MEMORANDUM

TO: All Parties

FROM: Esther Ueda, Executive Officer
Land Use Commission

SUBJECT: Decision and Order for Land Use Commission Docket No. A89-641 - State of Hawaii, Department of Transportation, Airports Division

January 26, 1990

Attached is an errata sheet for the subject Decision and Order filed on January 9, 1990.
Page 14, Finding 34 of the Decision and Order should read as follows:

34. SASP forecasts substantial increases in aviation activities as follows: total passenger volume at Keahole Airport is forecasted to nearly triple, from 1.48 million enplanements and deplanements in 1985 to 4.16 million in 2005, total airport operations are projected to increase from 93,878 in 1985 to 159,000 in 2005; and cargo and mail volumes are projected to increase from 9,558 tons in 1985 to 25,500 tons in 2005.
BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Petition of

STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION, AIRPORTS DIVISION

To Amend the Conservation Land Use District Boundary into the Urban Land Use District for Approximately 548.16 Acres at Keahole, North Kona, Hawaii, Tax Map Key Nos.: 7-3-43:
Portion of 1, Portion of 2, and Portion of 3

ORDER ADOPTING IN PART AND MODIFYING IN PART THE HEARING OFFICER’S PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW AND DECISION AND ORDER

DOCKET NO. A89-641

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ORDER ADOPTING IN PART AND MODIFYING IN PART THE HEARING OFFICER'S PROPOSED FINDINGS OF FACT,
CONCLUSIONS OF LAW AND DECISION AND ORDER

This matter came on for consideration on December 14, 1989 at the meeting of the Land Use Commission (hereinafter "Commission") of the State of Hawaii held in Honolulu, City and County of Honolulu, State of Hawaii. Appearing for the Petitioner was Lane Ishida; for the Department of Planning, County of Hawaii, was Norman Hayashi; and for the Office of State Planning were Ann Ogata-Deal and Karen Yamamoto. Hearing Officer Benjamin M. Matsubara was not present. No exceptions to the Hearing Officer's report were filed. However, during the Commission’s meeting of December 14, 1989, the County of Hawaii proposed that proposed Condition Number Three of the Hearing Officer’s report be modified to require an additional provision that the implementation of Condition Number Three be coordinated with the Department of Transportation Highways
Division. There were no objections from the Petitioner or the Office of State Planning on the proposed modification to Condition Number Three.

Following closing arguments by the parties, the Commission, after careful review of the Hearing Officer's report and recommendations and the proposed modification to proposed Condition Number Three, the record and files herein, with good cause existing and upon motion duly passed,

HEREBY adopts in part and modifies in part the recommendations of the hearing officer. Accordingly, the Commission hereby adopts the findings of fact, conclusions of law and decision and order as follows:

THE PETITION

This matter arises from a Petition for an amendment to the Hawaii Land Use Commission District Boundaries filed on May 2, 1989, pursuant to Section 205-4 of the Hawaii Revised Statutes, as amended, and Subchapter 6, of the Hawaii Land Use Commission Rules by STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION, AIRPORTS DIVISION, (hereinafter referred to as "Petitioner") to amend the designation of approximately 548.16 acres of land, situate at Keahole, North Kona, Island and County of Hawaii, State of Hawaii, identified as Hawaii Tax Map Key No.: 7-3-43: Portion of Parcel 1, Portion of Parcel 2, and Portion of Parcel 3 (hereinafter referred to as "Property") from the Conservation District to the Urban District.
An Environmental Impact Statement prepared in accordance with Chapter 343, Hawaii Revised Statutes and Chapter 200, Title 11, Administrative Rules, was included with the Petition.

PURPOSE OF PETITION

Petitioner has requested a boundary amendment for the property from Conservation to Urban to accommodate an expansion to the Keahole Airport. The proposed uses of the property, which consists of three separate parcels of land, are as follows: Parcel A is proposed for a future heliport facility, future leases, and reserve space for future airport use, and contains approximately 74.168 acres; Parcel B is proposed for ground transportation facilities such as car rentals and contains approximately 41.345 acres; and Parcel C is proposed for an extension to the existing runway and related taxiways, holding aprons, additional terminal space, parking, and other facilities, and contains approximately 432.647 acres.

PROCEDURAL MATTERS

On June 16, 1989, the Land Use Commission, by filing Findings of Fact, Conclusions of Law and Decision and Order, accepted the Environmental Impact Statement pursuant to Chapter 200 of Title 11, Administrative Rules, and Chapter 15 of Title 15, Administrative Rules, and ordered that the Petition be accepted for filing as of June 1, 1989.

The hearing on the Petition was conducted on October 5, 1989, in Kailua-Kona, Hawaii, pursuant to notice
published on August 25, 1989, in the Hawaii Tribune-Herald and the Honolulu Advertiser, newspapers of general circulation. Petitioner was represented by Lane Ishida, Deputy Attorney General; the County of Hawaii was represented by Duane Kanuha and Norman Hayashi; and the Office of State Planning was represented by Ann Ogata-Deal, Deputy Attorney General, Abe Mitsuda and Karen Yamamoto.

On October 5, 1989, the Hearing Officer, Benjamin M. Matsubara, Esq., duly appointed by the Land Use Commission on September 22, 1989, after considering the Petition for Intervention of Elizabeth Ann Stone filed on September 7, 1989, the objections of Petitioner, and the files and record of this docket, denied the Petition for Intervention.

The Hearing Officer filed Order Denying Petition For Intervention on October 17, 1989.

On October 5, 1989, the Hearing Officer accepted into evidence the written public testimonies of William W. Paty, Chairperson of the Board of Land and Natural Resources, dated June 20, 1989, and Elizabeth Ann Stone, dated July 4, 1989.

The following witnesses presented testimony:

**Petitioner:**

- Robert Chun 
  Engineering Program Manager, State of Hawaii Department of Transportation, Airports Division
- James W. Morrow 
  Principal, Environmental Management Consultant
- Henry J. Rinnert 
  President, Keahole Associates, Inc., Civil Engineer
Joe Ouye  
President, Facility Technics, Architect

Chester Koga  
R. M. Towill Corporation, Project Manager

Roy Tsutsui  
R. M. Towill Corporation, Project Engineer

Donald Maddison  
Principal, Peat, Marwick, Main & Co.

