessary pipelines and related facilities as an adjunct to the County's existing Kawaihae-Puako water system or to construct and operate a privately owned water system. The second alternative would require obtaining access and transmission facility easements across one parcel of State-owned land and one parcel of privately owned land.

114. The Petitioner proposes to drill brackish water wells on its land outside the petition area but within the master planned area. Two wells plus one standby well will be needed to service the two golf courses. Well construction permits for the three wells have been approved by the State Commission on Water Resource Management. Each well will have a planned capacity of 1.0 mgd.

115. According to the water resources and supply study, the total water requirement for the proposed project represents only 6.5 percent of the basin's conservatively estimated sustainable yield of 46 mgd. No long-term impact on the basin's sustainable yield is expected from meeting the water requirements of the proposed project. However, the study did not assess the adequacy of the aquifer to accommodate this Project and other projects proposed for the region.

116. Petitioner's consultant believes that the sustainable yield and chloride levels of other wells in the

area, such as the Lalamilo well system, would not be affected by the development of a water source on the Ouli property.

Drainage

117. Petitioner's engineering consultant believes that due to high permeability of the lava in the Property, neither offsite nor onsite drainage is anticipated to be a problem. Two large culverts exist on the Property where dry gulches pass under the Queen Kaahumanu Highway. Despite the large culvert sizes, however, there is no physical evidence of actual stream flow in the gulches and it appears that the gulches are the product of lava flows rather than storm flow runoff.

118. The only potential floodways are located within the existing gulches. The gulches have been designed to be part of the golf course or kept in open space use. Discussions with the County Department of Public Works indicate that no major drainage requirements will be necessary. The on-site drainage will be handled by dry wells. In certain areas, the drainageways will be modified to overflow into the golf course and prevent flooding of adjacent lots in the event of a major storm. The drainage system will be designed to retain excess stormwater runoff.

119. Petitioner anticipates that the impact to downstream areas will be negligible. Petitioner will undertake drainage studies at the appropriate time in the design process.



120. The State Department of Transportation states that a drainage study should be prepared for the proposed development and that no additional storm runoff will be allowed on the state's right-of-way.

Sewage Treatment and Disposal

121. Petitioner's engineering consultant estimates that the revised Project would generate approximately 0.6 million gallons of wastewater per day, compared to 0.9 mgd with the original Signal project.

122. There are no existing or planned County wastewater systems in the South Kohala district. The major resorts in the area operate private collection and treatment systems.

123. Petitioner proposes to develop a wastewater collection system and an aerated lagoon treatment plant. The treated effluent will be used to irrigate the landscaped areas and is not expected to impact groundwater resources. The treatment plant will be designed and operated to meet the requirements of the DOH.

124. The DOH is concerned about the use of treated wastewater for the irrigation of the golf course. The DOH points out that if spray irrigation is to be used, Petitioner should address the establishment of buffer zones, degree of wastewater treatment, wind speed and perhaps drip irrigation along the fringe areas of habitation.

125. The DOH is also concerned that with commercial development there is a potential for the discharge of toxins entering or passing through the wastewater treatment facility. According to the DOH it may be necessary to establish pretreatment systems for commercial facilities in order to assure proper operation of the proposed treatment system. Petitioner intends to implement the recommendations of DOH.

Roadway and Highway Services and Facilities

126. The Property is adjacent to the Queen Kaahumanu Highway, a two-lane Class I State highway with a posted speed limit of 55 mph and a design capacity of 1,800 to 2,000 vehicles per hour along open stretches of the roadway. This limited access highway extends 38 miles from Kawaihae to Kailua-Kona.

127. Mamalahoa Highway, a two-way State highway, serves the upland areas of North Kona and South Kohala. A private road (Waikoloa Village Road) and a County road (Waimea-Kawaihae Road) connect the Mamalahoa Highway with the Queen Kaahumanu Highway in the vicinity of the Project site.

128. Petitioner proposes to provide access via two intersections onto the Queen Kaahumanu Highway. The two existing highway access points are at the Mauna Lani Resort intersection and at a location approximately 1,000 feet north of the Mauna Lani Resort intersection on the master plan for the proposed Project.

129. Signal's traffic consultant, Pacific Planning and Engineering, Inc. ("Pacific"), utilized available existing land use data, as well as other future planning data that was available for the year 2000 and the Department of Transportation forecasts for Keahole airport passengers to analyze the trends along Queen Kaahumanu Highway. Pacific projected that Signal's development would generate 3,552 trip ends. This projection included approximately 620 trip ends to be generated by the now deleted proposed industrial use area. Pacific's projections indicate, however, that the Project will have an impact on Queen Kaahumanu Highway. Regardless of whether or not the proposed Project is developed, Queen Kaahumanu Highway would be operating at or near capacity by the year 2000.

130. The State Department of Transportation (DOT) stated that they had reviewed Pacific's Traffic Impact Assessment Report and had the following comments:

"1. A fully channelized intersection with deceleration, acceleration, and left turn storage lanes conforming to current design standards should be constructed by the developer. Traffic signals should be installed by the developer when warranted and if deemed necessary by DOT.

"2. Queen Kaahumanu Highway will be widened to a four-lane divided highway. The developer must coordinate his activities with the State Highways Division and reflect this type of highway facility in his intersection analysis and schemes. The developer shall share in the cost of constructing the four-lane divided highway.

"3. The developer shall periodically monitor the traffic at the development's access to determine if any additional highway improvement will be necessary. We want

written confirmation that the developer will perform the monitoring.

"4. To mitigate visual impacts, the new utility line fronting and leading to the development must be placed underground.

"5. This project should be coordinated with other developments in the area. Internal stub road layout must consider the eventual connection with adjacent developments.

"6. The developer should abide by the written agreement dated July 31, 1987 between the state and the applicant regarding Preservation, Protection and Maintenance of Abutting State Property.

"7. The developer should be informed that we are seriously concerned about the effects of developers such as Signal Puako on downstream sections of our highway system. Consequently, we will be considering methods to obtain developer assistance to fund needed improvements.

