

BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Petition of)
)
STATE OF HAWAII, DEPARTMENT OF)
TRANSPORTATION, AIR TRANSPORTATION)
FACILITIES DIVISION)
)
for the Reclassification of)
Certain Lands situated at Ke-ahole,)
North Kona, Island of Hawaii)
_____)

DOCKET NO. A77-430

DECISION AND ORDER

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DECISION

Pursuant to Section 205-4, Hawaii Revised Statutes, as amended, the State Department of Transportation filed a request on April 7, 1977 for reclassification from Conservation to Urban, 822.66 acres of certain lands situated at Ke-ahole, Island of Hawaii. The application was heard on August 24, 1977 at Kealakehe Elementary School Cafetorium, Kailua, Kona, Island of Hawaii. Mandatory parties to the proceedings were the State Department of Planning and Economic Development, representing the petitioner and the County of Hawaii Planning Department.

There were no intervening parties to the proceedings.

The Commission, having heard the testimony of the witnesses and the evidence received, together with the files and records pertaining to the application herein, makes the following findings of fact and conclusions of law.

FINDINGS OF FACT
RELATING TO PROCEDURAL MATTERS

A parcel identified as TMK 7-3-43: 4 consisting of 7.745 acres was not included in the property description of the subject petition. Most of the present Natural Energy Laboratory of Hawaii facilities are located on this parcel. The parcel is

owned in fee by the State of Hawaii.

CONCLUSIONS OF LAW
RELATING TO PROCEDURAL MATTERS

The State of Hawaii Department of Transportation, Air Transportation Facilities Division will file a separate petition to reclassify the subject parcel (TMK 7-3-43: 4) from Conservation to Urban. At that time, the agency may "simply incorporate by reference all of the documents and written testimony, etc. which were filed" in the original petition.

FINDINGS OF FACT
RELATING TO RECLASSIFICATION

Description of the Subject Property

1. The subject properties consist of approximately 822.66 acres of land, which are separated into two areas: (Area A) 500.86 acres and (Area B) 321.80 acres, both being portions of the Ke-ahole Airport authorized by Executive Order No. 2472. The subject properties are legally defined as Tax Map Key 7-3-43: por. of 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 28, 29, 30, por. of 32, 33, 34, 35, 36, and are owned in fee by the State of Hawaii.

2. The climate of the Ke-ahole Point area is semi-tropical with an average temperature of 75°F recorded at the Kailua-Kona Airport. The petitioned areas are considered arid with an average annual rainfall of 16 to 17 inches per year, but local storms can produce heavy rainfall patterns. However, the highly permeable lava allows most storm rainfall to percolate into the ground and there is no record of flooding in the area. A land/sea breeze system predominates at typical velocities of 3 to 14 knots.

3. Ke-ahole Point is located on the western slope of Hualalai, a dormant volcano, and consists primarily of pahoehoe lava with layer thicknesses varying from 6 inches to 100 feet.

Soil material is generally lacking in the area. The surface material is very friable and can usually be graded using conventional earth moving equipment.

4. The waters off Ke-ahole Point are pristine, with no stream discharges, industrial wastes, or domestic wastes affecting the area. The highest recorded wave along the west coast of Hawaii over the past 20-year period was 25.5 feet. As a guideline, a tsunami height of 15 feet at Ke-ahole Point should be considered as a 100 year occurrence.

Proposal for Reclassification

5. Pursuant to Section 205-4, Hawaii Revised Statutes, as amended, the State Department of Transportation, Air Transportation Facilities Division, filed a request on April 7, 1977 for reclassification of 822.66 acres of the subject properties as described above, from "Conservation" to "Urban".

6. Area A (500.86 acres) consists of the existing Ke-ahole Airport which serves the Kona-Kohala Coast and land for future airport development within the next five years.

7. According to the Airport Development Plan (1985) for Ke-ahole Airport, Area A will accommodate the future expansion of the airfield and terminal building complex as well as the development of general aviation facilities, airline maintenance and service areas, crash/fire rescue facilities, and airport service facilities. Two additional aircraft parking spots, a new fire and rescue building and a Hawaii Air National Guard complex are planned for completion within the next five years.