Julian Ng  
Parsons Brenckerhoff Quade & Douglas, Inc., Traffic Engineer

William Barrera  
President, Chiniago, Inc., Archaeologist

Owen Miyamoto  
Airport Administrator, State of Hawaii Department of Transportation, Airports Division

County of Hawaii

Norman Hayashi  
Planning Division Chief, Planning Department

Office of State Planning

Abe Mitsuda  
Chief, Land Use Division

POSITIONS OF THE PARTIES

The County of Hawaii - Approval.

The Office of State Planning - Approval with seven conditions stated as follows:

"1. There shall be no residential construction on any portion of the property subject to noise levels greater than 60 Ldn.

"2. Petitioner shall participate in an air quality monitoring program as specified by the Department of Health.

"3. Petitioner shall monitor the traffic attributable to the development proposed in the petition area at on-site and off-site locations, and shall undertake subsequent mitigative measures that may be required."
"4. Petitioner shall prevent contaminants resulting from construction activities from impacting coastal waters, especially near the Natural Energy Laboratory of Hawaii (NELH) and the Hawaii Ocean Science and Technology (HOST) Park.

"5. Petitioner shall participate in a groundwater and coastal water quality monitoring program with NELH and HOST Park.

"6. Petitioner shall provide wastewater treatment and transmission facilities as may be required by the State Department of Health.

"7. Petitioner shall preserve and protect such archaeological sites as may be required by the State’s Historic Sites Section. Petitioner shall immediately stop work on the impacted area and contact the State’s Historic Sites Section should any archaeological resources, such as artifacts, shell, bones, or charcoal deposits, human burial, or rock or coral alignments, pavings or walls of historic or prehistoric significance be encountered during the development in the petition area."

PROPOSED FINDINGS OF FACTS

The Hearing Officer, having duly considered the record in this docket, the testimony of the witnesses and the evidence introduced herein, makes the following proposed findings of fact:

DESCRIPTION OF THE PROPERTY

1. The Property is located adjacent to the existing Keahole Airport, which is situated approximately seven miles north of Kailua-Kona, makai of the Queen Kaahumanu Highway. Adjacent land uses are as follows: vacant and undeveloped lands are located to the north of the existing Keahole Airport; the Keahole Agricultural Park is located to the east, across the Queen Kaahumanu Highway; the Hawaii Ocean Science and
Technology (HOST) Park facilities are situated to the south; and the Natural Energy Laboratory of Hawaii (NELH) facilities are situated to the west. Further south of Keahole Airport are Urban Districted lands that have been proposed for the Kohanaiki Resort.

2. The Property is comprised of three separate parcels of land, all of which are contiguous to the existing Keahole Airport Urban District. Parcel A, the southernmost parcel, consists of approximately 74.168 acres, and is bounded to the north by Keahole Airport Access Road, to the east by vacant and undeveloped lands, to the south by the HOST Park facilities, and to the west by existing airport facilities. Parcel B, located between Parcels A and B, consists of approximately 41.345 acres, and is bounded to the north and east by vacant and undeveloped lands, and to the west and south by existing airport facilities. Parcel C, the northernmost and largest parcel, consists of approximately 432.647 acres, and is bounded to the north, east and west by vacant and undeveloped lands, and to the south by existing airport facilities.

3. The Property is a portion of the approximately 3,000 acres that were reserved for the Keahole Airport, which officially opened in 1970. Petitioner indicates that of the lands reserved for the Keahole Airport, approximately 421 acres to the south have been leased to the HOST Park, and approximately 322 acres to the west have been leased to the NELH.
4. The United States Department of Agriculture, Soil Conservation Service's Soil Survey of the Island of Hawaii indicates that the Property consist of A'a (rLV) and Pahoehoe (rLW) lava flows.

5. According to the Land Study Bureau Detailed Land Classification Report for the Island of Hawaii, the Property is designated Class E, which are lands that are very poor and least suited for agriculture.

6. The average slope of the entire airport property is less than five percent.

7. Elevation ranges from approximately 120 feet above mean sea level at the Queen Kaahumanu Highway to approximately 43 feet above mean sea level at the existing airport runway.

8. The climate at this section of North Kona is considered semi-arid. The mean annual rainfall is less than 20 inches. The average temperature at Keahole Airport is approximately 78 degrees Fahrenheit.

9. According to the Flood Insurance Rate Map (FIRM), the Property is within Zone "X" (areas determined to be outside the 500-year flood plain).

10. Petitioner indicates that the Keahole area, as well as the entire Island of Hawaii, is designated within Earthquake Zone 3 (on a scale of 0-3).
Existing Airport Facilities

11. The Keahole Airport began its operations in 1970. The existing airfield consists of a single runway (6,500 feet long by 150 feet wide) and parallel taxiway system oriented in a north-south direction. Use of the runway is primarily by interisland and local commuter aircrafts.

12. Existing airport support facilities include the main terminal complex, maintenance buildings, air cargo building, vehicle shed, general aviation T-hangers, air traffic control tower, generator building, crash/fire/rescue (CFR) building, restaurant facilities, parking areas, and service facilities.

DESCRIPTION OF PROPOSED DEVELOPMENT

13. Petitioner is requesting the reclassification to accommodate a proposed expansion of the Keahole Airport facilities to meet projected aviation demands and to improve airport operational efficiency as recommended in the Keahole Airport Master Plan (December 1987). Said master plan represents a series of facility improvements designed to accommodate the anticipated increase in passenger and aircraft operations to the year 2005 for the entire airport district, including the Property.

14. The major improvements proposed for the airfield consist of a 4,500-foot runway extension, additional taxiways, larger holding bays, and widened runway shoulders. With the
proposed extension, the total length of the runway will be 11,000 feet.

15. The proposed improvements are based on projected aviation demands and available aircraft capacity through the year 2005. A second runway will not be necessary until after 2005. The runway extension will generally be within Parcel C.