"8. The developer should consider implementing traffic management programs such as ridesharing, subscription bus service, vanpools, carpool computer matching service, provision of park-and-ride and daycare facilities, etc., as appropriate."

131. Signal had proposed to construct channelized intersections and to possibly install traffic signals at such time as they may be warranted. Pacific projected that with traffic signals, the affected roadways would operate below capacity, and the traffic from the Project would be mitigated to acceptable levels. Pacific anticipated that signalization would eventually be required at the Mauna Lani Drive/Queen Kaahumanu Highway intersection by the year 2000 regardless of whether or not the proposed development occurred.

132. A new traffic study was prepared for the revised project in March of 1991 by M & E Pacific, Inc ("M&E"). M&E found that traffic operations on Queen Kaahumanu Highway during

the p.m. peak hour are presently at Level Of Service ("LOS") D and are forecast to remain at that level to the year 2002 with the ambient conditions. LOS is forecast to be D/E by 1998 and at E by the year 2002 with the proposed project. LOS D is generally considered the limits of acceptable performance. LOS E is an indication of the need for highway improvements.

133. Future plans for the Queen Kaahumanu Highway include widening the highway to four lanes. If the highway is widened to four lanes by the year 2002, traffic operations are forecast to be at LOS A for both ambient and total forecast conditions.

134. M&E found that by the year 2002, during the p.m. peak hour, approximately 350 vehicles will leave the site, with 145 north bound and 205 south bound. Vehicles entering the site total 400, with 165 vehicles from the north and 235 vehicles from the south.

135. The left turn movement from the Mauna Lani Resort access road is presently at LOS E/F and is forecast to be at LOS F by 1996. The left turn movement from the proposed project site access road is forecast to be LOS F by 1996. These forecasts indicate that long traffic queues would form on the two access roads in the p.m. peak hour, but should not adversely affect operations on the highway itself.

136. M&E concluded that the growth in regional traffic is expected to create the need for highway improvements with or without the proposed project. The State Department of

Transportation has expressed a policy not to permit signalized intersections on Queen Kaahumanu Highway. Therefore, a grade-separated interchange would be required with or without the proposed project. Further study is required to develop the ultimate design for the interchange. An at-grade unsignalized intersection would suffice until the Queen Kaahumanu Highway is widened and the interchange is built.

### Schools

137. The South Kohala District is served by one public elementary/intermediate school (Waimea Elementary and Intermediate) and three private schools (Kamuela Montessori, Hawaii Preparatory Academy and Parker School). The major public high school for the region is Honoka'a High School.

138. Signal estimated that its Project would generate approximately 300 to 400 elementary/intermediate students and 120 to 180 high school students. Signal concluded that the existing public schools in the region were operating at capacity and would not be able to accommodate the anticipated enrollment.

139. Signal proposed to provide, at no cost to the State, a maximum of sixteen acres within the Property for public school sites, as the Department of Education may determine to be necessary to service the Property.

140. According to the Petitioner, the maximum number of students that will be generated by the revised project is 290, if the project is fully occupied. Since the project is

expected to have 50 percent occupancy, the Petitioner expects the number of students to be reduced to 145. In addition, in light of the upscale nature of the proposed community, the Petitioner conservatively estimated that 25 percent of the permanent residents will utilize private schools, leaving 109 students using public schools. This would amount to approximately 8 students per grade, if the students were equally divided among the grade levels. Based on these projections, which the Petitioner considers to be very conservative, the Petitioner does not anticipate that the proposed project will have a significant impact on schools in the area.

#### Electrical Power and Communication

141. The Hawaii Electric Light Company, a subsidiary of Hawaiian Electric Company, services the existing resort areas with 69 KV overhead lines extending south from the power lines in the Waimea-Kawaihae corridor.

142. The existing electrical system can adequately accommodate the proposed Project. The existing 69KV overhead power lines can be extended to a new substation in the mauka sector of the Property from the Waikoloa substation. Underground lines will distribute power from this substation throughout the Property along the proposed roadway network.

143. Telecommunications at each of the neighboring resort areas is by means of Hawaiian Telephone Company's

microwave link connecting the microwave tower facility in North Kohala with a microwave tower facility located centrally in each resort.

144. A microwave tower can be located on the Property for the distribution of telephone lines and cable TV lines along the underground power line distribution system.

#### Solid Waste

145. Petitioner estimates that solid waste will be generated from approximately 770 units since the occupancy rate is expected to be 50 percent.

146. Petitioner proposes that a private collection system would be utilized to dispose of the solid waste at the new County landfill site. This new landfill is expected to be in operation when the project begins occupancy.

#### Health Care Facilities

147. There are three State hospitals that could serve the needs of residents of the Project: 1) Kona Hospital, 2) Kohala Hospital, and 3) Honoka'a Hospital. One private facility, the Lucy Henriques Medical Center, is also available to provide outpatient health services including emergency room treatment.

148. The Kona Hospital or the Lucy Henriques Medical Center can provide emergency care for the future occupants of the Project. However, both hospitals will require upgrading to provide adequate full service care. Planning measures by the



State and the private hospital are underway to upgrade facilities.

#### Fire and Police Services

149. The Project would be serviced by the new County fire station that is located within one mile from the Property with a response time of less than five minutes. Back-up fire protection is available from the County's Waimea fire station with a response time of about 40 minutes.

150. The County Fire Department confirmed that the new fire station can adequately serve the Project.

151. The County Police Station in Waimea serves the South Kohala area. Other police facilities include the Kapa'au station, which serves the North Kohala area, and the Kealakehe station in North Kona.

152. The County Police Department would have to assess the need for additional police personnel based on the projected increase in population and traffic that would be generated by the Project. According to the Petitioner, based on a ratio of 3.39 police officers per 10,000 residents, only one additional officer will be needed.

