BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

ORIGINAL

In the matter of the Petition	)	DOCKET NO. A00-732
	)	
of	)	FINDINGS OF FACT,
	)	CONCLUSIONS OF LAW, AND
TSA CORPORATION	)	DECISION AND ORDER FOR A
	)	STATE LAND USE DISTRICT
To Amend the Land Use District	)	BOUNDARY AMENDMENT;
Boundary of Certain Lands situated at	)	
Kaloko, North Kona, Island of Hawaii,	)	EXHIBIT A
State of Hawai`i, consisting of	)	
approximately 102.016 acres, Tax Map	)	
Key: 7-3-051: portion of 060, from the	)	
Conservation District to the Urban	)	
District	)	

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.

2-14-02 by
Date Executive Officer

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER FOR A STATE LAND USE DISTRICT BOUNDARY AMENDMENT

BEFORE THE LAND USE COMMISSION

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FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER FOR A STATE LAND USE DISTRICT BOUNDARY AMENDMENT

TSA CORPORATION formerly dba TSA INTERNATIONAL, LIMITED

("Petitioner" or "TSA") filed a Petition For Land Use District Boundary Amendment on May 22, 2000, and the First Amendment Of Petition for Land Use District Boundary Amendment on November 17, 2000, pursuant to Section 205-3.1(c) and 205-4, Hawaii Revised Statutes ("HRS"), and Chapter 15-15, Hawaii Administrative Rules ("HAR"), to amend the State land use district boundary by reclassifying approximately 102.016 acres of land situated at Kaloko, North Kona, Island, County and State of Hawai`i, and designated by Tax Map Key No:(3) 7-3-051: portion of 060 ("Petition Area" or

"Property"), from the Conservation Land Use District to the Urban Land Use District for the development of Phases III and IV of the Kaloko Industrial Park ("Petition" or "Project").

The Land Use Commission ("Commission" or "LUC"), having considered the entire record on this matter, hereby makes the following findings of fact, conclusions of law and decision and order.

FINDINGS OF FACT

PROCEDURAL MATTERS

1. Petitioner filed its Petition For Land Use District Boundary Amendment on May 22, 2000, to reclassify approximately 102.272 acres of the Petition Area from the State Land Use Conservation District to the State Land Use Urban District for Phases III and IV of the Kaloko Industrial Park.

2. On May 22, 2000, Petitioner filed Exhibits 1 through 6. Exhibit 1 consisted of the Draft Environmental Assessment ("DEA") for the Property, filed pursuant to Chapter 343, HRS, and Section 15-15-50, HAR.

3. The Office of Planning, Department of Business and Economic Development and Tourism, State of Hawaii ("OP") filed its "Statement of the Office of Planning As to Whether The Anticipated Effects Discussed in Petitioner's Draft Environmental Assessment To Reclassify Approximately 102.3 Acres of Land Currently

in the Conservation District into the Urban District Constitutes A "Significant Effect" Pursuant to 343, HRS" on June 14, 2000.

4. The County of Hawaii ("County") filed a facsimile copy of the "County of Hawaii Planning Department's Comment On The Petitioner's Draft Environmental Assessment" on June 15, 2000.

5. On June 15, 2000, the LUC required Petitioner to file an Environmental Impact Statement ("EIS") pursuant to its Order Requiring Petitioner to Prepare an Environmental Impact Statement issued on July 26, 2000.

6. LUC filed Petitioner's Environmental Impact Statement Preparation Notice ("EISPN") with the Office of Environmental Quality Control, Department of Health, State of Hawaii ("OEQC") on June 26, 2000 for publication in the OEQC Environmental Notice on July 8, 2000.

7. LUC filed Petitioner's DEIS with OEQC on August 10, 2000, for publication in the Environmental Notice on August 23, 2000.

8. Petitioner filed its "First Amendment Of Petition For Land Use District Boundary Amendment;" Verification; Exhibits 7 – 13; Certificate of Service on November 17, 2000. The amended petition clarified the acreage of the Petition Area to 102.016 acres and corrected the TMK No to (3) 7-3-051: portion of 060. Exhibit 7 consisted of Petitioner's Final Environmental Impact Statement ("FEIS").

9. On November 17, 2000, the LUC accepted Petitioner's FEIS pursuant to its "Findings of Fact, Conclusions of Law, and Decision and Order Accepting An Environmental Impact Statement For A State Land District Boundary Amendment" issued on December 15, 2000.

10. On December 11, 2000, a Notice of Hearing on the Petition was published in *Midweek*, which scheduled the commencement of the hearings on March 8 – 9, 2001.

11. On January 18, 2001, the OP filed its Statement of Position.

12. On January 22, 2001, Petitioner filed its Exhibits 14 through 23.

13. On January 30, 2001, an Application to Intervene, dated January 26, 2001, was filed by Kaloko-Honokohau National Historical Park ("KAHO" or "National Park"), National Park Service, U.S. Department of Interior ("Intervenor" or "NPS").

14. On February 12, 2001, OP filed its Exhibit 1.

15. On February 22, 2001, a Prehearing Conference was conducted pursuant to Section 15-15-57, HAR.

16. NPS filed its Exhibits 1 through 20.

17. On February 23, 2001, the Acting Executive Officer of the LUC issued the Prehearing Conference Order, which established a schedule for the mutual exchange of exhibits and identification of witnesses for all parties at the hearing scheduled for March 8-9, 2001.

18. On February 26, 2001, the County filed its Position Statement in support of TSA's Petition.

19. On February 28, 2001, Petitioner filed its Exhibits 24 through 41.

20. On February 28, 2001, County filed its Exhibits 1 through 3.

21. On February 28, 2001, NPS filed its Exhibit 21.

22. On March 8, 2001, the hearing for the Petition commenced. The LUC granted the following: Intervenor status to NPS pursuant to its "Order Granting Intervenor Status to KAHO" issued on March 19, 2001[1]; and Petitioner's oral motion for change of Petitioner's name from "TSA International, Limited" to "TSA Corporation" pursuant to its "Order Granting Motion For Change of Petitioner's Name."

23. Petitioner filed its Exhibits 42 through 44.

24. OP filed its Exhibits 2 through 5.

25. Public witness testimony was received by Lance Wilhelm, Kiewit Pacific Company, in support of the Petition.

26. The following witnesses provided oral and/or written testimony on behalf of Petitioner: Hideki Hayashi, TSA President and Secretary; and Rodney Funakoshi, Wilson Okamoto & Associates, Inc.

27. A site visit was conducted on KAHO.

[1] The Commission granted Intervenor status to KAHO based on the National Park Service's concerns of potential contamination of groundwater and surface water quality generated from the project and its impacts to anchialine ponds and fishponds located in the park and nearby coastal waters.

28. At the Commission's hearing on March 9, 2001, the following provided oral and/or written testimony on behalf of the Petitioner: Alan Haun, Haun & Associates; Winona Char, Char & Associates; James E. Hallstrom, The Hallstrom Group, Inc.; and Ulalia Woodside and Dennis Shiu, Wilson Okamoto & Associates, Inc.

29. On April 2, 2001, Petitioner filed the following: "Petitioner's Motion for Issuance of Subpoena to Thierry M. Work, Administrative Subpoena" and Certificate of Service; and "Petitioner's Motion for Issuance of Subpoena to Richard E. Brock" and Certificate of Service. The LUC issued the respective subpoenas on April 11, 2001.

30. On April 3, 2001, Petitioner filed the following: its "Motion to Correct Transcript Of Hearings On March 8 and 9, 2001;" and its Exhibits 44 through 46. The LUC issued its "Order Granting Petitioner's Motion to Correct Transcript of Hearings on March 8 and 9, 2001," on June 19, 2001.

31. On April 10, 2001, a Second Prehearing Conference was conducted for the hearing scheduled for May 31, 2001 and June 1, 2001.

32. On April 27, 2001, the Acting Executive Officer of the LUC issued the Second Prehearing Conference Order, which established the scheduling for the mutual exchange of exhibits and other documents amongst the parties.

33. The following additional witnesses, upon the behest of the Commission, were identified for the hearing:

County's witnesses to address issues of wastewater improvement district, solid waste disposal, and affordable housing; and

OP's witnesses to address Hawaii's Implementation Plan for Polluted Runoff Control, Coastal Zone Management Program.

34. On May 2, 2001, NPS filed its amended Exhibit 21 and Exhibit 25A.

35. On May 3, 2001, Petitioner filed its Exhibits 7.F1, 11.A, 47, 47A, 47B, 47C, 49, 50, and 52 through 54.

36. On May 4, 2001, via facsimile, the County filed its Exhibits 7 through 11.

37. On May 7, 2001, NPS filed its Exhibit 26.

38. On May 8, 2001, NPS filed its amended Exhibit 25-A.

39. On May 24, 2001, Petitioner filed "Petitioner's Response To Intervenor Kaloko-Honokohau National Historical Park's Summary of Expert Witness Testimony."

40. On May 25, 2001, NPS filed its Exhibit 27.

41. On May 31 to June 1, 2001, the hearings resumed. The Commission approved NPS's oral motion to allow Nicole Walthall, Esq. to appear as counsel for Intervenor pursuant to its "Order Granting Intervenor's Motion for Legal Representation" issued on June 19, 2001.

42. The County filed its original and requisite copies of Exhibits 7 through 11.

43. OP filed its Exhibits 6 through 9.

44. The following provided oral and/or written testimony on behalf of the Petitioner: Hideki Hayashi, TSA President and Secretary; Pete Pascua, Wilson Okamoto & Associates, Inc.; Tom Nance, Tom Nance Water Resource Engineering; Dr. Thierry M. Work, United States Geological Survey ("USGS") and Dr. Richard Brock (Petitioner's subpoenaed witnesses); Dr. Steven J. Dollar, Marine Research Consultants; Masanobu R. Fujioka, Masa Fujioka & Associates; and Reginald E. David, Rana Productions, Ltd.

45. On June 22, 2001, a Third Prehearing Conference was conducted, for the continuation of the hearings scheduled for July 18 and 19, 2001 and August 23 and 24, 2001.

46. On June 22, 2001, County filed its Exhibits 12 and 13.

47. On June 29, 2001, the Executive Officer of the LUC issued the Third Prehearing Conference Order which set forth the following prehearing requirements:

a. All parties shall direct expert witness testimony and subsequent respective cross examinations in alignment with the parties' groundwater issues, which shall not preclude the discussion of other relevant groundwater related issues by any of the parties;

b. The County shall present its case at the hearing scheduled for

July 18 and 19, 2001, with the exception to the parties' groundwater issues, that will include its witnesses relating to housing, traffic, and general plan issues;

c. OP shall present its case at the hearing scheduled for July 18 and 19, 2001, with the exception to the parties' groundwater issues, that will include witnesses relating to transportation and archaeological resources;

d. Petitioner's expert witness on fauna shall present its case at the hearing scheduled for August 23 and 24, 2001; and

e. Discussion of the parties' groundwater issues shall resume and be completed at the hearing scheduled for August 23 and 24, 2001.

48. On June 26 and July 2, 2001, Petitioner filed respectively, "Petitioner's Motion to Correct Transcript of Hearings On May 31 and June 1, 2001" and "Petitioner's Amended Motion to Correct Transcript of Hearings On May 31 and June 1, 2001."

49. On July 10, 2001, Petitioner filed its Exhibits 55 through 60.

50. On July 16, 2001, the County filed its Exhibit 14.

51. On July 18 and 19, 2001, the hearings continued. The Commission denied Petitioner's Amended Transcript Correction Motion pursuant to its "Order Denying Petitioner's Amended Motion to Correct Transcript of Hearings On May 31 and June 1, 2001" issued on August 13, 2001.

52. The following provided oral and/or written testimony on behalf of the

County: Kiran Emler, Department of Public Works, County of Hawaii ("DPW"); and Norman Hayashi, Planning Department, County of Hawaii.

53. The following provided oral and/or written testimony on behalf of OP: Abe Mitsuda, OP; Ross Cordy, State Historic Preservation Division, Department of Land and Natural Resources, State of Hawaii; and Stanley Tamura, Highways Division, Department of Transportation, State of Hawaii.

54. The following provided oral and/or written testimony on behalf of Intervenor: Geraldine Bell and Stanley Cruise Bond, KAHO; and David Kahelemauna Roy, Jr., Kaloko-Honokohau Advisory Commission.

55. On August 23 and 24, 2001, the hearings continued.

56. Public witness testimony was received by Lunakanawai Hauanio expressing concerns of impacts generated by development upon cultural and native Hawaiian resources.

57. The following provided oral and/or written testimony on behalf of Petitioner: Dr. Richard Brock; Tom Nance; Dr. Steven J. Dollar; and Reginald David.

58. The following provided oral and/or written testimony on behalf of the County: Peter Boucher and Kiran Emler, DPW; and Edwin Taira, Office of Housing and Community Development, County of Hawaii.

59. The following provided oral and/or written testimony on behalf of OP:

Dennis Tulang, Wastewater Branch, Department of Health, State of Hawaii; and Susan Miller, Coastal Zone Management Program, OP.

60. The following provided oral and/or written testimony on behalf of Intervenor: Michael Thalhamer, PSOMAS.

61. On September 7, 2001, Petitioner filed its Exhibits 61 and 62.

62. On September 26, 2001, NPS filed its Exhibits 28 and 29.

63. On October 1, 2001, Petitioner filed its Exhibit 63.

64. On October 2, 2001, Petitioner filed its Exhibit 64.

65. On October 2, 2001, NPS filed its Exhibits 6A, 30, 31, and 32.

66. On October 3, 2001, NPS filed its Exhibits 33 through 37.

67. On October 3 and 4, 2001, the hearings continued.

68. Masanobu R. Fujioka provided oral and/or written testimony on behalf of Petitioner.

69. The following provided oral and/or written testimony on behalf of OP: Chauncey Hew, Groundwater Pollution Control Section, Safe Drinking Water Branch, Department of Health, State of Hawaii; and Denis Lau, Clean Water Branch, Department of Health, State of Hawaii.

70. The following provided oral and/or written testimony on behalf of

Intervenor: Roy Irwin, National Park Service, U.S. Department of the Interior; Dr. Delwyn Oki, USGS; and Eric Guinther, AECOS Incorporated.

71. Petitioner withdrew its Exhibit 63.

72. On October 22, 2001, OP filed its "Office of Planning's Motion to Extend Time;" and Memorandum of Support.

73. On October 29, 2001, County filed its "County of Hawaii's Statement of No Objection to the Office of Planning's Motion to Extend Time."

74. On October 30, 2001, Petitioner filed its Exhibits 65 through 72.

75. On October 31, 2001, OP filed its Exhibit 10.

76. On November 1 and 2, 2001, the hearings concluded.

77. NPS filed its Exhibits 22A and 38.

78. Public witness testimony was received by Mahealani Pai expressing concerns of impacts from the proposed project upon the cultural and natural resources at KAHO.

79. The following provided oral and/or written testimony on behalf of Petitioner: Tom Nance and Dr. Steve J. Dollar.

80. The following provided oral and/or written testimony on behalf of Intervenor: Eric Guinther; Dr. Paul Haberstroh, University of Hawaii at Hilo, State of Hawaii; Dr. David Foote, Biological Research Division, USGS; Sallie Beavers, KAHO;

Bryan Harry, Pacific Island Support Office, National Park Service, U. S. Department of the Interior; and Dr. Marie Morin, Fish and Wildlife Service, U.S. Department of the Interior.

81. The LUC approved the "Office of Planning's Motion to Extend Time" pursuant to its "Order Granting Office of Planning's Motion to Extend Time" issued on November 15, 2001.

82. Petitioner withdrew its Exhibits 67, 69 and 70.

83. The LUC ruled that Petitioner's Exhibits 66, 68 and 72 would not be allowed into evidence.

84. On November 15, 2001, NPS filed its Exhibit 39.

DESCRIPTION OF THE PETITION AREA

85. Petitioner is the fee owner of the Petition Area. Petitioner submitted corporate documents evidencing the merger of Kobayashi Development & Construction, Inc. with and into Takamasa International, Inc. that lead to the formation of TSA International, Limited. On February 28, 2001, Petitioner filed a Notice of Name Change from TSA International, Limited to TSA Corporation, which the Commission approved pursuant to its Order Granting the Motion To Change Petitioner's Name issued on April 10, 2001.

86. Petitioner is a Hawaii corporation incorporated in 1979, and licensed to do

business within the State of Hawaii, with its business and mailing address at 1441 Kapiolani Boulevard, Suite 1905, Honolulu, Hawaii 96814. Petitioner owns or has owned various properties in Hawaii, including Phases I and II of the Kaloko Industrial Park. It is also involved in various real estate management and investment activities in Hawaii.

