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BEFORE THE LAND USE COMMISSION

THE STATE OF HAWAI'I

In the Matter of the Petition of KU'ULEI HIGASHI KANAHELE and AHIENA KANAHELE, individuals, for a Declaratory Order Concerning the invalid classification of the de facto and improper industrial use precinct on approximately 525 acres of State Land Use Conservation District lands located in Mauna Kea and Hilo, County of Hawai'i, Tax Map Key No.: 4-4-015:009 (por.)	Docket No. DR19-67 PETITION FOR DECLARATORY ORDERS; DECLARATION OF KU'ULEI HIGASHI KANAHELE; DECLARATON OF AHIENA KANAHELE; EXHIBITS "01"-"03"; CERTIFICATE OF SERVICE

PETITION FOR DECLARATORY ORDERS

Petitioners KU'ULEI HIGASHI KANAHELE and AHIENA KANAHELE, individuals, (Petitioners) hereby petition the LAND USE COMMISSION of the State of Hawai'i (Commission) for a declaratory order concerning the improper use of approximately 525 acres of State Land Use Conservation District lands located in Mauna Kea and Hilo, County of Hawai'i, Tax Map Key No.: 4-4-015:009 (por.) ("de facto industrial use precinct").

Petitioners pray this Commission issue declaratory orders that boundary amendment procedures under Hawai'i Revised Statutes (HRS) chapter 205 applies to the transformation of conservation district areas into an area for extensive, intensive, long-term industrial uses though successive issuances of conservation district use permits (CDUPs) and subleases as described further *infra*. This Petition is submitted pursuant to HRS § 91-8 and Hawai'i Administrative Rules (HAR) §§ 15-15-98 and -99. Such laws are "meant to provide a means of seeking a determination of whether and in what way some statute, agency rule, or order, applies to the factual situation raised by an interested person." *Citizens Against Reckless*

Development v. Zoning Bd. of Appeals, 114 Hawai'i 184, 196-97, 159 P.3d 143, 155-56 (2007). HRS §91-8 provides for "[a]ny interested person" to petition this Commission "as to the applicability of any statutory provision or of any rule or order of the [Commission]." *Id.* This Commission has jurisdiction over petitions for declaratory orders concerning uses of lands that are not in conformity with state laws, specifically HRS chapter 205, and Commission rules. *See Kuleana Ku'ikahi, LLC v. State*, 130 Hawai'i 347, 310 P.3d 1048 (App. 2012) (the Commission properly limited its jurisdiction to questions of state law raised by petition for declaratory orders). This Petition does not relate to any existing Commission decision for a district boundary amendment or special permit.

I. Petitioners, their interests, and her reasons for submitting this Petition

A. Petitioners and their interests in the failure to hold reclassification proceedings on de facto industrial use precinct lands.

Petitioners have property interests in de facto industrial use precinct lands consequent to their native Hawaiian traditional and customary practices, rights to a clean and healthful environment, and these "concrete interests" underlie their procedural standing injury that proceeds from the failure to reclassify the de facto industrial use precinct under proper district boundary amendment procedures. *See Sierra Club v. Dep't of Transp.*, 167 P.3d 292, 318, 115 Hawai'i 299, 324 (2007) ("three important features of the procedural standing doctrine may be noted: (1) it is based on a specific characterization of a plaintiff's injury, namely the denial of some procedures mandated by law; (2) whether there is a procedural injury in turn depends on whether the plaintiff has been accorded a procedural right, an analysis which by its nature focuses on the statutory framework in question; and (3) the plaintiff's procedural right must be coupled with an underlying concrete interest").

Petitioner KU'ULEI HIGASHI KANAHELE (Ku'ulei) is a Native Hawaiian traditional and customary practitioner whose holds practices centered around protecting Mauna Kea lands, including lands in that exist in a de facto industrial use precinct, as a wao akua (realm of the gods). Declaration of Ku'ulei Higashi Kanahele (Ku'ulei Decl. ¶¶9, 17-25). Petitioner AHIENA KANAHELE (Ahiena) is a native Hawaiian traditional and customary practitioner whose practices also include those centered around protecting Mauna Kea lands, including lands in that exist in a de facto industrial use precinct, as a wao akua. Declaration of Ahiena Kanahele (Ahiena Decl. ¶¶8, 15-21). Petitioners' traditional and

customary rights are protected property interests under article XII, §7 of the Hawai'i Constitution.

Petitioners live on Hawaiian home lands in Panaewa, Hawai'i. Ahiena Decl.¶¶5-6; Ku'ulei Decl. ¶¶6-7. Their address is 1130 Auwae Road, Hilo, Hawai'i 96720. Their phone number is (808) 557-2087. Ahiena is a native Hawaiian beneficiary of the Department of Hawaiian Home Lands trust. Ahiena Decl. ¶9. The State holds Mauna Kea summit lands as part of a public trust pursuant to Section 5(b) of the Act of March 18, 1959, Pub. L. 86-3, 73 Stat. 4 (Admissions Act), of which trust both Petitioners are beneficiaries.

Petitioners have protected interests in their rights to a clean and healthy environment as defined by laws, including HRS §205-2(e), that relate to the protection of environmental quality. Mauna Kea public trust lands sit atop a central Hawai'i island aquifer that has ecological and spiritual significance for Petitioners. *See* Ku'ulei Decl. ¶¶18-22. Ahiena also seeks to protect Mauna Kea summit lands so that it can function as a wao akua. Ahiena Decl. ¶16. Ahiena frequented Mauna Kea lands, including de facto industrial use precinct lands, as part of his work as a ranger. *Id.* ¶14. Ahiena observed the urban and industrial character of the de facto industrial use precinct areas that obstruct scenic areas, open space, and the silence and natural sounds that should characterize the Maunakea conservation district. *Id.* ¶18.

Petitioners would aggressively engage public procedures on a district boundary amendment petition that sought to remove sacred land in the middle of the conservation district from that district and reclassify those lands as urban for extensive and intensive industrial uses. Ku'ulei Decl. ¶27; Ahiena Decl. ¶¶22-23. Petitioners have not been afforded the ability to protect their interests in preserving and protecting undeveloped Mauna Kea summit lands from becoming a de facto industrial use precinct because boundary amendment procedures were never instituted. Ku'ulei Decl. ¶28, Ahiena Decl. ¶24. This Commission's district boundary amendment process would allow Petitioners to fully develop the record to demonstrate the inappropriateness of industrial uses on the Mauna Kea summit. The failure to implement this required procedure deprives Petitioner of property interests without due process of law.

B. Petitioners' reasons for submitting this Petition.

Petitioners submit this Petition to obtain declaratory orders stating:

(1) current industrial research facility uses in the de facto industrial use precinct are appropriate within the urban district as prescribed by HRS § 205-2(b) and not the conservation district;

(2) further industrial uses proposed for the de facto industrial use precinct must comply with HRS chapter 205 and Commission procedures for obtaining a district boundary amendment to reclassify conservation lands into the urban district; and,

(3) even if a single scientific laboratory or other research facility may be appropriate within non-urban districts, the successive, individual approval of thirteen scientific laboratories, other research facilities, and associated offices, parking lots, and utilities, within the de facto industrial use precinct constitutes urban uses inconsistent with conservation district uses and/or detrimental to a multiple use conservation concept for which a district boundary amendment must be obtained.

II. Laws in question, relevant facts, issues raised, and Petitioner's interpretation of laws as applied to these facts and issues.

A. Designation of specific legal provisions in question.

The existence of the de facto industrial use precinct on conservation district lands raises questions under HRS §205-2, titled "Districting and classification of lands," which provides in relevant part:

> (a) There shall be four major land use districts in which all lands in the State shall be placed: urban, rural, agricultural, and conservation. The land use commission shall group contiguous land areas suitable for inclusion in one of these four major districts. The commission shall set standards for determining the boundaries of each district . . . .
> In establishing the boundaries of the districts in each county, the commission shall give consideration to the master plan or general plan of the county.
> (b) Urban districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated.
> In addition, urban districts shall include geothermal resources exploration and geothermal resources development, as defined under section 182-1, as permissible uses.
> [. . . .]
> (e) Conservation districts shall include areas necessary for protecting watersheds and water sources; preserving scenic and historic areas; providing park lands, wilderness, and beach reserves; conserving indigenous or endemic plants, fish, and wildlife, including those which are threatened or endangered; preventing floods and soil erosion; forestry; open space areas whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding communities, or would maintain or enhance the conservation of natural or scenic resources; areas of value for recreational purposes;

other related activities; and other permitted uses not detrimental to a multiple use conservation concept. Conservation districts shall also include areas for geothermal resources exploration and geothermal resources development, as defined under section 182-1.

Id. (emphasis added). The emphasized provision in HRS §205-2(e) was present in the initial 1963 codification of HRS chapter 205. *See* Act 205 §2, 1963 Haw. Sess. Laws at 317.

Pursuant to this Commission's rules, "[e]xcept as otherwise provided in this chapter, uses not expressly permitted are prohibited." HAR §15-15-23. The Commission's rules do not expressly permit specific uses within the conservation district, and rather refers governance of those uses to DLNR. HAR §15-15-26 ("Uses of land within a conservation district shall be governed by the rules of the state department of land and natural resources, title 13, Administrative Rules, and chapter 183, HRS.").

Uses of land in the conservation district are governed by the Department of Land and Natural Resources (DLNR or department) rules (HAR chapter 13-5) and HRS chapter 183C. This Commission's statutory authority to group lands into four districts is distinct from the State Board of and Land and Natural Resources' (BLNR) authority to regulate land uses in the conservation district under HRS §183C-3. BLNR lacks the Commission's authority to reclassify lands from one district to another or to amend district boundaries. BLNR's power to identify and appropriately zone those lands does not extend to permitting non-conservation uses within conservation district and it is this Commission's authority to declare what uses are appropriate in which districts.

The following constitutional authorities are specifically relevant to assessing Petitioners' status as interested persons eligible to bring this Petition to the Commission. Article XI, §1 of the Hawai'i Constitution, titled "Conservation and Development of Resources," provides:

> For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including land, water, air, minerals and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State.
> All public natural resources are held in trust by the State for the benefit of the people.

Id. Article XII, §7 of the Hawai'i Constitution provides:

> The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights.

The Hawai'i Supreme Court has interpreted this provision to impose on this specific Commission the "affirmative duty . . . to preserve and protect traditional and customary native Hawaiian rights." *Ka Pa'akai o Ka 'Āina v. Land Use Comm'n*, 94 Hawai'i 31, 45, 7 P.3d 1068, 1082 (2000). This Commission has constitutional obligations to protect public trust resources and native Hawaiian traditional and customary practices. Art. XI, §1 and art. XII, §7 of the Hawai'i Constitution; *see Clarabal v. Dep't of Education,* SCAP-16-0000475, at *46 (Haw. Aug. 13, 2019) ("As with all of the State's constitutional obligations, article X, section 4 places an affirmative duty on the State to fulfil its mandate.").

B. Statement of relevant facts.

In 1963, the legislature enacted HRS chapter 205, which obligated this Commission to classify lands in the de facto industrial use precinct within the conservation district. Act 205 §2, 1963 Haw. Sess. Laws at 317. On or about June 21, 1968, BLNR and University of Hawai'i (University) executed General Lease No. S-4191 (master lease) for lands inclusive of the de facto industrial use precinct, under which the University leases those lands a 65 year term expiring on December 31, 2033. Ku'ulei Decl. ¶31, Exh. 02. The master lease specified the University's uses of the de facto industrial use precinct:

> as a scientific complex, including without limitation thereof an observatory, and as a scientific reserve being more specifically a buffer zone to prevent the intrusion of activities inimical to said scientific complex. Activities inimical to said scientific complex shall include light and dust interference to observatory operation and certain types of electric of electronic installation on the demised lands, but shall not necessarily be limited to the foregoing.