16. Major terminal facilities proposed include an expanded interisland terminal, a new overseas terminal, expanded air cargo/mail facilities, new general aviation facilities, air taxi-commuter facilities, new heliport, expanded parking facilities, car rental area, airport maintenance area, fuel storage, and lots for fixed based operators. These improvements are proposed within the Property and the existing Urban District.

17. The proposed improvements will be developed in three phases: Phase I by 1990, Phase II by 1995, and Phase III by 2005.

18. Phase I will be developed in two increments. The first increment will include three new terminal gates and terminal support facilities. The second increment involves improvements to the airfield, including the extension of the runway to 11,000 feet.

19. Phase II will consist of further expansion of the terminal and terminal support facilities, including roadway improvements, general aviation area and development of a new heliport.

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20. Phase III includes further terminal expansion, employee parking facilities, and air cargo facilities.

21. Petitioner indicates that the proposed fuel storage area, originally proposed within the Property, is being relocated off the Property closer to Queen Kaahumanu Highway within the Conservation District. Petitioner proposes to obtain a Conservation District Use Permit (CDUP) from the Board of Land and Natural Resources to allow this facility.

22. Petitioner also indicates that a new proposed use, a crash and fire rescue (CFR) and training facility, which was not anticipated during the development of the master plan, is being sited off the Property north of Parcel B within the Conservation District. Petitioner proposes to obtain a CDUP for this additional use.

23. Petitioner believes that the fuel storage and CFR facilities are better sited away from the Property in the Conservation District due to the nature of these facilities.

24. The original estimated total cost of the development was approximately $169.59 million (in 1987 dollars). This included general site work ($20.29 million), airfield ($48.75 million), terminal ($76.94 million), roadway ($5.54 million), and utilities ($18.07 million). The original estimated development costs for Phases I, II and III were $97.77 million, $39.46 million and $32.36 million, respectively.

   However, testimony presented by Henry J. Rinnert indicates that based on the updated master plan entitled
Keahole Airport Improvements Development Plan, May 1989, the projected cost to develop the proposed project is approximately $238,500,000. (This includes a 15% contingency of approximately $31,101,000.)

In addition, Petitioner's Exhibit 21 presents revised plans and projected costs due to rescheduling the proposed Heliport Increment I from Phase II to Phase I, thus adding approximately $1,488,000 to Phase I costs for a new total of $136,379,000. The estimated costs for Phases II and III are $35,947,000 and $35,073,000, respectively.

25. The above cost projection excludes the cost to redevelop the existing terminal and support infrastructure estimated to be approximately $80,394,300.

PETITIONER'S FINANCIAL CAPABILITY TO UNDERTAKE THE PROPOSED DEVELOPMENT

26. Petitioner indicates that approximately $236 million has been appropriated for Airport System Capital Improvement Program projects for Fiscal Year (FY) 1987-88 and FY 1988-89. Of this amount approximately $13.35 million has been allocated to the Keahole Airport Facilities and Services. Petitioner indicates that in order for the State to undertake all of the capital projects currently being considered for Keahole Airport, it will need to finance approximately $157 million from the proceeds of the sale of Airport System Revenue Bonds and internally generated cash flow.
In addition, Petitioner indicates that the Federal Aviation Administration could assist in funding the proposed project.

STATE AND COUNTY PLANS AND PROGRAMS

27. The Property is designated within the State Land Use Conservation District.

28. The Property is designated for "industrial use" on the County of Hawaii Land Use Pattern Allocation Guide (LUPAG) Map. Petitioner indicates that the proposed expansion of the Keahole Airport is consistent with the overall objectives of the Hawaii County General Plan.

29. Petitioner also indicates that the existing Keahole Airport is zoned "General Industrial" by the County of Hawaii. The lands on which the proposed expansion of the Keahole Airport is situated are zoned "Open". Petitioner will seek a zoning amendment from "Open" to "General Industrial" before proceeding with construction of the airport expansion.

30. The Kona Regional Plan Land Use Concept Map generally delineates the Keahole Airport area for industrial uses.

31. The Property is designated within the County of Hawaii Special Management Area.

NEED FOR THE PROPOSED PROJECT

32. Petitioner indicates that the proposed expansion project is needed to accommodate forecasted increases in
aviation demands as well as to correct present operational deficiencies.

33. The Statewide Airport System Plan (SASP), developed to meet the projected aviation demands and to allow unrestricted overseas operations, indicates that aviation demand at the airport will continue to grow as a result of the increase in tourists to Hawaii and general economic growth of the State.

34. SASP forecasts substantial increases in aviation activities as follows: total passenger volume at Keahole Airport is forecasted to nearly triple, from 1.48 million enplanements and deplanements in 1985 to 41.16 million in 2005, total airport operations are projected to increase from 93,878 in 1985 to 159,000 in 2005; and cargo and mail volumes are projected to increase from 9,558 tons in 1985 to 25,500 tons in 2005.

35. SASP, which was updated in 1986, proposes to separate terminal facilities for air carrier operations from the smaller commuter, general aviation, and heliport facilities in order to eliminate aircraft mix on the ramp.

36. Owen Miyamoto, administrator of the Airports Division, Department of Transportation, State of Hawaii, indicates that the proposed extension of the existing runway to 11,000 feet will allow large aircraft such as the DC-10 to operate at maximum take-off weight. This means that the
aircraft may carry as many passengers as the design allows as well as traveling its maximum distance.

Petitioner believes there is a demand for improved airport facilities to accommodate wide body long range aircraft.

**IMPACTS UPON RESOURCES OF THE AREA**

**Aural Quality**

37. Petitioner included in its Petition a Noise Compatibility Program, prepared pursuant to Federal Aviation Regulations, FAR 150 to develop airport compatible land use and transportation plans for consideration and adoption by local authorities.

38. Petitioner states that due to the large size of the airport property, its location adjacent to the ocean, and the vacant and undeveloped nature of most of the lands in the vicinity, aircraft noise impacts on the surrounding environment have not been significant.

39. Petitioner indicates that eight complaints due to noise exposure during the 1985 fiscal year were received at the Keahole Airport Office as a result of overflights of the Kona Palisades Subdivision. The Keahole Airport Tower responds to approximately two to three complaints per month generally due to overflights.