87. Petitioner proposed the development of Phases III and IV of the existing Kaloko Industrial Park for light industrial, business and commercial uses.

88. The Petition Area is situated at Kaloko, North Kona, County of Hawaii, State of Hawaii, and designated as TMK No: (3) 7-3-051: portion of 060. A metes and bounds description of the Petition Area was submitted pursuant to Boundary Interpretation Number 00-21 dated November 14, 2000.

89. The Petition Area is situated on lands within the State Land Use Conservation District.

90. Phases I and II of the Kaloko Industrial Park consisting of 85 lots within 130.1 acres were reclassified from the Conservation District to the Urban District pursuant to the Commission's Findings of Fact, Conclusions of Law, and Decision Order for LUC Docket No. A80-482/T.S.K. Associates issued on May 14, 1981. The reclassification also included incremental districting for a proposed Phase III and IV provided there was substantial completion of on-site and off-site improvements for the

first two phases within five (5) years of the approval for reclassification. Since these improvements could not be completed within this timeframe, the property has remained in the Conservation District.

91. An approximately 8.5-acre roadway parcel was reclassified from the Conservation District to the Urban District in May 1986 by the Land Use Commission pursuant to the Commission's Findings of Fact, Conclusions of Law, and Decision and Order issued on May 15, 1986. This roadway parcel lead to the development of Hina Lani Street, a two-way, two-lane collector road that provides a mauka-makai connection between Queen Kaahumanu Highway and Mamalahoa Highway that traverses along the northern boundary of the Petition Area. Subsequent completion of the proposed Increment II could not be completed within the required timeframe, and the remainder of this property remained in the State Land Use Conservation District.

92. The Petition Area is presently vacant and undeveloped. The site consists of large, barren masses of pahoehoe and *aa* lava and is overgrown with scrub vegetation consisting mostly of koa haole and fountain grass.

93. Adjacent to the west of the Petition Area are Phases I and II of the Kaloko Industrial Park, consisting of 85 lots and includes industrial and business establishments such as light manufacturing, warehousing and distribution operations, and a Costco Wholesale facility.

94. Located approximately 0.4 mile west of the Petition Area, makai of Queen Kaahumanu Highway is the Kaloko-Honokohau National Historical Park. The 1,160-acre park was established in 1978, pursuant to Public Law 95-625, November 10, 1978, and is administered by the U.S. National Park Service. KAHO contains extensive natural and cultural resources, such as fishponds, wetlands and archaeological sites.

The defined purpose of the park was to: "…provide a center for the preservation, interpretation and culture, and to demonstrate historic land use patterns as well as provide needed resources for the education, enjoyment, and appreciation of such traditional native Hawaiian activities and culture by local residents and visitors…"

The fundamental purpose of the National Park System is to conserve park resources and values, and restore and resurrect the park's cultural and natural resources.

The Commission granted Intervenor status to NPS pursuant to its "Order Granting Intervenor Status to KAHO" issued on March 19, 2001.

95. Adjacent to the north of the Petition Area is a privately-owned undeveloped parcel consisting of approximately 1,530 acres. Petitioner disclosed to the Commission that the MID Corporation, a subsidiary of TSA, is the owner of the parcel.

96. The Kohanaiki Business Park, a 26-lot light industrial development, is located approximately 0.5 mile north of the Petition Area.

97. To the north approximately 3 miles from the Petition Area is the Kona International Airport at Keahole operated by the State Department of Transportation, Airports Division. Immediately west (makai) of the Airport is the Natural Energy Laboratory of Hawaii (NELH), a publicly funded research facility. The Hawaii Ocean and Science Technology Park (HOST) is located adjacent to and south of the Airport. Mauka of the Airport and Queen Kaahumanu Highway is the State-developed Keahole Agricultural Park.

98. Adjacent to the south of the Petition Area, is a 337-acre parcel owned by Lanihau Partners L.P., on which quarrying operations are currently being conducted upon a 261.7-acre portion operated by West Concrete Industries. The landowner is currently seeking a State Land District Boundary Amendment from the State Land Use Conservation District to the Urban District for the development of the Kaloko-Honokohau Business Park, which will include a mixture of light industrial and commercial uses and to allow the retention and expansion of the existing quarry and quarry-related uses. Approximately 0.5 mile south of the Petition Area is the 26-lot Honokohau-Mauka Business Park, a light industrial development. Further south of the Petition Area and makai of Queen Kaahumanu Highway are the State Department of Transportation, Harbors Division's 450-slip Honokohau Small Boat Harbor and the

County's Kealakehe Wastewater Treatment Plant ("WWTP"), located approximately 1.1 mile and 1.5 miles from the Petition Area, respectively.

99. The State-developed Villages of La'i'opua project, subject of LUC Docket A90-660/HFDC, is located approximately 0.9 mile southeast of the Petition Area. When fully developed, the project will include residential units, elementary and high school, commercial areas, parks, churches/day care, a golf course, and archaeological and botanical preserves.

100. Further south, approximately 1.6 miles from the Petition Area, the Queen Liliuokalani Trust is planning to develop some 546 acres near the intersection of Palani Road and Queen Kaahumanu Highway. The project, subject of LUC Docket No. A89-646/Liliuokalani Trust, was granted State Land Use District reclassification from the Agricultural and Conservation Districts to the Urban District in 1991.

101. Further south, approximately 3.4 miles from the Petition Area, is Kailua-Kona town which is the major commercial and business hub of the region.

102. East or mauka of the Petition Area are a number of residential developments located in the vicinity of Mamalahoa Highway. These include Kona Palisade, Kona Acres, Kona Coastview, Kona Wonder View, and Kona Highlands to the north/northeast; Kona Heavens to the east; and, Kealakehe Homesteads, Kona Chocho Estates, Kona Macadamia Acres, and Queen Liliuokalani Village to the southeast.

103. The Petition Area is in close proximity to public transportation systems, utilities and services. Queen Kaahumanu Highway is located approximately 0.4 mile mauka of the site, while Mamalahoa Highway is located approximately 3 miles mauka. The County's Puu Anahulu Landfill is approximately 18 miles to the north. Police and fire protection services for the Petition Area are available at facilities located approximately 2 miles to the south and 3.5 miles to the southeast, respectively. The nearest schools are located approximately 1.9 miles southeast of the site and a variety of parks are available in the project vicinity. Infrastructure and utilities will largely be an extension of the existing Kaloko Industrial Park.

104. The Petition Area occupies an area of relatively uniform slope, ranging from 5 to 8 percent. Elevations range from approximately 170 feet above mean sea level (MSL) along the site's western boundary to 300 feet above MSL along the eastern boundary.

105. The Flood Insurance Rate Map (FIRM) of the U.S. Federal Emergency Management Agency (FEMA) identified the Petition Area as lying within Zone X, areas determined to be outside the 500-year flood plain, and is not subject to coastal hazards such as tsunami inundation.

106. The natural drainage system of the Petition Area consists of rainfall percolating through the layers of very porous lava to the ground-water table. There are

no definable streams or natural drainage ways within or in the immediate vicinity of the Petition Area.

107. The Island of Hawaii is susceptible to seismic activities originating in fault zones under and adjacent to it. Two fault zones have been identified in the Kona region, the Kealakekua and Kaloko faults, both located in South Kona. The Hawaii County Code relating to the Uniform Building Code (1991 edition) was amended in July 1999 to upgrade the seismic zone for the Island of Hawaii from Zone 3 to Zone 4. The rating system is based on a scale of 1 to 4, with a rating of 4 having the highest risk associated with seismic activity. The Hawaii County Building Code requires that all new structures be designed to resist forces to seismic Zone 4 standards.

108. According to the volcanic hazard zones map for the Island of Hawaii prepared by the USGS, the Petition Area is in Zone 4. The zones are ranked from 1 through 9 based on the probability of coverage by lava flows, with Zone 1 being the highest hazard and Zone 9 being the lowest. The lava flow hazard for Zone 4 is attributed to Hualalai, one of three volcanoes, which have been active in historic times on the Island of Hawaii. About 5 percent of the area within Zone 4 was covered by lava since 1800, and less than 15 percent of the area was covered by lava in the last 750 years. In this zone, frequency of eruptions is lower than on Kilauea and Mauna Loa and flows typically cover large areas.

109. The soil capability class rating for both aa and pahoehoe lava is VIII, indicating that the soils have severe limitations that make them unsuited for cultivation and commercial plants, and restrict their non-urban use largely to pasture, woodland, wildlife, water supply, and aesthetic purposes.

110. The U.S. Department of Agriculture Natural Resources Conservation Service classifies the soil in the Petition Area as pahoehoe lava flows (rLW) and *aa* lava flows (rLV). None of the land within the Petition Area has been identified as "Important Agricultural Land" under the *Agricultural Lands of Importance in the State of Hawaii* (ALISH) system. According to the *Detailed Land Classification – Island of Hawaii* prepared by the University of Hawaii Land Study Bureau, the Petition Area is classified as “E”, or very poorly suited for agricultural productivity.

PROPOSAL FOR RECLASSIFICATION

111. The Kaloko Industrial Park, Phases I and II, consisted of 85 lots within 130.1 acres, provided industrial fee simple lands for wholesale merchants, light manufacturers, and others seeking such space in West Hawaii.

112. The Kaloko Industrial Park has been fulfilling the need for a light industrial subdivision in the growing region of North Kona. This region has grown from a 1980 population of 13,748 to a current population exceeding 26,000. The existing Kaloko Industrial Park has provided many new jobs and public resources to the region.

113. The proposed development will allow for light industrial and industrial-commercial mixed uses within a fee-simple subdivision. The site would be mass graded with all necessary infrastructure provided, including roadways, water, sewer, drainage, electrical, and communications systems.

114. The intended uses in Phases III and IV of the Kaloko Industrial Park include light industrial, business and commercial uses consistent with the existing light industrial uses in the developed Phases I and II. Approximately 66 acres will be designated for light industrial use and 36 acres will be designated for industrial-commercial mixed use. Examples of uses permitted under these zoning designations include:

Light Industrial and Industrial–Commercial Mixed-Use:

- automobile sales and rentals
- car washing facilities
- home improvement centers
- automobile service stations
- plant nurseries
- restaurants

Light Industrial:

- utility facilities, public and private
- lumberyards and building material yards
- heavy equipment sales
- Industrial-Commercial Mixed Use:
- business services
- retail establishments
- schools (photography, art, music, dance)

DEVELOPMENT TIMETABLE

115. Development of the project was anticipated to be completed within eighteen months of receiving County subdivision approval, exclusive of the individual lot improvements to be undertaken by the respective property owners and/or tenants.

PETITIONER'S FINANCIAL CAPABILITY

116. Petitioner intends to finance the proposed development through a combination of conventional financing and property sales. Based on Petitioner's previous experience with Phases I and II, it is estimated that approximately $6,000,000 may be required to complete construction of the proposed subdivision improvements.

117. As to the financing for the property, Petitioner intends to finance the project from sales proceeds out of Phase II sales for the development of the Petition Area.

118. If necessary, Petitioner will borrow construction funds from a financial institution by securing a mortgage on the Petition Area. Mortgaging the Petition Area is feasible because in January 2000, Petitioner bought back the notes and mortgages encumbering the Petition Area and the remaining Phase II lots. It is Petitioner's intent that these remaining mortgages will be removed in the near future. Thus, the Petition Area and the remainder of the Phase II lots are essentially free and clear of any monetary liens.

119. Petitioner represented that its financial condition is stable as reflected by the balance sheet and income statement submitted to the Commission.

STATE AND COUNTY PLANS AND PROGRAMS

State Land Use District

120. The Petition Area is in the State Land Use Conservation District, and the proposed reclassification is in general conformance to §15-15-18 (1) to (8) of the Land Use Commission rules, standards for determining "U" Urban District boundaries.

121. The Property will be zoned and developed for light industrial use, and industrial-commercial mixed use and is located close to other industrial uses.

122. The West Hawaii Regional Plan (WHRP) addresses areas of concern, which require State attention in order to most effectively meet the region's present and emerging needs. The goals of the WHRP include the need to ensure that new development does not adversely impact agricultural resource activities; aquacultural resource activities; the quality of the aquifer; the quality of the nearshore waters (including anchialine ponds); the quality of offshore and deep ocean waters; the quality of the air; and the watersheds. Landowners and developers within these subregional planning areas would face similar infrastructure problems including the availability of water, roads and sewers. The Petition area is included within a larger area that was recommended for reclassification from the State Land Use Conservation District to the State Land Use Urban district during the State's Five-Year Boundary Review in 1992.

General Plan Designation

123. The General Plan Land Use Pattern Allocation Guide Map designates the Petition Area as Industrial.

124. The County of Hawaii is proposing to change the General Plan designation for properties adjacent to KAHO from "urban" to "open."

125. The proposed project is in general conformance with the following elements of the Hawaii County General Plan: economic; flood control and drainage; historic sites; natural resources and shoreline protection; land use and industrial; and

for the additional elements pursuant to the County of Hawaii General Plan Revision Program: environmental quality and utilities.

Keahole to Kailua Development Plan

126. The *Keahole to Kailua Development Plan ("K to K Plan")* was adopted by resolution by the Hawaii County Council in April 1991. The K to K Plan intended to serve as an implementing tool for the County General Plan and be a flexible guide for the future growth and development of an area of approximately 17,000 acres in the North Kona District extending from the Kau ahupuaa to the north, Mamalahoa Highway to the east, Palani Road and Kailua Village to the south, and the shoreline to the west.

The proposed project is consistent with the "Urban Expansion" and "Limited Industrial" designations for the Petition Area.

The K to K Plan included a proposed network of arterial and collector roads, especially a lateral collector identified as "Main Street" running parallel to Queen Kaahumanu Highway from Kealakehe Parkway. Kamanu Street, a primary collector road which traverses in a north-south direction from Hina Lani Street parallel to Queen Kaahumanu Highway, will be extended approximately 350 feet to the south boundary of the Property.

County of Hawaii Zoning

127. The Petition Area is zoned Open District according to the Hawaii County Zoning Code.

A zone change will be requested to reclassify the Petition Area from Open District to ML, Limited Industrial District (approximately 66 acres) and MCX, Industrial-Commercial Mixed District (approximately 36 acres).

County of Hawaii Special Management Area

128. The Petition Area is located outside the boundaries of the County's Special Management Area ("SMA") and is therefore not subject to the SMA Use Permit.

NEED FOR THE PROPOSED DEVELOPMENT

129. Following an extended period of low activity in the early to mid-1990s, the West Hawaii economy and industrial real estate sector have shown substantial recovery and growth since late 1996, with particular strength over the past nine months. The actual number of lots absorbed in 1999 far outpaced the finished space land requirement.

130. Two projects in the nearby vicinity of the Petition Area, the Kaloko Industrial Park, Phase II (35 one-acre lots) and Kohanaiki Business Park (26 one- to five-acre lots), sold more than 80 percent of their available inventory during 1999, indicating a continuing demand for additional lots.

131. The region has absorbed some 240.2 gross acres of industrial lands through 1999, averaging 8.9 acres annually since 1979.

132. There is currently an estimated 5.5 percent vacancy rate of industrial floor space in the regional market. This is the lowest availability of space since 1991, and the lowest vacancy rate since 1990. Recently, absorption of available space quickened significantly, with the vacancy rate dropping by more than 1.5 points in the last quarter of 1999.

133. The existing in-place supply of industrial/business land in the Keahole to Kailua-Kona corridor, which includes the Petition Area, will be sufficient to meet market demands for another three or four years. After that time, additional developments will be required if the sector is to maintain an appropriate demand/supply balance. The recent offerings at the Kaloko Industrial Park, Phase II and Kohanaiki Business Park developments, while serving to fill pent-up demand occurring during the past decade, are almost fully absorbed. While there are large acreage of industrial additions proposed in the region, virtually all would have to be developed in a timely manner to meet demand levels.

134. Based on historic and prevailing market trends, and the anticipated movements in the West Hawaii industrial/business sector, it is estimated that it will

take from 8 to 10 years of marketing and exposure time to successfully absorb the 82 subdivided lots of the subject project.

ECONOMIC IMPACTS

135. Petitioner prepared a market study and economic analysis for the proposed project. The proposed development will be a significant source of employment for the region, during both construction and operation.

136. The development phase of the Kaloko Industrial Park Phases III and IV (including subdivision, lot improvements and initial business operations) will generate some 29,018 "worker years" of direct employment on the Big Island, paying $874 million in total wages and more than $200 million in local business profits over a 15-year build-out period (including infrastructure and finished buildings). The end-user businesses and building maintenance will create an additional 4,197 permanent jobs in the regional economy and $124.5 million in yearly wages on a stabilized basis. The businesses and their employees will, in turn, infuse nearly $300 million annually in purchases, receipts and expenditures into other West Hawaii businesses and suppliers.