#### Parks and Recreation

153. A diversity of public and private recreational facilities exist in the vicinity of the proposed Project. Public beach parks include Samuel Spencer Beach Park, Hapuna Recreation Area, Mahukona Beach Park, Kapa'a Beach Park, Keokea Beach Park. Private right-of-ways to the beach that are

available to the public are located at the Mauna Lani Resort, the Waikoloa Resort, the Mauna Kea Resort and the Ritz Carlton Resort.

154. The resident population of the Project will increase usage of existing offsite recreational facilities. However, the Project would also add two golf courses, and neighborhood parks to the region.

155. The Petitioner will satisfy the County's park dedication requirements.

#### SOCIOECONOMIC CONSIDERATIONS

156. Signal's consultant, Decision Analysts Hawaii, Inc., estimated that the original Project would generate approximately 230 construction jobs during construction of the Project.

157. Signal estimated that the proposed commercial development and the golf course would generate direct employment of 435 jobs. In addition, the on-site community facilities and maintenance of homes and common areas were estimated to generate approximately 665 jobs.

158. The Petitioner estimates that the revised project will generate direct, indirect and induced employment opportunities during the construction and operational phases. The development will create a range of 280 to 1,929 jobs annually, totaling 28,853 man years of jobs during a 20-year timeframe. Upon project completion, it is estimated that 1,513

full time permanent jobs will be created with 540 of these jobs on-site and an indirect employment of 973 elsewhere on the island.

159. The revised project will supply an additional 1,550 housing units to help meet the growing demand for residential property in this area. In addition, the Petitioner proposes to construct approximately 930 affordable housing units, or 60 percent of the 1,550 units, off-site at Waikoloa Village. Waikoloa is a planned support community that has been designated by the County of Hawaii for affordable housing projects. Nansay was chosen by the County to be the Master Developer of the Waikoloa Village Affordable Housing Project. The County affordable housing policy is to provide 17 percent of the affordable units to households with a county median income of less than 80 percent, 33 percent of the affordable units to households with a county median income of 80 to 120 percent, and 50 percent of the affordable units to households with a county median income of 120 to 140 percent. The Petitioner proposes to provide the affordable housing units according to the County's policy.

160. Signal estimated that the original Project would generate for the County a net revenue of about \$0.2 million annually.

161. Signal estimated that the original Project would generate \$9.3 million in revenues annually for the State. In addition, State revenues from the construction activity of

developing the Project were estimated to be approximately \$27 million that would be collected over about a ten year period.

162. State expenditures that would be generated by the original Project were estimated to be approximately \$8.1 million annually. These expenditures included operations and maintenance expenses as well as the debt service on school improvements. The net revenue from the original project for the State was estimated to be \$1.2 million annually.

163. The Petitioner estimates that the revised project would generate \$76,452,610 in net revenues to the County, and \$44,666,178 in net revenues to the State, over a 20-year time period.

#### INCREMENTAL DISTRICTING

164. The Petitioner proposes to develop the proposed Project over approximately a six year period, from 1993 to 1999. Infrastructure development would be phased, with major infrastructure development and the golf courses being constructed up-front in the early phases of development.

#### CONFORMANCE TO STATE LAND USE POLICIES AND CONTROLS

##### Hawaii State Plan

165. The proposed reclassification conforms with the objectives and policies set forth in the Hawaii State Plan Chapter 226, HRS.

The proposed Project and the affordable housing that the Petitioner plans to develop at Waikoloa Village will provide diversified housing opportunities. The proposed Project will

also provide diversified employment opportunities through the proposed commercial development, golf courses, and teaching academy.

- 226-5(b) (1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social and economic aspirations while recognizing the unique needs of each county.
- 226-5(b) (2) Encourage an increase in economic activities and employment opportunities on the Neighbor Island consistent with community needs and desires.
- 226-104(b) (2) Make available marginal or non-essential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.
- 226-104(b) (3) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.
- 226-104(b) (4) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.
- 226-104(b) (6) Protect and enhance Hawaii's shoreline, open spaces and scenic resources.

The State Plan encourages the decentralizing growth from Oahu to appropriate areas on the Neighbor Islands. The project also conforms with other location guidelines set forth in the State Plan: adequate public facilities already exist or can be reasonably provided, the land has marginal agricultural value, the site is nearly contiguous to existing urban land, the site contains no critical environmental sources, and the site is not located on the shoreline or other scenic area. In addition, Petitioner has proposed to establish significant natural, open

space buffer areas that would protect and retain the existing open space and scenic resources of the area, and the project's commercial and golf course developments will also provide new employment opportunities that will also be needed in this region of high growth.

#### State Functional Plans

166. The Project conforms with implementing actions in the State Functional Plans:

a. State Tourism Functional Plan.

The following implementing actions in this functional plan are related to the proposed Project:

"II.A.5. Policy. Improve the availability of affordable housing for those employed in the visitor industry.

II.A.5.a. Implementing Action. Impose realistic and fair employee housing requirements on projects seeking land use redesignations, general or development plan amendments, rezoning, SMA permits and building permits."

The project will provide affordable housing in the nearby support community of Waikoloa Village located east of the project site. Approximately 930 units are planned at Waikoloa Village to satisfy the 60 percent affordable housing requirement for the Puako project.

"II.A.8. Policy. Encourage the development of hotels and related facilities within designated visitor destination areas with adequate infrastructure and support services before development of other possible visitor destinations.

II.A.8.a. Implementing Action. Ensure that all proposed tourism development projects conform to the following guidelines: ensure adequate infrastructure, ensure a mix of visitor accommodations, and provide for an adequate number of affordable dwelling units to accommodate employee households."

The Project will develop the necessary infrastructure requirements for water, sewer, roadways, drainage, electric, telephone and cable systems. These systems will be developed in accordance with County and State regulations.

As stated earlier, 930 affordable housing units will be provided at Waikoloa Village. It is expected that some of these homes will be rented or purchased by people who are employed at the golf courses or commercial center at Puako.