40. Petitioner indicates that there are no existing incompatible land uses located in areas affected by 60 day-night sound level (Ldn) or higher. The nearest residential developments are the Keahole Agricultural Park, containing
three residences, and the Kona Palisades Subdivision. These residences are outside of the 60 Ldn or greater contours.

41. Petitioner indicates that other proposed developments in the vicinity include the Hawaii Ocean Science and Technology (HOST) Park, the O’oma II Resort and the Kohanaiki Resort. The HOST Park is planned for a high technology aquaculture park with related facilities which Petitioner believes are compatible with the airport. The proposed O’oma II and Kohanaiki resorts have a potential for incompatibility because they include residential development. Portions of the proposed resort areas fall within the Ldn 60 or greater contours.

42. The proposed O’oma II Resort development to the south has a significant amount of land within the Ldn 60 or greater contours. Some of the land will be used for residential development which is an incompatible land use because of the high noise levels generated by the aircraft.

43. Petitioner proposes four noise abatement measures for noise impacts that may result from the proposed expansion project as follows:

1. Build high-speed exit taxiways to reduce the need for more power sometimes required to exit via perpendicular taxiways.

2. Changing flight patterns by routing aircraft over less sensitive areas can reduce the noise exposure. Air carrier flights from Hilo are sometimes routed between the Kona Palisades and the airport. Aircraft generally follow the informal noise abatement procedures, but aircraft
do occasionally fly too close to the subdivision. Airlines will recommend to their pilots to use the downwind approach over the ocean provided weather conditions permit and flight patterns do not affect the FAA’s ability to properly sequence aircraft in and out of Keahole Airport.

3. Enforce prescribed flight track use. Adherence to the prevalent flight tracks would result in the least number of people being exposed to high levels of aircraft noise. Some deviations occur on departure of the air tour aircraft and result in noise complaints. The State, FAA and aircraft operators have developed informal procedures for the air tour aircraft. The aircraft will have a runway heading long enough to reach an altitude of 1,500 feet by the time they are abeam the Air Traffic Control Tower.

4. Limit aircraft types to Stage 3 aircraft which are quiet technology aircraft.

44. Petitioner indicates that there are no remedial measures that can help to improve the compatibility of existing incompatible land uses. However, Petitioner’s noise consultant recommends preventive measures to help reduce the probability of incompatible land uses that include the following:

1. Comprehensive planning and urban growth management to maintain compatibility with the airport and its environs need to be conducted. Noise sensitive land uses (e.g., schools, churches, residential developments) in areas currently and predicted at Ldn 60 or greater should be prohibited.

However, should such uses be permitted, every effort should be made to ensure that effective noise mitigation measures are employed and avigation easements are required. There should also be a noise disclosure for developments within the 55-60 Ldn impacted areas.

To mitigate impacts to noise-sensitive uses, soundproofing of noise-sensitive structure
exposed to aircraft noise levels of Ldn 60 or greater should be a requirement. This requirement can be enforced through amendment of the Building Code. Single family or manufactured housing should not be permitted in areas exposed to noise levels above Ldn 70, regardless of the degree of soundproofing.

New or redeveloped structures exposed to Ldn 60 or greater should require the granting of an avigation easement. The easement should be shown on subdivision plat maps and enforced when requesting rezoning, subdivision approval or a building permit.

2. Zoning changes to encourage airport-compatible development should be implemented in areas exposed to high levels of aircraft noise. Building height limitations and restricted land uses based on aircraft safety criteria and aircraft noise exposure should be adopted as a zoning overlay.

3. Some landowners pay taxes on open space land, such as agriculture, at a rate computed for "higher or better" use. Reduction of taxes for landowners within such areas of the airport environs would provide them an incentive to retain ownership of these properties rather than selling for urban development.

4. The Federal Housing Administration (FHA) mortgage insurance policies and practices should continue. Mortgage insurance for areas exposed to Ldn 75 is not normally provided. Adequate soundproofing to achieve an interior noise level of 45 Ldn in areas above Ldn 65 is recommended.

45. Petitioner acknowledges that aircraft noise levels will increase with the projected increase in aircraft operations, and that noise resulting from single event overflights of nearby residential developments is probable. Petitioner indicates that the proposed expansion project will not cause significant aircraft noise impact to existing land uses or to the community.
46. In regards to potential noise impacts from construction activities, Petitioner believes that noise-sensitive facilities will not be adversely affected because the Keahole Airport is not close enough to noise sensitive areas to create disturbances due to outdoor construction.

Air Quality

47. Petitioner's air quality consultant prepared an air quality study for the proposed airport expansion project. The air quality consultant concludes that the Keahole Airport and its environs are a significant contributor of carbon monoxide, nitrogen oxides, hydrocarbons, and to a lesser extent, particulate matter and sulfur dioxide. Emissions of these pollutants are projected to increase over the 1985-2005 period as a result of increases in aircraft operations and the ground vehicle activity that is generated by those operations.

48. The consultant adds, however, that ambient concentrations of these pollutants are projected to remain in compliance with federal and state air quality standards.

49. The consultant indicates that the unique non-tradewind, diurnal wind pattern can result in build-up of pollutant concentrations in the Kona area. Blockage of normal tradewinds by the two large mountain masses east of Kona reduces natural ventilation, and can result in a build-up of air pollutants in the area. Thus, due to the potential for
pollutant build-ups, the air quality consultant recommends close monitoring and periodic reevaluation of pollutant concentrations as future developments arise in the Kona area.

Recreational, Scenic and Cultural Resources

50. Petitioner indicates that the regional visual resource of the area, as viewed from the Queen Kaahumanu Highway, is a panoramic view of the North Kona coastline. Views from the existing Keahole Airport include a panoramic view of Hualalai to the east. Petitioner also indicates that the airport facilities stand out in high contrast to the lava fields due to the open nature of the area's landscape.

51. According to Petitioner, the existing ground transportation service area contains very little landscaping. This area is enclosed by a chain link fence with cars parked along the interior. Structures contain a mix of wooden and metal buildings painted in a variety of colors. Other existing areas with little landscaping include the entrance to the airport at Queen Kaahumanu Highway, the airport access road and the foot of the access road.