137. At the time of rezoning the Permit Area, the Petitioner will be required to do an affordable housing analysis as a County condition of approval.

138. Industrial parks are traditionally a major source of net revenue for governmental coffers, weighing the costs of providing public services to the project versus the tax benefits provided by it through property, income and sales taxes.

SOCIAL IMPACTS

139. The 1990 per capita income of $13,169 for County households was below that of the other counties in the State. The 1990 per capita income for North Kona was $17,497. The County's Median Household income and Median Family income were $29,712 and $33,186 respectively. North Kona's Median Household income and Median Family income were $35,364 and $39,329 respectively.

140. According to Chapter 11 of the County code, the qualifying income limit for a family of four to qualify for affordable housing is 140 percent of the family median income in Hawaii or $63,000.

141. The median family income for a family of four, according to the United States Department of Housing and Urban Development ("HUD") and the census is $45,000.

142. Kona workers commute from South Kona, Kau, Hamakua and Hilo because they cannot find housing units in Kona within HUD income guidelines.

143. Studies have shown that there is a shortage of affordable housing in Kona.

144. The last study on affordable housing in the Kona area was completed in 1997. At that time it was determined that there was not enough affordable housing.

145. The County has approximately 270 acres in Waikoloa that was intended for housing, but the County got out of the housing business.

146. The County did not go forward with the housing plans for Waikoloa because infrastructure requirements would require a new water well, a new electrical substation and a permanent sewer treatment plant. Without cost sharing the County could not carry the burden of developing the parcel. The County gave the land to the State and the State paid the County for the infrastructure costs.

IMPACTS UPON RESOURCES OF THE AREA

Agricultural Resources

147. The Petition Area consists of lands classified as very poorly suited for agricultural productivity. The U.S. Department of Agriculture Natural Resources Conservation Service classified the soil in the Petition Area as pahoehoe lava flows (rLW) and *aa* lava flows (rLV). None of the land within the Petition Area has been identified as "Important Agricultural Land" under the *Agricultural Lands of Importance in the State of Hawaii* (ALISH) system. According to the *Detailed Land Classification – Island of Hawaii* prepared by the University of Hawaii Land Study Bureau (LSB), the Petition Area is classified as “E”, or very poorly suited for agricultural productivity.

Historical Resources

148. An archaeological inventory survey conducted of the Petition Area by Haun & Associates in April 2000 identified forty (40) sites with 56 component features remaining within the Petition Area. These sites included 35 single feature sites and ten complexes of features. The feature types surveyed included the following: modified outcrops (22); terraces (12); caves (10); mounds (9); pahoehoe excavations (7); cairns (6); walls (5); trails (3); enclosures (3); concentrations of marine shell (2); a cupboard; and a series of abraded surfaces. Feature function included the following: agriculture (6); temporary habitation (14); resource procurement (7); marker (6); livestock control (3); transportation (3); tool manufacture (1); and storage (1).

149. Five additional lava tube caves were also identified within the Petition Area during the April 2000 survey. Upon examination, these caves were determined to contain no cultural remains.

150. The site and component features conform to traditional Hawaiian site/feature types based on previous archaeological work and historic documentary research. Temporary habitation sites and trails were identified. The trails appear to be "branch" trails. These trails were distinguished from major *mauka-makai* and coastal transportation routes because the branch trails facilitated access to resource and subsistence areas in the immediate vicinity of habitation sites. The temporary

habitation sites contained very limited amounts of cultural material. Cultural deposits were uncommon, and where present, very shallow. These characteristics, and the limited evidence for structural modifications to the caves, indicated that the temporary habitation use was of very limited duration. Historic remains consisted of ranch walls.

151. Sites identified and relocated during the survey were assessed for significance based on the criteria outlined in the HAR Chapter 275, Department of Land and Natural Resources-State Historic Preservation Division Rules Governing Procedures for Historic Preservation Review. In the survey report, all of the sites were assessed as solely significant under Criterion "d." These sites have yielded information important for understanding late prehistoric to historic land use in the project area. The mapping, written descriptions, photography, and test excavation at 32 of the 40 sites adequately documented them and no further work or preservation was recommended.

152. Eight sites (21999, 22010, 22014, 22016, 22017, 22018, 22023, and 22032) retained the potential to yield information important for understanding prehistoric and historic land use. These sites consisted of caves containing portable remains, and shallow cultural deposits, or surface scatters of food remains. Data recovery at the sites would entail surface collection and excavation where deposits are present. The data

recovery work would be guided by a Data Recovery Plan prepared for the Department of Land and Natural Resources – State Historic Preservation ("DLNR-HPD") review and approval.

153. The DLNR-HPD accepted the archaeological inventory survey report on October 16, 2000. The agency's review found the survey coverage, background research, and site descriptions to be adequate, and concurred with the significance assessments and recommended treatments.

National Park Service Mandates

154. KAHO is a natural and cultural resource of the utmost value both to the State of Hawaii and the nation as a whole, representing some of the State's most important natural systems, habitats, and valued cultural, historical, and natural resources.

155. Congress authorized KAHO on November 10, 1978, to provide a center for the preservation, interpretation and perpetuation of traditional native Hawaiian activities and culture and to demonstrate historic land use patterns as well as provide needed resources for the education, enjoyment and appreciation of those activities and culture by local residents and visitors, and be administered in accordance with provisions of the law generally applicable to the National Park System.

156. A substantial public investment – over 70 million dollars of public funds – was spent on the purchase of the land within the National Park. This Commission recognizes the economic value of this coastal National Park, providing such exquisite natural, recreational and cultural resources.

157. The National Park Service's mandate and the purpose of KAHO is to restore and resurrect many of the park's cultural and natural resources.

158. The National Park Service is also required to encourage compatible adjacent land uses and to pursue mitigation of potential adverse effects on park resources and values by participating in the planning and regulatory processes of other entities, such as this Commission.

159. Should impacts to the natural or cultural resources of the National Park occur, the National Park Service is directed to take all necessary actions to safeguard national park resources. Those who destroy or injure park resources are liable to the United States for response costs and damages.

National Park Management

160. When a development is proposed up-gradient of a National Park and the contaminants threats are potentially serious, the National Park recommends an Ecological Risk Assessment be conducted consistent with their criteria. No party conducted such an assessment.

161. The Environmental Protection Agency's 1998 guidance states that special measures should be taken to protect nationally important resources.

162. The philosophy of "The Precautionary Principle" was developed to address the inherent complexities of natural systems and the difficulties of predicting the effects of human activities on dynamic ecosystems.

163. The Precautionary Principle states, in effect, that in the absence of scientific agreement or exhaustive scientific evidence, precautionary measures should be taken to protect important natural and cultural resources.

164. The Precautionary Principle is gaining wider acceptance in the United States and worldwide during the past decade as the basic rule that should govern activities that affect the ocean environment and the Commission accepted this principle as applicable to this Petition.

165. The Commission supported this philosophy as applied to National Parks and determined that, for all proposed development adjacent to or near a National Park that raises threats of harm to the environment, cultural resources, or human health, precautionary measures should be taken to protect the National Park cultural and natural resources, even if some cause and effect relationships are not fully established scientifically.

166. The Park Service applies the Precautionary Principle to its management decisions. In the absence of scientific agreement or exhaustive scientific evidence, the Park Service will err on the side of the protected resource.

167. The water in the National Park, whether water in the fishponds, the anchialine ponds or the ocean water is a critical park resource in and of itself.

168. One of the critical elements in maintaining the National Park's cultural and natural environment is maintaining a high level of water quality because some of the Park's most important cultural and natural resources are the unique anchialine ponds and fishponds that were utilized by Hawaiian families for hundreds of years and are home to threatened and endangered species.

169. Evidence shows that the proposed development will increase nutrients and release contaminants into the groundwater that flows into the National Park, and that the existing industrial development already has.

170. As to the extent of the potential harm from the demonstrated and potential impacts, the proposed industrial development may adversely impact the National Park.

171. For this Petition, there was a lack of scientific study and research as to the potential adverse impacts from the proposed development. No risk assessments as prescribed by NPS have been done to determine that no harm will come to the

resources of the National Park, including the anchialine ponds, the coral reef, and the endangered and threatened species that rely on the health of those systems for habitat, and are considered sacred to native Hawaiians. Contrary to Petitioner's position, a lack of scientific inquiry is cause for caution.

Cultural and Historical Resources

172. Kaloko-Honokohau has a long, rich cultural history that was and is very important to the Hawaiian culture.

173. During the 1600 and 1700's at Kaloko, most Hawaiian families, around 200 to 300 people, lived on the shore. These Hawaiians survived in Kona's dry arid climate because the unique anchialine pools provided drinking water. The Kaloko Fishpond, Aimakapa Fishpond, and Aiopio Fishtrap also provided fish and bait for Hawaiian families.

174. Kaloko fishpond is one of the most significant cultural features in the National Park. The fishpond could produce up to 5,000 pounds of fish per year. A cave in the vicinity of Kaloko fishpond is the reputed burial location of Maui ruler Kahekili and King Kamehameha I.

175. Royal residences were set up along the shoreline, where today we find heiau, house platforms and enclosures, burial sites, petroglyphs, agricultural sites, and historic trails.

176. Interviews and oral histories of the Kaloko-Honokohau area highlighted the importance of the mauka-makai relationship and the management of the ahupuaa in Hawaiian culture.

177. Fishermen continue to use the traditional opelu ko`a as passed down for generations.

178. Interviewees expressed concern about surface runoff and wastewater disposal affecting the water quality in the anchialine pools and Kaloko and Aimakapa fishponds.

179. Water is sacred to native Hawaiians – the dynamic thread that ties the environment together.

180. Knowledge of the water cycle and its underground flow was integrated into native Hawaiian daily cultural practices and passed on to their descendents.

181. What affected the water cycle affected the total environment.

182. In recognition of the significance of these cultural resources, Congress created the Honokohau National Landmark District in 1972 before establishment of the National Park. National Landmark status is the highest level of protection given to an area for its nationally important cultural resources.

183. Important sacred native Hawaiian resources involving waters of the National Park include Kahinahinaula (Queens Bath) and anchialine pools, the

Aimakapa and Kaloko fishponds, Aiopio fishtrap and adjacent heiau, and near-shore waters used for pikai ceremonies.

184. The National Park waters are a central element in many Native Hawaiian practices and rituals performed within the National Park boundaries. These traditional practices rely heavily on the quality of the water, including groundwater, in the National Park.

185. Native Hawaiians utilize traditional techniques such as pole, spear, and net fishing for subsistence gathering and ritual needs. Hawaiians also gather other marine food resources from the National Park, such as limu, wana, opihi, and octopus.

186. The opae`ula in the anchialine ponds provide traditional bait and chum for offshore fishing.

187. Religious ceremonies are still carried out by local Hawaiian families within the National Park.

188. In furtherance of its mandate, the National Park Service plans to restore many of these cultural resources, including restoring Kaloko fishpond to recreate it as a functioning fishpond for traditional Hawaiian fishing practices.

189. The makai wall and the makaha at Kaloko fishpond are being repaired/built and ultimately will become a productive, functioning fishpond.

190. Any impacts to waters in the National Park would, in and of itself, be an impact to cultural resources.

191. Degradation of water quality from mauka industrial development poses a threat to the traditional native Hawaiian practices in the National Park.

192. Increased nutrients in the groundwater flowing into the anchialine ponds could reduce or eliminate fish and bait species used by native Hawaiians for traditional fishing practices.

193. Toxic contaminants, which can lead to fish kills or bird die-offs, impact the use of Hawaiian fishponds and the ability to catch and consume fish in the National Park.

194. Impacts to near-shore waters might alter or reduce marine species utilized by native Hawaiians. A reduction in marine species due to development is a direct impact on native Hawaiian gathering rights.

Threatened and Endangered Species

195. The National Park is home to several endangered and threatened species as well as a "species of concern" awaiting listing under the Endangered Species Act ("ESA").

196. The National Park is home to the endangered Hawaiian coot (*Fulica alai*) or `alae ke`oke`o, the endangered Hawaiian stilt (*Himantopus mexicanus knudseni*) or

ae`o, the critically endangered hawksbill sea turtle (*Eretmochelys embricata*) or honu `ea, the threatened green sea turtle (*Chelonia mydas*) or honu, and one candidate species, the Orangeblack damselfly (*Megalagrion xanthomelas*).

197. Other transient endangered species that are found within the National Park boundaries are the Hawaiian monk seal (Monachus schauinslandi) or 'ilio-holo-i-ka-uaua, and the humpback whale (Megaptera novaeangliae), or kohola.

198. Anchialine pools in the park contain rare and endemic organisms that may eventually be listed. In addition, new species and new records of known species have been discovered in the National Park in the past decade and it is expected that more will be discovered.

199. Marine mammals and migratory birds, which are commonly found in the National Park, are also protected under other Federal laws, including the Marine Mammal Protection Act and the Migratory Bird Treaty Act.

200. Migratory shorebirds, including the indigenous Pacific Golden Plover, and transient marine mammals, including seals, whales and dolphins, use the near shore and offshore habitat of the National Park.

201. The Endangered Species Act, the Migratory Bird Treaty Act, and the Marine Mammal Protection Act prohibit the general public, including developers, from

"taking" (which includes harming or killing) endangered species, migratory birds, or marine mammals.

202. The National Park cannot fulfill its responsibility to ensure clean habitat for these protected species without the cooperation of neighboring landowners.

Waterbirds

203. The Hawaiian coot is endemic to the Hawaiian Islands (occurs only in Hawaii). The Big Island population is around 200 birds on the Kona Coast and 75 birds on the Hilo Coast.

204. The Hawaiian stilt is also endemic to the Hawaiian Islands. The Kona Coast supports the largest number of stilts on the Big Island.

205. Aimakapa Pond is a significant breeding, nesting, and feeding area for the endangered Hawaiian stilt and Hawaiian coot and is also very important as an overwintering and stopover area by migratory waterbirds, and shorebirds.

206. Loss of wetland habitat is the primary cause of the decline of endangered Hawaiian waterbirds. Urbanization of areas around wetlands causes damage to water quality from urban runoff and other inputs such as nutrients and pathogens.

207. Altering the hydrology of wetland areas makes them less suitable, or even unsuitable, for native waterbirds. Alterations include withdrawals from municipal water sources, which can change the depths of wetlands, affect temperature changes,

and cause saltwater intrusion into coastal groundwater supplies, which then alters salinity levels in associated wetlands.

208. Waterbirds can be severely impacted by avian disease. The most prevalent avian disease affecting Hawaii's waterbirds is botulism, which has been recorded on Kauai, Oahu, Maui, and Hawaii, including Aimakapa fishpond.

209. In 1994, the waterbird populations in Aimakapa fishpond experienced an outbreak of avian botulism.

210. The only known outbreak of botulism Aimakapa fishpond occurred after the development of the first phases of Petitioner's industrial development.

211. While the exact causes of avian botulism are not known, experts on the subject have associated some outbreaks with increased nutrients from sewage or wastewater.

212. Increased nutrients can cause algal blooms that deprive water bodies of oxygen. A lack of dissolved oxygen can kill vertebrate and invertebrate species, giving the bacteria that produces botulism toxin the opportunity to grow.

213. Industrial contaminants (such as pesticides or other toxics) that reach a water body can also cause acute die-offs, and set the stage for avian botulism.

214. One of the recommended means of preventing further botulism outbreaks is to maintain water quality and avoid polluted runoff from reaching waterbird habitat.

215. In addition to botulism, environmental contaminants in coastal wetlands are a serious concern for waterbirds.

216. Toxins can kill birds directly or reduce their ability to reproduce.

217. Birds are susceptible to toxins accumulated within the food chain.

218. Petroleum products cause adverse impacts to any bird that comes into contact with it. For endangered bird species, this impact would constitute a risk of a violation of the Endangered Species Act.

Damselflies

219. The orangeblack damselfly (Megalagrion xanthomelas) was first discovered in the National Park on the backside of Kaloko Pond nine years ago.

220. The orangeblack damselfly is probably the most threatened of the Hawaiian damselfly species.

221. The population of orangeblack damselflies in the National Park is especially important and valuable because other recently discovered populations of the species on the Big Island are in areas slated for development.

222. Damselflies as a group is sensitive to water quality. Their presence is an indicator that the water quality is good.

Impacts to Damselflies

223. Threats to the orangeblack damselfly include loss of coastal aquatic

habitat, including anchialine pools. Modification of habitat, such as removal of complex plant communities, native sedges, or stream channelization, has a devastating impact on abundance.

224. Unlike artificial habitats, such as golf courses, only native settings – which include a complex community made up of native sedges and other aquatic algae plant species -- allow the orangeblack damselflies to co-exist with alien fish, a significant problem with anchialine pools in Hawaii.