"B(4) Policy. Ensure that visitor facilities and destination areas are carefully planned and sensitive to existing neighboring communities and activities.

B(4)(e) Implementing Action. Resort development should take place within designated visitor destination areas.

B(4)(c) Implementing Action. 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."

The Project is compatible with resort developments in the area. The proposed commercial area would provide support amenities, and the golf courses would provide a recreational support amenity.

b. State Housing Functional Plan.

The following implementing actions in the State Housing Functional Plan are directly related to the proposed Project:

"A(2). Policy. Encourage increased private sector participation in the development of affordable for-sale housing units.

A(2)(a). Implementing Action. Create and offer incentives to private developers for providing affordable for-sale housing units.

A(3). Policy. Ensure that (1) housing projects and (2) projects which impact housing provide a fair share/adequate amount of affordable homeownership opportunities.

A(3)(c). Implementing Action. Impose realistic and fair housing conditions on projects seeking land use redesignations, general or development plan amendments, rezoning, SMA permits and building permits."

Petitioner proposes a mix of single and multi-family housing products. The housing products are expected to attract Hawaii residents as well as visitors and investors. The Petitioner will provide 930 affordable housing units at Waikoloa Village. In addition, a larger proportion of "low-end" units may be provided in order to qualify for additional affordable housing credits.

"E(1). Policy. Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, employment and other concerns of existing communities and surrounding areas.

E(1)(a). Implementing Action. Assess, delineate, and where feasible, acquire, master plan and develop lands suitable for future residential development."

The project is in proximity to existing urban uses (Waikoloa Village to the east and Mauna Lani resort to the west). The site is designated "urban expansion" by the County of Hawaii General Plan and is consistent with the County's plan for urban development.

c. State Education Functional Plan.

The following implementing action in the State Education Functional Plan is directly related to the proposed project.

"B(4) Cluster Policy. Support education programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.



B(4)(e) Implementing Action. Provide adults with increased opportunities to continue their personal development through a broad range of pre-vocational, recreational, and cultural course offerings."

The golf teaching academy provides the opportunity for enhanced personal development by developing a unique facility where golfers can improve their game.

Conformance With Urban District Standards

167. Petitioner's proposed reclassification conforms to the State Land Use District Regulations for determining Urban District Boundaries as follows:

A. The Property is centrally located near major resort developments and major employment centers in the region. In addition, the Project will generate new centers of employment within the commercial area, golf courses and teaching academy areas.

B. Petitioner has presented evidence in support of the economic feasibility of the development of the Property.

C. Basic services such as transportation systems, and police and fire protection, already exist in proximity to the Project. In addition, services such as water, sanitation, and parks, will be provided by the developer.

D. The Property is reasonably free from the danger of floods, tsunami, unstable soil conditions, and other natural hazards.

E. The County General Plan envisions a concentration of urban development along the coast from Anaehoomalu Bay to

Kawaihae and mauka to include the Waikoloa Village. The proposed Project sits in the middle of this urban concentration between the Waikoloa Village and the coastal development. The General Plan currently designates the Property for Urban Expansion.

F. The Project is located near to existing urban development and projected urban expansion. Public infrastructure to support the existing and projected urban development are either already available or will be provided by Petitioner. Public revenues that are generated by the Project would exceed the expenditures required to construct or operate the public facilities and services that would be required for the Project.

G. The Property does not contain any important natural features except for the natural open space qualities of the Property.

H. The Property does not contain any historical sites of significance.

I. The Property is not suitable for agriculture and there are no agricultural activities on the site.

J. The project will generate employment during the construction phase of the project, and permanent employment opportunities when construction is completed.

K. The project will provide housing opportunities to a broad range of income groups by providing approximately 1,550 housing opportunities on the Property and 930 affordable houses off-site at Waikoloa Village.

CONFORMANCE TO COASTAL ZONE POLICIES AND OBJECTIVES

168. The proposed reclassification of the Property for the development of the Project conforms to the policies and objectives of the Coastal Zone Management Program Chapter 205A, Hawaii Revised Statutes, as amended.

RULING ON STIPULATED AND PROPOSED FINDINGS OF FACT

Any of the stipulated or proposed findings of fact submitted by the Petitioner or other parties not already ruled upon by the Commission by adoption herein, or rejected by clearly contrary findings of fact herein, are hereby denied and rejected.

Any conclusion of law herein improperly designated as a finding of fact should be deemed or construed as a conclusion of law; any finding of fact herein improperly designated as a conclusion of law should be deemed or construed as a finding of fact.

CONCLUSIONS OF LAW

Pursuant to Chapter 205 of the Hawaii Revised Statutes, as amended, and the Hawaii Land Use Commission Rules, the Commission finds upon a preponderance of the evidence that the reclassification of the Property and approximately shown on Exhibit "A" attached hereto and incorporated by reference herein, consisting of approximately 1,060 acres of land situate at Waikoloa, South Kohala, County and State of Hawaii, from the Agricultural District into the Urban District, subject to the conditions in the Order, is reasonable, non-violative of Section

205-2, Hawaii Revised Statutes and is consistent with the Hawaii State Plan as set forth in Chapter 226, Hawaii Revised Statutes, as amended.

ORDER

IT IS HEREBY ORDERED that the Property, consisting of approximately 1,060 acres, being the subject of this Docket No. A87-617 by Puako Hawaii Properties, situate at Waikoloa, South Kohala, County and State of Hawaii, and identified as Hawaii Tax Map Key Numbers: 6-8-01: portion of 25, portion of 36, portion of 37, portion of 38, portion of 39, and portion of 40, and approximately identified on Exhibit "A", attached hereto and incorporated by reference herein, for reclassification from the Agricultural District to the Urban District, shall be and is hereby approved subject to the following conditions:

1. Petitioner shall provide housing opportunities for low, low-moderate, and moderate income Hawaii residents by offering for sale at least thirty percent (30%) of the units at prices which families with an income range up to one hundred twenty percent (120%) of the County of Hawaii's median income can afford, and thirty percent (30%) of the units at prices which families with an income range of one hundred twenty to one hundred forty percent (120-140%) of the County of Hawaii's median income can afford, provided, however, in no event shall the gross number of affordable units be less than 1,000 units.