In addition, protective barriers consisting of rock walls and dense landscaping are currently being used to reduce the effects of jet blasts.

52. Petitioner proposes landscape improvements in order to create a more pleasing visual environment for users of the airport and related facilities. Enhancement is proposed at
the entrance to the airport, along the airport access road including the medial strip and the area at the foot of the airport access road; the new parking lot should follow the same landscaping concept used for the existing parking lot; and the rock walls and internal landscaping as protective barriers from jet blast should be incorporated into the landscaping plan.

53. To mitigate the impact of future improvements, Petitioner intends to incorporate an overall "tropical village" design theme.

Coastal/Aquatic Resources

54. Petitioner identifies the Keahole Airport as being within the Special Management Area, but believes that the proposed expansion of the Keahole Airport will not directly impact the coastal resources of the area.

The Department of Land and Natural Resources (DLNR) notes that the project site is buffered from the marine environment by the shoreline HOST and NELH facilities. DLNR recommends that precautions be taken during the extensive construction activities proposed to prevent contaminants from impacting coastal waters, especially near the HOST and NELH facilities which depend upon pristine marine water for their operation.

Archaeological/Historic Resources

55. Petitioner's archaeological consultant prepared an archaeological survey of the Property in December of 1987. However, portions of the project such as Service Road K, the
sewage treatment plant access road, the fuel storage and expansion area, and the crash and fire rescue/training facility were not included in the survey.

56. The archaeological survey identifies six sites discovered in the southeast portion of the Property. The consultant indicates that three of the sites lacked associated cultural materials and are significant only for their information content. Information from these three sites have been recorded and documented and, as such, these sites are no longer considered significant. The three remaining significant sites consisted of habitation caves and a large lava tube with four petroglyphs near one of the entrances. Petitioner indicates that these three remaining significant sites will undergo archaeological data recovery, as well as excavation and/or mapping.

57. According to the archaeologist, none of the sites warranted preservation according to the Hawaii and National Registers of Historic Places.

58. The Office of State Planning points out that the Department of Transportation (DOT) has agreed to take steps to ensure the continuing preservation of the small petroglyph field and the remnant of the Mamalahoa Trail (the King's Highway) which are immediately adjacent to the project area. In addition, DLNR recommends that due to the movement of heavy equipment in the area, DOT should include provisions in
construction documents to protect these sites with appropriate barriers even though the expansion areas do not directly affect these sites.

Nearshore and Marine Environment

59. The coastal water in the area are considered pristine and are designated Class AA by the State Department of Health.

60. The DLNR indicates that the Keahole Airport is buffered from the marine environment by the HOST and NELH facilities and recommends that precautions be taken during construction activities to prevent contaminants from impacting coastal waters, especially near the HOST Park and NELH facilities which depend upon pristine marine water for their operations.

Groundwater Resources

61. Petitioner indicates that the Property is not classified as a groundwater recharge area.

Flora and Fauna

62. Petitioner indicates that a botanical consultant conducted a survey of the Property in August 1987. The consultant indicates that none of the plant species found on the site are considered rare, threatened or endangered and the proposed project poses no threat to these species.

63. A survey of terrestrial vertebrate fauna of the Property was also conducted in August 1987. The fauna
consultant reports that there were no threatened or endangered vertebrate animal species observed on the Property.

Agricultural Resources

64. The Property is not in any agricultural use. In addition, the Property is not classified on the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawaii (ALISH) system.

ADEQUACY OF PUBLIC SERVICES AND FACILITIES

Highway and Roadway Facilities

65. Petitioner's consultant prepared a traffic assessment for the proposed project. The traffic consultant indicates that the two-lane Queen Kaahumanu Highway is the main ground transportation link between Kawaihae and Kailua-Kona and identifies the Keahole Airport Access Road (hereinafter referred to as "Airport Access Road") as providing the only ground access into the airport. The Queen Kaahumanu Highway forms a T-intersection (hereinafter referred to as "T-intersection") with the Airport Access Road, with the latter being the stem of the "T" to the west.

66. According to the traffic consultant, existing peak day, peak hour traffic volumes on the Queen Kaahumanu Highway (hereinafter referred to as "Highway") are well under capacity. The Highway operates under Level of Service (LOS) B conditions with volume-to-capacity (V/C) ratio of 0.22 north of the T-intersection, and under LOS D conditions with V/C ratio
of 0.36 south of the T-intersection. The northbound left turn from the Highway operates at LOS A, while right turns from the airport access road operate at LOS A and the left turns at LOS D.

67. The traffic consultant indicates that for the current average day peak hour traffic conditions, the Highway experiences LOS B conditions north of the T-intersection with the traffic volume at 19% of capacity, and LOS C conditions south of the T-intersection with the traffic volume at 30% of capacity. Northbound left turns on the Highway operate at LOS A. From the Airport Access Road, right turns operate at LOS A while the left turns operate at LOS C. In both the peak day and the average day, peak hours, the airport access road operates at LOS C, with volumes approximately 25% of capacity.

68. The consultant projects that traffic on the Airport Access Road will increase in proportion to the increase in the number of air passengers served by the airport. The 4.16 million passengers projected for year 2005, when compared with the 1.49 million passengers served in 1985, indicates an average growth rate of just over five percent per year. Highway and access road traffic was estimated to increase at five percent per year for each year between 1990 and 2005.

69. The traffic consultant indicates that the increased traffic on the Highway will result in lowered levels of service. Conditions south of the airport, if the projected
volumes are realized, may result in LOS E. North of the airport, the Highway is projected to operate at LOS D. Peak day, peak hour volumes are estimated to be 86 percent of the Highway’s capacity south of, and 53 percent north of, the airport. With build-out of the NELH and HOST Park facilities and development of the Kohanaiki Resort, highway capacity can be expected to be further impacted.

70. The traffic consultant further indicates that at the unsignalized T-intersection, year 2005 peak day, peak hour traffic volumes would exceed the intersection’s capacity. Controlled movements, such as turns onto the Highway and the left turn from the Highway toward the airport, would be at LOS F. By 2005, the average day, peak hour volume for the northbound left turn from the Highway would operate at LOS D. Right turns from the airport would be at LOS E while the left turn volumes would exceed capacity (i.e., LOS F).