Marine Turtles

225. National Park waters provide important, perhaps critical, foraging and resting habitat for the juvenile class of green sea turtles.

226. As many as 250 juvenile green turtles are supported in the National Park's habitat. The turtles congregate to feed on the algae growing on the tideflats, in `Ai`opio, and in the sandy area off Aimakapa pond. The sandy beach in front of Aimakapa is a common haul-out for basking turtles. Turtles are also commonly seen swimming in front of Kaloko Pond. SCUBA divers observe turtles at offshore "cleaning stations" on a regular basis.

227. A 30-inch hawksbill turtle has been regularly sighted in National Park waters since November 2000. Smaller hawksbill turtles were occasionally seen at the

turtle “cleaning stations” offshore. Anecdotal reports suggested these turtles once nested in the National Park.

228. The health of the sea turtle population, as with other animals, is likely directly tied to the quality of their habitat. The National Park currently supports a healthy population of juvenile green sea turtles and healthy appearing hawksbill sea turtles.

Impacts To Marine Turtles

229. An increasing threat to the recovery of marine turtles worldwide is the infectious fibropapallomitosis disease. This disease primarily affects the green sea turtles, but also affects hawksbill turtles.

230. To date, juvenile green turtles on the Kona Coast are virtually free of the disease. However, juvenile turtles of the size found in the park are the size most frequently stricken by the disease, so the National Park’s turtle population is particularly vulnerable.

231. Although Kona Coast turtles are healthy now, it is very important to look ahead and keep them healthy. If most of the currently infected turtles in Hawaii die before reaching sexual maturity (about 40 years), then it is possible that the National Park’s sea turtle population and others on the Kona Coast would be the main populations left to repopulate the entire Hawaiian green sea turtle stock.

232. Discussions in the published literature have suggested connections between turtle populations affected with the disease and nearby urban areas.

Coastal Waters

233. KAHO consists of 596 acres of marine environment. These park waters support important cultural and natural resources.

234. The offshore waters at the National Park are recognized for their high quality and critical importance to the coastal ecosystem.

235. The Hawaii State Department of Health ("DOH") classified National Park waters as double A (AA). The DOH's objective of this classification is to preserve the natural pristine state of the water with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions.

236. The State Department of Land and Natural Resources has designated the National Park waters as a Fish Replenishment Area/ Fisheries Management Area. This is recognition of the important marine resources in the park. The park waters are an important, accessible fishing and gathering grounds for the local community.

237. The National Coral Reef Initiative is a Federal reef protection and research program that includes this National Park's important reef system in recognition of its national significance.

238. The marine and shoreline areas of the National Park support many

Federal and State listed endangered and threatened species, marine mammals and migratory and resident shorebirds.

239. Use of park marine resources by people, including the local community and visitors is an important aspect of this National Park, especially for the practice of traditional and customary native Hawaiian rights. Uses of the shoreline include recreational and subsistence fishing (including invertebrates and limu), swimming, snorkeling, sunbathing, and wildlife viewing (birds, turtles, and marine organisms in the tidepools and reefs).

240. The offshore area includes sixteen day-use moorings within park waters are used on a daily basis by SCUBA diving businesses. Visiting SCUBA divers are estimated to account for $5 million in direct revenue to SCUBA operators in the Kailua-Kona area.

241. The near-shore coastal waters are connected to, and affected by, the groundwater flow to submarine discharge, seeps and springs in the coastal area.

242. The geography of the shoreline and the unusually shallow offshore waters of the National Park combine to cause a potential reduction in the circulation and flushing of ocean water in the area, which may cause nutrients and contaminants to remain in park waters make the coastal ecosystem more susceptible to adverse impacts of these inputs.

243. Based upon Petitioner's data measuring nutrients at the bottom of the nearshore waters of the National Park, the National Park's waters are already in violation of the State's water quality standards for nutrients, including nitrates, ammonia, and phosphate, and chlorophyll-a and turbidity.

244. While the West Hawaii reefs remain relatively pristine, the majority of coral reef experts worldwide consider human effects such as terrestrial runoff, sewage and nutrient enrichment to be one of the most significant threats facing coral reefs today.

245. Changes in groundwater chemistry composition from runoff and wastewater discharges may affect the structure of marine-life communities in nearshore areas.

246. Many chemicals are toxic when they get into the aquatic environment. Not only can they be deadly, but they can also disrupt reproduction and growth functions. Metals can also cause severe health and reproductive problems in fish and animals and can also cause problems for humans who consume these organisms.

247. Blooms of harmful algae species from added nutrients may be ingested by marine animals causing toxicity to the animal, and toxicity that is passed up the food chain to man.

248. Added nutrients and contaminants may affect the quality of sea turtle foraging habitat.

249. Overabundance of nutrients on coral reefs can cause a shift in marine community structure -- dominance of corals to dominance of algae or other non-coral organisms by displacing new corals and overgrowing corals.

250. Addition of phosphates to reefs may reduce calcification of coral by 50 percent.

251. Nutrient enrichment of coral reefs may have devastating indirect effects, making the community structure vulnerable to additional impacts like disease over-fishing, storms, and contaminant or petroleum spills.

Aquatic Resources – Anchialine Pools

252. The National Park has at least 70 anchialine pools ranging from tiny depressions in the lava to larger ponds, including Aimakapa pond, representing about 10% of all anchialine resources in the State.

253. Anchialine pools are a rare and threatened ecosystem, and Hawaii is the only state in the U.S. to have this ecosystem. The Hawaiian Islands support the greatest concentration of pools in the world; about 89% of those are on the Big Island.

254. The National Park is one of the few coastal areas on the Big Island where these pools are protected from their greatest threat – coastal development that fills in and destroys the pools.

255. Anchialine pools are brackish ecosystems that, by definition, are not directly connected to the ocean but are subject to tidal influence. These pools are typically formed in coastal lava environments where fresh groundwater flows into depressions or openings at the surface of the lava.

256. The definition of anchialine pools, however, says nothing about a specific pool's water quality or the biota supported in the pond. These pools vary in size and type and have no set pattern of response to nutrients or other influences.

257. Some anchialine pools are small in size and have free flowing groundwater running through them. Even if the groundwater has increased nutrients in them, the ponds do not show signs of eutrophication. This means that nutrients are not likely limiting in such systems, rather some other things are limiting the algae growth.

258. Other anchialine ponds are larger, such as Aimakapa, and do not share the special qualities of the smaller anchialine pools. While still an anchialine feature by definition, Aimakapa has begun to fill in with sediment, reducing the rate of groundwater exchange and increasing the sensitivity to increases in nutrient inputs.

259. Smaller anchialine pools are of particular interest in Hawaii because the opae`ula, a small shrimp, are unique to anchialine pools. These shrimps are both a rare species and an important cultural resource for native Hawaiian traditional fishing practices.

260. Historically, because the arid climate of the Kona coast supported no streams or rivers, these anchialine pools provided drinking water for native Hawaiians and others prior to the development of water wells.

261. Anchialine pools provide a freshwater environment for many unique species along an extremely dry coastline. Several species of invertebrates have adapted to the anchialine pool environment, including opae`ula (red shrimp), other crustacean, damselflies dragon flies, and mollusks.

262. Although the National Park's anchialine pools have not been thoroughly surveyed and therefore may contain other candidate or listed species, existing studies show that they support all of the typical anchialine species, as listed above.

263. Although alien fish have been introduced to some of the National Park's anchialine pools, the endemic Hawaiian species have adapted their behavior to avoid these daytime predators.

264. The anchialine pools and the species that they support are susceptible to impacts from changes to their unique ecosystem, including water chemistry changes from added nutrients and contaminants.

Aquatic Resources – Kaloko Fishpond

265. Kaloko fishpond has an area of about 11 acres and is the loko kuapa type of pond, where a natural embayment is separated from the sea by a man made wall. The pond was constructed between 600 and 800 years ago by native Hawaiians with a dry-set stone wall 770 feet long, 25 to 35 feet wide and 9 feet high across the embayment.

266. Because of its direct connection to the ocean through its makaha (sluice gate) and porous wall, Kaloko Fishpond is not an anchialine pond and is mostly seawater.

267. Kaloko fishpond is connected to groundwater through freshwater inflow on the mauka sides of the pond.

268. Kaloko fishpond is one of the most significant cultural features in the National Park.

269. More than 43 species of aquatic fauna have been recorded from Kaloko fishpond, including the very rare shrimp Palaemonella burnsi.

270. Many fish species such as awa (milkfish) and mullet live in the pond.

These fish were historically taken and eaten from Kaloko pond by native Hawaiians, as they are today.

271. Kaloko fishpond provides feeding grounds along the shore for endangered Hawaiian stilts, and migratory and resident shorebirds.

272. The NPS is in the process of restoring the wall and returning Kaloko fishpond to a functioning traditional Hawaiian fishpond. The ultimate goal is to stock the pond and raise edible fish using traditional Hawaiian aquaculture practices.

273. The National Park initiated a 3-year project to remove alien mangrove trees from Kaloko Pond by hand. The project was successful and cost a half a million dollars to restore the natural habitat.

274. Contamination of fish in Kaloko fishpond from mauka development is a major concern for this important cultural and natural resource.

275. Contamination of the fish and other aquatic organisms from metals such as mercury and copper, pesticides, and other toxics can affect hormones and reproduction, long-term survival, and the immune system of fish, or result in the death of the animal.

276. Contamination of fish could render them inedible, thereby destroying the cultural value of the pond.

Aquatic Resources – Aimakapa Fishpond

277. Aimakapa fishpond is the largest and most important wetland along the west coast of Hawaii and is a critically important habitat for endemic endangered waterbirds, migratory waterfowl, and shorebirds. Aimakapa fishpond is a also valuable cultural resource of high importance to native Hawaiians historically and today.

278. Wetlands on the Kona Coast of Hawaii consist of clusters of brackish water anchialine pools surrounded by lava flows, or ancient man-modified wetlands, ponds, anchialine pools, and embayments identifiable as Hawaiian fishponds, all of which experience tidal fluctuations.

279. The U.S. Fish and Wildlife Service considers that "Aimakapa Pond is the most important Kona Coast wetland supporting most of the coots and stilts in the region."

280. Aimakapa pond is the largest fishpond in the National Park, approximately 15 acres. It is a loko pu`uone pond, a natural pond formed by a sand berm impounding groundwater between the ocean and an elevated a'a flow.

281. The National Park is currently revising the management and restoration plan for Aimakapa fishpond and plans to conduct a nesting enhancement study within

the pond to enhance the feeding, nesting, and breeding areas of the pond for endangered waterbirds.

282. Aimakapa fishpond pond is hydrologically connected to the groundwater by numerous springs around the pond edges that supply brackish (slightly salty) groundwater to the pond.

283. Aimakapa Pond is already impacted by industrial development on the Kona Coast as contaminants have been found in the pond's sediment and fish tissues.

284. Aimakapa fishpond is nitrogen limited. That is, inorganic nitrogen is nearly stripped totally from the water (eaten) by the algae in the pond.

285. Water bodies limited in nitrogen are at risk of eutrophication when additional nutrients, such as nitrogen and phosphorus, are added to the water body. This leads to changes in plant and animal communities and, in the National Park, potential impacts to federally protected species and their habitat.

286. Eutrophication is a gradual accumulation of nutrients and organic biomass, accompanied by an increase in production (plants or algae) and a decrease in the average depth of water caused by sediments accumulating on the bottom.

287. Man's activities accelerate the eutrophication process, which causes severe problems for affected bodies of water. This acceleration is brought on by human discharges of organic wastes and/or nutrients, such as nitrogen and phosphorus.

288. Problems caused by eutrophication are: increases in undesirable plant and animal species such as cyanobacteria and harmful or nuisance algae; rapid nighttime drops in oxygen concentrations causing fish and invertebrate kills; overproduction of microscopic plants (phytoplankton and large algae), which reduce water clarity and cause problems with rotting of excess vegetation, and a reduction of species (biodiversity) able to survive in an eutrophic environment thus affecting the food web.

289. Petitioner estimates a 50% increase of added nitrogen to the environment of the National Park from the full industrial build-out mauka of the National Park. This impact will likely be detrimental to the ponds.

290. Additions of nutrients from the proposed mauka development if released into Aimakapa Pond could lead to eutrophication.

291. A simple bioassay test, which can be done in any lab and takes just a few weeks, would show whether the anticipated increase in inorganic nitrogen to the waters of Aimakapa pond would accelerate eutrophication of the pond. Petitioner did not conduct this simple lab test.

292. Rather than performing this test or studying the forms of nitrogen uptake by plants in the pond, Petitioner testified that such information was beyond the scope of their study.

293. One of the central issues for this Petition – examining the impacts of added inorganic nitrogen to the water resources of the National Park – was dismissed as "beyond the scope" of Petitioner's study.

294. There is an absence in the evidence of competent and reliable studies showing that the proposed industrial development would not adversely impact the National Park's resources. Therefore, further potential degradation of Aimakapa fishpond from contamination by upslope activities would potentially hinder this natural and cultural resource and would hinder the National Park's progress in restoration and management of Aimakapa fishpond.

NATIONAL PARK WATER QUALITY

295. The pristine off-shore waters of the National Park are classified "AA;" however, the aquifer in the Kaloko area is classified as an aquifer vulnerable to contamination.

296. Even though the coastal ponds and nearshore waters of the National Park provide important habitat for many fish and wildlife species, the National Park waters presently show adverse impacts from human-caused sources and actions.

297. Contaminants have been found in the pond sediments and fish tissue collected from Aimakapa fishpond in the National Park.

298. Contaminants in the pond include polychlorinated biphenyls, chlorinated benzenes, heptaclohr and other chlordane-related compounds, hlorophenolfenamiphos, dieldrin, mirex, gamma hexachlorocyclohexance, endrin, pentachloroanisole, chlorpyrifos, 2,4'-DDE, 4,4'-DDE, 4,4'-DDD/PCB 114, 2,4'-DDT, and 4,4'DDT.

299. Contaminants in the fish tissue include PCBs, chlorinated benzene compounds, chlordane related compounds, gamma-hexachlorocyclohexane, dieldrin, endrin, heptachlor, anisole, chlorpyrifos, and DDT and its related products. These contaminants reach the pond through groundwater or other means, and then accumulate in the pond sediments and the fish tissue.

300. Additional contaminants were found in the wells located in the National Park, including phenol and metals, such as chromium, copper and zinc.

301. Many of these pollutants are toxic to fish, wildlife and humans.

302. Organochlorine pesticides like chlordane have been shown to be animal carcinogens and they can disrupt hormonal activity and cause reproductive problems.

303. Gamma chlorine pesticides are animal carcinogens that also might disrupt hormonal activity and cause reproductive problems.

304. Mercury can build up in fish tissues and affect predators and humans who eat the fish.

305. Metals such as copper are toxic to aquatic organisms.

306. Contaminants such as pharmaceutical compounds can have a negative effect on the reproductive success of organisms. Compounds such as ethinyl estradiol can interrupt reproduction in fish.

307. In the absence of adequate studies to show that the additional contaminants generated by the new industrial development will not harm the National Park, effective controls on pollution must be in place to contain and treat contaminants to protect the groundwater and the National Park.

Surface Water

308. Surface water consists of rainfall moving over the surface of the land, including waters generated by washing down of parking areas or vehicles, and irrigation.

309. Surface water is a source of polluted runoff or "nonpoint source pollution" because the water carries pollutants from impermeable surfaces such as roads, roofs and parking lots, picking up spills, trash and other contaminants. In a lava environment, this contaminated surface water can quickly leach into the lava towards the groundwater. Significant pollutant types include sediments, nutrients, toxins, floatables, and pathogens.

310. The consequences of nonpoint source pollution are increased risk of disease from water recreation, algae blooms, fish kills, destroyed aquatic habitats, and turbid waters.

311. Industrial contamination, including pesticides and solvents, has been found in groundwater sources in other parts of the State of Hawaii.

312. Most polluted runoff is from people's activities on the land and water, which can and should be prevented through appropriate measures.

313. The most likely form of release from the proposed industrial park is non-point source accumulations such as parking or maintenance area drippings which are washed away by rainfall and percolate into the subsurface.

314. The USGS Study shows that the National Park has already been impacted by industrial development on the Kona Coast, finding contaminants in groundwater, pond sediments, and fish within the National Park.

315. Petitioner's engineers did not consult the State of Hawaii's Implementation Plan for Polluted Runoff Control while developing plans for the proposed development's wastewater disposal, surface water runoff, and pollution prevention plan.

316. The 1997 USGS study of the National Park's groundwater cannot be relied upon to support a finding that the existing industrial development has not adversely impacted the National Park.