This condition may be fulfilled through projects under such terms as may be mutually agreeable between the Petitioner

and the Housing Finance and Development Corporation of the State of Hawaii. This condition may also be fulfilled, with the approval of the Housing Finance and Development Corporation, through construction of rental units to be made available at rents which families in the specified income ranges can afford.

This affordable housing requirement shall be implemented concurrently with the completion of the market units for the residential project. The determination of median income, as that term is used in this condition, shall be based on median income figures that exist at the time that this condition must be implemented.

2. Petitioner shall develop, at its expense and in coordination with the State Department of Land and Natural Resources and the County of Hawaii Department of Water Supply, the necessary water source, storage, and transmission facilities to provide an adequate supply of potable water to the Property. Petitioner shall develop the necessary water source prior to development of the Property.

3. Petitioner shall ensure that a buffer area along the boundary of the Property fronting the Queen Kaahumanu Highway right-of-way will be preserved to protect natural open space and scenic views. This buffer area shall be preserved in perpetuity either through the establishment of a conservation easement pursuant to Chapter 198, HRS, as amended, or such other means as shall be reviewed and approved by the Office of State Planning of the State of Hawaii.

The buffer area shall be comprised of approximately two hundred twenty-five (225) acres and shall extend inland from the Queen Kaahumanu Highway right-of-way to a depth of approximately one thousand two hundred (1,200) feet. The depth of the buffer area may meander to a lesser or greater depth to accommodate the Project's development plan and preservation of natural open space and scenic views. Exceptions shall be made for infrastructure improvements or corridors that may be necessary to service the developed portions of the Property. The approximate boundaries of the natural open space buffer area are reflected in Petitioner's Exhibit 11 which is attached hereto and incorporated herein as Exhibit B.

4. Petitioner shall participate in the funding and construction of present and future transportation improvements at project access points as identified and deemed necessary by the State Department of Transportation. Such improvements may include a highway overpass or underpass. Petitioner shall also participate in the funding and construction of other on-site and off-site transportation improvements necessitated by the proposed development and in designs and schedules accepted by and coordinated with the State Department of Transportation, provided that the extent of the Petitioner's participation shall not exceed its share of the increased community traffic impacts in the region and, provided further that, in the event the County adopts an impact fee for transportation improvements, the foregoing requirements shall not include or double-count the cost

of any specific traffic improvements which may also be included in the County's impact fee computation.

5. Petitioner shall design, locate and construct a sewage treatment plant as may be required by the County of Hawaii and the State Department of Health so as to minimize adverse impacts on adjoining properties.

6. Petitioner shall immediately stop work on the impacted area and contact the State Historic Preservation Office should any archaeological resources such as artifacts, shell, bone, or charcoal deposits, human burial, rock or coral alignments, paving or walls be encountered during the Project's development.

7. Petitioner shall provide a maximum of sixteen (16) acres within the Property for public school site(s), as the State Department of Education may determine to be necessary to service the Property, at no cost to the State of Hawaii. These school site(s) shall be provided, if there is a need for such site(s), in location(s) designated for community facilities on Petitioner's master plan, or in location(s) as may be mutually agreeable to the Petitioner and the State Department of Education.

8. Prior to the development or transfer of any interests whatsoever in and to the Project, Petitioner shall provide community benefit assessments as agreed between Petitioner and the Office of State Planning and shall file it with the Commission within 30 days of the execution of the agreement.

9. Petitioner shall comply with "The Eight (8) Conditions Applicable to This Golf Course Development", prepared by the State Department of Health dated April, 1990 (Version 3) and attached hereto.

10. Petitioner shall engage the services of a qualified golf course manager to oversee the irrigation of the golf course and application of fertilizers and pesticides to the golf course and who shall be certified by the State Department of Agriculture in the application of fertilizers and pesticides.

11. Petitioner shall make available adequate golf tee times, no less than forty (40) percent of total daily golf tee times, at affordable rates for public play by Hawaii State residents.

12. Petitioner shall provide annual reports to the Land Use Commission, The Office of State Planning and the County of Hawaii Planning Department in connection with the status of the Project and Petitioner's progress in complying with the conditions imposed.

13. Petitioner shall develop the Property in substantial compliance with the representations made to the Commission. Failure to so develop the Property may result in reversion of the Property to its former classification, or change to a more appropriate classification.

14. Petitioner shall give notice to the Land Use Commission of any intent to sell, lease, assign, place in trust,



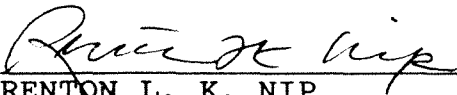
or otherwise voluntarily alter the ownership interest in the Property covered in the petition, prior to development of the Property.

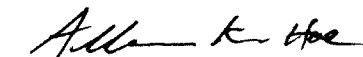
15. The Commission may fully or partially release these conditions as to all or any portion of the Property upon timely, and upon the provision of adequate assurance of satisfaction of these conditions by the Petitioner.

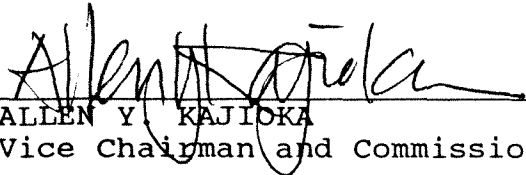
DOCKET NO. A87-617 - PUAKO HAWAII PROPERTIES

Done at Honolulu, Hawaii, this 9th day of July 1991,  
per motion on June 13, 1991.