71. According to the traffic consultant, the Keahole Airport Master Plan envisions a divided, four-lane access road to the airport. A new 24-foot wide roadway will be constructed parallel to the existing 24-foot access road, with a 24-foot median between roadways. Separate left and right turn lanes will be provided for eastbound traffic approaching the Highway intersection. No other roadway improvements were assumed for the identification of traffic impacts.

72. As mitigation measures, the traffic consultant recommends that the widening of the Highway to a four-lane
roadway or the addition of one lane with the provision of alternating passing zones of minimum one-mile lengths are two possible measures to improve future levels of service. In addition, signalization of the T-intersection would provide adequate capacity for the access road traffic.

73. The traffic consultant's recommendations include the following:

1. Traffic signals should be installed at the intersection of the airport access road and Queen Kaahumanu Highway prior to the summer of 1994.

2. The widening of the 2-lane access road to a 4-lane divided roadway should occur before year 2004.

74. Petitioner's traffic consultant, Julian Ng, indicates that alternatives to signalizing the T-intersection may be through grade separation methods such as an interchange or by restriping the Highway to add a left-turn acceleration lane toward Kawaihae. The consultant indicates that a portion of the Highway between Keahole Airport and Kailua-Kona can be described as a collector road rather than a high speed regional highway due to various accesses on both sides of the Highway and suggests that signalization is more appropriate.

75. In addition, Petitioner points out that circulation roadways and parking within the airport are inadequate to serve the proposed expansion and recommends the following measures:

1. The peripheral road between the public parking area and the proposed employee parking area
should be increased from two lanes to four lanes. The peripheral road fronting the terminal should be widened to five lanes. The five lanes should be separated by an island into three and two-lane roadways. The two lane segment adjacent to the public parking should be designated for bus, taxi and limousine parking, and baggage truck loading zone and through traffic.

2. An additional 540+ public parking spaces should be added adjacent to the existing public parking. A new employee parking area has been sited to the east of the public parking. A total of 290 employee parking stalls should be provided.

Water Service

76. Source water is presently obtained from four wells and an underground shaft south in the Kahaluu area. Petitioner indicates that the proposed airport expansion will require peak hour demand rates of approximately 1.4 million gallons per day (mgd) of potable water. As airport flow rates fluctuate greatly during the day, peak to average flow ratios can be as large as a factor of 10.

The existing 12-inch line servicing the airport is adequate to carry the projected flows during peak or fire conditions and will be extended to cover the new terminal facilities. Additional 8 and 12-inch water lines will be used to serve the remainder of the proposed development parcels. There will be continued use of the existing off-site transmission and storage facilities, maintained by the Hawaii County Department of Water Supply.

77. Petitioner's Environmental Impact Statement (EIS) indicates that although the existing water transmission links
along the Queen Kaahumanu Highway are adequate, some source water development may be required. The demand for source development is shared by all projects planned for the northern Kona area. The Hawaii County Water Master Plan, prepared in 1980, indicates an abundance of groundwater.

78. The County of Hawaii Department of Water Supply (DWS) indicates that: 1) Petitioner should address in detail the existing and projected maximum daily and peak hour water demand requirements for the existing and proposed expansion facilities; 2) a time schedule for water use should be included; 3) the existing water transmission system along Queen Kaahumanu Highway should be improved to provide additional flow and storage capacities to accommodate the growing needs of the area; and, 4) additional source facilities should be developed.

79. The DWS further comments that source development is an ongoing endeavor by the DWS and DLNR. In light of the State's participation in source development, the DWS has no objections to the subject request. However, subject to review of water demand figures and scheduling, water service for the expansion facilities needs to be coordinated with the off-site water system improvements along Queen Kaahumanu Highway.

80. The State Department of Agriculture (DOA) indicates that recurring incidents of low water pressure have been reported at the Keahole Agricultural Park, adversely affecting many farming operations. DOA further states that
expanded use of the same water source may increase existing
detrimental effects on present Keahole Agricultural Park users.

Wastewater Treatment and Disposal

81. Petitioner indicates that the peak sewage
generation rate is estimated at about 1.2 mgd. Petitioner
proposes to develop a gravity system to collect sewage from all
airport facilities; a station to convey sewage from the
terminal area to the treatment plant located to the north; and,
a sewage treatment plant designed for secondary treatment.
Most of the effluent will be disposed of through irrigation of
airport landscaping with injection wells approximately 30 feet
deep as a backup system.

82. Petitioner’s Environmental Impact Statement
indicates that since the new sewage system will be self
contained, no impacts will result on local municipal systems.
The treated effluent will be diluted with the groundwater and
be naturally filtered and purified prior to eventual migration
to the ocean. No significant impacts are anticipated to the
class AA coastal waters.

In addition, the EIS points out that without proper
maintenance of the treatment plant, saturation of the
underlying basalt may occur and some odors will be generated.
Therefore, proper maintenance of the treatment plant is
necessary to insure no odor or injection well clogging problem.

83. Petitioner’s proposed mitigation measures are
summarized as follows:
1. Effluent spray contact with humans can be minimized by providing sufficient landscaped buffer zones that use potable water.

2. A program of groundwater monitoring and coastal water quality may be executed prior to sewage treatment plant development to ensure compliance with applicable water quality standards and to establish baseline data on water quality.

84. The State Department of Health (DOH) states that it concurs with the use of wastewater treatment works for the airport facilities. DOH requests that all technical details should be submitted to them for approval prior to construction and should be in conformance with Chapter 62, Wastewater Systems, Administrative Rules, Title 11, effective December 10, 1988.

Drainage

85. Petitioner indicates that the existing drainage system at Keahole Airport performs satisfactorily as a result of favorable geologic characteristics. Layers of basalt lava rock cover most of the area, making for excellent infiltration and subsurface flow conditions. The present system of dry wells, swales, and culverts is planned to be expanded as more areas are developed. There is no municipal drainage system in the area.