8. Area B (321.80 acres) will be used to establish a natural energy research laboratory at Ke-ahole Point. Several basic alternate energy research projects at Ke-ahole Point are presently in progress or will be undertaken in the immediate future. The objectives of these projects will be to collect basic data on currents, temperature gradation, water density

stratification, biological and chemical analysis, ocean bottom geology, wave energy, meteorology, sea conditions, zones of mixing, mariculture, biofouling, corrosion, etc. The data from these projects will be used for the design of future OTEC, mariculture, and solar energy projects. All facilities, pipelines, monitoring cables, etc., will be temporary and will be removed upon completion of the experiments.

9. Area B at Ke-ahole Point was selected for the Natural Energy Laboratory based on the following important criteria for site selection:

- a) Nearby availability of cold, deep ocean water
- b) A warm ocean surface layer not subject to strong seasonal cooling
- c) High annual solar radiation
- d) Accessibility to logistical support including major airports, harbor and highways
- e) Adequate quantities of undeveloped land suitable for mariculture and aquatic bioconversion research.

10. The following three major research projects are being considered for the Natural Energy Laboratory of Hawaii (NELH) site.

a) OTEC - An Ocean Thermal Energy Conversion installation, which is the major project at NELH, would utilize the thermal differential between the surface and deep ocean waters to generate electrical power. A full scale land based test facility is scheduled for completion by 1983.

b) BIOMASS - The Biomass Conversion Project will investigate the cultivation and harvesting of plant and animal forms either as a food source or for thermal conversion of the material to produce energy. The project requires flat land, access to basic nutrients, saltwater supply, consistent temperature and sunlight conditions.

c) DIRECT SOLAR - NELH will use Ke-ahole Point as a test center for solar energy systems to include three basic techniques: Photovoltaic conversion, low temperature collectors and high temperature collectors. These experiments require large level areas for the installation of collector panels, and a high proportion of clear, sunny weather.

State and County Plans

11. The current state land use designation for the subject properties is "Conservation".

12. The County of Hawaii General Plan Land Use Pattern Allocation Guide Map designates the area for "Industrial" uses.

13. The County of Hawaii General Plan Land Use Pattern Allocation Guide Map designates the shoreline as "Open".

14. The County General Plan Facilities and Transportation Map recognizes a portion of the area for airport use.

15. The present County zoning designation is "Open" (O.)

16. The entire area is also situated within the County Special Management Area. (SMA)

Need for Growth and Development

17. Area A The 500.86 acres requested for Urban reclassification consist of the existing Ke-ahole Airport and the land needed for future airport expansion within the next five years. The proposed uses are discussed in item 7.

18. Area B Future energy programs at the NELH, Ke-ahole Point, have the potential of contributing to the area's economic future and the state as a whole in terms of alternative energy sources. The creation of a major research center at Ke-ahole Point could encourage development of other industries and desirable activities in the region.

Resources of the Area

19. Agricultural Resources: The Department of Agriculture has no objections to the subject petition and is

currently planning for the development of an agricultural park mauka of Queen Kaahumanu Highway. There are no anticipated conflicts between the uses. The Land Study Bureau's overall master productivity soil rating for agricultural use is class "E" or very poor.

20. Natural Resources: No endangered plant species are known to exist in the area. The endangered Hawaiian Stilt, known to be present in pond areas several miles to the north and south of the site, may fly over Area B and the endangered Hawaiian Hoary Bat, known to be present to the north and south of the site, probably feeds on insects along the coastal area. The proposed development will have no significant impact on these species.

21. Environmental Resources: The pristine quality of the ocean waters off Ke-ahole Point will not be affected by the proposed development. Impacts due to air pollution and noise will be addressed and coordinated by NELH and the State Department of Health.

22. Recreational Resources: The construction of the access road will have a positive impact on the recreational uses of the Ke-ahole Point area such as hiking, fishing, diving and exploration of shoreline historical sites. These opportunities will be available to local residents and to the visitor industry.