317. The author of the USGS study, Dr. Oki, denies that his study, which is a one time sampling event of groundwater, may be relied upon as a "field test" of pollution released from the existing industrial development.

318. A single sample collected in 1997 cannot be relied upon to make any conclusions about the state of groundwater contamination in the National Park in 2001.

319. Untreated surface water from the industrial development will potentially impact National Park resources by contaminating the groundwater that reaches the Park's ponds and coastal areas.

320. Control of contaminated surface water can be achieved through the development of a Pollution Prevention Plan ("PPP") designed to address all pollutants associated with industrial development and to identify measures that will contain and treat such pollutants in order to prevent any release into the environment, including the groundwater.

321. In order to protect the National Park makai of the proposed industrial development, the PPP should focus on structural Best Management Practices ("BMPs"), particularly in roadways and gutters to contain surface runoff. BMPs are measures,

controls, and devices used to prevent pollution from being discharged into waters such as rainwater and surface water and then carried into streams, ponds, and oceans.

322. This site has essentially no soil, and underlying lava formation is highly permeable making it easy for organics and petroleum products to reach groundwater and ultimately discharge into the anchialine pools and Kaloko Fishpond within the National Park.

323. These BMPs should include storage and handling on impervious (paved) surfaces, containment of stormwater runoff, and appropriate treatment (such as oil-water separators and lined neutralization ponds) before discharge.

GROUNDWATER RESOURCES

324. Contaminants that could impact the National Park's resources include, but are not limited to solvents, non-soluble pesticides, pharmaceutical compounds, soluble petroleum compounds, metals, and toxic combinations of metals and nutrients.

325. Even though petroleum based-products may get stuck on rock matrix, some constituents can dissolve into the flowing water stream.

326. Although Petitioner's expert alleged that data exists to support the theory that a huge petroleum spill would not reach the National Park, no such data or documentation was presented as evidence before the Commission.

327. Petitioner did not do any contaminants testing to examine whether contamination from the industrial development has reached the National Park.

328. The soluble constituents of petroleum could pose a contamination problem.

POLLUTION PREVENTION PLAN

329. Implementation of Petitioner's PPP would result in adverse impacts to the surface and ground water resources in the Petition Area and in the adjacent National Park.

330. Fresh groundwater flows from inland and mountainous areas towards the coast, or mauka to makai.

331. Groundwater in Hawaii is recharged from rainfall and other inputs both locally and from higher elevations.

332. Surface waters, that is waters that runoff over the land, tend to go into the ground and reach the groundwater because of the high permeability of the ground. Surface waters include rainfall and other waters such as washdown and irrigation. The volcanic rocks from south of the Petition Area to Keahole point are highly permeable. This high infiltration capacity means that any surface water will readily infiltrate the ground surface and move down into groundwater.

333. Because rainfall in the vicinity of the National Park is low, the main source

of groundwater in the National Park originates from inland areas east or mauka of the National Park.

334. In the National Park, groundwater flows at approximately 55 feet below the surface of the ground at the mauka border and gradually rises closer and closer to the surface as it flows toward the coast. The water in the fishponds and in the anchialine pools is essentially groundwater exposed at the surface.

335. Groundwater originating from the Petition Area reaches the National Park and is fed into the anchialine ponds, Aimakapa Pond, Koloko Pond, and the coastal waters via springs and other seeps.

336. Because of the nature of lava flows and fractures, the actual flow routes of the groundwater between the Petition Area and the National Park are not known. There may be lava tubes and other preferred paths of groundwater flow that increase flow from the Petition Area to the National Park.

337. Essentially all the resource impact from the proposed development will manifest in the groundwater. Groundwater plays an important role in maintaining the ecosystem of the anchialine ponds within and outside the National Park.

338. Groundwater is vulnerable to impacts associated with industrial development and uses, such as the release of petroleum products, solvents, and other toxic chemicals into the groundwater, the disposal of nutrient-rich wastewater,

irrigation and washwater into the groundwater, contaminated stormwater runoff, and the removal of groundwater for drinking water supply.

339. Contamination of groundwater, increased nutrient load in the groundwater, changes in salinity of groundwater, and changes to groundwater volume alter the natural ecosystems in the National Park. The myriad of potential impacts from such changes --ranging from massive bird die-offs from avian botulism to increased population of toxic algae growth in the ponds – remain inadequately assessed and lack sufficient scientific study.

340. Removal of groundwater from inland wells decreases flow into the National Park and increases the salinity of that groundwater. The cumulative development planned *mauka* of the National Park will cause a 7% reduction in groundwater flow through the National Park and increase salinity in that groundwater by 10%.

341. There are no direct data indicating the thickness of the brackish water zone, the lens where the fresh groundwater flows.

342. Salinity impacts to groundwater will be greater with a full build-out of the area because of the significantly increased withdrawals of the freshwater lens.

343. The potential impacts to the groundwater water quality of the National Park are not adequately assessed or mitigated in Petitioner's proposed project.

Scenic Resources

344. The primary public viewpoints of the Petition Area include: (1) mauka views from Queen Kaahumanu Highway; (2) makai views from upper Hina Lani Street in the vicinity of Mamalahoa Highway; (3) southerly views from Hina Lani Street; and (4) mauka views from the Kaloko-Honokohau National Historical Park.

345. There are no significant impacts affecting views or visual resources. The Petition Area lies mauka of an existing industrial development and will have low building profiles. Although there are no significant impacts affecting views or visual resources, due to the elevated topography of the Petition Area, buildings within the proposed development will be visible beyond the existing Kaloko Industrial Park development as viewed from makai areas. Landscaping and architectural design criteria will be developed and implemented for the project to reduce any visual impacts of the proposed development. Architectural design criteria would include consideration of building profiles and design, exterior color and surface treatment, and exterior lighting and sign standards.

Flora Resources

346. A total of 44 plant species were identified within the Petition Area. Of these plant species, 28 (64 percent) are introduced, one (2 percent) is originally of Polynesian introduction, and 15 (34 percent) are native. Of the native species, nine are

indigenous (native to the Hawaiian Islands and elsewhere) and six are endemic (native only to the Hawaiian Islands).

347. Two vegetation types are predominant within the Petition Area. The older, more weathered pahoehoe lava flows, which encompass about 75 percent of the Petition Area are predominantly vegetated with koa haole and fountain grass scrub vegetation. Scattered throughout this scrub vegetation are shrubs such as noni (*Morinda citrifolia*), maiapilo, Christmas berry, and naio. A few kiawe trees (*Prosopis pallida*) along with the shrub klu (*Acacia farnesiana*) are also scattered among the scrub vegetation. Within the shallow pockets of soil are found plants of *portulaca pilosa*, 'uhaloa (*Waltheria indica*), hairy spurge (*Chamaesyce hirta*), Nata redtop grass, partridge pea (*Chamaecrista nictitans*), 'ilima (*Sida fallax*), and a thin layer of dried out mosses. Within a collapsed lava tube along the eastern boundary of the site is an 'ohe tree (*Reynoldsia sandwicensis*) and a few clumps of 'ala'ala wai nui or the native lowland peperomia (*Peperomia blanda* variety *floribunda*).

348. The 'a'a lava flow is sparsely vegetated with most of the plants occurring along the margins of flow where it abuts the older pahoehoe flow. Native shrubs found on the 'a'a flow include maiapilo or native caper (*Capparis sandwichiana*), naio or false sandalwood (*Myoporum sandwicense*), alahe'e (*Psydrax odorata*), and kolomona (*Senna gaudichaudii*). Other species include a lama tree (*Diospyros sandwicensis*) and huehue

vines (*Cocculus orbiculatus*) which are locally abundant in places. Introduced or alien plants include Christmas berry shrubs (*Schinus terebinthifolius*), fountain grass (*Pennisetum setaceum*), and hairy swordfern (*Nephrolepis multiflora*). An area within the southern portion of the site previously disturbed in conjunction with the adjacent quarry operation is also vegetated with Natal redtop grass (*Melinis repens*), koa haole (*Leucaena leucocephala*), and 'ohi'a trees (*Metrosideros polymorpha*).

349. None of the plants found within the Petition Area during the survey is a threatened or endangered species listed and protected by Federal and State Endangered Species Laws. One candidate endangered species plant identified as the ko'oko'olau (*Bidens micrantha* subspecies *ctenophylla*) was found within the Petition Area. To mitigate impacts to the four plants found on the Petition Area, a buffer zone will be established in the immediate vicinity of the *Bidens* plant located along the Petition Area's eastern boundary. Seeds and cuttings will be propagated from the other three *Bidens* plants located within the Petition Area to preserve its genetic material.

Fauna Resources

350. During a faunal survey of the Petition Area conducted by Rana Productions, Ltd. in March 2000, no native, endangered or threatened avian or mammalian species were detected within the Petition Area.

351. A total of 16 avian species representing 10 families were detected during

station counts. All of the species recorded are considered to be alien (introduced to Hawaii by man) to the Hawaiian Islands. All of the birds detected are common alien species found throughout the leeward lowland areas on the Island of Hawaii. No native, endangered or threatened avian species were detected within the proposed development site during the course of this survey.

352. The findings of both the avian and mammalian surveys were consistent with the present habitat available on the site.

353. There is the possibility that small numbers of the endangered endemic Hawaiian subspecies of the Dark-rumped Petrel flies over the Petition Area. The only mammalian species observed during the survey was the Indian mongoose, although various species of rodents are likely to utilize the site. Although not detected during the survey, the federally endangered Hawaiian hoary bat and Hawaiian hawk may fly over the Petition Area on occasion.

354. The potential impact that the proposed development poses to the endangered Dark-rumped Petrels is the increased threat of the downing of birds disoriented by exterior lighting associated with the project. To reduce the potential for interactions between nocturnally flying Dark-rumped petrels with external lights and man-made structures, exterior lighting within the proposed development will be shielded.

Recreational Resources

355. There are several State Parks in the Kona area. These include the Old Kona State Park, Kealakekua Bay Historic State Park, and Kekaha Kai State Park, Keolonahihi State Historic Park and Napoopoo Beach Park.

356. County parks in the Kona region include Disappearing (White) Sands Beach Park, Hookena Beach Park, Kahaluu Beach Park, Manini Point (Napoopoo), Milolii Beach Park, and Pahoehoe Beach Park.

Tennis courts are available at Greenwell Park in Captain Cook, Higashihara Park in Keauhou, and at Kailua Playground. There are several private, semi-private, and resort-owned golf courses in the area, which are also open to the public.

357. Approximately 450 berthing slips are provided for recreational and commercial vessels at Honokohau Small Boat Harbor located approximately 1.1 miles southwest of the Petition area at Honokohau Bay.

Scenic/Visual Resources

358. The provisions of the Services Organic Act of 1916, reaffirmed by the Park Services General Authorities Act of 1970 mandated the NPS to conserve the scenery and the natural and historic objects and wildlife therein.

359. The National Park is proposing to construct a visitor center. Based on the number of visitors to the Pu'uhonua O Honaunau National Historical Park, the Kaloko-Honokohau National Historic Park estimated approximately 500 visitors per day.

Noise

360. Ambient noise in the vicinity of the Petition Area is predominantly attributed to vehicular traffic along the nearby streets and the adjacent quarry operations south of the Petition Area.

361. The increased noise levels as a result of the proposed Kaloko Industrial Park Phase III and IV, and adjacent Kaloko-Honokohau Business Park are not anticipated to adversely affect any nearby noise sensitive uses, since the surrounding areas are comprised of light industrial uses and undeveloped lands. No significant noise impacts are anticipated from the operation of the proposed project.

Construction Noise

362. Operation of construction equipment will raise ambient noise levels in the project vicinity. However, since the surrounding areas are comprised of light industrial uses and undeveloped lands, no significant noise impacts are anticipated from the construction phase for the proposed project.

363. Mitigation measures, including construction noise limits pursuant to the provisions of the The DOH Administrative Rules, Title 11, Chapter 46, Community Noise Control (applicable only to Oahu) are applicable to the project.

Air Quality

364. The 1998 Annual Summary, Hawaii Air quality Data does not provide air quality data for the island of Hawaii. The Big Island has three special monitoring stations. The Kona Station is closest to the Petition area. The Kona Station monitors two pollutants: particulate matter (PM10) and sulfur dioxide (SO2). Levels of PM10 and SO2 were found to be well within Federal and State air quality standards.

365. In the immediate vicinity of the Petition Area, ambient air quality levels are affected by traffic-generated vehicular-related emissions in the form of carbon monoxide ("CO"), and periodically from the adjacent quarry operations located south of the Petition Area.

366. Ambient air quality levels in the immediate vicinity would be most affected by vehicular emissions in the form of CO generated by project-related traffic. Planned traffic and roadway improvements in the immediate project vicinity would improve traffic flow and consequently help in reducing CO concentration levels. Through restrictive covenants, the individual businesses within the proposed development will be restricted from using their subject lots in a manner that creates air

pollution, dust or emission of odorous or noxious matters as may be considered a nuisance to nearby lots.

367. Potential air quality impacts during construction of the proposed development will be mitigated by complying with the DOH Administrative Rules Title 11, Chapter 60, Air Pollution.

Adequacy of Public Service and Public Facilities

368. Schools servicing the project area include Kealakehe Elementary, Kealakehe Intermediate and Kealakehe High Schools located approximately 1.9 miles to the southeast of the Petition Area. The elementary school's capacity is 1,064 students, and the 1999/2000 school year enrollment was 898 students, putting the school at approximately 84 percent capacity. Kealakehe Intermediate School, with facilities for 1,078 students, is at 86 percent capacity with 930 students. Kealakehe High School opened in 1997, and is currently at 76 percent capacity with a student body numbering 1,119 in grades 9th through 11th. The High School will begin 12th grade instruction during the 2000-2001 school year.

369. The proposed development will not generate a substantial demand for schools as the work force is anticipated to be primarily from the existing population.

Wastewater Treatment and Disposal

370. Wastewater is a general term for human waste disposed through a

flushing toilet system. This waste is organic and carries nutrients, particularly nitrogen and phosphorus.

371. Disposal of wastewater in individual onsite systems, such as septic tanks and leach fields, will create a nutrient-rich source of local recharge to the groundwater basal lens.

372. Increased nitrogen and phosphorus concentrations in the groundwater impact the nearby ecosystems, including the ponds and other water resources in the National Park.

373. An individual wastewater system is a facility designed to receive and dispose of no more than 1000 gallons per day of domestic wastewater. Onsite individual wastewater systems include, but are not limited to, septic tanks and cesspools.

374. Individual wastewater systems, including cesspools and septic systems, are a major component of chronic nonpoint source pollution and may contribute both pathogens and nutrients to surface waters.

375. The DOH asked for the Commission's help in protecting the unique natural resources adjacent to the Petition Area, which are unable to be considered by the DOH under the rules of HAR 11-62 when approving individual wastewater systems.

376. The DOH recommended that the wastewater systems in the Petition Area remove as many nutrients as can reasonably be removed.

377. No State wastewater system regulations protect significant natural resources and the rules do not address the removal of nutrients, such as nitrogen and phosphorous, that may disrupt natural systems.

378. The State does not take unique resources, such as anchialine pools, into account when permitting wastewater systems.

379. Onsite individual wastewater management measures are not a DOH priority.

380. Cesspools currently are allowed by the State to be installed in the Petition Area.

381. The County was not convinced that the septic tanks and leach fields offered adequate protection of ocean waters and coastal anchialine ponds.

382. While the State laws and regulations on wastewater systems were inadequate for the protection of natural resources, the Commission recognized the following aspects as guidance for the Commission's action on this Petition.

383. The DOH seek to insure that the disposal of wastewater does not contaminate or pollute any valuable water resource.

384. The DOH seek to insure that the disposal of wastewater from individual

wastewater systems does not contaminate or pollute any drinking water or potential drinking water supply, or the waters of any beaches, shores, ponds, lakes, streams, groundwater, or shellfish growing waters.

385. By 2006, the State of Hawaii plans to implement revised wastewater system regulations (HAR 11-62) to require denitrification (removal of nitrogen) for all wastewater treatment systems that are next to nitrogen-limited surface waters, such as the water resources in the National Park.

386. A cesspool is inadequate for wastewater disposal at the Petition Area because cesspools have great potential for contamination of groundwater and coastal waters.

387. A cesspool is an excavated hole in the ground that receives raw wastewater and is designed to retain the organic matter and solids, but allows the liquid and pathogens to seep through its bottom or sides into the underground formation.

388. Cesspools release almost all of the nutrients in the wastewater into the environment and therefore are not adequate to protect groundwater.

389. A standard septic tank – a watertight tank that receives raw wastewater, removes gross solids, and discharges a settled effluent – is inadequate for wastewater disposal at the Petition Area because nutrient levels are not significantly reduced in a

septic tank. Septic tanks release nearly all of the nutrients in the wastewater into the environment and therefore are not adequate to protect groundwater.