Exh. 02. Since 1968, the following industrial research facilities have been approved for use and operation in the de facto industrial use precinct:

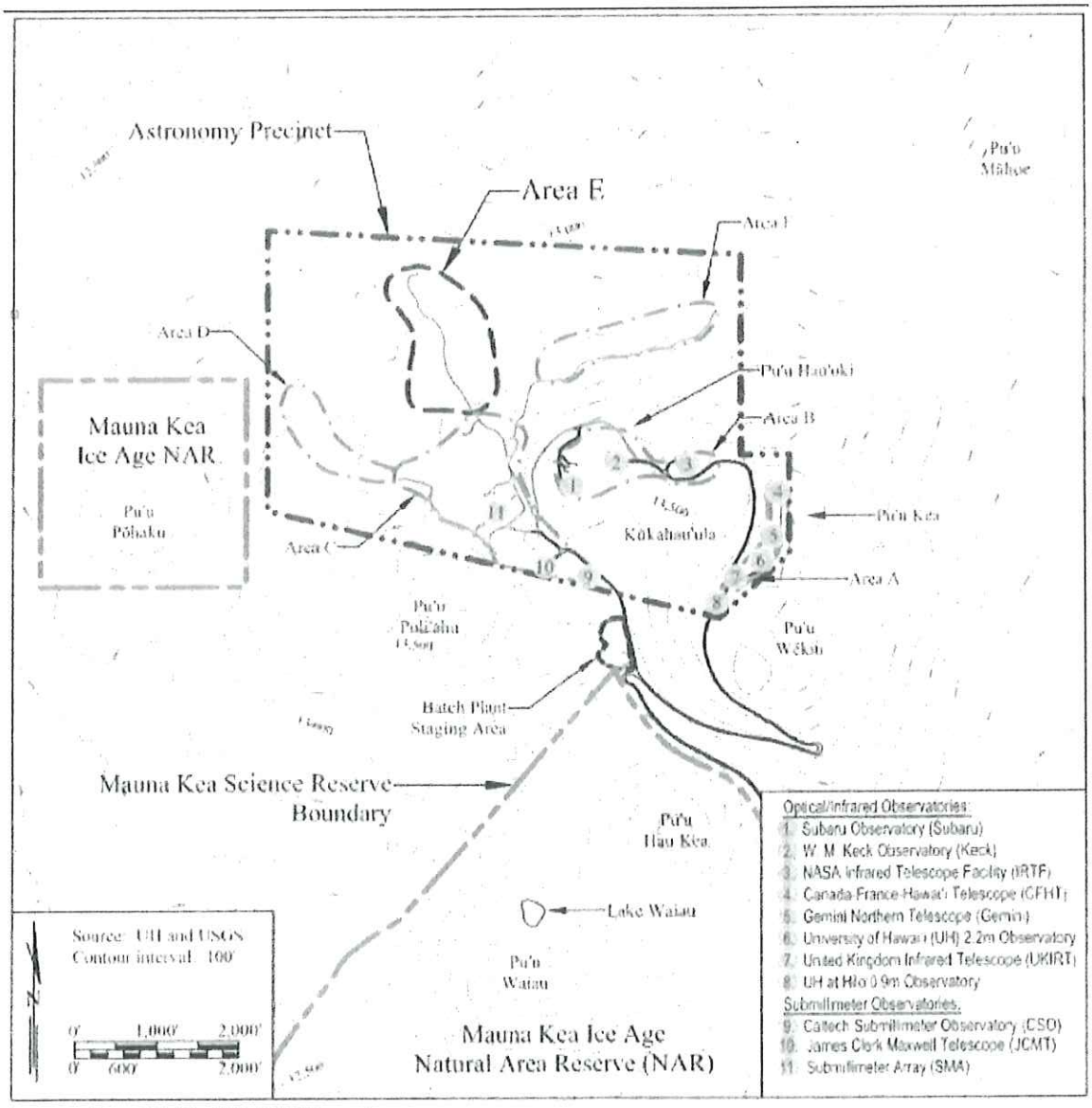
(1) the University of Hawai'i 2.2 meter telescope built in 1968, with an after-the-fact conservation district use permit (CDUP HA-954) prepared in September 1977.
(2) the Cambridge Research Laboratories' 0.6 meter telescope, built in 1968 and decommissioned in 2008, which was replaced with a 0.9 meter telescope (Hōkū Ke'a) installed in its place; an after the fact CDUP HA-954 was prepared in September 1977. The University reports it filed a notice of intent to decommission in February 2016.

(3) the Canada France Hawai'i Telescope (CFHT) is a 3.6 meter telescope that began operations in 1979 under CDUP HA-527, approved in 1974.
(4) NASA's Infrared Telescope Facility (IRTF) is a 3 meter telescope that began operations in 1979 under CDUP HA-653, approved in 1974.
(5) the United Kingdom Infrared Telescope (UKIRT) is a 3.8 meter telescope that began operations in 1979 under CDUP HA-653, approved in 1974.
(6) the Very Long Baseline Array (VLBA) telescope is a system of ten radio telescopes that began operating in 1992 under CDUP HA-2174, approved in 1989.
(7) the Caltech Submillimeter Observatory (CSO) is a 10.4 meter telescope that began operations in 1986 under CDUP HA-1492, approved in December 1982. Caltech filed a notice of intent to decommission in February 2016.
(8) the 15 meter James Clark Maxwell Telescope (JCMT) began operations in 1987 under CDUP HA-1515, approved in 1983.
(9) the Submillimeter Array consists in eight six-meter radio telescope on 24 concrete pads and began operations in 2003 under CDUP HA-2728 approved in 1994.
(10) the Subaru Telescope is an 8.2 meter optical infrared telescope operated by the National Astronomical Observatory of Japan and began operating in 1999 under CDUP HA-3462 approved in 1992.
(11) the W.M. Keck Observatories (Kecks I and II) are twin 10-meter telescopes that began operations in 1990 and 1993 under CDUP HA-1646 (approved 1984) and HA-2509 (approved 1992) respectively.
(12) the Gemini North Observatory consists in paired 8.1 meter telescopes and began operations in 2000 under CDUP HA-2691, approved in 1994.
(13) the Thirty Meter Telescope (TMT) consists in a 30 meter diameter telescope, which has not been constructed but was approved under CDUP HA-3568 in October 2017.

See Ku'ulei Decl. ¶30, Exh. 01 (OMKM Annual Report to BLNR, Item K-2-1, at 7-9 (Jan. 25, 2019). The University, with BLNR's approval, has executed the following nine subleases for lands in the de facto industrial use precinct.

1974: National Aeronautics and Space Administration, 70,650 square feet (NASA IRTF)
1975: Canada-France-Hawai'i Telescope Corporation, 2 acres (CFHT)
1983: California Institute of Technology, 0.75 acres (Caltech Submillimeter Observatory)
1985: California Institute of Technology, 2 acres (Keck I and Keck II)
1997: National Astronomy Observatory of Japan, 5.4 acres (Subaru)
1997: Smithsonian Institution, 3 acres (Smithsonian Submillimeter Array)
1997: Associated Universities Inc., 87,500 square feet (Very Long Baseline Array)
1997: National Science Foundation, 2 acres (Gemini North)
2015: Thirty Meter Telescope International Observatory Corporation, 8.66 acres (TMT)

See Exh. 01 at 20. These subleases of conservation land intensify the uses of lands in the de facto industrial use precinct. "Subdivision" can occur even where it has not received proper approvals. Black's Law Dictionary defines an "illegal subdivision" as: "The division of a tract of land into smaller parcels in violation of local subdivision regulations, as when a developer begins laying out streets, installing sewer and utility lines, and constructing houses without the authorization of the local planning commission." *Black's Law Dictionary*, at 1155 (7th ed, 2000). The de facto industrial use precinct also includes improved roads, utilities, and other structures that support these industrial uses of the de facto industrial use precinct.



Source: Figure 2-3, *Final EIS*: TMT Observatory

Fig. 01. Map of astronomy facilities on the summit of Mauna Kea, excerpted from the TMT Final Environmental Impact Statement, Vol. 1, Fig. 2-3 (May 8, 2010).

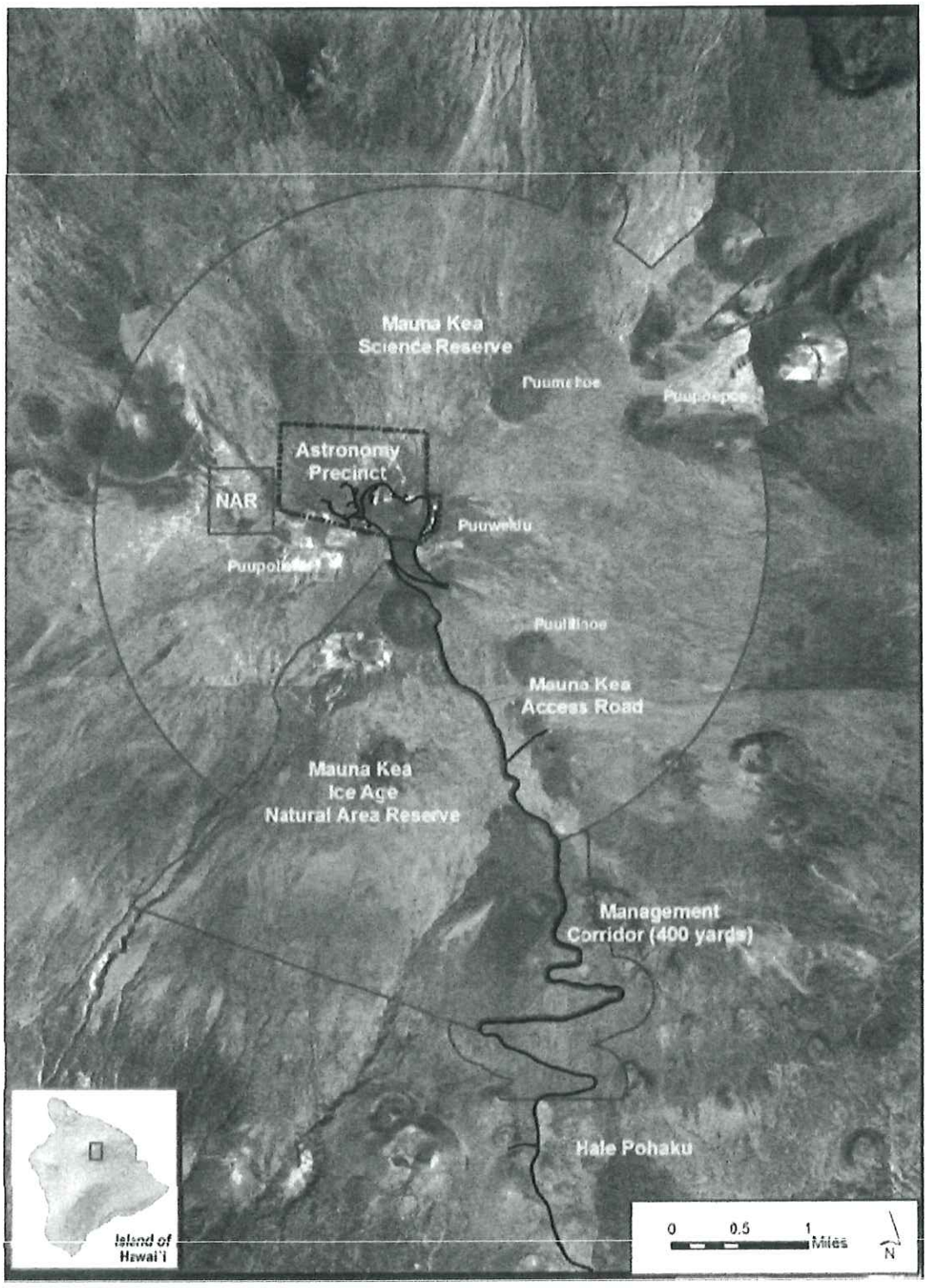


Fig. 2. Maunakea summit areas leased by the University of Hawai'i. Excerpted from the University of Hawai'i Comprehensive Management Plan, Fig. 3-1 (Apr. 2009).

Petitioner and others in the native Hawaiian community conduct traditional and customary practices protected under article XII, §7 of the Hawai'i Constitution that are harmed by the failure to conduct proper boundary amendment procedures in regard to the industrial uses of conservation district lands. Ku'ulei Decl. ¶28; Ahiena Decl. ¶23.

Industrial research facilities displace habitat for the endemic and rare wekiu that is found only on the summit region of Mauna Kea. Exh. 01 at 14. These industrial facilities create noise disturbances that are incompatible with the serene use and enjoyment of the summit's open spaces. Ahiena Decl. ¶21. Uses contributing to the urban and industrial character of the de facto industrial use precinct areas obstruct scenic areas, open space, and the silence and natural sounds that should characterize a conservation district. Ahiena Decl. ¶20. Industrial uses of conservation land do not "enhance the present or potential value of abutting or surrounding communities" and have rather led to certain "dark sky" initiatives that influenced implementation of relatively less-strong streetlights. Ku'ulei Decl. ¶32; Exh. 03. The lack of streetlight guidance impairs the ability of members of the surrounding community to safely navigate roads in Hawai'i county at night. *Id.*

C. Issues raised and Petitioner's interpretation of applicable laws to facts and issues.

HRS §205-2(e) is a land use law that specifically requires that conservation districts "shall include areas necessary for . . . other permitted uses not detrimental to a multiple use conservation concept[.]" *Id.* Precinct lands include permitted uses that are "detrimental to a multiple use conservation concept" and are thus specifically disallowed from classification in the conservation district. HRS § 205-2(e). Industrial research facilities displace areas more properly used to protect watersheds and water sources; preserve scenic and historic areas; provide park lands, wilderness, and beach reserves; conserve indigenous or endemic plants, fish, and wildlife, including those which are threatened or endangered; prevent floods and soil erosion, to encourage forestry; open space areas whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding communities, or would maintain or enhance the conservation of natural or scenic resources; areas of value for recreational purposes, or other related activities. *See supra* Part II.B.

The de facto industrial use precinct does not conform with statutory requirements for conservation district classification due to the cumulative, intensified uses that have been made of the land under BLNR and University management. This Commission is authorized

to make orders concerning the applicability of HRS chapter 205 and its own rules, specifically HAR chapter 15-15. Successive variances for use of the conservation district purposes in the de facto industrial use precinct exist under the thirteen conservation district use permits. The subdivision of the conservation district through the issuance of nine subleases, in addition to the University's own demarcations for its industrial research facilities intensified uses in the de facto industrial use precinct. The appropriate procedure for establishing such a concentration of industrial research uses is to apply for a boundary amendment from this Commission.

Pursuant to its constitutional and statutory obligations, this Commission may properly issue orders stating Commission boundary amendment procedures under HRS chapter 205 are required to remove de facto industrial use precinct lands from the conservation district and into the appropriate urban district for industrial uses.

Petitioners request that this Commission's deliberations and disposition of the Petition occur at a Commission meeting open to the public.

III. Memorandum of authorities

This Commission's district boundary amendment procedures apply to the de facto industrial use precinct, in the middle of the conservation district on top of Mauna Kea, and these procedures are required to followed to obtain a reclassification of lands into the urban district.

A. Industrial research facilities are zoned for commercial and industrial districts.

Uses within the urban district are those that are required to "include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated." HRS § 205-2(b). Industrial research facilities such as those located in the de facto industrial use precinct are urban activities and uses under Hawai'i county zoning as well as in other counties across the state.