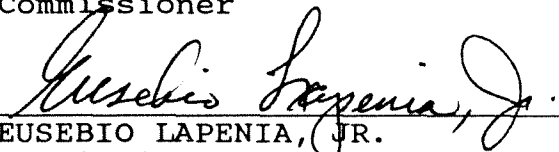
LAND USE COMMISSION  
STATE OF HAWAII

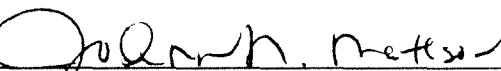
By   
RENTON L. K. NIP  
Chairman and Commissioner

By   
ALLEN K. HOE  
Vice Chairman and Commissioner

By   
ALLEN Y. KAJIOKA  
Vice Chairman and Commissioner

By (absent)  
KAREN S. AHN  
Commissioner

By   
EUSEBIO LAPENIA, JR.  
Commissioner

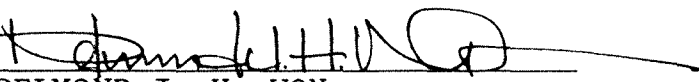
By   
JOANN N. MATTSON  
Commissioner

Filed and effective on  
July 9, 1991

Certified by:

  
Executive Officer

By (absent)  
ELTON WADA  
Commissioner

By   
DELMOND J. H. WON  
Commissioner

**A87 - 617 / PUAKO HAWAII PROPERTIES**  
(MOTION TO AMEND DECISION AND ORDER)

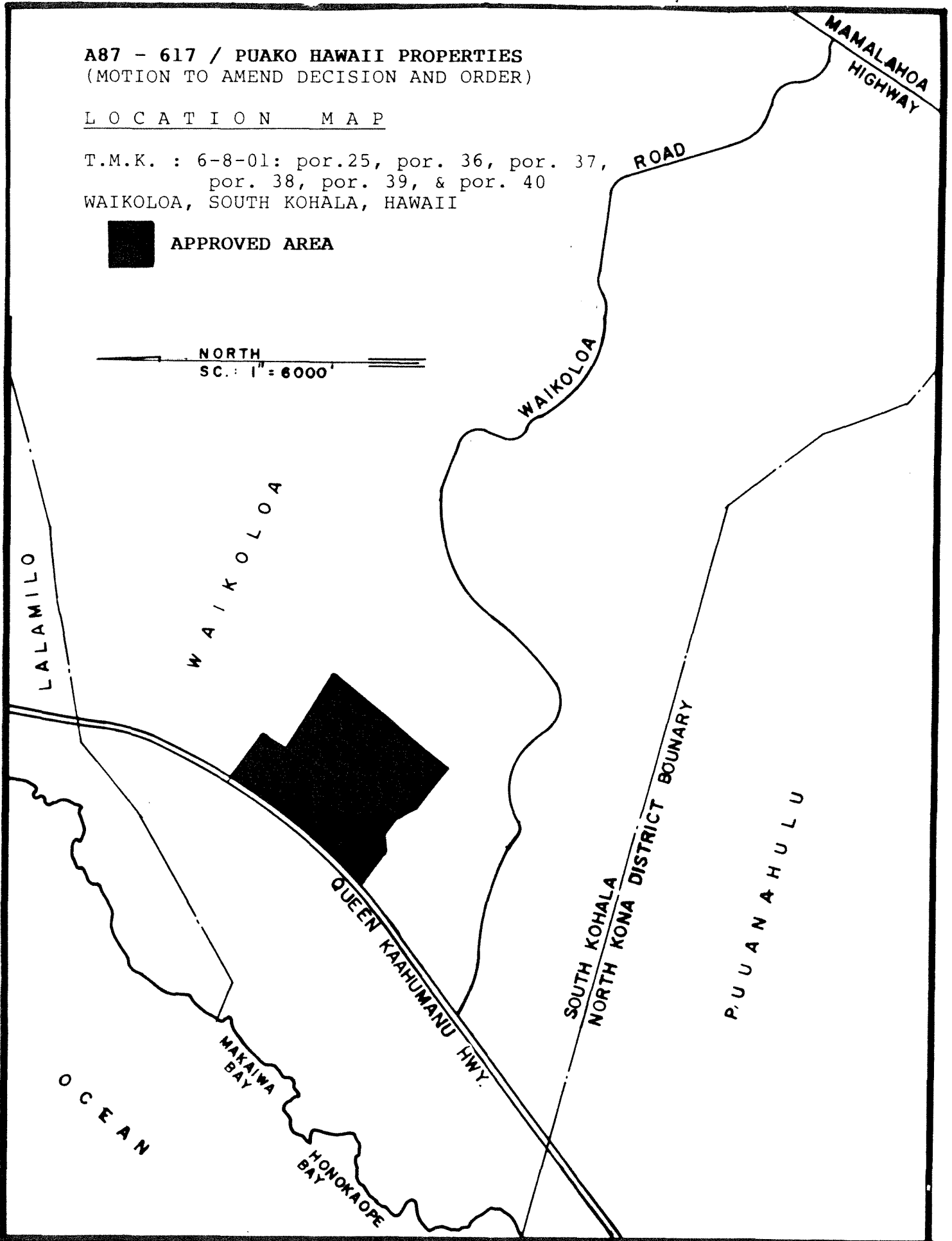
L O C A T I O N    M A P

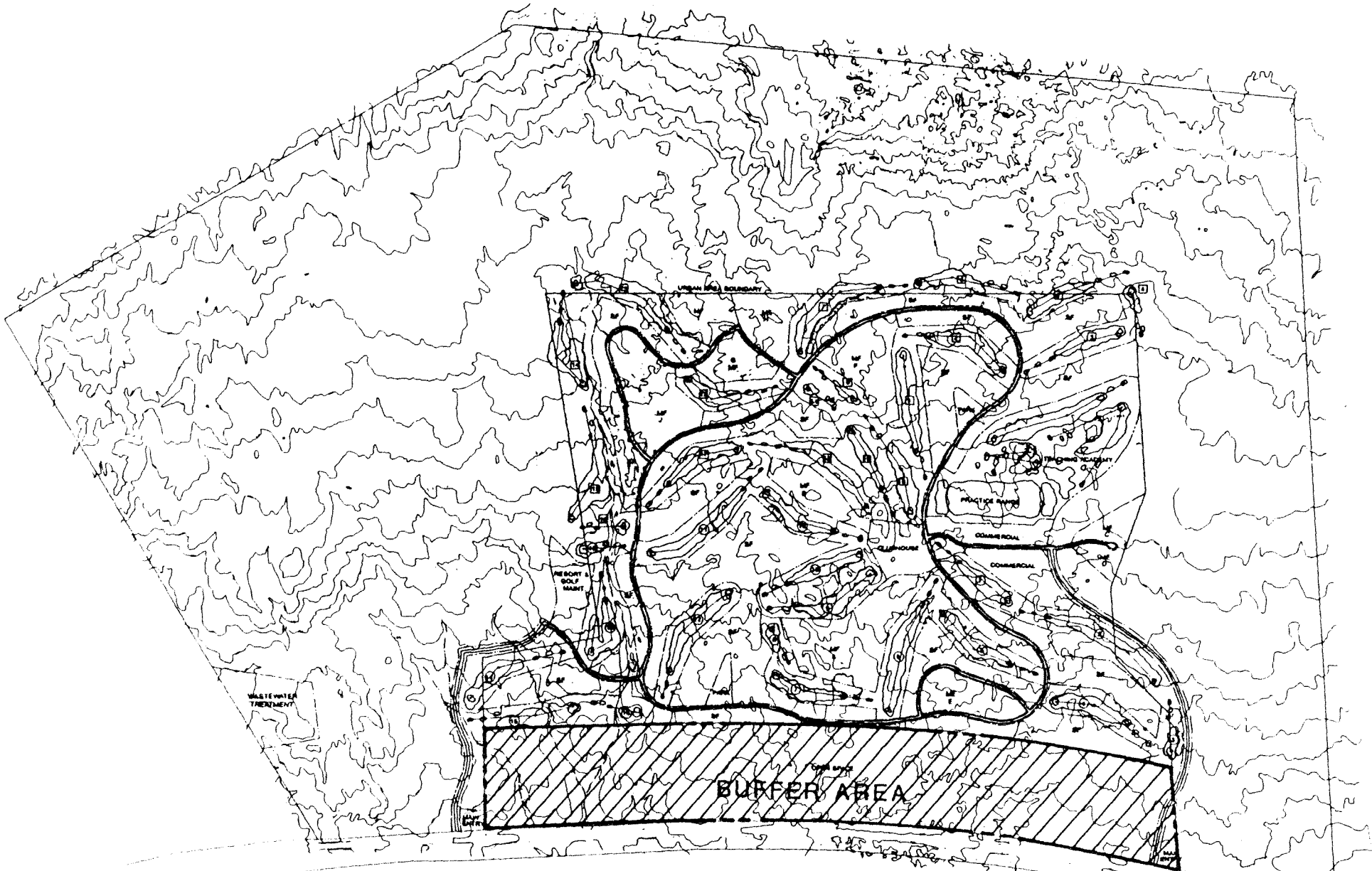
T.M.K. : 6-8-01: por. 25, por. 36, por. 37,  
          por. 38, por. 39, & por. 40  
WAIKOLOA, SOUTH KOHALA, HAWAII



**APPROVED AREA**

NORTH  
SC.: 1" = 6000'





MASTER PLAN  
 PUAKO RESIDENTIAL GOLF COMMUNITY



26 FEB 91



Exhibit B



# STATE OF HAWAII DEPARTMENT OF HEALTH

April, 1990 (Version 3)

## EIGHT (8) CONDITIONS APPLICABLE TO THIS NEW GOLF COURSE DEVELOPMENT

1. The owner/developer and all subsequent owners shall establish a groundwater monitoring plan and system which shall be presented to the State Department of Health for its approval. The groundwater monitoring plan and system shall minimally describe the following components:
  - a. A monitoring system tailored to fit site conditions and circumstances. The system shall include, and not be limited to, the use of monitoring wells, lysimeters and vadose zone monitoring technologies. If monitoring wells are used, the monitoring wells shall generally extend 10 to 15 feet below the water table.
  - b. A routine groundwater monitoring schedule of at least once every six (6) months and more frequently, as required by the State Department of Health, in the event that the monitoring data indicates a need for more frequent monitoring.
  - c. A list of compounds which shall be tested for as agreed to by the State Department of Health. This list may include, but not be limited to the following: total dissolved solids; chlorides; PH; nitrogen; phosphorus; or any other compounds associated with fertilizers, biocides or effluent irrigation.
2. Baseline groundwater/vadose zone water data shall be established as described in this paragraph. Once the monitoring system and list of compounds to be monitored for have been determined and approved by the State Department of Health, the owner/developer shall contract with an independent third-party professional (approved by the State Department of Health) to establish the baseline groundwater/vadose zone water quality and report the findings to the State Department of Health. Testing of the analyses of the groundwater shall be done by a certified laboratory.
3. If the data from the monitoring system indicate the presence of the measured compound and/or the increased level of such compound, the State Department of Health can require the owner/developer or subsequent owner to take immediate mitigating action to stop the cause of the contamination. Subsequently, the developer/owner or subsequent owner shall mitigate any adverse effects caused by the contamination.