390. Leach fields, also called absorption beds, are an important component of a septic system because some nutrients are removed from the wastewater in the leach field, provided that adequate soil is used. Soil is a critical component of the leach field used with a septic system.

391. A properly functioning leach field is capable of removing at least 80% of nitrates and 90% of phosphates from the wastewater before release into the environment.

392. A FAST wastewater septic tank system that includes an adequate leach field is an appropriate system for installation in the Petition Area because it removes a large percentage of nutrients from the wastewater before release into the environment, greatly reducing potential impacts on the natural systems makai of the Petition Area.

393. A FAST wastewater septic system is a typical septic tank equipped with an internal treatment system capable of removing nitrogen inside the tank.

394. A FAST septic system that includes a leach field, comprised of appropriate soil fill, provides the best protection for groundwater because of the removal of a significant percentage of nutrients from the wastewater prior to its release into the environment.

395. The FAST septic system is capable of a 60 - 70% reduction of nitrogen in the septic tank alone and the leach field absorption bed is capable of a further 80% reduction of nitrogen, or a combined total of up to 94% reduction of nitrogen released into the ground.

396. The FAST septic system is more effective at removing nutrients than the regular septic system proposed by the Petitioner.

397. The FAST septic system requires very simple, regular maintenance for its one moving part, the blower.

398. A maintenance program that ensures proper function of any wastewater treatment system is necessary to avoid breakdowns and prolonged unintended releases of organics, solids and nutrients into the environment. Lack of maintenance of an individual wastewater system can be a problem.

399. It is possible for a septic system to malfunction, releasing untreated nutrients and pathogens to the environment without the knowledge of its owner.

400. Septic tanks and cesspools are not monitored by the County nor State and are typically not under any maintenance schedule.

401. Taking advantage of economies of scale, installation of a FAST system, with a proper leach field, for 20 or more lots would cost less per lot than 20 separate standard septic/leach field systems.

402. Intervenor's uncontroverted testimony on cost estimates for the FAST system are reliable because the estimates were developed by a licensed engineer Mr. Michael Thalhamer.

403. Petitioner's engineer, Denis Shiu, the Petitioner's only qualified expert in this matter, estimated that a septic tank costs $20-25,000 to install for a single lot in the Petition Area, but this estimate omitted the cost of a leach field.

404. Sending wastewater from the Petition Area to the Kealakehe wastewater treatment plant is preferable to any individual wastewater system because no nutrients will be released into the environment from the wastewater generated in the Petition Area.

405. The County will require the Petitioner install "dry" sewer lines in anticipation of future hook-up to the County's municipal wastewater disposal system.

Drainage

406. The terms "drainage wells", "injection wells", and "drywells" are interchangeable and have the same meaning, which is any well that injects surface fluids, i.e., storm runoff, into any geohydrologic formation. The County's standard for disposal of all surface runoff is through drainage wells.

407. Drainage wells, injection wells, and dry wells are basically just holes drilled into the ground.

408. Drainage wells provide a direct conduit to groundwater, and are sometimes drilled into groundwater.

409. Groundwater contamination from drainage wells is a serious problem because it affects drinking water and also streams and the ocean.

410. The design specifications of drainage wells does not inherently incorporate any structure or other design feature to remove petroleum, oil, or any contaminants contained in runoff.

411. Drainage wells do not help control nonpoint source pollution.

412. There are no State laws or County codes currently in place to ensure that pollutants carried with surface runoff do not get into the environment through groundwater. This lack of protection puts water quality and natural resources at risk where drainage wells are used.

413. There are no drinking water resources in or adjacent to the Petition Area.

414. State regulations governing drainage wells are based only on drainage capabilities, not on removing any hazardous substances.

415. Nonpoint source pollution, like general wash-down and polluted irrigation water, is not considered when permitting drainage wells.

416. The State does not do any monitoring of drainage wells. The State relies entirely upon the owner to self-monitor the drainage well for disposal of contaminants.

417. Drainage wells on the Island of Hawaii are subject to abuse such as dumping waste. The State has experienced significant levels of non-compliance with drainage well conditions and self-monitoring requirements and considers it a real problem.

418. Like the State laws, the County codes for drainage wells do not address protection of significant environmental resources, but rather solely consider flood control and volume of runoff.

419. County drainage well standards are only designed for flood control purposes and not for removing any hazardous substances.

420. The County does not consider nonpoint source pollution, like general wash-down and polluted irrigation water, in its review of surface discharge in development plans.

421. The County applies the same standards to address runoff whether the proposed development is in an urban area or next to a National Park.

422. There is no County monitoring system or owner/operation self-monitoring requirement for drainage wells.

423. Because the DOH has made no studies of the ecological impacts of drainage wells, a finding of no impacts to water quality in the Kona Area from drainage wells is not supported.

424. BMPs are measures, controls, and devices used to prevent pollution from being discharged into waters such as rainwater and surface water and then carried into streams, ponds, and oceans.

425. Structural BMPs such as oil/water separators and lined holding tanks or catchments are devices designed to collect surface water and remove such things as oils, greases, fines, silt, sediments, and other pollutants that adversely impact groundwater.

426. Structural BMPs are up to 90% effective at removing matter such as oil and grease.

427. Structural BMPs are a safeguard to prevent pollution and to relieve some of the non-compliance issues associated with self-monitoring.

428. BMPs also include education or training measures to aid in prevention of spills and releases.

429. Appropriate BMPs for the proposed development should specifically address the types of industrial uses anticipated by identifying structural BMPs to contain whatever pollutants might be released from the specific industrial use and to prevent any release into the environment.

430. Appropriate BMPs for the proposed development are filtration or infiltration measures, including flow-through based treatments such as filters, vegetated swales and other media filters and infiltrators. These require that surface flow be

passed through soil or suitable media capable of filtering pollutants prior to discharge or release into the groundwater. Vegetated swales consisting of suitable native plants, grass or ground cover could be installed to provide flow-through treatment.

431. The conditions imposed in LUC Docket No. A84-570/W.H. Shipman Limited are examples of efforts towards pollution prevention and BMPs to control pollution. The DOH supports these BMPs and other polluted runoff control measures.

432. This Commission cannot defer to the State or the County on this issue of drainage because neither the State nor the County protects the natural resources that are dependant upon clean water. The State does not require structural BMPs in drainage wells, even where contaminated runoff is anticipated from the permitted facility.

433. Petitioner proposed to install an unknown number of drainage wells in the Petition Area without adequate structural BMPs. This will be a potential source of groundwater contamination that may reach the National Park and adversely impact National Park resources. Added nutrients and organic contaminants will alter the quality of the groundwater leaving the development.

434. To mitigate the impacts of stormwater runoff discharging pollutants into the groundwater, BMPs capable of filtering pollutants prior to discharge or release into the groundwater must be used. These include lined holding tanks or catchment devices designed to collect and remove spills, oil/water separators to remove petroleum from

runoff; other on-site measures to control erosion and transport of fines, silt, sediments and other pollutants that could adversely impact groundwater or surface waters; and filtration or infiltration measures, including flow-through based treatments such as filters, vegetated swales and other media filters and infiltrators.

Solid Waste Disposal

435. Solid waste from the region is presently disposed of at the County of Hawaii's Puu Anahulu landfill located approximately 18 miles north of the Petition Area in Waikoloa. Refuse generated by the proposed project will be collected by private refuse collection companies and transported to the County's Puu Anahulu landfill for disposal. The landfill has adequate long-term capacity available.

Water System

436. Potable water use is provided by the County's Department of Water Supply from its North Kona Water System. Adequate water supply is currently available from water lines in the immediate project vicinity and two reservoirs along Hina Lani Street.

437. Proposed water system improvements include new water lines along the project roadways and extension of a new water line within the project connecting to the existing 20-inch water line along Hina Lani Street.

438. Water commitments for the proposed development have been secured

from the County Department of Water Supply in the amount of 510,600 gallons per day or 851 additional units of water at 650 gallons per day.

439. The proposed project's average daily water demand is estimated to be 328,000 gallons per day (gpd), with the maximum daily and peak hour flow demands estimated at 492,000 gpd and 1,640,000 gpd, respectively.

Highway and Roadway Service

440. Primary access to the Kaloko Industrial Park is from Queen Kaahumanu Highway at its intersection with Hina Lani Drive. The Industrial Park may also be accessed from the east via Mamalahoa Highway and Hina Lani Drive.

441. The State roads in the area and in the area of the proposed Phases III and IV of Kaloko Industrial Park are the Queen Kaahumanu Highway, portions of Route 190 on the mauka route between Kona and Waimea and a short segment of Kealakehe Parkway.

442. The Queen Kaahumanu Highway widening from Henry Street to the Airport Access Road is a high priority for the State and plans for widening this section of the highway are currently in the design phase. The State has appropriated $10 million to acquire the right of way.

443. The project will be phased over a period of time with the first phase from Henry Street to Honokohau to begin in 2003. Completion of this first phase is

anticipated to take a least two years. The completion of the second phase - from Honokohau to the airport Access Road is anticipated for 2007.

444. Traffic signals at the intersection of Hina Lani Drive and Kaahumanu Highway will be energized within the next week.

445. The Petitioner's traffic assessment analyzed traffic conditions at three intersections in the vicinity of the Petition during the weekday AM and PM peak traffic hours (7:00 to 8:00 am and 3:30 to 4:30 pm) and identified potential traffic impacts resulting from the proposed project. The analysis is based upon the concept of Level of Service ("LOS") developed by the Transportation Research Board.

446. Levels of Service are defined by LOS "A" through "F", with LOS "A" representing ideal or free flowing conditions and LOS "F" representing unacceptable conditions.

447. The three intersections analyzed were: Queen Kaahumanu Highway and Hina Lani Drive; Hina Lani Drive and Kanalani Street; and Hina Lani Drive and Kamanu Street.

448. Queen Kaahumanu Highway is a 2-way, 2-lane arterial State Highway extending from Kawaihae to Kailua-Kona. A left-turn median storage and right-turn acceleration lane are provided at its unsignalized intersection with Hina Lani Drive. According to the study, the critical movement of the highway at this intersection is the

southbound left-turn traffic movement. Presently, this movement operates at LOS "B" during the AM and PM peak hour of traffic.

449. Hina Lani Drive is a 2-way, 2-lane County collector road on the Petition area's northern boundary, providing a mauka-makai connection between Queen Kaahumanu and Mamalahoa Highway. The critical movement of this approach is the westbound left-turn traffic movement. The westbound left-turn movement from Hina Lani Drive operates poorly at LOS "F" conditions during the AM and PM peak traffic hours.

450. Additional traffic from the construction of the industrial park would add to the congestion at the intersection of Queen Kaahumanu Highway and Hina Lani Drive.

451. The critical movement at the Hina Lani Drive and Kanalani Street intersections is the westbound left turn on to Kanalani Street and the through traffic movement that operates at the free-flow condition of LOS "A". The critical movement of the Kanalani approach to Hina Lani Drive is the left-turn and right-turn movement which operates at LOS "B" during the AM and PM peak hours of traffic.

452. The critical movement of both the eastbound and westbound traffic along Hina Lani Drive at the Kamanu Street intersection is the left-turn and through traffic

movement which operates at the free-flow condition of LOS "A" during the AM and PM peak hours of traffic.

453. Kanalani and Kamanu Streets are existing north south roads within the existing Kaloko Industrial Park Phase I and II. Both of these streets feed into Hina Lani Drive to the north. There is no road that runs parallel to Hina Lani Drive to the south that connects up with Queen Kaahumanu Highway.

454. There are no additional access roads proposed by the Petitioner to provide access to and from Hina Lani Drive to the Petition area. The County of Hawaii does not think it unreasonable to require an additional access road from the project to Hina Lani Drive.

455. There will be connecting north-south roads to the Lanihau project. The County of Hawaii does not think it unreasonable to require a condition of development that the Petitioner provides this connection.

456. The County depends on the developers to build the cross streets.

457. The State Department of Transportation ("DOT") planed to install a traffic signal at the intersection of Queen Kaahumanu Highway and Hina Lani Drive by 2001. Traffic operations at this intersection are expected to improve with the installed traffic signal and DOT's future plans to widen Queen Kaahumanu Highway to four lanes.

458. The left-turn traffic movement on the westbound approach of this

intersection is expected to improve from LOS "F" to LOS "B" during the AM peak hours, and LOS "C" during the PM peak hours. The levels of service at the other two study intersections are not expected to change since the traffic operations along Hina Lani Drive are expected to be similar to existing conditions. By 2010, Petitioner forecasted that traffic operations at these intersections are expected to be worse due to the increase in traffic accessing the proposed project.

459. The Petitioner recommended several measures to mitigate the impact that the proposed industrial park will have on traffic patterns. They are as follows: Maintain adequate sight distance for motorists to safely enter and exit all project driveways and roadways; Re-stripe Hina Lani Drive at the intersection with Kamanu Street to create a left-turn storage lane for vehicles turning left onto Hina Lani Drive; Re-stripe Kamanu Street at the intersection with Hina Lani Drive to provide exclusive left-turn and right turn lane for the approach.

460. According to DPW, the 'Main Street' identified in the Keahole to Kailua Development Plan is intended to keep local traffic off Queen Kaahumanu Highway.

461. In the County of Hawaii's K-K Plan, Main Street is defined as a collector roadway, which provides for circulation between the limited industrial areas, which includes the Petition area and urban expansion areas to the north across Hina Lani Drive.

462. The County's current Implementation Strategy Plan proposes the widening of Hina Lani Drive to an 80-foot wide four lane road to be completed by 2020.

Public Utilities

463. While actual power requirements for the project will depend on the ultimate use of individual lots, using 4,000 kilowatt ("KWh")/month/lot, the Petitioner estimates projected power consumption for the proposed development at 329,000 KWh per month. Electrical power supply and service for the proposed industrial area will be provided via the Hawaii Electric Light Company's (HELCO) existing facilities in the adjacent Kaloko Industrial Park and the 69 kilovolt (kV) transmission line along Queen Kaahumanu Highway. A new substation may be required to service the proposed project.

464. Telephone service for the proposed phases III and IV of Kaloko Industrial Park can be provided using HELCO power poles and direct burial cables. Currently, service to the area is provided by GTE Hawaiian Telephone Company via trunk cables supported on HELCO's 69 kV poles mauka of Queen Kaahumanu Highway. Fiber-optic cables that are located within the existing Kaloko Industrial Park could be extended to the proposed project.

465. Cable service lines extend from Sun Cablevision's main plant in Kailua-Kona, only up to Honokohau Harbor. The service could be extended from the Kaloko Industrial Park entrance via a fiber-optic loop on Queen Kaahumanu Highway.

Police and Fire Protection

466. The Kealakehe Police Station, located less than 2 miles south of the Petition Area, provides service to the North and South Kona Districts. Fire protection service is provided by the Kailua-Kona Fire Station located approximately 3.6 miles southeast of the Petition Area. Although it is likely that the proposed project would require the occasional police and fire protection services, it would likely represent a minimal amount relative to the overall regional demand.

Health Care Services

467. The Petition Area is within the service area of the 75-bed Kona Community Hospital located in Kealakekua, approximately 11 miles to the south. Although the hospital provides for most surgical needs, specialty cases are transferred to Honolulu hospitals.

468. Another medical facility in the region is the North Hawaii Community Hospital in Waimea. The Hospital has 50 beds and provides a full spectrum of acute care services, including a 24-hour emergency room, medical/surgical care, obstetrical/gynecological care, cardiac care, and long-term care.

Commitment of State Funds and Resources

469. The proposed Kaloko Industrial Park Phases III and IV will be funded through a combination of conventional financing and property sales and will not require direct expenditures by either the State of Hawaii, or the County of Hawaii.

Conformance to Applicable District Standards

470. The proposed reclassification is in general conformance to Section 15-15-18 (1) to (8) of the Land Use Commission rules, standards for determining "U" Urban District boundaries.

471. The Property will be zoned and developed for light industrial use, and industrial-commercial mixed use and is located close to other industrial uses.

472. The Petition area is included within a larger area that was recommended for reclassification from the State Land Use Conservation District to the State Land Use Urban district during the State's Five-Year Boundary Review.