In Hawai'i county, laboratories and research are permitted in general commercial districts (Hawai'i County Code (HCC) § 25-5-112(a)(36)), in village commercial districts (§25-5-122(a)(28)), in commercial mixed districts (§25-5-132(a)(28)), in limited industrial districts (§25-5-142.(a)(29)) and in general industrial districts (§25-5-152(a)(38)). The Hawai'i county zoning scheme for science research facilities is in accord with that of other counties. In Maui, laboratories are allowed in zone M-1 for light industrial use (Maui County Code (MCC) §19.24.020) and laboratories and biotechnology are included in "knowledge

industries" and "light industrial and manufacturing" in the Kīhei Research and Technology Park District. MCC §19.38.020. In Kaua'i, scientific research is zoned for the general commercial district (Kaua'i County Code (KCC) §8-2.4(j)(18)), limited industrial district (§8-2.4(m)(12)), and in the general industrial district (§8-2.4(n)(17) without a permit. In the City and County of Honolulu, research laboratories are a permitted use in B-2 business districts (Revised Ordinance of Honolulu (ROH) § 21-3.110-1), business mixed use districts (ROH § 21-3.120-2) I-1 and I-2 industrial districts (ROH § 21-3.130-I), and industrial-commercial mixed use district (ROH § 21-3.140-I). The thirteen observatories and associated building improvements and utilities are activities and uses appropriate to commercial and industrial districts as defined by ordinances or regulations of Hawai'i county and other counties. *See* HRS § 205-2(b).

Industrial districts traditionally have been the receptacle into which all uses are placed after those worthy of protection have been provided for. This is substantively the rule imposed under HAR § 15-15-24, which provides that permissible uses in the urban district consist in: "[a]ny and all uses permitted by the counties, either by ordinances or rules may be allowed within this district, subject to any conditions imposed by the commission pursuant to section 205-4(g), HRS."

Placement of research facilities has entailed specific considerations that accord with the "catch-all" nature of industrial districts. Districting areas for research facilities entails specific considerations that are not included in the eight criteria for conservation district use. *See* HAR §13-5-30. Such considerations include "extensive provisions concerning the buildings, structures, facilities and equipment which can be used on property[;]" whether experiments within the facilities might create a risk of harm or damage to persons, structures or plant growth beyond the boundaries of the land, inclusion of safeguards against "noise, smoke, dust, odor and certain other specified conditions," special conditions concerning access to and egress from the premises, and requirements for sanitation. These are examples of the exacting standards under a special zoning law imposed on research laboratories proposed to be located near residences. *See Summ v. Zoning Commission of Town of Ridgefield*, 186 A.2d 160, 164 (Conn. 1962) (affirming the zoning commission's decision to change zoning regulations to allow procedures for making a limited area available for research laboratories); *Thomas v. Town of Bedford*, 184 N.E.2d 285, 286 (N.Y. 1962); *Sieber v. Laawe*, 109 A.2d 470, 475 (N.J. Super Law Div. 1954) (upholding the municipality's amendment of the

zoning ordinance to allow for special permits for research laboratories in certain residential zones); *V.F. Zahodiakin Engineering Corp v. Zoning Bd. of Adjustment*, 86 A.2d 127 (1952) (upholding city's refusal to continue a zoning exception for research laboratory and other industrial uses).

B. Successive permits for industrial research facilities in the de facto industrial use precinct unlawfully evade Hawai'i Land Use boundary amendment laws.

The de facto industrial use precinct is the consequence of successive issuances of conservation district use permits and subleases and development of the area as an "astronomy precinct" by DLNR sublessees.[1] *See Spandorf v. Board of Appeals of Village of East Hills*, 167 A.D.2d 546 (N.Y. App. Div. 1990) (upholding zoning board's determination that successive variances had begun to change the character of the neighborhood).

BLNR is authorized to determine permissible uses of conservation lands under HRS chapter 183C and to promulgate rules authorizing uses of conservation district lands. While the Commission has no authority to determine the validity of conservation district use permits purporting to authorize an industrial use in the conservation district, the Commission does have the jurisdiction and the obligation to declare the incompatibility of the cumulative effect on the use of the lands consequent to the successive granting of conservation district use permits within the conservation district for industrial uses, which are rather appropriate to the urban district.[2] *See* HRS §205-2(e); *Perreault v. Town of New Hampton*, 193 A.3d 266, 270 (N.H. 2018) (upholding zoning board's consideration of cumulative impact in a zoning case); *In the Matter of Millennium Custom Homes, Inc. v. Young*, 58 A.D.3d 740, 742 (N.Y. App. Div. 2009) (variance application upheld upon examination of "the cumulative effect of the multiple variances requested"); *Matter of Josato, Inc. v. Wright*, 35 AD3d 470, 471 (N.Y. App. Div. 2006) (zoning board could consider the "cumulative effect"

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[1] The University's 2000 Master Plan proposed the creation of an astronomy precinct encompassing approximately 525 acres of the overall Science Reserve. Although the Master Plan was never formally adopted, the term "astronomy precinct" continues to be used in University planning documents. *See* Exh. 01 at 5.

[2] Petitioners note that this Commission is currently considering two petitions to reclassify conservation district lands into other, more intensively-used districts: (1) Kevin M. Barry and Monica S. Barry, Trustees of the Barry Family Trust, who have a pending petition for a district boundary amendment to reclassify 0.51 acres of Ke'eau, Puna, Hawai'i conservation land into the agricultural district in LUC Dkt. No. A18-806; and (2) the Hawaiian Memorial Life Plan, Ltd., which has petitioned to reclassify 53.449 acres of conservation land in Kāne'ohe, O'ahu to the urban district in LUC Dkt. No. A17-804.

of the 16 requested variances, even if the effect of each alone would be relatively minor); *Tetra Builders, Inc. v. Scheyer*, 251 A.D.2d 589 (N.Y. App. Div. 1998) (upholding zoning board's denial of application "[i]n light of the cumulative effect of the multiple variances").

This Commission is required to classify conservation district lands within the limitations set forth by HRS § 205-2(e), which expressly includes "permitted uses not detrimental to a multiple use conservation concept" and conversely, prohibits such detrimental uses. *Id.* This Commission's statutory jurisdiction over the classification of conservation lands prohibits the use of these lands for urban, rural or agricultural uses detrimental to a multiple use conservation concept. HRS §205-2(e). The only exception in this statute to this implicit prohibition against industrial uses of conservation district lands is geothermal resource exploitation, which is irrelevant to the situation presented here.

IV. Potential parties

Parties with potential interests in requested declaratory orders from this Commission include:

(i) persons and organizations whose rights to a clean and healthy environment are defined by HRS §205-4(e) protections for summit lands of the Mauna Kea State conservation district, such as the Sierra Club Moku Loa Group;

(ii) native Hawaiian traditional and customary practitioners whose practices involve the undeveloped summit lands of the Mauna Kea conservation district: Clarence Kukauakahi Ching, E. Kalani Flores, Pua Case, Hawane Rios, Ruth Aloua, Deborah J. Ward, Paul K. Neves, Cindy Freitas, Joseph Kualii Lindsey Camara, Richard L. Maele DeLeon, Harry Fergerstrom, Tiffnie Kakalia, Kalikolehua Kanaele, Kaho'okahi Kanuha, Lanakila Managuil, Pua Kanahele, Mehana Kihoi, Glen Kila, Maelani Lee, Lanny Alan Sinkin, Mauna Kea Anaina Hou, Kealoha Pisciotta, Jennifer Leinaala Sleightholm, Yvonne Mahelona, Dwight J. Vicente, and William Freitas;

(iii) the University of Hawai'i;

(iv) the Board of Land and Natural Resources; and,

(v) existing University sublessees of Mauna Kea summit lands: National Aeronautics and Space Administration, Canada-France-Hawai'i Telescope Corporation, California Institute of Technology (Caltech Submillimeter Observatory, Keck I and Keck II), National Astronomy Observatory of Japan, Smithsonian Institution, Associated Universities Inc.

(Very Long Baseline Array) National Science Foundation (Gemini North), and the TMT International Observatory Corporation.

V. Prayer for relief

For the foregoing reasons, Petitioner respectfully requests this Commission grant this Petition and issue declaratory orders stating:

(1) current industrial research facility uses in the de facto industrial use precinct are appropriate within the urban district as prescribed by HRS § 205-2(b) and not the conservation district;

(2) further industrial uses proposed for the de facto industrial use precinct must comply with HRS chapter 205 and Commission procedures for obtaining a district boundary amendment to reclassify conservation lands into the urban district; and,

(3) even if a single scientific laboratory or other research facility may be appropriate within non-urban districts, the successive, individual approval of thirteen scientific laboratories, other research facilities, and associated offices, parking lots, and utilities, within the de facto industrial use precinct constitutes urban uses inconsistent with conservation district uses and/or detrimental to a multiple use conservation concept for which a district boundary amendment must be obtained.

DATED: Honolulu, Hawai'i September 3, 2019

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BEFORE THE LAND USE COMMISSION

THE STATE OF HAWAI'I

In the Matter of the Petition of KU'ULEI HIGASHI KANAHELE and AHIENA KANAHELE, individuals,	)	DECLARATION OF KU'ULEI HIGASHI KANAHELE

DECLARATION OF KU'ULEI HIGASHI KANAHELE

I, KU'ULEI HIGASHI KANAHELE, do declare under penalty of law that the following is true and correct.

1. I make this declaration based upon my personal knowledge, information and belief.

2. I am a resident of the island of and county of Hawai'i.

3. I am more than eighteen years of age.

4. I am one of the Petitioners in the above captioned proceedings concerning the improper use of approximately 525 acres of State Land Use Conservation District lands located in Mauna Kea and Hilo, County of Hawai'i, Tax Map Key No.: 4-4-015:009 (por.) ("de facto industrial use precinct").

5. These lands have meaning for myself and my family.

6. I am married to Petitioner AHIENA KANAHELE.

7. We live on Hawaiian Home Lands in Panaewa.

8. I have never requested or been granted a contested case hearing on my interests and rights in lands on Maunakea.

9. I am a Native Hawaiian descended from the peoples who inhabited the Hawaiian archipelago prior to 1778, and a traditional and customary practitioner.

10. My cultural practices involve Hawaiian religion/spirituality (Papakū Makawalu) through hula and oli.

11. I learned hula and oli from Hālau O Kekuhi, the hālau hula and center of cultural knowledge for the Edith Kanaka'ole Foundation.

12. I was a chant/ oli student of Pualani Kanaka'ole Kanahele for several years.

13. Pualani Kanaka'ole Kanahele is my mother-in-law, kumu hula and kumu oli, and Papakū Makawalu mentor.

14. I am the lead Papahulihonua (earth science) researcher with the Edith Kanaka'ole

Foundation.

15. My primary duty is to interpret traditional Hawaiian chants to understand how our ancestors lived and thrived in our island environment. Understanding traditional chants is important because chants document centuries of environmental observations and is the method our ancestors used to record that information.

16. In 1813, Kamehameha III, Kauikeaouli, was born and to honor this occasion, a chant was composed to highlight Kauikeaouli's lineage. Hawaiian royal lineage begins with the creation of the world and such is the case in Kauikeaouli's birth chant. In his chant, night was born first because darkness is a necessary component for gestation and growth. Out of this darkness was born Hawai'i Island, the sacred firstborn of all land. Daylight was born next and with it, the birth of clouds and the atmosphere. The birth of daylight and clouds together shows our ancestors' understanding of hydrology in the islands in that the sun's heat is a causative of the formation of clouds.

17. After daylight, ka mauna a Kea (the mountain of Kea) is born. Ka mauna a Kea, commonly known as Maunakea, is born of the gods, Wākea (sky) and Papa (earth). Kauikeaouli's genealogy chant is a confirmation of Maunakea's sacredness in the Hawaiian mind – Maunakea is born of gods, the same gods who will later be the progenitor of the Hawaiian race. From this stems the Hawaiian belief that Maunakea is an ancestor to the Hawaiian people.

18. The sacredness of Maunakea does not lie only in the fact that Maunakea is descended from the gods Papa and Wākea. Maunakea's summit touches the atmosphere and stands in the wao akua (god zone) where our gods are found. Hawaiian akua (gods) are not invisible spiritual beings, Hawaiian akua are the physical elements that give life – water, snow, mist, etc. The summit of Maunakea is sacred it is a wao akua where water, snow, and mist are found, far removed from the wao kanaka (human zone). To protect this wao akua and keeps its elements pristine, our ancestors designated the summit as sacred and limited access to a select few, who were only able to access the summit for specific reasons.

19. In my practices, Maunakea is the wao akua that captures and supplies Hawai'i island with water.

20. Maunakea is responsible for gathering, storing and distributing the water on Hawai'i Island. As mentioned in Kauikeaouli's birth chant, the sun is the causative of cloud formation, but it is Maunakea's role to attract the clouds to our island. The Kumulipo, Hawai'i's cosmological chant, states that Maunakea's forests then act as pahuwai (storage basins) for the water to collect and

recharge the aquifer, hānau ʻo waomaʻukele, he mau pahukapu.

21. The chant, "E Ō E Maunakea" names specific water gods of Maunakea: Poliʻahu (snow), Lilinoe (mist), Waiau (lake), and Kalauʻākolea (fog drip). In essence, Maunakea draws clouds to its summit and the precipitation (in the form of snow, mist, and fog drip) feeds Lake Waiau and our island's aquifer. This chant, like countless others, speaks of the water cycle and the role that Maunakea plays in it.

22. My traditional and customary practices require the conservation of the Maunakea summit so that it can function as a wao akua.

23. My religion informs me that my akua (deities) are the elements of the earth. Pele is my akua, she is the pele (lava) that creates new land. Wākea is my akua, he is the wākea, the spaces that are "broad, wide, spacious, open, unobstructed", inclusive of the summit of Maunakea and the atmosphere above it.

24. Industrial development at the summit of Maunakea desecrates the very nature/essence of my akua, by destroying the open, unobstructed space that is characteristic of conservation districts.