4. Owner/developer shall provide sewage disposal by means of connection to the public sewer system; or by means of a wastewater treatment works providing treatment to a secondary level with chlorination. Effluent from this wastewater treatment works may be used for golf course irrigation, subject to Condition #3. The entire system shall be approved by the State Department of Health in conformance with Administrative Rules Title 11, Chapter 62, Wastewater Treatment Systems, effective December 10, 1988.
5. If a wastewater treatment works with effluent reuse becomes the choice of wastewater disposal, then the owner/developer and all subsequent owners shall develop and adhere to a Wastewater Reuse Plan which shall address as a minimum, the following items:
  - a. Management Responsibility. The managers of the irrigation system using reclaiming wastewater shall be aware of the possible hazards and shall evaluate their system for public health, safety, and efficiency. They must recognize that contact with the reclaimed wastewater from treated domestic sewage poses potential exposure to pathogenic organisms which commonly cause infectious diseases (bacteria, viruses, protozoa, and helminths or worms).
  - b. General Recommendations
    - 1) Irrigated areas should be no closer than 500 feet from potable water wells and reservoirs.
    - 2) Irrigated areas should be no closer than 200 feet from any private residence.
    - 3) Application rates should be controlled to minimize ponding. Excess irrigation tailwater in the reclaimed wastewater irrigation area shall be contained and properly disposed. An assessment should be made of the acceptable time and rate of application based on factors such as type of vegetation, soil, topography, climate and seasonal variations.
    - 4) Effluent holding/mixing ponds shall be designed to prevent the infiltration of the wastewater into the subsurface. The holding/mixing ponds shall be made impervious.
    - 5) Irrigation shall be scheduled such that the public is not in the vicinity and the soil is sufficiently dry to accept the irrigation water.
    - 6) Permanent fencing or barriers shall be erected around polishing or holding ponds to prevent public entry or stray feral and tame animals from gaining access to the ponds.

- 7) Adequate irrigation records shall be maintained. Records should include dates when the fields are irrigated, rate of application, total application and climatic conditions. Records should also include any operational problems, diversions to emergency storage or safe disposal and corrective or preventive action taken.
  - 8) The holding/mixing ponds shall be periodically monitored for the purpose of detecting leakage into the subsurface. If leakage is detected, corrective action shall be immediately taken.
- c. Adequate Notice. Appropriate means of notification shall be provided to inform the employees and public that reclaimed wastewater is being used for irrigation on the site.
- 1) Posting of conspicuous signs with sufficient letter size for clear visibility with proper wording should be distributed around the use areas.
  - 2) Signs shall be securely fastened. Periodic surveillance shall be conducted to assure permanent posting at all times. Immediate replacements shall be made when necessitated by deterioration, vandalism or misuse.
- d. Adequate Employee Education. Employees or users should be cautioned and warned of the potential health hazards associated with the ingestion of reclaimed wastewater being used at the site.
- 1) Employees should be warned that the ingestion of reclaimed wastewater is unsafe.
  - 2) Employees should be protected from direct contact of the reclaimed wastewater. If necessary, protective clothing should be provided.
  - 3) Employees should be informed of the following:
    - The irrigation water is unsafe for drinking or washing.
    - Avoid contact of the water or soil with any open cuts or wounds.
    - Avoid touching the mouth, nose, ear or eyes with soiled hands, clothes or any other contaminated objects.
    - Be aware that inanimate objects such as clothes or tools can transport pathogenic organisms.
    - Always wear shoes or boots to protect feet from the pathogenic organisms in the soil or irrigation water.

6. Releases from underground storage tanks (USTs) used to store petroleum products for fueling golf carts, maintenance vehicles, and emergency power generators pose potential risks to groundwater.

Should the owner/developer/operator plan to install USTs that contain petroleum or other regulated substances, the owner/developer/operator must comply with the federal UST technical and financial responsibility requirements set forth in Title 40 of the Code of Federal Regulations Part 280. These federal rules require, among other things, owners and operators of USTs to meet specific requirements in the detection, release response and corrective action. Also, the owner/developer/operator must comply with all State UST rules and regulations pursuant to Chapter 342-L 'Underground Storage Tanks' of the Hawaii Revised Statutes.

In consideration of the above-mentioned remarks, the Department of Health recommends that the owner/developer/operator implement facility plan alternatives that exclude the installation and operation of UST systems (e.g., the preferential use of electric golf carts, use of above-ground storage of fuel oil for emergency power generators, etc.), or, if USTs are utilized, that secondary containment be considered.

7. Buildings designated to house the fertilizer and biocides shall be bermed to a height sufficient to contain a catastrophic leak of all fluid containers. It is also recommended that the floor of this room be made waterproof so that all leaks can be contained within the structure for cleanup.
8. A golf course maintenance plan and program will be established based on "Best Management Practices (BMP)" in regards to utilization of fertilizers and biocides as well as the irrigation schedule. BMP's will be revised as an ongoing measure. The golf course maintenance plan will be reviewed by the State Department of Health prior to implementation.

If there are any questions regarding the eight (8) conditions mentioned here, please contact Mr. James K. Ikeda at 543-8304. We ask you cooperation in the protection of Hawaii's valuable groundwater resource.



BEFORE THE LAND USE COMMISSION  
OF THE STATE OF HAWAII

In the Matter of the Petition of ) DOCKET NO. A87-617  
PUAKO HAWAII PROPERTIES )  
To Amend the Agricultural Land )  
Use District Boundary into the )  
Urban Land Use District for )  
Approximately 1,060 Acres of )  
Land Situate at Waikoloa, South )  
Kohala, Island, County and State )  
of Hawaii, Tax Map Key Nos.: )  
6-8-01: Portion 25, Portion 36, )  
Portion 37, Portion 38, Portion )  
39, Portion 40 )  
\_\_\_\_\_ )

CERTIFICATE OF SERVICE

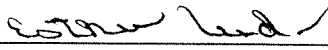
I hereby certify that a copy of the Amended Findings of Fact, Conclusions of Law, and Decision and Order was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by certified mail:

HAROLD S. MASUMOTO, Director  
Office of State Planning  
State Capitol, Room 410  
Honolulu, Hawaii 96813

CERT. NORMAN K. HAYASHI, Planning Director  
Planning Department, County of Hawaii  
25 Aupuni Street  
Hilo, Hawaii 96720

CERT. JAN N. SULLIVAN, ESQ., Attorney for Petitioner  
Takeyama & Sullivan  
1188 Bishop Street  
Suite 1411, Century Square  
Honolulu, Hawaii 96813

DATED: Honolulu, Hawaii, this 9th day of July 1991.

  
\_\_\_\_\_  
ESTHER UEDA  
Executive Officer