Hawaii State Plan

473. Pursuant to Section 205-17(1), HRS, and Section 15-15-77(b)(1), HAR, and subject to the conditions of approval set forth herein, the reclassification of the Property conforms to the applicable goals, objectives, and policies of the Hawaii State Plan, Chapter 226, HRS, as amended with respect to the following State Plan objectives and policies, based upon the following:

- SEC. 226 – 6 (a) (1) and (b) (6): Objectives and policies for the economy
  - The development phase of the Kaloko Industrial Park Phases III and IV is expected to generate nearly 29,018 "worker years" of direct employment resulting in an estimated $874 million in total wages;
  - Petitioner expected that more than $200 million in local business profits will occur over a 15-year build-out period (infrastructure and finished buildings);
  - Secondary effects include the creation of an additional 4,197 permanent jobs in the regional economy, $124.5 million in yearly wages, and $300 million annually in purchases, receipts and expenditures into other West Hawaii businesses and suppliers.
- SEC. 226-11 (b) (6) and (b) (8): Objectives and policies for the physical environment – land-based, shoreline, and marine resources.
  - Protection and preservation of the candidate endangered species ko`oko`olau (*Bidens micrantha* subspecies *ctenophylla*) plant located along the Petition Area's eastern boundary;

- Reduction of potential interactions between the endangered endemic, nocturnally flying Dark-rumped petrels with external lights and man-made structures through shielded exterior lighting;
- Mitigation of impacts to the quality of groundwater and marine waters affecting the natural and cultural resources of KAHO through conditions of approval imposed herein.

• SEC 226-12 (b) (3) and (4) Objectives and policies for the physical environment – scenic, natural beauty, and historic resources.

- The requirement of landowners and/or tenants of the individual lots to provide and maintain on-site landscaping to further enhance the visual environment in accordance with the landscaping criteria;
- Architectural design criteria to reduce visual impacts of the proposed structures would include consideration of building profiles and design, exterior color and surface treatment such as the use of non-reflective building materials and colors to blend with the surrounding environment, and exterior lighting and sign standards; and

- Measures to protect and preserve cultural resources that may be affected by the project as required by the conditions of approval imposed herein.

- SEC. 226-13(b) (3) and (7): Objectives and policies for the physical environment – land, air and water quality.
  - Mitigation of impacts to the quality of groundwater and marine waters affecting the natural and cultural resources of KAHO through conditions of approval imposed herein.
- SEC. 226-104 (b) (1) and (9): Population growth and land resources priority guidelines.
  - The Petition Area is located in close proximity to urban areas where adequate public facilities are available, including the adjacent Kaloko Industrial Park, Phases I and II, Kona International Airport at Keahole approximately 3 miles to the north, and Kailua-Kona town approximately 3.4 miles to the south.
  - The Petition Area has been identified as an area recommended for urban development according to the State Office of Planning's Five-Year Boundary Review (1992), which is made within the context of other existing State and County land use policies for the site and the region as a whole.

Hawaii Coastal Zone Management Program

474. Hawaii's Coastal Zone Management ("CZM") Program, established pursuant to Chapter 205A, HRS, as amended, is administered by the OP and provides for the beneficial use, protection and development of the State's coastal zone. The objectives and policies of the CZM Program encompass broad concerns such as impact on recreational resources, historic and archaeological resources, coastal scenic resources and open space, coastal ecosystems, coastal hazards, and the management of development. The proposed project is consistent with the following applicable CZM objectives and policies as conditions of approval are imposed herein:

- Recreational Resources: Petitioner proposed implementation of BMPs and a PPP by individual lot owners to prevent pollution from being discharged into a receiving water, and may include structural BMPs, such as berms or oil/water separators; and procedural BMPs, such as training in spill response procedures; or administrative, such as record keeping.
- Historic Resources: Petitioner stated it will implement a Data Recovery Plan prepared for review and approval by the DLNR-HPD for significant historical sites found in the Petition Area.
- Scenic and Open Space Resources: Petitioner will require landowner

and/or tenants to provide and maintain on-site landscaping; and implement architectural design criteria to reduce visual impacts.

- Coastal Ecosystems: Petitioner proposed implementation of BMPs and a pollution prevention plan by individual lot owners to prevent pollution from being discharged into a receiving water, and may include structural BMPs, such as berms or oil/water separators; procedural, such as training in spill response procedures; or administrative, such as record keeping.
- Coastal Hazards: The Petition Area is located within Zone X, areas determined to be outside the 500-year flood plain according to the FEMA FIRM, and is not subject to coastal hazards such as tsunami inundation.

  Petitioner proposed implementation of BMPs and a PPP by individual lot owners to prevent pollution from being discharged into a receiving water, and may include structural BMPs, such as berms or oil/water separators; procedural, such as training in spill response procedures; or administrative, such as record keeping.

Incremental Districting

475. Pursuant to Section 15-15-78 of the LUC Rules, incremental districting is not required because full development of the subject property can substantially be completed within ten years after the date of the Land Use Commission's approval.

CONCLUSIONS OF LAW

1. The Commission finds upon the clear preponderance of the evidence that the reclassification of the Property, consisting of approximately 102.016 acres situated at Kaloko, North Kona, Island and State of Hawaii, identified as Tax Map Key No: 7-3-051: por. 060, from the Conservation District to the Urban District, upon the conditions set forth in this Decision and Order, is reasonable, conforms to the standards for establishing the Urban District boundaries, is not violative of section 205-2, HRS, is consistent with the Hawaii State Plan as set forth in Chapter 226, HRS, the Coastal Zone Management Program, as set forth in Chapter 205A, HRS, and the policies and criteria established pursuant to section 205-17, HRS, and conforms to Chapter 15-15, HAR.

2. Article XII, Section 7 of the Hawaii Constitution requires the Commission to protect native Hawaiian traditional and customary rights: The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights.

3. The State's power to regulate the exercise of customarily and traditionally exercised native Hawaiian rights allows the State to permit development that interferes with such rights if the preservation and protection of such rights would result in actual

harm to the recognized interests of others. Nevertheless, the State is obligated to protect the reasonable exercise of customarily and traditionally exercised rights of native Hawaiians to the extent feasible. Public Access Shoreline Hawaii v. Hawaii County Planning Commission, 79 Hawai`i 425, 450, n. 43, 903 P.2d 1246 (1995).

4. Native Hawaiian rights protected by the Hawaii Constitution that are practiced within Kaloko-Honokohau National Historical Park include pole, spear and net fishing; gathering of limu, wana, opihi, and octopus; gathering the opae`ula in anchialine pools for bait and chum for offshore fishing; religious ceremonies, including pikai ceremonies using near-shore waters.

5. The ancient fishponds and anchialine pools within the National Park are valued and important natural and cultural resources.

6. The endangered, endemic birds and the threatened and endangered sea turtles within the National Park are valued and important natural resources.

7. The aforesaid native Hawaiian rights and natural and cultural resources would be damaged or destroyed by the pollution of groundwater that reaches the National Park from surrounding areas, including Petitioner's proposed development at the Kaloko Industrial Park. Appropriate mitigation measures are, therefore, required under the Hawaii Constitution and the Commission's decision-making criteria in order to approve reclassification of the project area.

DECISION AND ORDER

IT IS HEREBY ORDERED that the Property being the subject of Docket No. A00-732, filed by Petitioner, TSA Corporation, consisting of approximately 102.016 acres of land in the State Land Use Conservation District at Kaloko, North Kona, Island of Hawaii, County of Hawaii, State of Hawaii, identified as Tax Map Key No. 7-3-051: portion of 060, is hereby reclassified into the State Land Use Urban District, and the State land use district boundaries are amended accordingly, subject to the conditions of approval set forth herein.

This Commission is acutely aware that continuous development is planned for this coastline. Although each developer might claim that only a "small amount" of pollution will result from their development and that the area's ecosystem will show "little" effects, these developments and their impacts are cumulative and, absent strong mitigation measures, have the potential to devastate the fragile resources of the coastal and marine aquatic environments of the entire Kona coastal region.

Absent adequate, effective and enforceable conditions of approval, including removal of wastewater nutrients and surface runoff contaminants, Petitioner's proposed industrial development has the potential to cause unacceptable adverse impacts to coastal resources, particularly the natural and cultural resources of the adjacent National Park and the traditional and customary native Hawaiian practices

that depend on the pristine nature of such resources.

Based upon the findings of fact and conclusions of law stated herein, it is hereby determined that the customary and traditional native Hawaiian practices, the cultural resources, and the important natural systems and habitats of the National Park that have been identified herein shall be adequately protected by the conditions of this decision and order.

To protect the exercise of customary and traditional native Hawaiian practices; to protect the historical and cultural resources of the coastal area including the Kaloko-Honokohau National Historical Park; to ensure the health and preservation of the natural systems and habitats of the National Park, including the endangered, threatened, and endemic species and their habitat, the reclassification of the Property shall be subject to the following conditions.

Wastewater

1a. The Petition Area shall be developed with dry sewer lines for eventual connection to the Kealakehe Wastewater Treatment Plant (WWTP).

1b. The Petition Area shall be required to connect to the WWTP, when such connection is available. The Petitioner, its successors, and assigns, shall collaborate with the County of Hawaii to include the Petition Area within an improvement district, if one is developed to fund the connection to the WWTP. The Petitioner or individual

lot owners within the Petition Area shall pay for their fair share of the cost to fund such connection to the WWTP, whether or not an improvement district is established.

1c. The Petitioner and/or any future owner(s) of the Petition Area shall refrain from constructing upon or occupying any portion of the Petition Area until such time as the portion (e.g., lot) to be constructed upon or occupied is connected to the WWTP, unless in the interim, the portion to be constructed upon or occupied has installed a septic tank system [i.e., Individual Wastewater System (IWS)] designed to remove no less than 60% Total Nitrogen from the treatment system (e.g., septic tank with FAST, Biofilter, Recirculation Filters, Sequential Batch Reactor, or comparable technology) and an absorption field of import material which is designed to achieve no less than 80% reduction of nitrogen; featuring adequate percolation rate; and offering additional phosphorus removal. Installation is subject to conditions of approval dictated by the Director of the Hawaii State Department of Health and Hawaii Administrative Rules (HAR) Title 11 Chapter 62. When connection to the WWTP becomes available, all portions of the Petition Area, including all individual lots therein, shall connect to the WWTP, whether or not an interim wastewater treatment system has been installed.

1d. Utilization of the IWS described above (i.e., septic tank with FAST, Biofilter, Recirculation Filters, Sequential Batch Reactor, or comparable technology and an absorption field of import material which is designed to achieve no less than 80%

reduction of nitrogen; featuring adequate percolation rate; and offering additional phosphorus removal) shall be limited to no more than 45% of the individual lots to be developed in the Petition Area.

1e. The owner of the IWS shall certify with the Hawaii State Department of Health that the IWS shall be operated and maintained in accordance with all of the provisions of the operation and maintenance manual developed pursuant to HAR 11-62. The certification shall include that upon the sale or transfer of ownership of the IWS, the sale or transfer will include the appropriate transfer documents and provisions binding the new owner to the operation and maintenance manual.

1f. Petitioner and/or each individual lot owner(s), shall develop and participate in a Wastewater Treatment System Maintenance Agreement, before constructing upon or occupying any portion of the Petition Area, that shall provide for safe and effective operation and maintenance of the treatment unit(s), whether shared or individual, and/or the temporary sewage line. This requirement shall be included in the conditions of sale of any lot and/or parcel in the Petition Area.

1g. Should the National Park Service elect to pursue installation of a temporary sewage line to the WWTP for the Kaloko-Honokohau National Historic Park Visitor Center construction project, the Petitioner may elect, subject to prior authorization by the National Park Service, to dispose of wastewater from not more

than 20 one-acre lots in the Petition Area, via such temporary line to the WWTP. In no event shall the temporary sewage connection be in place and utilized for longer than five (5) years from the date of completion of construction of such temporary line except at the sole discretion of the National Park Service. The Petitioner shall pay its fair share cost to fund such temporary connection to the WWTP, as determined by the National Park Service, the Petitioner and the County of Hawaii. When connection to the WWTP becomes available through permanent sewer lines, all portions of the Petition Area, including all individual lots that may have been connected to the above described temporary sewage line, shall connect to the WWTP through permanent lines, whether or not one or more lots were connected via the temporary sewage line. Connection of not more than twenty (20) one-acre lots to the WWTP via such temporary sewage line does not release any other individual lots within the Petition Area from compliance with any other condition(s) of this decision and order.

Storm and Surface Water Runoff

2a. To the extent possible, all storm and surface water runoff shall be captured on the premises. To the extent possible, all runoff entering the ground shall be first treated to remove all industrial waste so that no industrial pollutants will reach the Kaloko-Honokohau National Park or enter the water table. Petitioner shall be subject to and prepare covenants, conditions, and restrictions for the Petition Area to contain

spills and prevent materials associated with light industrial uses attributable to the operations of property, including petroleum products, chemicals, or other pollutants from leaching or draining into the ground or subsurface storm drain collection areas. Said covenants shall be subject to the approval of the Hawaii State Department of Health, upon consultation with the National Park Service, and the County of Hawaii. The Petitioner and/or tenant shall obtain all required permits and construct required improvements for storm water discharge on and from the property. These conditions shall include the following:

2b. Prior to the occupancy of any part of the Petition Area, the Petitioner shall engineer, construct (or require to be constructed) and maintain surface water/storm water containment systems that ensure no State water quality standards will be violated.

2c. No injection well shall be constructed as an element of a surface water/storm water containment system in the Petition Area unless, prior to the start of any construction, appropriate requirements of HAR Chapter 11-23 are satisfied and the Hawaii State Department of Health issues an UIC (Underground Injection Control) permit. Contaminants shall be monitored and removed with best efforts prior to entering injection wells.

2d. If a large void, such as a lava tube or solution cavity, is encountered

during drilling, where the drill rod drops more than three feet, measures shall be taken to prevent migration of the injected fluids to the Kaloko-Honokohau National Park to the satisfaction of the Hawaii State Department of Health as described in HAR §11-23-09(f).

2e. All injection wells established in the Petition Area shall be operated in such a manner that they do not violate any of the Hawaii State Department of Health's administrative rules under title 11 HAR, regulating various aspects of water quality and pollution, and chapters 342-B, 342-D, 342-F, 342-H, 342-J, 342-L, and 342-N, Hawaii Revised Statutes (HRS). Relevant HAR include but, are not limited to:

i. Chapter 11-20, "Rules Relating to Potable Water Systems";

ii. Chapter 11-62, "Wastewater Systems"; and

iii. Chapter 11-55, "Water Pollution Control".

2f. The operator of any injection well or wells in the Petition Area shall keep detailed records of the operation of the well or wells, including, but not limited to, the type and quantity of injected fluids, and the method and rate of injection for each well. Such records will be available for inspection or review by the Hawaii State Department of Health as specified under appropriate sections of HAR Chapter 11-28.

2g. Any person who violates any of these conditions shall be subject to penalties as prescribed in appropriate chapters of HRS and HAR as they relate to (but

are not limited to): Potable Water Systems; Wastewater Systems; Water Pollution Control; Safe Drinking Water; and Underground Injection Control.

2h. The Petitioner, successors and/or individual lot owners in the Petition Area shall ensure that all drainage injection wells or subsurface drainage structures be designed with a debris catch basin to allow the detention and periodic removal of rubbish and sediments deposited by runoff. Storm water runoff shall first enter the debris catch basin before flowing into the drainage well. The debris catch basin's volume should be at least two (2) cubic yards (or approximately 4'x4'x4'). The debris catch basin shall be periodically inspected and cleaned accordingly. Oil/water separators shall be utilized where petroleum products are used.

Pollution Prevention

3a. Any public or private industrial development within the Petition Area which could be considered a new source of pollution or an increased source of pollution shall, in its initial project design and subsequent construction, provide the highest and best degree of waste treatment practicable under existing technology.

3b. Before constructing upon or occupying any portion of the Petition Area, a Pollution Prevent Plan (PPP), after consultation with the National Park Service, shall be developed that addresses each of the types of uses permissible in the light industrial park, by specifically designating Best Management Practices (BMPs) tailored to each

specific use. Emphasis shall be given to structural BMPs to prevent any and all pollutants that may be associated with such industries from being released into the environment, including reaching the groundwater. Structural BMPs shall include, but shall not be limited to, oil/water separators, detention ponds, lined containment pits, and stormwater filtration units designed to contain and remove industrial contamination. The PPP shall include but not be limited to:

i. All cleaning, repairs and maintenance of equipment involving the use of industrial liquids, such as gasoline, diesel, solvent, motor oil, hydraulic oil, gear oil, brake fluid acidic or caustic liquids, antifreeze, detergents, degreasers, etc. shall be conducted on a concrete floor, whether roofed or unroofed. The concrete floor shall be constructed to contain any drip or spills and to provide for the recovery of any spilled liquid. Water drainage from these concrete floors if necessary, shall pass through a separator sump before being discharged.

ii. Any containers used for storage of used oil or other industrial liquids shall be kept on a concrete surface. The surface shall be bermed to prevent the loss of liquid in the event of spills or leaks. The containers shall be sealed and kept under shelter from the rain.