25. My practices are injured by encroachments of human activity and construction on the summit areas of Maunakea.

26. Construction, including industrial construction, on the Maunakea summit injures my spiritual practices.

27. I would participate to strongly oppose a proposed boundary amendment to reclassify conservation district lands at the Maunakea summit into the Urban district.

28. Because the proper procedure for proposing industrial development on conservation district lands was not instituted, I was deprived of my ability to protect my traditional and customary practices, right to a clean and healthy environment, and other property rights in public trust lands.

29. There are no other public processes through which I can protect my cultural practices and other interests in the use and future for Maunakea lands.

30. Attached as Exhibit "01" is a true and correct copy of excerpts from the 2018 Annual Report on the status of the implementation of the Mauna Kea Comprehensive Management Plan (CMP), which was submitted to the State of Hawai'i, Board of Land and Natural Resources (BLNR) for their January 25, 2019 meeting, and was downloaded from the BLNR website. *See* BLNR Agenda Item K-2-1 (Jan. 25, 2019) *available at*: https://dlnr.hawaii.gov/wp-content/uploads/2019/01/K-2-1.pdf.

31. Attached as Exhibit "02" is a true and correct copy of the General Lease between BLNR and the University of Hawai'i, dated January 21, 1968.

32. The lack of sufficient street-lighting, consequent to industrial observatory operations on Mauna Kea, impairs the ability of members of the surrounding community to safely navigate roads in Hawai'i county at night. Attached as Exhibit "03" is a true and correct copy of University of Hawai'i, Institute for Astronomy, "New Lighting Law Protects Observatories," *Nā Kilo Hōkū*, No. 23 (2007) *available at*: https://www2.ifa.hawaii.edu/newsletters/article.cfm?a=328&n=28.

DECLARANT FURTHER SAYETH NAUGHT

DATED: Hilo, Hawai'i September 1, 2019

KU'ULEI HIGASHI KANAHELE
Declarant

BEFORE THE LAND USE COMMISSION

THE STATE OF HAWAI'I

In the Matter of the Petition of	)	DECLARATION OF AHIENA KANAHELE
KU'ULEI HIGASHI KANAHELE and AHIENA KANAHELE, individuals,	)	

DECLARATION OF AHIENA KANAHELE

I, AHIENA KANAHELE, do declare under penalty of law that the following is true and correct.

1. I make this declaration based upon my personal knowledge, information and belief.

2. I am a resident of the island of and county of Hawai'i.

3. I am more than eighteen years of age.

4. I am one of the Petitioners in the above captioned proceedings concerning the improper use of approximately 525 acres of State Land Use Conservation District lands located in Mauna Kea and Hilo, County of Hawai'i, Tax Map Key No.: 4-4-015:009 (por.) ("de facto industrial use precinct").

5. I am married to Petitioner KU'ULEI HIGASHI KANAHELE.

6. We live on Hawaiian Home Lands on Hawai'i island.

7. I have never requested or been granted a contested case hearing on my interests and rights in lands on Maunakea.

8. I am a native Hawaiian descended from the peoples who inhabited the Hawaiian archipelago prior to 1778, and a traditional and customary practitioner.

9. I am a beneficiary of the trust administered by the Department of the Hawaiian Home Lands and Hawaiian Homes Commission.

10. My cultural practices involve ocean-going activities, including surfing and lawai'a, as well as Hawaiian spirituality.

11. I learned my cultural practices from my Hawaiian family and other members of our community.

12. Pualani Kanaka'ole Kanahele is my mother. Maunakea summit lands have meaning for myself and my family.

13. In the early 2000s, I worked for the Office of Mauna Kea Management as a ranger for approximately seven years.

14. During my tenure as a ranger, I visited the summit lands of Maunakea regularly.

15. My cultural practices center Maunakea as the wao akua, a sacred space where human activity and construction must be minimized.

16. My traditional and customary practices require the conservation of the Maunakea summit so that it can function as a wao akua.

17. Intensive human activity, including industrial construction, on the Maunakea summit injures my spiritual and traditional and customary practices practices.

18. I have observed uses contributing to the urban and industrial character of the de facto industrial use precinct areas that obstruct scenic areas, open space, and the silence and natural sounds that should characterize the Maunakea conservation district.

19. My practices and beliefs instruct that humans should not be long in the wao akua of the Maunakea summit.

20. I worked as ranger on Maunakea to mālama the area in light of the fact that the state and others have elected to introduce human uses of the summit areas.

21. Industrial facilities create noise disturbances that are incompatible with serene uses and enjoyment of the Maunakea summit's open spaces.

22. I would participate to strongly oppose a proposed boundary amendment to reclassify conservation district lands at the Maunakea summit into the Urban district.

23. Because the proper procedure for proposing industrial development on conservation district lands was not instituted, I was deprived of my ability to protect my traditional and customary practices, right to a clean and healthy environment, and other property rights in public trust lands.

24. There are no other public processes through which I can protect my cultural practices and other interests in the use and future for Maunakea lands.

DECLARANT FURTHER SAYETH NAUGHT

DATED: Hilo, Hawai'i September 1, 2019

AHIENA KANAHELE
Declarant

EXHIBIT 01

STATE OF HAWAI`I
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
Honolulu, Hawai`i

January 25, 2019

Board of Land and
Natural Resources
State of Hawai`i
Honolulu, Hawai`i

REGARDING:
1. 2018 Annual Report on the status of the implementation of the Mauna Kea Comprehensive Management Plan (CMP) (non-action item); and
2. Request to delegate to the Chair of the Board of Land and Natural Resources the authority to name a Department of Land and Natural Resources (DLNR) representative to participate in the CMP five-year management review process

PERMITTEE: University of Hawai`i at Hilo

REPRESENTATIVE: Stephanie Nagata, Director, Office of Mauna Kea Management, 200 W. Kawili Street, Hilo, HI 96720

LANDOWNER: State of Hawai`i; leased to the University of Hawai`i under General Lease S-4191

LOCATION: Mauna Kea Science Reserve, Ka`ohe Mauka, Hāmakua District, Hawai`i

TAX MAP KEYS: (3) 4-4-015:009 (Maunakea Science Reserve)
(3) 4-4-015:012 (Halepōhaku)

ARE OF PARCEL: approximately 11,288 acres (Mauna Kea Science Reserve)
19.3 acres (Halepōhaku)

SUBZONE: Resource

ATTACHMENTS: Exhibit 1: 2018 Annual Report to the Board of Land and Natural Resources
Exhibit 2: 2018 Board Briefing on Maunakea Management
Exhibit 3: General and Special Conditions contained in Conservation District Use Permit (CDUP) HA-3568 for the Thirty Meter Telescope

BACKGROUND

On April 9, 2009, the Board of Land and Natural Resources approved the Maunakea Comprehensive Management Plan (CMP) for the Maunakea Science Reserve, including Halepōhaku and the Summit Access Road, Ka`ohe, Hāmakua District, Hawai`i

On March 25, 2010, the Board approved four associated resource subplans which elaborated on the management actions contained in the CMP. The four plans were the Natural Resource Plan, Cultural Resources Management Plan, Public Access Plan, and Decommissioning Plan.

A condition of the approval is that the University Board of Regents, or its authorized designee, submit annual reports to the Board of Land and Natural Resources, in writing and in person, with information regarding the status of the development of each sub plan, and the status of the development of each management action.

This current report reflects the ongoing management actions and activities in the Science Reserve for the 2018 calendar year. The full report is attached as Exhibit 1.

Previous years' reports are available on OCCL's website at dlnr.hawaii.gov/occl/maunakea-management.

OCCL notes that CMP is in the process of being updated. OMKM is currently preparing a report on the status of the cultural and natural resources for Maunakea. This will form the basis for any proposed revisions to the CMP. At the end of the process the revised CMP will be presented to the BLNR for consideration.

One of the conditions of the Thirty Meter Telescope approval is that the University allow DLNR to name a representative to the review committee. OCCL will be recommending that the Board delegate to the Chair the authority to name the representative.

UPDATES TO 2018 BOARD BRIEFING

OCCL facilitated a board briefing on Maunakea Management in January 26, 2018. OCCL's staff report for the briefing is attached as Exhibit 2. We would like to offer the Board the following brief updates to the items discussed at the briefing:

Built Environment

In June 2018 the Board approved CDUP HA-3812 for parking improvements at the Maunakea Visitor Center. OCCL reviewed and approved the construction plans in October. Work is currently on-going.

OMKM has proposed relocating commercial star-gazing vans to the Halepōhaku staff parking area, in order to separate commercial and individual visitors. The University has also expressed interest in installing a gate above the Visitor's Center as a public safety

measure when hazardous and unsafe conditions require the closure of the access road. They have not yet submitted a permit application for these last two items.

Decommissioning

The UH Hilo Telescope and the Caltech Submillimeter Array (CSA) are currently non-operational. The UH Hilo Telescope has been removed, and the University intends to remove internal equipment from CSA (mirrors, shells, etc.) in mid-2019.

Public scoping on the CSA decommissioning was completed in January 2018. OCCL is currently waiting on the draft environmental assessment for the decommissioning plan.

The Thirty Meter Telescope (TMT) has developed an Decommissioning Funding Plan which included a Financial Assurance Statement of Intent. Future site restoration is estimated to cost $17.1 million (2013 dollars).

Administrative Rules

In July 2018 Governor Ige gave approval for the University to move ahead with public hearings on the proposed Administrative Rules regarding public and commercial activities on Mauna Kea lands. A round of public hearings was held in September. On October 18, 2018 the University of Hawai'i Board of Regents approved a request to revise certain provisions in the draft.

The revised rules will be subject to additional consultation and a second round of public hearings.

OCCL is monitoring the progress of the proposed rules.

Land Authorizations

An Environmental Impact Statement Preparation Notice (EISPN) for a new land authorization for long-term continuation of astronomy on Maunakea was published in February 2018. Public open house meetings were held in March 2018.

The EISPN discusses a "No Action Alternative," an action alternative under which the University receives a new authorization for a reduced land area relative to its current encumbered area, and an action alternative under which it receives a new authorization for the same areas it currently leases or holds an easement over.

Thirty Meter Telescope

The Board of Land and Natural Resources issued a Decision and Order authorizing the issuance of a CDUP for the telescope on September 27, 2017 (reference CDUP HA-3568). This decision was appealed to the Supreme Court of the State of Hawai'i. After hearing arguments on the appeal, the Supreme Court upheld the Board's decision in an opinion published on October 30, 2018 (reference SCOT-17-0000811).

Pursuant to the Board's Decision and Order:

> Construction can be initiated once the permittee demonstrates compliance with the preconstruction conditions and mitigation measures contained in the Decision. The Department is required to review the construction and grading plans for consistency with the permit. Once the construction and grading plans have been signed and the preconstruction conditions have been met the Department will issue a Notice to Proceed to TMT.
>
> Any work done or construction to be done on the land shall be initiated within two (2) years of the approval of such use, in accordance with construction plans that have been signed by the Chairperson, and, unless otherwise authorized, shall be completed within twelve (12) years of the approval. The UH Hilo shall notify the Department in writing when construction activity is initiated and when it is completed;
>
> Before proceeding with any work authorized by the Board, UH Hilo shall submit four copies of the construction and grading plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to UH Hilo. Plan approval by the Chairperson does not constitute approval required from other agencies,

The full set of general and special conditions is attached as Exhibit 3.

The permittee is currently considering a multi-phased development plan, starting with Civil Construction. "Civil Construction" involves geotechnical studies, access way improvements, utility installation, rough grading of the site, and building the telescope pier foundation.

Auditor's Report

The only outstanding item specific to DLNR is that "DLNR continue to work with UH to renew the general leases." The other open items regard the adoption of new administrative rules and revising the CMP.

Miscellaneous

Release of hydraulic fluid: A release of hydraulic fluid was observed at the Keck Observatory in June 2018. The State of Hawai'i Department of Health Hazard Evaluation and Emergency Response Office was notified, and an outside consultant, Masa Fujioka & Associates, was hired to provide third-party guidance. An examination revealed that the fluid was seeping from the observatory's hydrostatic bearing system, at a rate of approximately 0.5 gallons / month, and had migrated to the top one inch of soil underneath the facility's foundation.

The OCCL and Chair's office subsequently conducted a site visit to the Keck Observatory.

Immediate mitigation consisted of cleaning and degreasing concrete surfaces and placing oil absorbent mats on the pier structure. A permanent rubber seal was also placed around the structure to contain any future seepage.

The final report from the consultant recommended that the contaminated soil should be managed in place, and that an Environmental Hazard Management Plan should be conducted for any future construction or decommissioning to manage the impacted soil. Keck is currently working on addressing comments received from the Department of Health on the final disposition plan.

Air Craft Debris: There are six known spots in the summit region that contain debris from aircraft and drone crashes, four of which are on University-managed lands. Although not all are from military craft, the Garrison Command Sergeant Major of the USAG Pōhakuloa Training Center has been working with OMKM and OCCL to put together a team to remove the debris. Initial reconnaissance hikes were conducted over the summer of 2018. The final removal plan will be submitted to OCCL for review.

RECOMMENDATION

1) OCCL is presenting the attached annual report as a "non-action" item on the Board's Agenda. We have invited a representative from the Office of Maunakea Management to give a brief presentation to the Board;

2) That the Board of Land and Natural Resources authorize the Chair of the Board to name a DLNR representative to the review committee for the update of the Comprehensive Management Plan for Maunakea.

