

September 12, 1977

Ref: HA-5/26/77-954

Mr. Harold S. Masumoto
Director of Administration
University of Hawaii
2444 Dole Street, Rm. 212
Honolulu, HI 96822

Dear Mr. Masumoto:

"After the Fact" Conservation District Use Application
for Governmental Use (Telescope Observatories and
Accessory Improvements) at Hamakua, Hawaii

At its meeting of September 9, 1977 the Board of Land
and Natural Resources approved your application subject to the
following conditions:

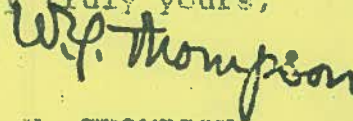
1. That the applicant comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments, and applicable parts of Section 20 of Departmental Regulation No. 4.
2. Strict compliance with the policies and directives of the Mauna Kea Plan as devised and adopted by the Board of Land and Natural Resources.
3. Other conditions as may be prescribed by the Chairman.
4. Staff and personnel associated with the University of Hawaii astronomy observatories and ancillary facilities at the summit shall absolve the State of Hawaii from fault or blame in the event injury

Mr. Harold S. Masumoto
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or fatal harm is caused through their own negligence
in observing safety practices and procedures.

should you have questions on any of these conditions,
please contact the Planning Office at 548-7837.

Very truly yours,



W. Y. THOMPSON
Chairman of the Board

cc: Hawaii Board Member
Hawaii District Land Agent
Hawaii County Planning Department
Office of Environmental Quality
Control
Environmental Quality Commission
Department of Health
Department of Transportation

bcc: Land Management
DOWALD
Fish & Game
State Parks
Forestry
Historic Preservation Ofc.

~~40E~~:cm

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

~~PHYSICAL AND NATURAL RESOURCES~~

P. O. BOX 621
HONOLULU, HAWAII 96809

File No. HA-5/26/77-954
Expiration Date 11/22/77

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

September 9, 1977

Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii

Gentlemen:

"After the Fact" Conservation District Use
Application for Governmental Use
at Hamakua, Hawaii

APPLICANT: University of Hawaii
2444 Dole Street, Room 212
Honolulu, HI 96822

USE REQUESTED: Telescope Observatories and Accessory Improvements

LOCATION: Portion of TMK 4-4-15:9

AREA OF PARCEL: 13,321.054 A

AREA OF USE: 13,321.054 A

SUBZONE: General Use

DESCRIPTION OF AREA:

The site of active use is the summit area of Mauna Kea above the 13,700' elevation above sea level. Three principal observatories plus accessory improvements were constructed on State-owned lands commencing in July, 1968. Prior to start of construction approximately 13,321 acres were leased to the University of Hawaii, GL S-4191, in January, 1968. The area is more familiarly known today as the Mauna Kea Science Reserve and generally encompasses all of the land area above the 12,000' contour elevation.

Access to the summit from Hilo or Kona is via the Saddle Road (State Route 200) to Puu Huluhulu. From this location a 2-lane paved summit access road begins and continues past the Humuula Sheep Station to Hale Pohaku. From Hale Pohaku to the summit, except for about 800 feet of compacted gravel with an oiled surface, the road consists of compacted gravel.

The summit is approximately 40 miles from Hilo and 6.5 miles from Hale Pohaku.

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Topographically, the existing facilities are on an almost flat plateau, which is part of the ridge bridging the sub peaks that comprise the summit of Mauna Kea. Because the area is above the 13,000' elevation, freezing temperatures and the relatively dry atmosphere have retarded soil development from the cinders, ash and a'ala lava. In general, the slope of the plateau is about 10% slope. There are no large and deep erosion scars or gulches.

Within the Science Reserve are two important natural and archaeological sites: Lake Waiiau at 13,020 feet elevation is listed as the highest lake in the United States. At the 12,400 foot elevation is the Keanakakoi adz quarry. Other sites of historical significance within the Science Reserve have been identified in an archaeological survey conducted by the Bishop Museum. These sites will not be adversely affected by the project.