86. Petitioner indicates that there are no defined waterways of any kind in the area which will be disrupted by the proposed expansion. Collected runoff will be disposed of in deep pits. The airfield and terminal improvements will
significantly increase the amount of impervious area thereby increasing the amount of runoff.

87. Petitioner believes that adequate drainage is available in the surrounding terrain and that the increased runoff generated from the airport facilities will be accommodated resulting in no impacts on adjacent developments (HOST Park and NELH).

88. Petitioner proposes to develop dry wells along with a collection system for the disposal of on-site generated runoff. The quantities of runoff disposed by these new dry wells are estimated to be 10 cubic feet per second (cfs) per dry well. Runoff entering from off-site areas will be diverted around the development, if necessary, by perimeter swales. The terminal and airfield drainage facilities will be designed to accommodate 5-year storm intensities. Other measures proposed include the preparation of guidelines for the general safety of the public with respect to the various drainage facilities.

Crash, Fire, Rescue Facilities and Medical Services

89. Petitioner indicates that the crash, fire, rescue facilities satisfy the requirements for an INDEX C airport. The existing facilities have sufficient space to support additional rescue personnel and equipment for the expanded airport.

90. Petitioner also indicates that paramedical services are provided by the crash, fire, rescue unit.
Ambulances are dispatched from Fire Station No. 7, located in Kailua. The closest hospital is the Kona Hospital which is located in Kealakekua Bay.

**Schools**

91. Petitioner does not address the potential impact of the proposed project on the schools of the area.

The State Department of Education had no comments to offer regarding the proposed project.

**Police Service**

92. Petitioner indicates that there will be a need for the Keahole Airport to contract additional police officers and security guards for the proposed expansion. In addition, the airlines will require more security screening guards at the departure gates.

**Electricity and Telephone Service**

93. Petitioner indicates that the off-site power system is maintained by the Hawaii Electric Light Company (HELCO). A substation, located at the intersection of the Airport Access Road and Queen Kaahumanu Highway, will be used to provide electrical power for the expanded airport facilities. Source transmission is via a HELCO 69KV overhead line along the Queen Kaahumanu Highway. The current capacity of the HELCO system is 127 megawatt (MW) with peak demands reaching 102MW. Petitioner indicates that no other significant impacts are anticipated.
Solid Waste Disposal

94. Petitioner indicates that solid waste collection and disposal at the Kealakehe Sanitary Landfill is currently contracted with a private firm. Petitioner indicates that the volume of solid waste is projected to triple with the development of the proposed facilities.

ECONOMIC AND SOCIAL IMPACTS

95. Petitioner addresses the potential impact of the proposed project on three areas of the socio-economic environment: 1) human settlement patterns; 2) population characteristics, and 3) the economy. Petitioner indicates that residential development in the vicinity of the airport has been limited since the development of the airport in 1970. The most recent development was the Keahole Agricultural Park which consists of 2,608 acres divided into 5-acre and 15-acre lots. The construction of a single-family residence by each lessee is allowed in the Agricultural Park.

96. Petitioner indicates that the next closest area of residential development is the Kona Palisades Subdivision located east of the Queen Kaahumanu Highway. The closest home currently to the Keahole Airport Terminal Building is approximately 1.8 miles away. Other built up areas to the south include the Kaloko Industrial Park and the Honokohau Harbor which are 3.4 miles and 3.9 miles, respectively, away from the airport.
97. In terms of population characteristics, Petitioner anticipates that population growth for the area will indirectly increase because of direct and indirect employment opportunities created by the expansion of the airport. Petitioner cites the 1985 Department of Planning and Economic Development State Data Book which shows that the South Kohala district experienced a 199.5 percent increase in population between 1960 and 1980, while the North Kona district experienced a 212.2 percent increase in population between 1960 and 1980. As a mitigative measure, Petitioner indicates that additional residential housing may be needed to accommodate this expected growth in population.

Presently, the State Housing Finance and Development Corporation is currently pursuing a 3,900-unit planned community in the Kealakehe ahupuaa, located approximately three miles south of Keahole Airport.

98. In terms of the economy, Petitioner indicates that the expansion of the Keahole Airport will create a variety of jobs. Short-term construction employment and indirect construction related employment will add to the island’s economy during the course of build-out and an estimated 2,053 direct and 3,592 indirect construction-related jobs will be generated. More long-term employment for airport-related and airport-support facilities will be generated. More visitors are expected because the airport will be able to accommodate
additional flights. The attraction of more visitors will also result in added employment in the visitor industry.

CONTIGUITY OF THE PROPOSED RECLASSIFICATION

99. The three parcels that comprise the Property are all contiguous to the existing Keahole Airport Urban District. Most of the remaining sides of the three parcels abut the Conservation District, as do much of the lands north and east of the Property.

CONFORMANCE TO HAWAII STATE PLAN

100. The proposed project is generally consistent with the objectives and policies of the Hawaii State Plan as follows:

226-17(b) "To achieve the transportation objectives, it shall be the policy of this State to:

"(6) Encourage Transportation systems that serve to accommodate present and future development needs of communities.

"(7) Encourage a variety of carriers to offer increased opportunities and advantages to inter-island movement of people and goods.

"(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs."

101. The proposed reclassification is also in conformance to the objectives and policies outlined in the State Transportation Functional Plan for the Statewide Airport System as follows:

"Objective B - Develop and update airport master plans which serve statewide needs relating to the efficient,
safe, and convenient movement of people and goods in support of planned growth objectives.

Policy B(1) - Plan and develop airfields and surrounding land use in coordination with the counties to assure safety, efficiency and economy in air transportation.

Implementing Action B(1)(a) - Update airfield master plans and land use maps for the surrounding areas to optimize airfield use for the projected air traffic and assure compatible surrounding land use with airport operations.

Implementing Action B(1)(f) - Operate and maintain existing airport facilities of the State Airport System in a safe, economical and efficient manner for the level of activity and type of operation of each airport.

Policy B(2) - Plan and develop new or additional passenger facilities to effectively accommodate future aviation demands, in keeping with sound fiscal policies and environmental considerations.

Implementing Action B(2)(d) - Plan and develop additional passenger terminal facilities at other state airports including aircraft parking aprons, terminal buildings, public parking facilities, highway access and service support facilities.