Respectfully submitted,

Michael Cain

Michael Cain, Staff Planner
Office of Conservation and Coastal Lands

Approved for submittal:

Suzanne D. Case, Chairperson
Board of Land and Natural Resources

STATE OF HAWAI`I
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
Honolulu, Hawai`i

January 26, 2018

Board of Land and
Natural Resources
State of Hawai`i
Honolulu, Hawai`i

REGARDING: **Board Briefing on Maunakea Management**

1. 2017 Annual Report on the Status of the Implementation of the Maunakea Comprehensive Management Plan (CMP)
2. Update on decommissioning plans for Maunakea observatories
3. Update on the status of proposed revisions to the Maunakea CMP
4. Update on the status of proposed administrative rules for Maunakea
5. Update on the status of the EIS for new land authorizations on Maunakea
6. Review of the July 2017 report from the State Office of the Auditor

PERMITTEE: University of Hawai`i at Hilo

LANDOWNER: State of Hawai`i

UNIVERSITY LEASES: General Lease S-4191 for the Maunakea Science Reserve
General Lease S-5529 for Halepōhaku
Grant of Easement S-4697 for the Maunakea Access Road

LOCATION: Ka`ohe, Hāmakua District, Hawai`i

TMK: (3) 4-4-015:009 (Maunakea Science Reserve)
(3) 4-4-015:012 (Halepōhaku)

AREA OF PARCELS: approximately 11,288 acres (Maunakea Science Reserve)
19.3 acres (Halepōhaku)

SUBZONE: Resource

I. EXECUTIVE SUMMARY

The Office of Conservation and Coastal Lands is presenting this report on Maunakea Management as a "non-action" briefing. In particular it will focus on the status of the development of the Maunakea Comprehensive Management Plan and its associated subplans. We have included a map of the University-managed lands on Maunakea as **Exhibit 1**, and a map of the observatories on the summit as **Exhibit 2**.

On April 9, 2009, the Board of Land and Natural Resources approved the Maunakea Comprehensive Management Plan (CMP) for the Maunakea Science Reserve, including Halepōhaku and the Summit Access Road, Ka`ohe, Hāmakua District, Hawai`i

On March 25, 2010, the Board approved four associated resource subplans which elaborated on the management actions contained in the CMP. The four plans were the Natural Resource Plan, Cultural Resources Management Plan, Public Access Plan, and Decommissioning Plan.

Section V of this report contains more background on these subplans. It also provides brief updates on active issues involving public access, enforcement issues, commercial tours, and the decommissioning of observatories.

A condition of the CMP is that the permittee provide the Board with an annual written update on the status of the development of the management plan and subplans. The 2017 Annual Report is attached to this submittal as **Exhibit 3.** Related to this, we have included the University's 2006 report to the legislature on the long-term development of Maunakea as **Exhibit 4.**

OCCL is taking this opportunity to present updates on three interrelated items:

- Updates to the Maunakea Comprehensive Management Plan (Section V -F)
- Proposed new Administrative Rules for Maunakea (Section VI)
- New land authorizations on Maunakea (Section VII).

In addition, this report will review current University actions on some of the special conditions attached to the Decision and Order for the Thirty Meter Telescope (Section VIII). A summary provided by the University on Thirty Meter Telescope's THINK Fund & Workforce Pipeline Program is attached as **Exhibit 6**.

Finally, we will review the July 2017 Follow-up Report on Maunakea Management released by the State Office of the Auditor (Section IX). The report is attached to this submittal as **Exhibit 5.**

OCCL has created an online library for public documents relating to the management of lands on Maunakea at dlnr.hawaii.gov/occl/maunakea-management. The library contains Conservation District Use Permits and Applications, the Comprehensive Management Plan, sub-plans, and annual reports, and reports from the State Office of the Auditor. The current contents of the library are shown in **Exhibit 7**.

We have invited a representative from the Office of Maunakea Management to give a brief presentation to the Board on the 2017 Annual Report. Representatives from DOFAW, DOCARE, Land Division, SHPD, and OCCL will also be present following the briefing to answer any questions the Board might have.

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4. Report on long-term development of observatory sites on the summit of Mauna Kea
5. July 2017 Report from the State Office of the Auditor
6. Thirty Meter Telescope's THINK Fund & Workforce Pipeline Program
7. Online Maunakea Documents Library

II. BACKGROUND: THE MAUNAKEA SUMMIT

For the sake of clarity, OCCL will use the following terms for the summit region in this report:

The ***summit plateau*** is the alpine desert ecosystem 3900 meters above mean sea level. The slope shifts abruptly here, from approximately 27% downslope to less than 10% on the plateau. Geological evidence indicates that this broad, circular region was formed by remnant lava flows in the former caldera, and subsequently sculpted by glaciers. The plateau itself varies only approximately 100 meters in elevation, but it is dotted with scattered cinder cones that rise 30 to 180 meters above the surface of the plateau. Other significant geological features are the outcrops of hawaiite, an olivine basalt formed via the interaction of glacial ice and hot lava, and prized for adze making; the alpine Lake Waiau; and remanant glacial from previous episodes of glaciation in the summit region. The highest point is 4205 meters.

> ***Pu'u o Kūkahau`ula*** is the traditional name for the cluster of cones and ridgelines that are above 4080 meters. The names of the individual cones, Pu`uwēkiu, Pu`ukea, and Pu`uhau`oki, are believed to be more recent cartographic designations.
>
> The State Historic Preservation Division identifies Kūkahau`ula, as well as Lake Waiau and Pu`u Līlīnoe on the summit plateau, as *traditional cultural properties.* This area has a strong association with Hawaiian folklore and mythology.
>
> The ***north plateau*** is the portion of the summit plateau to the north of Kūkahau`ula, identified as the Great Rocky Table Summit in an 1891 government survey.

The ***lower summit region*** is the alpine shrub and grassland ecosystem above the tree line at 2900 meters. OCCL notes that the record indicates that the tree line has shifted down-slope since the introduction of cattle.

Maunakea's ***lower slopes***, from approximately 2000 meters to the tree line, is composed of a māmane-naio forest.

This report will focus on land uses and management for areas above 2700 meters.

A note on spelling: The UH School of Hawaiian Language recommends spelling Maunakea and Halepōhaku as one word. The Office of Maunakea Management adopted the one-word spelling in 2013. This report will follow this format unless the two-word spelling (Mauna Kea) is part of a proper name or direct quote.

III. BACKGROUND: MAUNAKEA ADMINISTRATIVE UNITS

A. Administrative Units

The Department of Land and Natural Resources (DLNR) managed areas in the summit region and upper slopes of Maunakea are the Mauna Kea Natural Area Reserve and the Mauna Kea Forest Reserve. The University of Hawai'i managed areas are the Maunakea Science Reserve, the Halepōhaku Midlevel Facilities, and the Maunakea Access Road between Halepōhaku and the summit.

The lower slopes of Maunakea also contain lands managed by or under the jurisdiction of the Department of Hawaiian Homelands, the U.S. Army (Pōhakuloa Training Area), and the U.S. Fish and Wildlife Service (Hakalau Forest National Wildlife Refuge). The County of Hawai'i maintains the Access Road below Halepōhaku.

Mauna Kea Forest Reserve: The Forest Reserve encompasses 52,500 acres, and is under the jurisdiction of DLNR's Division of Forestry and Wildlife (DOFAW). The māmane forest here is critical habitat for the federally listed palila.

Mauna Kea Ice Age Natural Area Reserve: The 2033-acre reserve was created in 1981. It is managed by DOFAW's Natural Area Reserve System. Among its unique geological and cultural features are the Keanakakoi adze quarry, Lake Waiau, and Pu'u Pōhaku). The Mauna Kea NAR is bounded by the Science Reserve and the Mauna Kea Forest Reserve.

The Maunakea Science Reserve is an 11.288-acre State-owned leased by the University of Hawai`i under General Lease S-4191, with day-to-day management delegated by the Board of Regents to the Office of Maunakea Management (OMKM). It contains most land within a 2.5-mile radius of the site of the UH 2.2-m telescope – in effect, all land above 3700 meters in elevation except for a pie-shaped wedge set aside as the Mauna Kea Ice Age Natural Reserve. The Science Reserve also includes a section in the lower summit region where the Very Long Baseline Array is located.

Halepōhaku is a 19.3-acre State-owned parcel below the summit region leased to the University of Hawai'i through 2041 under General Lease No. S-5529, which describes the character of use as "premises leased to be used solely for permanent mid-level facilities, a construction camp, an information station as well as existing facilities purposes." It is the site of the Onizuka Center for International Astronomy (Halepōhaku Mid-Level Facilities).

The portions of the **Summit Access Road** that extend from Halepōhaku to the boundary of the Science Reserve is also under UH management. This includes a 400-yard corridor on either side of the road, excluding those areas within the adjacent Mauna Kea Ice Age Natural Area Reserve.

The University's 2000 Master Plan proposed the creation of an astronomy precinct encompassing approximately 525 acres of the overall Science Reserve. Although the Master Plan was never formally adopted, the term 'astronomy precinct' continues to be used informally in planning documents.

B. DLNR Management Responsibilities

The **Division of Forestry and Wildlife** (DOFAW) manages the Mauna Kea Forest Reserve, as well as outdoor recreation programs, trail and access systems, and the hunting program.

Land Division is charged with the management and enforcement of leases, permits, executive orders, and other encumbrances.

The **Office of Conservation and Coastal Lands** (OCCL) is responsible for the permitting and regulating of land uses in the Conservation District. Conservation District Use Applications are processed by OCCL, although the Board of Land and Natural Resources has the final authority to modify, grant, or deny permits. OCCL is also responsible for investigating potential land use violations and permit violations.

The **State Historic Preservation Division** (SHPD) is charged with preserving and protecting historically and culturally significant properties as outlined in the National Historic Preservation Act, the Statewide Historic Preservation Plan, and Chapter 6E of the Hawai'i Revised Statutes. SHPD-managed programs include: Statewide Inventory of Historic Properties, Burial Sites Program, Certified Local Government Program, National Main Street Program, Historic Preserves Program, Information and Education Program, Interagency Archaeological Services, and maintenance of the Hawai'i and National Register of Historic Places. SHPD also reviews proposed development projects to ensure minimal effects of change on historic and cultural assets.

The **Hawai'i Island Burial Council** (HBC) falls under the jurisdiction of SHPD, and is responsible for the management of all human remains over fifty years old. Burial protection plans and burial treatment plans on Maunakea are required to be done in consultation with the HBC.

The **Division of Conservation and Resource Enforcement** (DCOARE) is responsible for enforcing all laws and rules that apply to lands that are managed by DLNR. Pursuant to Act 226 Session Laws of Hawai'i 1981, DOCARE's enforcement officers have full police powers to execute all state laws and rules within all state lands.

C. University Management Structure

The BLNR approved a Project Development Implementation Framework on February 18, 2010 that established a new management structure for the Science Reserve. The framework was based on the 2000 Mauna Kea Science Reserve Master Plan. The management structure now consists of:

- **The Office of Maunakea Management (OMKM):** The office is charged with the day-to-day management of the Maunakea Science Reserve as prescribed in the Master Plan, and reports directly to the UHH Chancellor.
- **Maunakea Management Board:** An advisory body comprised of seven members of the community who are nominated by the UH Hilo Chancellor and approved by the UH Board of Regents.
- **Kahu Kū Mauna Council:** A nine-member Native Hawaiian council appointed by the Board, and that advises the Board and Chancellor on cultural matters and issues

In addition, OMKM coordinates several advisory committees, including an Environment Committee and a Wēkiu Bug Scientific Committee.

The University's **Institute for Astronomy** (IfA) is responsible for conducting and coordinating astronomical research in the Science Reserve.

The **Maunakea Observatories Oversight Committee** is funded by the observatories, and contains representatives from each observatory as well as IfA. The funds are used to fund road maintenance, snow removal, facilities maintenance, management at the midlevel facilities, the Visitor Information Center, weather forecasting, and other common activities affecting the observatories.

The **Maunakea Observatories Support Services (MKSS)** oversees the Visitor Information Station, provides administrative support for the weather center and communication system, and operates the food and lodging at Halepōhaku. MKSS provides administrative support to OMKM for the Maunakea Ranger program.

The **Maunakea Ranger Program** was established in 2001 to provide daily oversight on University-managed lands. The rangers help educate the public about the natural and cultural resources of Maunakea, advise visitors of the hazards of high-elevation travel, safe driving information, and participate in search and rescue operations. In addition, they report potential violations of DLNR rules in the surrounding Forest Reserve and Mauna Kea Ice Age Natural Area Reserve. Other duties include conducting trail maintenance, invasive species removal, coordinating litter removal, and assisting with research on the summit. Rangers conduct daily patrols of Kūkahau'ula, and assist DLNR with monthly patrols and trash pick-up at Lake Wai`au, and periodic patrols to the Keanakakoi adze quarry, both part of the NARS.

There are currently eight full-time and three part-time rangers.

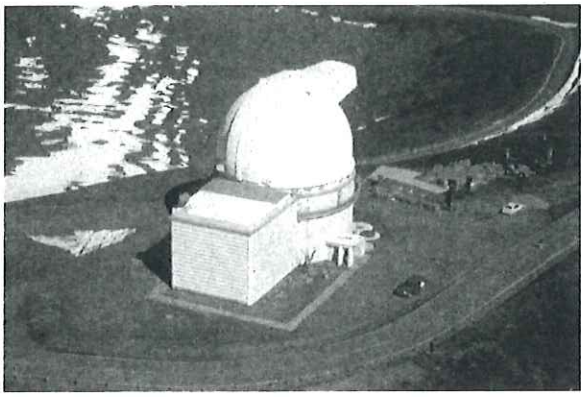
IV. Background: Maunakea Built Environment

There are currently thirteen observatories in the Maunakea Science Reserve: nine optical/infrared observatories[1] and three radio observatories[2] on Kūkahau`ula, and one radio observatory[3] in the lower summit region. A permit has been issued for one optical / infrared observatory[4] for the northern plateau in the Maunakea Science Reserve.