Existing structures include a 24" Air Force Telescope facility completed in July, 1968; a 24" Planetary Patrol Telescope built during the fall of 1968; an 88" Telescope observatory constructed in January, 1970 and various ancillary facilities.

Utilities in support of the observatories, which are managed operated, and staffed by the University of Hawaii, include:

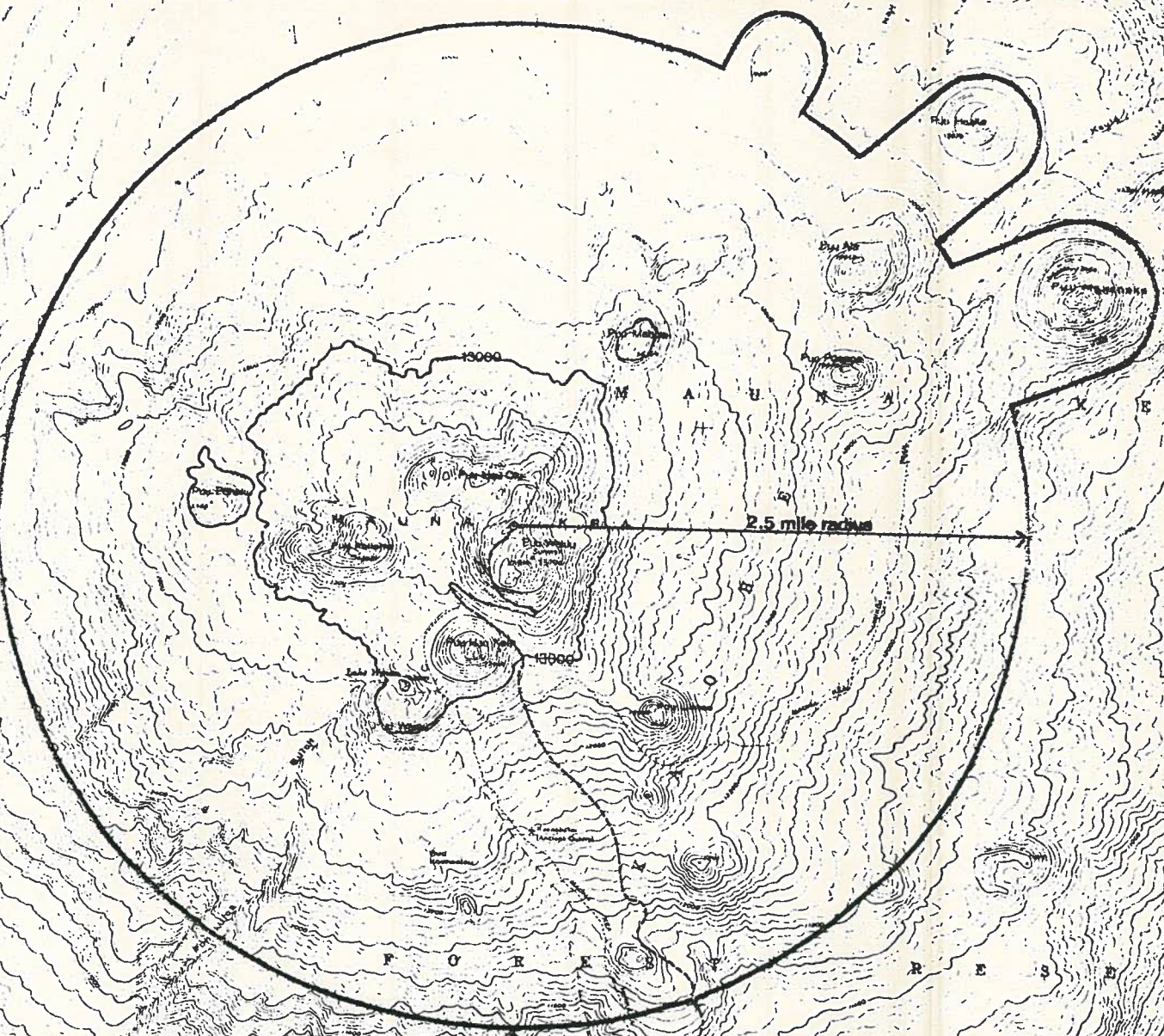
1. Electricity which is provided at the summit by two 143 KW diesel generators--one main generator and one standby generator. The present demand is approximately 80 KVA. The demand is expected to increase to about 300 KVA when the CFHT is completed and to about 400 KVA when the UKIRT and IRTF are completed. Approximately 6,000 gallons of diesel fuel are used each month to operate the generators. This fuel is trucked to the summit periodically.
2. Telephone communication to the summit is via a microwave link and there are no plans to convert to an overhead line system.
3. Water is periodically hauled to the summit from Pohakuloa and stored in an 8,000 gallon underground storage tank adjacent to the UH 88-inch telescope facility. Present water consumption is about 2,500 gallons per month.
4. Sewage disposal is by septic tank located about 90 feet south-west of the UH 88-inch telescope facility.
5. Solid waste is collected and periodically hauled to Hilo for disposal.