(The Department of Labor and Industrial Relations' Occupational Safety and Health regulations, sections titled, "Housekeeping Standards" and "Storage of Flammable or Combustible Liquids," shall be followed along with the local fire code.)

iii. All employees shall be informed to immediately collect and contain any industrial liquid spills on the concrete floor and should be informed against discharging or spilling any industrial liquids. Employees shall be aware to prevent any industrial spill onto the bare ground.

In the event that a specific use is proposed for the Petition Area that is not specifically addressed in the PPP, the Petitioner and/or the individual lot owner(s) proposing such use shall consult with the National Park Service to establish a set of BMPs appropriate for such proposed use and consistent with the goal of preventing any and all pollutants from being released into the environment. In the event that the Petitioner and the National Park Service cannot agree upon a mutually acceptable PPP within 12 months of the date of issuance of the boundary reclassification, the Commission shall review the draft PPP, along with written comments from Petitioner, the National Park Service and the other parties, and shall issue a final PPP. In no event shall the Petitioner and/or individual lot owner(s) construct upon or occupy any portion

of the Petition Area until such time as the final PPP is complete. The final PPP shall be recorded and shall run with the land within the Petition Area in the same manner as all conditions of approval imposed by the Commission.

3c. The Petitioner, its successors or individual lot owners shall provide signage for all drainage/injection wells in the Petition Area with warnings such as the following: DUMP NO WASTES. GOES TO GROUNDWATER AND OCEAN. HELP PROTECT HAWAI`I'S ENVIRONMENT. Signage shall be either stand-up (legible from at least 30 feet, permanently posted at an effective and safe height) or painted on the ground next to the drainage well's inlet.

3d. For parking areas, BMPs will be established as covenants running with the land, which emphasize pollution prevention rather than treatment. All large vehicles such as buses, trucks, or construction equipment shall utilize drip pans to avoid release of petroleum onto paved surfaces. Areas used primarily for automobile parking shall be periodically checked and cleaned to avoid buildup of oil or other automotive fluids. Maintenance work other than emergency work on vehicles will be banned in parking areas.

3e. Where site geometry permits, the Petitioner, its successors or individual lot owners shall design and construct (or require to be constructed) landscaped areas,

including grassed or vegetative swales to capture storm water drainage from all perimeter lots, facilities, and parking areas of the Petition Area.

3f. Owner or operator covenants developed for the Petition Area shall expressly disclose to all future individual lot owner(s) the existence of the National Park System Resource Protection Act, 16 U.S.C. Sections 19jj-19jj-4, and the consequences of violation of such act. In particular, future land owners shall be made aware that any person who destroys, causes the loss of, or injures any park system resource is liable to the United States for response costs and damages resulting from such destruction, loss or injury.

3g. The Petitioner shall participate and collaborate in a regional (Kaloko-Honokohau) pollution prevention forum to be convened by the Commission within one year from the issuance of this decision and order. Intervenor shall be invited as well. Topics to be discussed include: pollution prevention planning; best available control technologies (BACT); structural and operation BMPs addressed to the type of uses permissible in the light industrial park, and formulas for determining fair and reasonable pro-rata share costs relating to any ground water monitoring program. Participants in this forum should include but not necessarily be limited to individuals

or entities with property or development interests impacting the Queen Kaahumanu Highway corridor extending from the Kona International Airport to the Palani Road intersection.

Groundwater Quality Monitoring

4. The Petitioner shall contribute its fair and reasonable pro-rata share of costs relating to a ground water monitoring program of USGS Wells 4161-01, 4161-02 and 4061-01, Aimakapa Pond, Kaloko Pond and two (2) other anchialine ponds of the Kaloko-Honokohau Historic National Park as identified by the National Park Service. Monitoring would continue once every six months for 10 years from initial occupancy, or until such time as sewer lines and hookup to the WWTP is implemented. Constituents to be monitored shall be of a full suite of nutrients (including nitrogen and phosphate), contaminants (including metals, phenolic compounds, pesticides and pesticide breakdown products, chlorinated solvents, BTEX compounds, selected pharmaceutical endocrine disruptive compounds, such as ethinyl estradiol, and nonylphenol), and standard water quality parameters (including pH, temperature, dissolved oxygenates, and salinity). The fair and reasonable pro-rata share of costs will be determined by the Commission and in conjunction with the findings generated at the regional pollution prevention forum discussed above.

Regional/Local Transportation

5a. The Petitioner shall participate and collaborate in a regional (Kaloko-Honokohau) transportation planning forum to be convened by the Commission within one year from the issuance of this order. Participants in this forum to be convened include but, are not limited to individuals or entities with a property or development interest impacting the Queen Ka'ahumanu Highway corridor extending from the Kona International Airport to the Palani Road intersection. Topics to be discussed include: regional transportation planning issues; the timing and cost of necessary improvements to the Queen Ka'ahumanu Highway as described in the Hawaii Long Range Transportation Plan; determination of individual fair share contributions; and process for resolving any conflicts which may arise.

5b. The Petitioner shall contribute their fair and reasonable pro-rata funding and construction of regional transportation improvements and programs to the satisfaction of the State Department of Transportation for the Petition Area.

5c. The Petitioner shall participate and collaborate with the County of Hawaii Department of Public Works and other affected agencies in the development of County feeder streets within the Petition Area.

5d. Petitioner shall participate in the fair and reasonable pro-rata funding and construction of any such roadways from its northern boundary to the southern

boundary in accordance with the roadway requirements of the County of Hawaii.

5e. Petitioner shall provide an appropriate easement as determined by the County of Hawaii on the south end of Kamanu Street in order to provide a North-South connection with the adjoining property.

Financial Contribution Plan

6. The Petitioner shall coordinate with affected State or County agencies the development of a financial plan for satisfying any financial contributions or requirements associated with this petition. All such plans may provide for an annual fair share incremental payment to the affected agency by the Petitioner out of the development revenues or otherwise. The affected State or County agency may establish a dedicated escrow account for the deposit and utilization of the financial contribution from Petitioner to facilitate this plan.

Affordable Housing

7. The Petitioner shall submit a housing needs assessment and implementation plan to the Commission and appropriate County housing agency for their review and approval within six months of the issuance of this decision and order and comply with the County of Hawaii affordable housing policy. The housing needs assessment shall be based on an analysis of the jobs generated by the development, the projected number of qualified households which may be entitled to housing assistance

as specified by the County of Hawaii, the number and availability of affordable housing units and rentals in the West Hawaii area (both planned and built), the projected number of employees from the development who might be expected to commute from East Hawaii, the number of owner occupants (within the Petition Area) who reside in the West Hawaii area and the number of employees who might already reside in the West Hawaii area.

Archaeological/Historical Sites

8a. Eight sites (21999, 22010, 22014, 22016, 22017, 22018, 22023, and 22032) retain the potential to yield information important for understanding prehistoric and historic land use. If Petitioner believes that one or more of these sites cannot be preserved, it shall provide to the Land Use Commission no later than six (6) months after this decision and order is issued a mitigation plan for its review and approval.

8b. Should any previously unidentified burial, archaeological or historical sites such as artifacts, marine shell concentrations, charcoal deposits, stone platforms, pavings or walls be found, the Petitioner, developer(s) and/or landowners of the affected properties shall stop work in the immediate vicinity and the State Historic Preservation Division of the Department of Land and Natural Resources (SHPD) shall be notified immediately. The significance of these finds shall then be determined and approved by the SHPD. Subsequent work shall proceed upon an archaeological

clearance from the SHPD when it finds that mitigative measures have been implemented to their satisfaction.

Landscaping

9a. Petitioner shall develop a landscaping plan for the Petition area that can be followed by each subsequent lot owner/tenant. Fishermen knowledgeable of traditional reference points used in locating fishing grounds, and the National Park Service shall be consulted on the development of building and landscape design guidelines prior to construction to maintain these reference points.

9b. Petitioner, where feasible, shall use indigenous and water conserving plants such as the papyrus (native paper plant) and incorporate the same into common area landscape planting.

9c. The Amy B.H. Greenwell Botanical Garden, Kaloko-Honokohau National Historical Park and other interested parties and educational institutions shall be afforded the opportunity to gather seeds and cuttings of native plants on the property that cannot be rescued or incorporated into the project's landscaping plan.

9d. The Petitioner shall provide buffer fences/buffer strips to protect the Bidens Micrantha, a candidate endangered species by establishing a buffer zone with a minimum width of 30 feet, in the immediate vicinity of Bidens Micrantha #1 plant identified in the EIS. The Petitioner shall ensure that genetic material (seeds and

cuttings) are propagated from the other three Bidens Micrantha plants located within the makai portion of the Petition area.

Soil Erosion and Dust Control

10. Petitioner shall implement efficient soil erosion and dust control measures during and after the development process to the satisfaction of the Hawaii State Department of Health.

Civil Defense

11. Petitioner, developers and/or landowners of the affected properties shall add a solar powered siren with 115 Dbc omni directional speaker array, and insure that the siren be installed in a central location funded and constructed according to adequate civil defense measures as determined by the County of Hawaii and State Civil Defense agencies.

12. Petitioner shall develop the Petition area in full compliance with all material representations made by the Petitioner to the Commission. Failure to do so for any reason including but not limited to economic feasibility, may result in the imposition of fines as provided by law for each and every separate violation, reversion of the Petition area to its former condition by Petitioner at Petitioner's own expense, reversion of the Petition Area to its former classification or a change to a more appropriate classification and/or any other legal remedies, including but not limited to

suit for actual and punitive damages under Federal or State law or suit for injunctive relief that requires the developer to restore the project area to its former condition.

13. Petitioner shall give notice to the Commission of any intent to sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interests in the Petition Area, prior to development of the Petition Area.

14. Petitioner shall timely provide without any prior notice, annual reports to the Commission, the Office of Planning, and the County of Hawaii Planning Department in connection with the status of the subject project and Petitioner's progress in complying with the conditions imposed herein. The annual report shall be submitted in a form prescribed by the Executive Officer of the Commission.

15. The Commission may fully or partially release the conditions provided herein as to all or any portion of the Petition Area upon timely motion and upon the provision of adequate assurance of satisfaction of these conditions by Petitioner.

16. Within 7 days of the issuance of the Commission's Decision and Order for the subject reclassification, Petitioner shall (a) record with the Bureau of Conveyances a statement that the Petition Area is subject to conditions imposed by the Land Use Commission in the reclassification of the Petition Area, and (b) shall file such copy of such recorded statement with the Commission.

Petitioner shall record the conditions imposed by the Commission with the

Bureau of Conveyances pursuant to Section 15-15-92 Hawaii Administrative Rules. All such conditions shall run with the land.

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ADOPTION OF ORDER

The undersigned Commissioners, being familiar with the record and proceedings, hereby adopt and approve the foregoing ORDER this 7th day of February, 2002. This ORDER and its ADOPTION shall take effect upon the date this ORDER is certified and filed by this Commission.

LAND USE COMMISSION
STATE OF HAWAI'I

By _____
MERLE A. K. KELAI
Chairperson and Commissioner

By (absent)
LAWRENCE N.C. ING
Vice Chairperson and Commissioner

By _____
P. ROY CATALANI
Commissioner

By _____
BRUCE A. COPPA
Commissioner

By _____
PRAVIN DESAI
Commissioner

By _____
ISAAC FIESTA, JR.
Commissioner

By _____
M. CASEY JARMAN
Commissioner

By _____
STANLEY ROEHRIG
Commissioner

By _____
PETER YUKIMURA
Commissioner

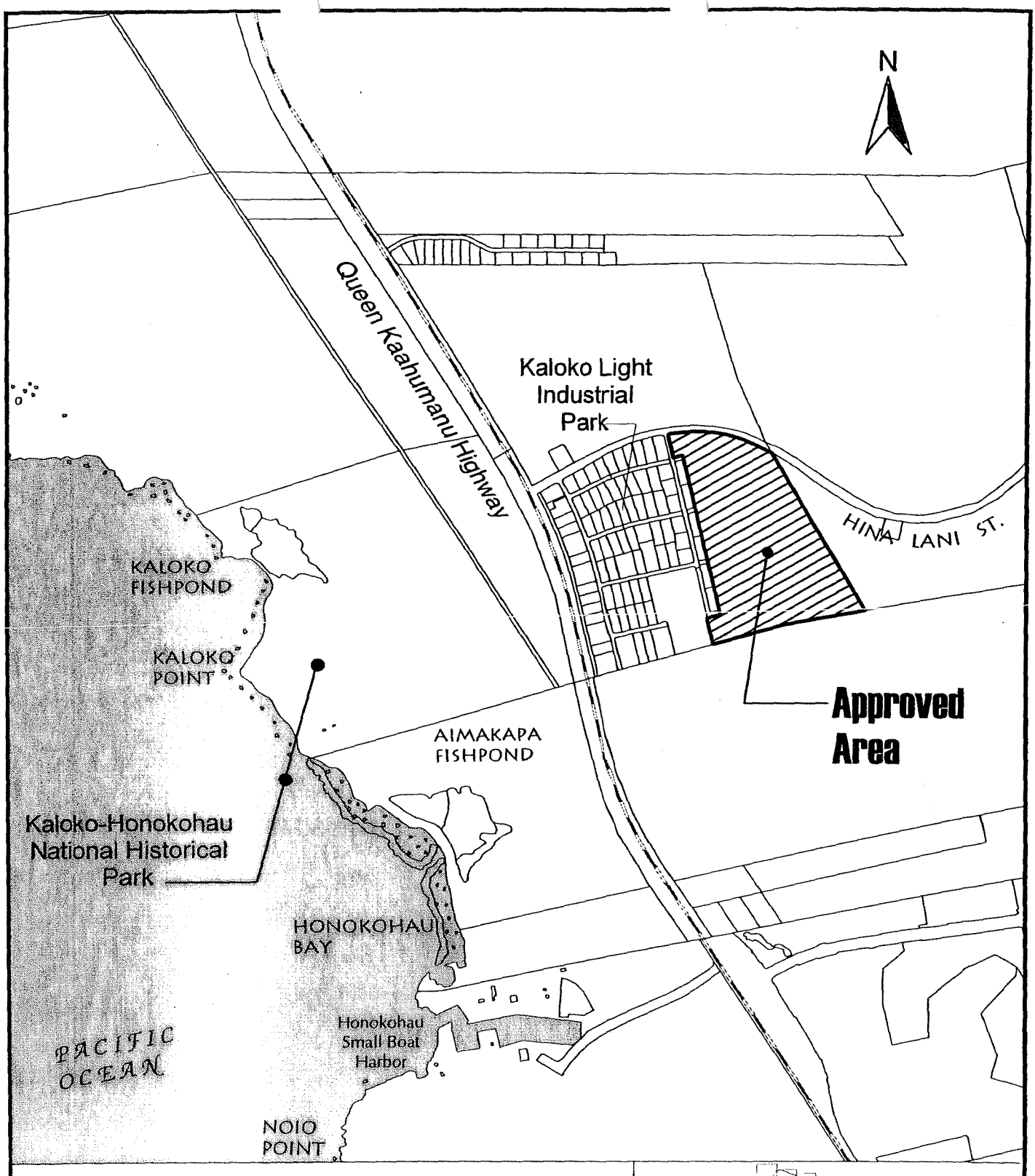
APPROVED AS TO FORM:

_____
Deputy Attorney General

Filed and effective on
February 14, 2002

Certified by:

_____
Executive Officer

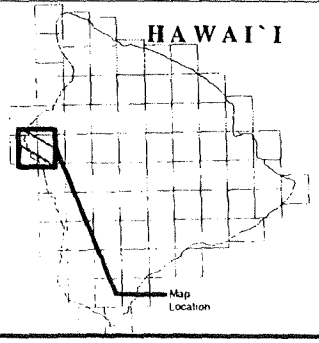


A00-732 TSA INTERNATIONAL, LIMITED

LOCATION MAP

Tax Map Key: 7-3-51: 60
Kaloko, North Kona, Hawaii
Scale: 1" = 2, 000 ft.

EXHIBIT "A"



BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

In the Matter of the Petition of	)	DOCKET NO. A00-732
	)	
TSA CORPORATION	)	CERTIFICATE OF SERVICE
	)	
To Amend the Land Use District Boundary	)	
of Certain Lands Situated at Kaloko, North	)	
Kona, Island of Hawaii, State of Hawaii,	)	
Consisting of Approximately 102.016 Acres,	)	
Tax Map Key: 7-3-51: portion 60, from the	)	
Conservation District to the Urban District	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Proposed 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:

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Hale Auhau
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Honolulu, Hawaii 96813

DATED: Honolulu, Hawaii, this 14th day of February, 2002.

ANTHONY J. H. CHING
Executive Officer