Two these telescopes are non-operational. The Caltech Submillimeter Observatory (CSO) was no longer scientifically competitive once the Atacama Large Millimeter/Submillimeter Array came online in Chile in 2011. Caltech has filed a Notice of Intent to Decommission, and has begun pre-assessment consultation and scoping for the decommissioning of the observatory. The UHH 0.9-m telescope, Hōkū Ke'a, is also non-operational. The University has filed a Notice of Intent to Decommission this telescope. The remaining observatories remain scientifically competitive.

A. Observatories

University of Hawai'i 2.2-meter Telescope (UH2.2)



The University of Hawai'i 2.2-meter telescope (UH2.2) was built in 1968 and became operational in 1970, making it the first large telescope built on the summit of Maunakea. It is currently owned and operated by the University of Hawai'i.

UH2.2 is the primary telescope used by UH professors, postdocs, and graduate students. In 1991 scientists discovered the first Kuiper Belt object, and in 1992 a team discovered forty-five of the known moons of Jupiter and additional moons on the outer planets. Current science includes an integral field spectrograph devoted to the observation of supernovae.

BLNR approved CDUP HA-954, an 'after-the-fact' permit, for the telescope in September 1977.

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[1] UHH 0.9m Telescope (Hōkū Ke'a), UH 2.2-m Telescope, NASA Infrared Telescope Facility (IRTF), Canada-France-Hawai'i Telescope (CFHT), United Kingdom Infrared Telescope (UKIRT), W.M. Keck Observatory (Keck I and II), Subaru Telescope, and Gemini North Telescope.

[2] Caltech Submillimeter Observatory (CSO), James Clerk Maxwell Telescope (JCMT), and the Submillimeter Array (SMA)

[3] Very Long Baseline Array (VLBA)

[4] Thirty Meter Telescope (TMT)

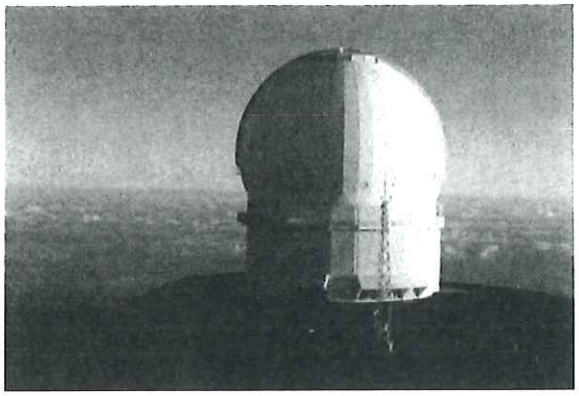
UH Hilo Hōkū Ke`a Educational Observatory

The original 0.6-meter telescope on this site was built by Air Force Cambridge Research Laboratories in 1968. Ownership was ceded to the UH Institute for Astronomy in June 1970, and transferred to the UH Hilo Department of Physics in 2003.

The original telescope was decommissioned in 2008, and a 0.9-meter telescope named Hōkū Ke'a was installed in its place. This telescope never achieved first light. A 0.7-meter replacement for Hōkū Ke'a was purchased in 2015, but before it was installed the University of Hawai'i at Hilo decided to decommission the site to comply with Governor David Ige's Ten Point plan for the Maunakea summit. UH Hilo is currently looking for a permanent site to locate the observatory.

BLNR approved CDUP HA-954, an 'after-the-fact' permit, for the telescope in September 1977. The University filed a Notice of Intent to decommission the site in February 2016.

Canada-France-Hawai'i Telescope (CFHT)



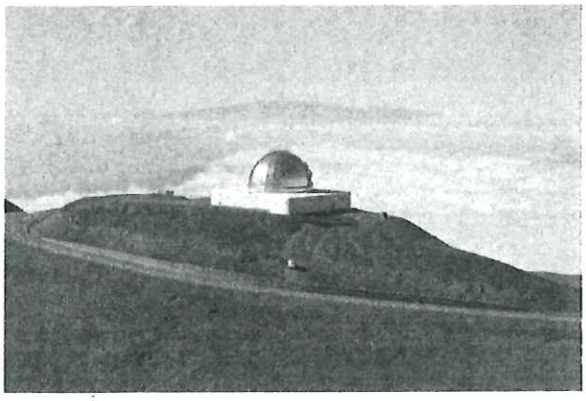
The CFHT is 3.6-meter optical telescope developed jointly by the University of Hawai'i, the Centre National de la Recherche Scientifique (France), and the National Research Council of Canada. The University of Hawai`i provides ten percent of the operating costs and one full-time staff person for CFHT as part of the telescope's tri-partite agreement.

Current science includes studies of the winds of Venus, detection of exoplanets, observations of interstellar dust, and the tracking of the interstellar asteroid 'Oumuamua.

Approximately 15% of the observing time is dedicated to the University of Hawai'i.

BLNR approved CDUP HA-527 for the telescope in 1974, and it began operations in 1979.

NASA InfraRed Telescope Facility (IRTF)



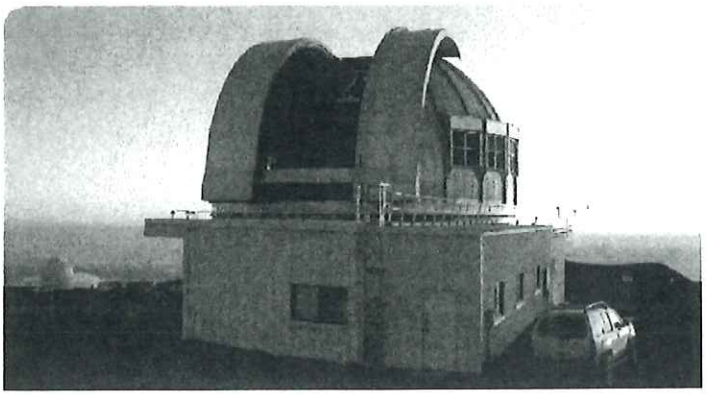
The IRTF is a 3-meter telescope that was initially built to support the Voyager missions to Jupiter, Saturn, Uranus, and Neptune. It is currently operated by the University of Hawai'i under a contract with NASA.

Current science includes research on the aurora on Saturn, observations of ozone on Mars, spectral monitoring, and observations of the moons of the outer solar system planets. The facility continues to provide support for NASA missions.

Approximately 15% of the observing time is dedicated to the University of Hawai'i.

BLNR approved CDUP HA-653 for the facility in 1975. It became operational in 1979.

United Kingdom Infrared Telescope (UKIRT)



BLNR approved CDUP HA-653 for the facility in 1975. It became operational in 1979. The University has discussed decommissioning UKIRT in accordance with Governor Ige's Ten Point Plan for Maunakea.

The 3.8-meter UKIRT is the second largest dedicated infrared telescope in the world. UKIRT was originally owned by the United Kingdom. Ownership was transferred to the University of Hawai'i in 2014. It was then funded by NASA until June 2017, and operated under a cooperation agreement among Lockheed Martin Advanced Technology Center, the University of Arizona, and the University of Hawai'i. In June 2017 the UH Institute for Astronomy took over the operation of UKIRT.

The majority of UKIRT's current science is dedicated to the Infrared Deep Sky Survey, though it has also been used to study orbital debris and for research by planetary scientists at the University of Hawai'i.

The actual viewing time by the University of Hawai'i on UKIRT fluctuates between 15% and 50%, depending on funding and its partnership agreements.

Very Long Baseline Array (VLBA)

The Mauna Kea Very Long Baseline Array (VLBA) is one unit in an integrated system of ten identical radio telescopes stretching from the U.S. Virgin Islands to Hawai'i, which are operated remotely from Socorro, New Mexico. Each VLBA station consists of a 25m antenna and an adjacent control building. The ten stations work together as one single instrument. It is in the lower summit region at approximately 3700 meters elevation.

The VLBA has been operated by the Long Baseline Observatory (LBO) since October 2016, when it separated from the National Radio Astronomy Observatory. The LBO is a facility of the National Science Foundation operated under a cooperative agreement by Associated Universities, Inc.

Current science includes a long-term project to map the complete 3D structure of the Milky Way; coordinated effort with NASA Fermi Gamma-ray Space Telescope to observe gamma-ray sources; long-term study of active galactic nuclei; tracking near-earth asteroids; and monitoring movements of the earth's crust by tracking the distance between the telescopes. Such measurements are an integral part of the earth-based control segment in the development and maintenance of the U.S. government's Global Positioning System (GPS).

BLNR approved the CDUP HA-2174 for the facility in 1989. The facility has been operational since 1992.

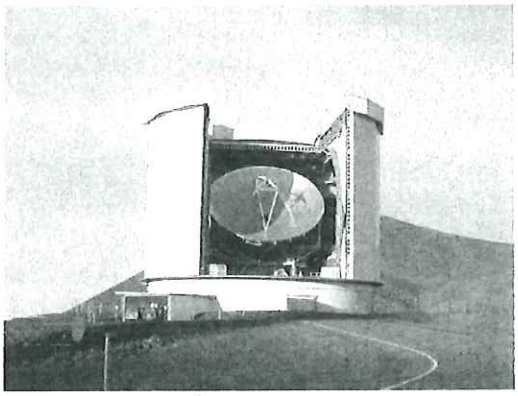
Caltech Submillimeter Observatory (CSO)

CSO is a 10.4 meter-diameter telescope located alongside the James Clark Maxwell telescope which is owned by the California Institute of Technology.

BLNR approved CDUP HA-1492 in December 1982. The facility was operational from 1986 through September 2015, with 15% of the viewing time dedicated to UH.

Caltech filed a Notice of Intent to Decommission with OCCL in February 2016. The public scoping period on the draft Environmental Assessment was completed on January 15, 2018.

James Clark Maxwell Telescope (JCMT)



The 15-meter JCMT is the largest submillimeter telescope in the world, and contains the second largest mirror on Maunakea

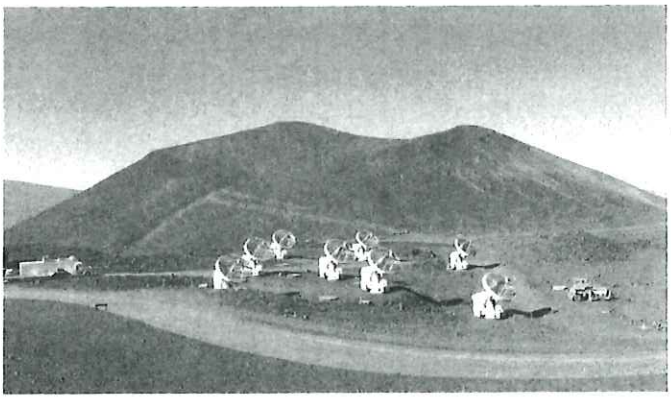
JCMT was originally funded by a partnership between the United Kingdom and Canada, and the Netherlands, and operated by the Joint Astronomy Centre. In March 2015 the operation of the JCMT was taken over by the East Asian Observatory.

Current science includes the study of the solar system, interstellar and circumstellar dust and gas. JCMT is also part of the Event Horizon Telescope, an array of global telescopes that coordinate observations and research on the Milky Way's supermassive black hole Sagittarius A.

Between 12.5% and 15% of the observing time is dedicated to the University of Hawai'i.

BLNR approved CDUP HA-1515 for the telescope in 1983, and it began operations in 1987.

Submillimeter Array (SMA)



SMA consists of eight 6-meter radio telescopes that operate as one unit. The telescopes can be arranged in varying configurations using 24 concrete pads. SMA is located at the base of Pu`u Poli'ahu in an area informally known as "Submillimeter Valley."

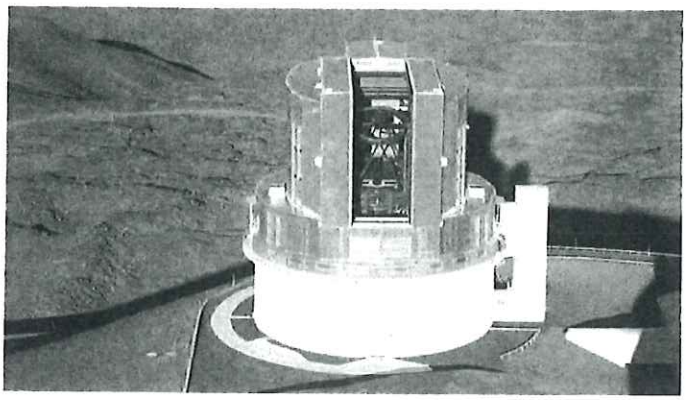
Current science includes the study of newly-formed planetary systems, asteroids, comets, both dying and new-born stars, and red-shifted radiation from the oldest objects in the universe.

The SMA is jointly operated by the Smithsonian Astrophysical Observatory and the Academia Sinica Institute of Astronomy and Astrophysics (Taiwan).

Between 12.5% and 15% of the observing time is dedicated to the University of Hawai'i.

BLNR approved CDUP HA-2728 for the array in 1994. The system became fully operational in 2003.

Subaru Telescope



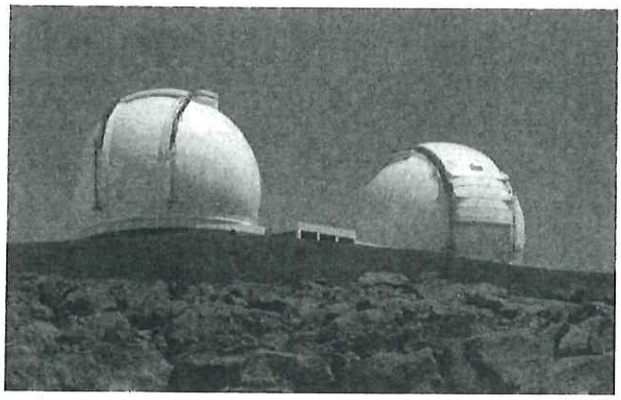
Subaru Telescope is an 8.2-meter optical-infrared telescope operated by the National Astronomical Observatory of Japan (NAOJ), National Institutes of Natural Sciences.