DESCRIPTION OF PROPOSED USE:

The three current University of Hawaii telescopes and ancillary facilities in operation at the summit are described as follows:

88" Telescope Facility

This structure was the first to undergo construction on the summit of Mauna Kea. Also constructed was a utility building which houses the generators, an 8,000 gallon underground water tank, and a septic tank for liquid waste. The telescope

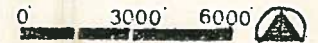


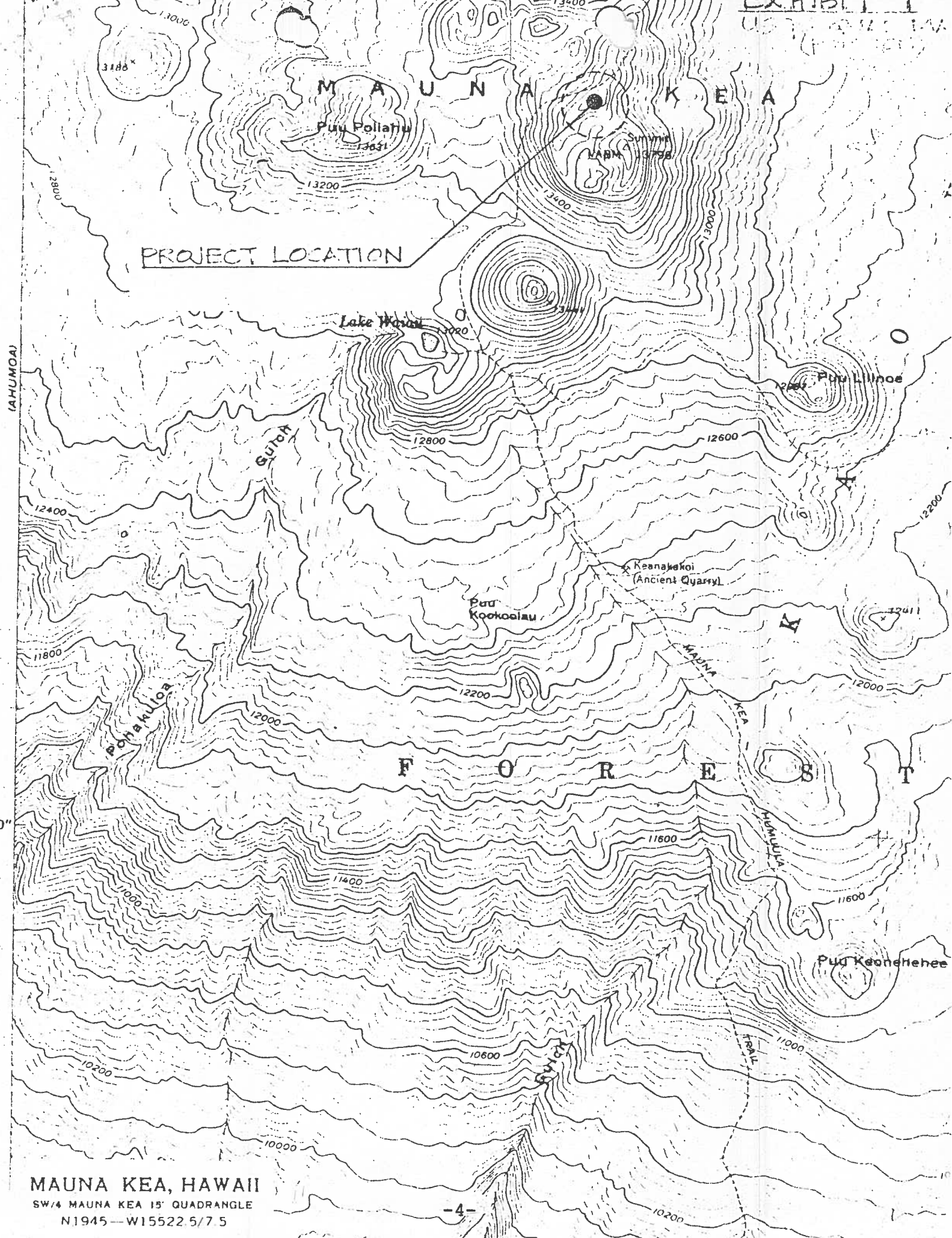
Mauna Kea Science Reserve

MAUNA KEA SCIENCE RESERVE

Environmental Impact Statement for
the existing operations and the
construction and operations of the
new IRTF and UKIRT Observatories
Mauna Kea, Hawaii

EDAW inc.





MAUNA KEA, HAWAII
SW/4 MAUNA KEA 15' QUADRANGLE
N1945—W15522 5/7 5


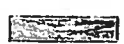
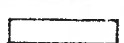


13400

3 m IRTF

3.6 m CFHT

LEGEND

-  EXISTING
-  UNDER CONSTRUCTION
-  UNDER DESIGN

61cm PLANETARY PATROL
(24-inch)

(88-inch)
2.24 m UH
13,777

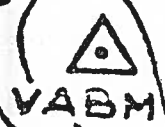
3.8 m UKIRT

UTILITY BUILDING
EXTENSION

UTILITY BLDG

61cm AIR FORCE
(24-inch)

SUMMIT
13796



MAUNA KEA SUMMIT
SITE PLAN

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building is connected with the utility building by an underground utility tunnel through which the electrical cables, etc. are routed.

There are no signs at the summit. There is no outside night lighting since this adversely affects observing conditions. Landscaping was confined to the grading required to prevent erosion and to minimize construction scars.

24" Air Force Telescope

This facility was totally sponsored by the U. S. Air Force but is now owned and operated by the University. The Air Force provided the telescope, the pre-fabricated components of the dome building and the two (2) gasoline engine drive 10KW generators. The University provided the labor and miscellaneous materials to construct the facilities, but was totally reimbursed by the Air Force. The total cost of construction, including the cost of the telescope, was approximately \$100,000.

A small building was originally constructed to house the generators which would provide power for the operation of this facility. However, since electricity is now provided by the 88-inch telescope generator, the building is being used by the ski patrol for equipment storage.

Power connection is by underground cable. Water and sewage disposal are not required. Solid waste is periodically collected and hauled to Hilo for disposal.

24" Planetary Patrol Telescope

NASA furnished the telescope for this facility, but the University provided the material and labor (at a cost of approximately \$15,000) to construct the dome facilities. The University now owns and operates this facility. Power for the operation of the facility is provided by the generator for the 88-inch telescope facility. Connection is by underground cable. Water and sewage disposal are not required. Solid waste is periodically collected and trucked to Hilo for disposal.