23. Scenic Resources: The proposed development will not have any adverse impact on the scenic quality of Ke-ahole Point.

24. Historic Resources: Bishop Museum archaeological reconnaissance surveys of the NELH site, and of the proposed alternate road alignments, and of the utility corridors, noted 14 localities of minor surface structural remains. The majority of these remains occur along the coast and the immediate inland areas of sand pockets not far behind the coastal line. Further inland, on the pahoehoe and aa lava, stacked stone cairns and apparent foot trails were found, but were rated archaeologically

insignificant. Public access to the area via the existing jeep trail along the coast has resulted in disturbance of many of these remains, but two of the localities were noted as relatively undisturbed to justify further study. The proposed development will be coordinated with the Department of Land and Natural Resources regarding the disposition of any archeological remains.

Public Services and Facilities

25. Electrical Utility Services: A new utility corridor to facilitate installation and maintenance of electrical and telecommunication lines will connect to the electrical substation located at the intersection of Queen Kaahumanu Highway and the existing airport access road. It will extend from the substation to the NELH site. The corridor will be 20 feet wide and 5,000 feet long. It will contain an underground conduit system for power and communication lines which cross the existing runway to the planned central utility terminus at the NELH site. Conduits have already been installed under the runway for future expansion and are presently empty.

26. Water: Two alternative water systems are under consideration to service the NELH site. The selection is contingent upon the planned expansion of the County water system which includes the proposed operation of the Kahuluu Shaft in April 1979. If the County water supply system is not expanded, the water line to the NELH site will be a 2½ inch line connected to an existing 12-inch fixture in the airport water supply system which is located 75 feet east of the existing electrical equipment room at the airport building complex. The 2½ inch line will feed directly into an on-site 300,000 gallon storage tank made from neoprene-coated nylon fabric which is essential for the following NELH water requirements: 22,000 gallons per day fresh water, 66,000 gallons for three-day emergency standby, 225,000 gallons for fire protection. If the County water system is expanded in 1979, installation of a larger

water line will eliminate the necessity of an on-site storage tank.

27. Sewage Treatment and Disposal Services: Sewerage disposal from the NELH site will be accommodated by the existing Ke-ahole Airport sewage treatment plant (STP) which has a capacity of 40,000 gallons per day, but is presently used to only $\frac{1}{4}$ of its capacity. The estimated flow from the NELH site is only 11,700 gallons per day, so the existing STP is considered adequate for the foreseeable future. The existing airport STP can be expanded to process larger flows, should they occur.

28. Solid Waste Disposal Services: Solid waste disposal will be in conformance to all State and County regulations.

29. Roadway and Highway Services: The proposed access to the NELH site will be via a two-lane 24-foot wide road with an easement width of 170 feet. The right-of-way includes a 50 foot wide utility corridor for future use when export of electrical power from the site becomes a reality. The total right-of-way will be 10,700 feet encompassing 35 acres. The road will intersect Queen Kaahumanu Highway approximately 1,200 feet north of the airport's southern boundary line.

Scatterization and Contiguity of Development

30. The existing Ke-ahole Airport has generated a new center of employment and already has basic services such as sewer, water, electricity, tele-communications and police/fire protection. There are sufficient reserve areas for functional expansion of airport operations.

31. The proposed expansion of Ke-ahole Airport and the Natural Energy Laboratory site will utilize the existing airport infrastructure and Kaahumanu Highway. Also, Kawaihae Port and the close proximity to Kailua-Kona are compatible to the proposed urban reclassification.

32. The requested areas for boundary amendments are

not contiguous to an existing urban district, but the area can be viewed as an existing center with an intense urban airport use. However, a strip of Conservation District will remain between Area A and Area B to preserve future options for the airport expansion. The State Department of Transportation, Air Transportation Facilities Division, selected the Ke-ahole site because of its remote location and requests that every effort be made to keep the surrounding area in the Conservation District to prevent urban encroachment.

Preferences for Development

33. Permanent employment is expected to be generated by development of the subject properties to include skilled technicians, additional airline personnel, office personnel and highly trained specialists at NELH. With the exception of the scientists at NELH most of the jobs will draw from the Kona work force.