CONFORMANCE WITH THE STATE LAND USE COMMISSION RULES

102. The proposed reclassification is generally consistent with the standards for determining "U" Urban District boundaries as outlined as follows:

"(1) It shall include lands characterized by "city-like" concentrations of people, structures, streets, urban level of services and other related land uses;

"(2) It shall take into consideration the following specific factors:
(A) Proximity to centers of trading and employment except where the development would generate new centers of trading and employment;

(B) Substantiation of economic feasibility by the petitioner;

(C) Proximity to basic services such as sewers, transportation systems, water, sanitation, schools, parks, and police and fire protection; and

(D) Sufficient reserve areas for urban growth in appropriate locations based on a ten-year projection;

"(3) It shall include lands with satisfactory topography and drainage and reasonably free from the danger of floods, tsunami, unstable soil conditions, and other adverse environmental effects;

"(4) In determining urban growth for the next ten years, or in amending the boundary, land contiguous with existing urban areas shall be given more consideration than non-contiguous land, and particularly when indicated for future urban use on state or county general plans;

"(5) It shall include lands in appropriate locations for new urban concentrations and shall give consideration to areas of urban growth as shown on the state and county general plans;

"(6) It may include lands which do not conform to the standards in paragraphs (1) to (5):

(A) When surrounded by or adjacent to existing urban development; and

(B) Only when those lands represent a minor portion of this district;

"(7) It shall not include lands, the urbanization of which will contribute toward scattered spot urban development, necessitating unreasonable investment in public infrastructure or support services;
"(8) It may include lands with a general slope of twenty percent of more which do not provide open space amenities or scenic values if the commission finds that those lands are desirable and suitable for urban purposes and that official design and construction controls are adequate to protect the public health, welfare and safety, and the public’s interests in the aesthetic quality of the landscape."

CONFORMANCE TO COASTAL ZONE POLICIES AND OBJECTIVES

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

CONCLUSION OF LAW

Pursuant to Chapter 205, Hawaii Revised Statutes, as amended, and the Commission Rules, the Commission finds upon the preponderance of evidence that the reclassification of the Property, consisting of approximately 548.16 acres of land situate at Keahole, North Kona, Island and County of Hawaii, State of Hawaii, from the Conservation District to the Urban District and an amendment to the district boundary accordingly, subject to the conditions in the Order, is reasonable and non-violative of Section 205-2 of the Hawaii Revised Statutes, as amended.

ORDER

IT IS HEREBY ORDERED:

That the Property which is the subject of this Petition Docket No. A89-641 by State of Hawaii, Department of Transportation, Airports Division, consisting of approximately
548.16 acres of land situate at Keahole, North Kona, Island and County of Hawaii, State of Hawaii, identified as Hawaii Tax Map Key Number: 7-4-03: portion of 1, portion of 2, and portion of 3, and approximately identified on Exhibit A, attached hereto and incorporated by reference herein, shall be and hereby is reclassified from the Conservation District to the Urban District and the district boundaries are amended accordingly, subject to the following conditions:

1. There shall be no residential construction on any portion of the property subject to noise levels greater than 60 Ldn.

2. Petitioner shall participate in an air quality monitoring program as specified by the Department of Health.

3. Petitioner shall monitor the vehicular traffic attributable to the development proposed in the petition area at on-site and off-site locations, and shall undertake subsequent mitigative measures that may be required in coordination with the Department of Transportation, Highways Division.

4. Petitioner shall prevent contaminants resulting from construction activities from impacting coastal waters, especially near the Natural Energy Laboratory of Hawaii (NELH) and the Hawaii Ocean Science and Technology (HOST) Park.

5. Petitioner shall participate in a groundwater and coastal water quality monitoring program with NELH and HOST Park.
6. Petitioner shall provide wastewater treatment and transmission facilities as may be required by the State Department of Health.

7. Petitioner shall preserve and protect such archaeological sites as may be required by the State's Historic Sites Section. Petitioner shall immediately stop work on the impacted area and contact the State's Historic Sites Section should any archaeological resources, such as artifacts, shell, bones, or charcoal deposits, human burial, or rock or coral alignments, paving or walls of historic or prehistoric significance be encountered during the development in the petition area.
Done at Honolulu, Hawaii, this 9th day of January 1990, per motion on December 14, 1989.

LAND USE COMMISSION
STATE OF HAWAII

By RENTON L. K. NIP
Chairman and Commissioner

By (conflict)
LAWRENCE F. CHUN
Vice Chairman and Commissioner

By SHARON R. HIMENO
Commissioner

By ALLEN K. HOE
Commissioner

By (conflict)
ALLEN Y. KAJIOKA
Commissioner

By EUSEBIO LAPENIA, JR.
Commissioner

By JAMES M. SHINNO
Commissioner

Filed and effective on January 9, 1990

Certified by:

Executive Officer

ELTON WADA
Commissioner

FREDERICK F. WHITTEMORE
Commissioner
BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Petition of ) DOCKET NO. A89-641
STATE OF HAWAII, DEPARTMENT OF ) STATE OF HAWAII,
TRANSPORTATION, AIRPORTS DIVISION ) DEPARTMENT OF

To Amend the Conservation Land ) TRANSPORTATION,
Use District Boundary into the ) AIRPORTS DIVISION
Urban Land Use District for )
Approximately 548.16 Acres at )
Keahole, North Kona, Hawaii, )
Tax Map Key Nos.: 7-3-43: )
Portion of 1, Portion of 2, and )
Portion of 3 )

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Order Adopting In )
Part and Modifying In Part the Hearing Officer’s 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:

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

DUANE KANUHA, Planning Director )
Planning Department, County of Hawaii )
25 Aupuni Street )
Hilo, Hawaii 96720 )

LANE ISHIDA, ESQ., Attorney for Petitioner )
Deputy Attorney General )
CERT. )
Land/Transportation Division )
Room 300, 465 South King Street )
Honolulu, Hawaii 96813 )

DATED: Honolulu, Hawaii, this 9th day of January 1990. )

ESTHER UEEDA )
Executive Officer