The use of the summit area for the construction and operation of these telescope facilities is compatible with the site since the area was designated as a Science Reserve area to be used specifically for astronomical observations and research.

Two principal sources of funds for the construction and operation of the three observatories are the State of Hawaii and the U. S. Government. Estimated capital costs for the U. S. Observatory include \$9.7 million of State funds and \$4.0 million of federal funds. Annual operating costs, estimated at \$700,000, are shared almost equally by the State and Federal Governments.

COMMENTS RECEIVED TO DATE:

Department of Health: No objections, however, adequate sanitary facilities should be provided at the Mauna Kea summit.

Hawaii County Planning Department: No objections to the described uses as it appears that the application is for "housekeeping" purposes.

Fish & Game: No adverse effects on fish or wildlife values.

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Land Management: No objections.

State Parks: No known direct State Parks interests are involved concerning the astronomy facilities as long as snow activities can continue in the general area.

Historic Preservation Office: The proposed use will have no effect on any known historic or archaeological site on or likely to be eligible for inclusion to the Hawaii and/or National Registers of Historic Places. As such, this office has no reservations for the project to proceed. In the event any unanticipated sites or remains are encountered, the applicant is to contact this office immediately.

ANALYSIS:

The use is permitted under Section 2B(1)(e) of Departmental Regulation No. 4. A negative declaration was determined for the "after the fact" action by the applicant in conformance with Section 1:30 of the EIS Regulations. With reference to the provisions of Section 205-29d, Hawaii Revised Statutes relating to Coastal Zone Management Area as defined by the County of Hawaii.

As remarked by the Hawaii County Planning Department, this is a housekeeping application, and it is the outcome of cooperative efforts on the part of the U. H. Administration and DLNR Staff to solicit the sanction of the Board of Land and Natural Resources for the ongoing scientific activities in astronomy at Mauna Kea. It is to be noted that the newer observatories for CFHT, UKIRT, and NASA have gone through the CDUA process and received the approval of the Board and at this time have completed or are nearing completion of construction.

To debate the current unsanctioned status of the three U. H. observatories now would be, at best, informative but academic. It is felt that the failure to obtain the approval of the Board for the use of State-owned Conservation lands may well be based on assumption rather than outright omission.

An explanation based on assumption does seem plausible since earlier applications for State-owned conservation lands were submitted to the Board by Land Management with recommendations for favorable action subject to compliance with Sections 2C and 2F of Departmental Regulation No. 4. While the records do not indicate that such was the case, in the disposition of the General Lease, it may be reasonable to conclude that the participants of the lease assumed that the construction of observatories was permitted in conjunction with the purposes of the Mauna Kea Science Reserve.

The use of Mauna Kea for astronomical research, given life by the issuance of the general lease, is further embodied and is the forms of the Mauna Kea Plan recently adopted by the Board. The U. H. observatories, where sited, are selected in the utilization plan for the summit of Mauna Kea.

RECOMMENDATION:

Approval of this "after the fact" application for the construction and use of three telescope observatories and ancillary

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facilities for astronomical research, subject to the following conditions:

1. That the applicant comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments, and applicable parts of Section 2C of Departmental Regulation No. 4.
2. Strict compliance with the policies and idrectives of the Mauna Kea Plan as devised and adopted by the Board of Land and Natural Resources.
3. Other conditions as may be prescribed by the Chairman.
4. Staff and personnel associated with the University of Hawaii astronomy observatories and ancillary facilities at the summit shall absolve the State of Hawaii from fault or blame in the event injury or fatal harm is caused through their own negligence in observing safety practices and procedures.

Respectfully submitted,

L. Bautista

LEONARD BAUTISTA
Staff Planner

APPROVED FOR SUBMITTAL:

W. Y. Thompson
W. Y. THOMPSON, Chairman
of the Board