Standards for Determining District Boundaries

34. The existing Ke-ahole Airport can be described as containing a "city-like" concentration of people, structures, streets and an urban level of services. At present approximately 900,000 passengers pass through each year and the passenger forecast for 1995 is 2.4 million persons.

35. The proposed airport expansion and NELH Proposal will expand the levels of existing trading and employment. If the NELH is developed according to the Master Plan, there could be as many as 75 additional scientific personnel in the ultimate development. For 1995, there would be about 500 employees working directly at the airport, not counting the ground transportation, taxis, bus drivers.

36. The economic feasibility of the proposed developments appears favorable with Federal, State and County support. During the years 1973 and 1974 over \$2.5 million dollars were funded for projects in Hawaii on natural energy systems. Federal support

accounted for half, but more than \$1 million of State funds were involved with approximately \$350,000 from the counties and business community. So far, geothermal energy has received the most support, but funding for NELH research project development has totaled \$750,000. If the subject reclassification is approved, it will further show the State of Hawaii's commitment to alternative energy programs and improve the possibilities for Federal aid.

37. The proposed developments will have access to basic services such as sewers, water, sanitation, police and fire protection due to the existing Ke-ahole Airport facilities.

38. The subject properties are relatively flat, well drained and the soil characteristics are compatible to the airport use. It is reasonably free from hazards such as floods and tsunamis as stated in the "Description of the Subject Property."

39. The County of Hawaii General Plan Land Use Pattern Allocation Guide Map designates the area for "Industrial Uses". Airports and facilities such as NELH are compatible to this classification.

Incremental Districting

40. All of the proposed Ke-ahole Airport construction, which would account for nearly \$2.7 million, can be accomplished within Area A (500.86 acres) within the next five years.

41. The NELH development within the next five years is contingent on Federal support.

Miscellaneous Information

42. The proposed NELH access road alignment, the water and sewage corridor, and the electrical and communications corridor cross lands in the Conservation District which are not part of the subject petition. These corridors will remain in the Conservation District and will require a "Conservation District Use Application (CDUA)" to the State Department of Land and Natural Resources. The application will be prepared by the

Natural Energy Laboratory of Hawaii.

CONCLUSIONS OF LAW

1. The findings of fact have shown that the subject properties have met the standards of the State Urban District and Interim Statewide Land Use Guidance Policy as set forth in Chapter 205, Hawaii Revised Statutes.

2. The findings have shown that the land use request to reclassify the subject properties from "Conservation" to "Urban" is reasonably necessary to accommodate growth and development and that there are no significant adverse effects upon agricultural, natural, environmental, recreational, scenic, historic or other resources of the area.


3. Based on the above findings of fact it is concluded that the subject properties are more compatible within the Urban District because of the existing intense airport use and proposed future uses which include a major airport expansion and the establishment of a primary site for natural energy research in the State of Hawaii.

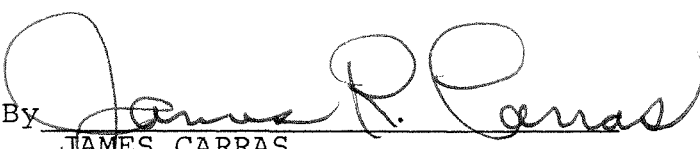
ORDER

It is hereby ordered that the subject property in Docket No. A77-430, consisting of approximately 822.66 acres situated at Ke-ahole, North Kona, Island of Hawaii, (identified by Tax Map Key numbers as indicated in Finding No. 1), shall be reclassified from the Conservation to the Urban District.

DONE at Honolulu, Hawaii, this 17th day of February 1978 by Motion passed on February 1, 1978, in Honolulu, Hawaii.


LAND USE COMMISSION
STATE OF HAWAII

By 
C. W. Duke
Vice Chairman and Commissioner

By 
JAMES CARRAS
Commissioner

By 
COLETTE MACHADO
Commissioner

By 
SHINSEI MIYASATO
Commissioner

By 
MITSUO OURA
Commissioner

By 
CAROL WHITESELL
Commissioner