Current science includes the recent identification of 11 dwarf galaxies and two star-containing halos, tracking the source of gravitational waves, and mapping the hydrogen gas in the early universe.

Fifty-two nights per year, approximately 15% of the observing time, are dedicated to the University of Hawai'i.

The BLNR approved CDUP HA-3462 for Subaru in 1992. It achieved first light in 1999.

W. M. Keck Observatory (Keck I and Keck II)



The twin Keck Observatory telescopes primary mirrors are 10-meters, each composed of 36 hexagonal segments that work in concert as a single piece of reflective glass.

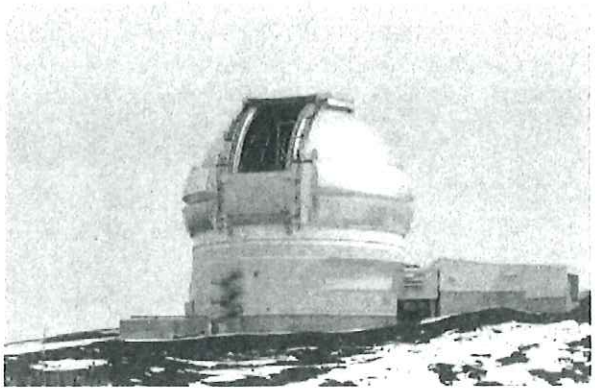
The W. M. Keck Foundation funded both the original Keck I telescope and Keck II. Today Keck Observatory is a 501(c)3 governed by the California Association for Research in Astronomy (CARA), whose Board of Directors includes representatives from the California Institute of Technology and the University of California, with liaisons from NASA and the Keck Foundation.

Keck currently produces over 150 papers per telescope per year, making it the most productive of any of the world's ground-based observatories. Current science includes the discovery of dozens of exoplanets, new studies on the rings and atmosphere of Uranus, high-resolution imaging of comets, and the study of protoplanetary accretion disks around fifteen young stars.

Approximately 10% of the observing time on Keck I and 15% on Keck II is dedicated to the University of Hawai'i.

BLNR approved CDUP HA-1646 for Keck I in 1984, and it saw first light in 1990. BLNR approved CDUP HA-2509 for Keck II in 1992, and it saw first light in 1993.

Gemini North Observatory



The Gemini Observatory consists of paired 8.1 meter optical/infrared telescopes, one in Chile and one in Hawai'i. It replaced the NASA-Lowell Observatory 24" telescope.

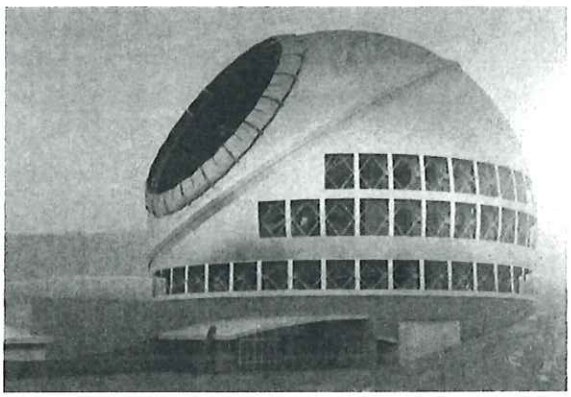
Gemini is operated by a partnership between the National Optical Astronomy Observatory (USA), National Research Council Canada, Comisión Nacional de Investigación Científica y Tecnológica de Chile, Institute for Astronomy University of Hawaii, Instituto de Astrofísica La Plata (Argentina), and the Laboratório Nacional de Astrofísica (Brazil).

The pairing of the telescope allows near complete coverage of both the northern and southern skies. Current research includes the imaging and analysis of exoplanets, star formation and evolution, quasars, and the large-scale structure of the universe.

Approximately 10% of the observing time is dedicated to the University of Hawai'i.

The BLNR approved CDUP HA-2691 for Gemini in 1994. The telescope saw first light in 2000.

Thirty Meter Telescope (TMT)



The core of the project is a 30-meter in diameter aperture telescope composed of 492 individual mirror segments, secondary and tertiary mirrors directing the gathered light, and a network of interchangeable sensors and instruments that will collect and process the light. TMT will be located on the north plateau, approximately ½ mile from the Kūkahau`ula Summit, at an approximate elevation between 4008 meters and 4015 meters.

The telescope will be operated by TMT International Observatory, LLC, an international partnership between the California Institute of Technology, the University of California, the National Institutes of Natural Sciences of Japan, the National Astronomical Observatories of the Chinese Academy of Sciences, the Department of Science and Technology of India, and the National Research Council (Canada).

Approximately 7.5% of the observing time will be dedicated to the University of Hawai'i.

The BLNR approved CDUP HA-3568 for TMT in a Decision and Order in October 2017. Should TIO secure all the necessary authorizations, it is estimated that construction will take seven years.

Five appeals of the Decision were filed in the State Supreme Court. DLNR filed the Record on the Appeal with the Court on December 5, 2017. Appellate briefs are due on the appeal February 15th, 2018. Answering briefs, and then reply briefs, will be due after this. The Court will schedule oral arguments once all briefs have been filed.

Oral arguments before the Court have not been scheduled yet.

OCCL notes that the 2000 Master Plan foresaw the construction of the Keck Outrigger Project on Maunakea. This project did not proceed. The Comprehensive Management Plan and its associated Decommissioning Plan foresaw the replacement of the UH 2.2-meter observatory with Pan-STARRS. This project did not proceed either, although a reduced version of Pan-STARRS was built on Haleakala.

B. Midlevel Facilities at Halepōhaku (Onizuka Center for International Astronomy)

The 19.3 acre Halepōhaku parcel (TMK (3) 4-4-015:012) is situated at an elevation of about 9,200 feet on the south slope of Maunakea. The parcel is leased to the University of Hawai'i through 2041 by the State Board of Land and Natural Resources (BLNR) under General Lease No. S-5529, which describes the character of use as "premises leased to be used solely for permanent mid-level facilities, a construction camp, an information station as well as existing facilities purposes."

The first cabins were built at Halepōhaku by the Civilian Conservation Corps in the 1930s to provide shelter for hunters and hikers. Wooden dormitories were built in 1967, and were used to supply support facilities and housing for construction workers, University of Hawai'i telescope observers, and support staff throughout the 1970s.

In 1976 the Board approved CDUP HA-781 for the construction of a 2600-square foot dormitory to house construction workers working on the United Kingdom Infrared Telescope (UKIRT).

In 1977 the Board approved CDUP HA-895 to demolish and replace two of the existing buildings with a fourteen-bed and an eight-bed dormitory, and to retrofit two existing mess halls.

In 1982 the Board approved CDUP HA-1430 for the construction of a 12,913-square foot support services and common area building, three dormitories totaling 13,938-square feet with a 59-bed capacity, a 2500-square foot maintenance building, an 800-square foot generator building, and an 1181-square foot Visitor Information Station (VIS).

In 1986 the Board approved CDUP HA-1819 for the subdivision of the Halepōhaku parcel, the establishment of a construction camp site with four cabins and a parking area, and the designation of a one-acre staging area south of the camp site.

In December 2017 OCCL accepted for processing Conservation District Use Application (CDUA) HA-3812 for parking and infrastructure improvements at the VIS. The application is currently out for public and agency comment. OCCL anticipates presenting the application to the Board for consideration in the second quarter of 2018.

The lower portion of Halepōhaku contains two unimproved gravel parking areas, one of which is used for overflow parking for the VIS and the other as a staging area for construction activities. The overflow parking is often used by commercial tour groups if the paved parking area adjacent to the VIS is full.

The section of the Maunakea Access Road above Halepōhaku is also under University management. In 1974 the Board approved CDUP HA-537 for the construction of a 4.6 mile one-lane road between Halepōhaku and the summit, and the filling and grading of an additional 1.9 miles of existing roadway. Fill material came from a seven-acre quarry near Pōhakuloa on the site of the 1843 lava flow.

VII. LAND AUTHORIZATIONS ON MAUNAKEA

A. General Leases

The Maunakea Science Reserve encompasses 11,288 acres of State land leased to the University of Hawai`i under General Lease S-4191. The lease commenced on January 1, 1968, and is set to expire on December 31, 2033.

The character of use for GL S-4191 reads: *For a scientific complex and as a scientific reserve being more specifically a buffer zone to prevent the intrusion of activities inimical to said scientific complex. Activities inimical to said scientific complex shall include light and dust interference to observatory operation and certain types of electric or electronic installation on the demised lands, but shall not necessarily be limited to the foregoing.*

The Halepōhaku parcel encompasses 19.261 acres of State land leased to the University under General Lease S-5529. The lease commenced on February 28, 1986, and is set to expire on February 28, 2041.

The character of use for GL S-5529 reads: *The lessee shall use or allow the premises leased to be used solely for permanent mid-level facilities, a construction camp, an information station as well as existing facilities purposes.*

Grant of Easement No. S-4697 covering the Maunakea Access Road was issued to the University as of September 8, 1981. The easement is coterminous with GL No. S-4191, ending on December 31, 2033.

B. EIS for New Land Authorizations

In 2013 the University sought the mutual cancellation of General Lease Nos. S-4191 and S-5529, and the issuance of a new 65-year direct lease. They also requested that the amendment of Grant of Easement No. S-4697 covering the Maunakea Observatory Access Road to be coterminous with the new general leases. The Board deferred action on the request until after an Environmental Impact Statement (EIS) was prepared for the proposed action.

The University is currently preparing an EIS preparation notice for new land authorization on Maunakea. UH anticipates publishing the notice in the Department of Health's *Environmental Notice* in the first quarter of 2018. The University will then compile public comments and prepare a draft EIS for review.

The Department anticipates that the University will be requesting a new land authorization. Other anticipated proposed terms will be that no telescope development will take place on a new site except for the TMT project, that named decommissioned sites will not be redeveloped, and that existing observatories will not expand beyond their existing sublease footprint.

The EIS will be exploring three alternatives: 1) new land authorization for the current areas under UH management, 2) let the leases and easement expire at the end of 2033 and the lands revert back to DLNR, or 3) issue a new land authorization for a reduced area including the astronomy precinct access road and Halepōhaku, effectively withdrawing 10,000 acres from the science reserve and returning them to DLNR management.

OCCL notes that the withdrawal of lands from the science reserve will present DLNR with several management challenges. Currently OMKM takes the lead regarding, among other issues, visitor safety; archaeological monitoring (at the approximate cost of $60,000-$65,000/annum, wēkiu bug monitoring, invasive species monitoring; resource research and management program development; photo documentation of the water level of Lake Waiau and trash clean-up; periodic monitoring of the adze quarry.

The withdrawal would necessitate that DLNR and the University formalize many of their working relationships with the development of collaborative management agreements and joint enforcement agreements. We would also note that the proposed Administrative Rules are for University-managed lands, and would not address DLNR managed lands on the summit.

OCCL notes that it is currently unclear whether the Maunakea Comprehensive Management Plan would continue to be in effect for and lands that are withdrawn from the Science Reserve.

C. Subleases

The University currently has subleases with seven organizations for the purposes of operating astronomical observatories. Institutions were to build and operate observatories at their own cost and risk, in exchange for providing UH with time on the telescopes. Each sublessee pays the University a nominal fee of $1.00 per annum in addition to giving the University a percentage of observing time on their respective telescope. UH used its dedicated time on the telescopes to build its astronomy program.

The subleases are:

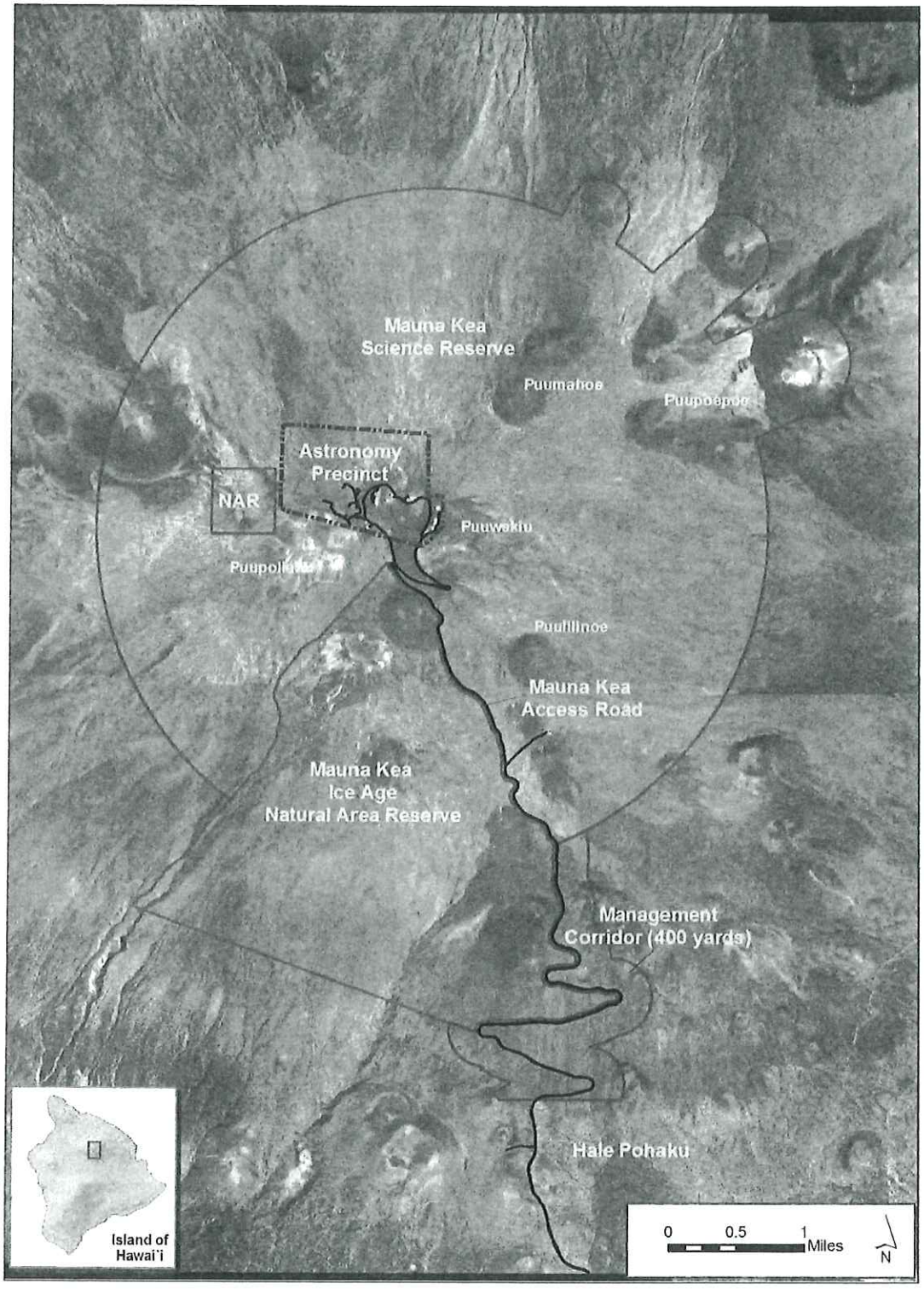
1974: National Aeronautics and Space Administration, 70,650 square feet (NASA IRTF)
1975: Canada-France-Hawai'i Telescope Corporation, 2 acres (Canada-France-Hawai'i Telescope)
1983: California Institute of Technology, 0.75 acres (Caltech Submillimeter Observatory)
1985: California Institute of Technology, 2 acres (Keck I and Keck II)
1997: National Astronomy Observatory of Japan, 5.4 acres (Subaru)
1997: Smithsonian Institution, 3 acres (Smithsonian Submillimeter Array)
1997: Associated Universities Inc., 87,500 square feet (Very Long Baseline Array)
1997: National Science Foundation, 2 acres (Gemini North)

All subleases are co-terminus with the University's General Lease.

In June 2014, the Board consented to a sublease between the University and TMT International Observatory. The consent is currently being challenged in the courts (ref. CAAP-17-0000059 Flores vs BLNR et al filed February 3, 2017). All briefs have been filed in the case. The Supreme Court has not yet scheduled oral arguments.

UH has notified the observatories that they will be paying rent under any new subleases.

Figure 3-1. UH Management Areas



INSTITUTE FOR ASTRONOMY
UNIVERSITY OF HAWAI`I
2680 Woodlawn Drive, Honolulu, HI 96822

Information Bulletin 19, March 2015

The Maunakea Observatories

Locations of Summit Facilities

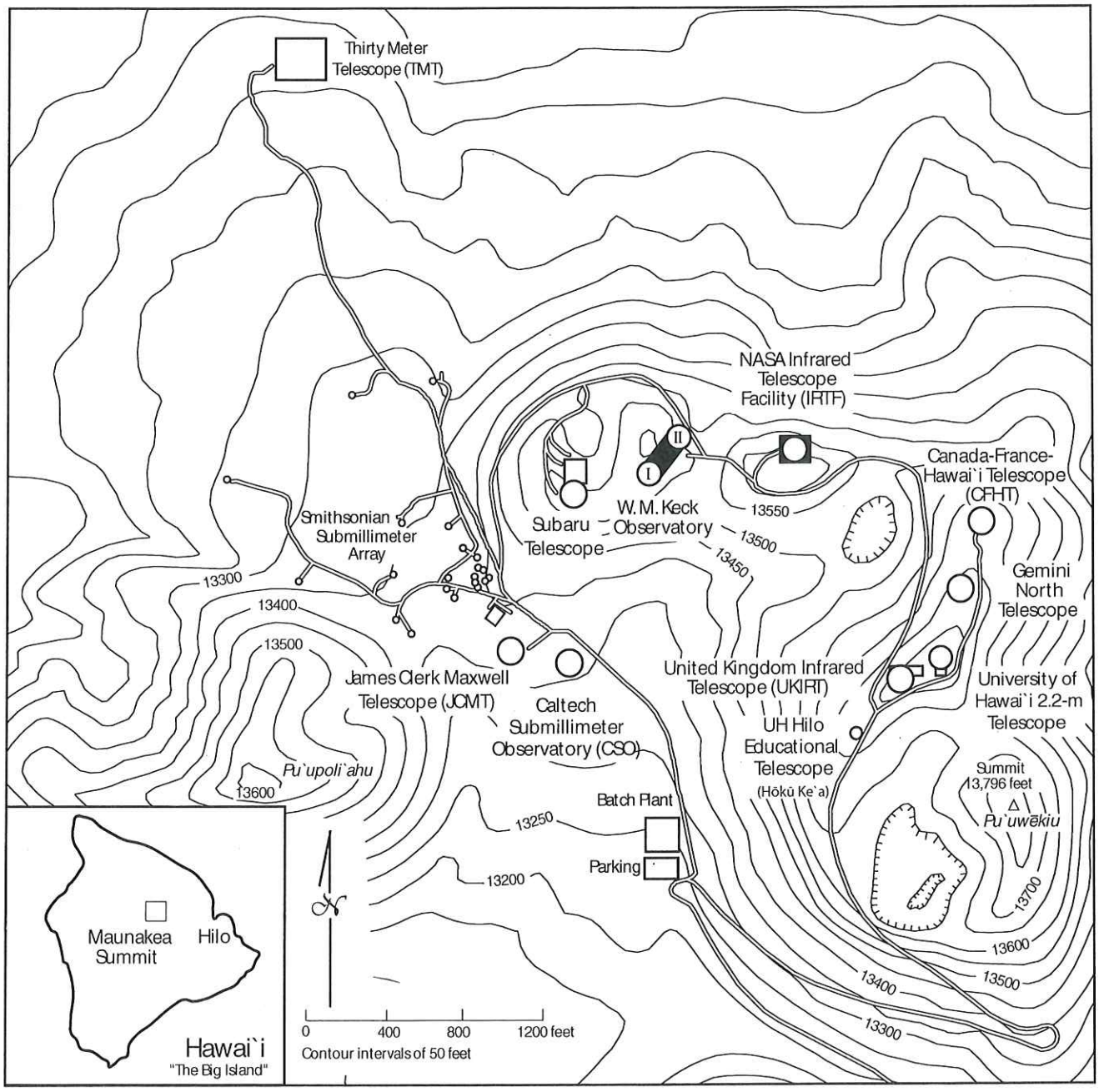


EXHIBIT 02

GENERAL LEASE NO. S-4191

THIS INDENTURE OF LEASE, made this 21st day of January, 1968, by and between the STATE OF HAWAII, by its Board of Land and Natural Resources, pursuant to the provisions of Section 103A-90(b), Revised Laws of Hawaii 1955, as amended, hereinafter referred to as the "LESSOR", and the UNIVERSITY OF HAWAII, a body corporate, whose post office address is 2444 Dole Street, Honolulu, City and County of Honolulu, State of Hawaii, hereinafter referred to as the "LESSEE",

WITNESSETH THAT:

FOR and in consideration of the mutual promises and agreements contained herein, the Lessor does hereby demise and lease unto the said Lessee and the said Lessee does hereby rent and lease from the Lessor, all of that certain parcel of land situate at Kaohe, Hamakua, County and Island of Hawaii, State of Hawaii, and more particularly described in Exhibit "A", hereto attached and made a part hereof.

TO HAVE AND TO HOLD, all and singular the said premises, herein mentioned and described, unto the said Lessee, for and during the term of sixty-five (65) years, to commence from the 1st day of January, 1966, and to terminate on the 31st day of December, 2030.

DEPARTMENT OF LAND AND NATURAL RESOURCES
HONOLULU, HAWAII

RESERVING UNTO THE LESSOR THE FOLLOWING:

1. Water Rights. All surface and ground waters appurtenant to the demised premises, together with the right to enter and to capture, divert or impound water; provided, that the Lessor shall exercise such rights in such manner as not to interfere unreasonably with the Lessee's use of the demised premises; provided, further, that the Lessee shall have the right to use the waters of Lake Waiau for any purpose necessary or incidental to the use permitted by this lease on the following conditions:

a. No drilling or disturbance of Lake Waiau's bottom, banks or areas adjacent thereto shall be permitted;

b. No activity shall be permitted which will result in the pollution of the waters of Lake Waiau;

c. Lessee shall not take or divert any of the waters arising from springs which furnish the water supply for Pohakuloa, and no alterations to said springs shall be made by Lessee.

2. Access. All rights to cross the demised premises for inspection or for any government purposes.

3. Hunting and Recreation Rights. All hunting and recreation rights on the demised lands, to be implemented pursuant to rules and regulations issued by said Board in discharging its fish and game or state parks responsibilities; provided, however, that such hunting and recreation activities shall be coordinated with the activities of the Lessee on the demised lands; and provided, further, that such hunting and recreation activities shall be limited to day-light hours only.

4. Right to use Demised Lands. The right for itself, and its successors, lessees, grantees and permittees, to use any portion of the lands demised and the right to grant to others rights and privileges affecting said land; provided, however, that, except as otherwise provided herein, no such use shall be permitted or rights and privileges granted affecting said lands, except upon mutual determination by the parties hereto that such use or grant will not unreasonably interfere with the Lessee's use of the demised premises; provided, further, that such agreement shall not be arbitrarily or capriciously withheld.

THE LESSEE, IN CONSIDERATION OF THE PREMISES, COVENANTS WITH THE LESSOR AS FOLLOWS:

1. Surrender. The Lessee shall, at the expiration or sooner termination of this lease, peaceably and quietly surrender and deliver possession of the demised premises to the Lessor in good order and condition, reasonable wear and tear excepted.

2. Maintenance of the Premises. The Lessee shall keep the demised premises and improvements in a clean, sanitary and orderly condition.

3. Waste. The Lessee shall not make, permit or suffer, any waste, strip, spoil, nuisance or unlawful, improper or offensive use of the demised premises.

4. Specified Use. The land hereby leased shall be used by the Lessee as a scientific complex, including without limitation thereof an observatory, and as a scientific reserve being more specifically a buffer zone to prevent the intrusion of activities inimical to said scientific complex.

Activities inimical to said scientific complex shall include light and dust interference to observatory operation

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~~during hours of darkness~~ and certain types of electric or electronic installation on the demised lands, but shall not necessarily be limited to the foregoing.

5. Assignments. The Lessee shall not sublease, sublet, assign or transfer this lease or any rights thereunder without the prior written approval of the Board of Land and Natural Resources.

6. Improvements. The Lessee shall have the right during the existence of this lease to construct and erect buildings, structures and other improvements upon the demised premises; provided, that plans for construction and plot plans of improvements shall be submitted to the Chairman of the Board of Land and Natural Resources for review and approval prior to commencement of construction. The improvements shall be and remain the property of the Lessee, and shall be removed or disposed of by the Lessee at the expiration or sooner termination of this lease; provided, that with the approval of the Chairman such improvements may be abandoned in place. The lessee shall, during the term of this lease, properly maintain, repair and keep all improvements in good condition.

7. Termination by the Lessee. The Lessee may terminate this lease at any time by giving thirty (30) days' notice in writing to the Lessor.

8. Termination by the Lessor. In the event that (1) the Lessee fails to comply with any of the terms and conditions of this lease, or (2) the lessee abandons or fails to use the demised lands for the use specified under paragraph 4 of these covenants for a period of two years, the Lessor may terminate this lease by giving six months' notice in writing to the Lessee.

9. Non-Discrimination. The Lessee covenants that the use and enjoyment of the premises shall not be in support of any

policy which discriminates against anyone based upon race, creed, color or national origin.

10. General Liability. The Lessee shall at all times, with respect to the demised premises, use due care for safety, and the Lessee shall be liable for any loss, liability, claim or demand for property damage, personal injury or death arising out of any injury, death or damage on the demised premises caused by or resulting from any negligent activities, operations or omissions of the Lessee on or in connection with the demised premises, subject to the laws of the State of Hawaii governing such liability.

11. Laws, Rules and Regulations, etc. The Lessee shall observe and comply with Regulation 4 of the Department of Land and Natural Resources and with all other laws, ordinances, rules and regulations of the federal, state, municipal or county governments affecting the demised lands or improvements.

12. Objects of Antiquity. The Lessee shall not appropriate, damage, remove, excavate, disfigure, deface or destroy any object of antiquity, prehistoric ruin or monument of historical value.

13. Undesirable Plants. In order to prevent the introduction of undesirable plant species in the area, the Lessee shall not plant any trees, shrubs, flowers or other plants in the leased area except those approved for such planting by the Chairman.

IN WITNESS WHEREOF, the STATE OF HAWAII, by its Board of Land and Natural Resources, has caused the seal of the Department of Land and Natural Resources to be hereunto affixed and these presents to be duly executed this 27th

day of June, 1968, and the UNIVERSITY OF HAWAII, by its Acting Secretary and VP for Business Affairs has caused these presents to be duly executed this 28th day of June, 1968, effective as of the day and year first above written.

STATE OF HAWAII

By: _____
ACTING Chairman and Member
Board of Land and
Natural Resources

And By: _____
Member
Board of Land and
Natural Resources

UNIVERSITY OF HAWAII

By: _____
Its Acting President

And By: _____
Its Vice President for Business Affairs

APPROVED AS TO FORM:

_____
Deputy Attorney General
Dated: 5/8/68

mm
Proofed by:

EXHIBIT 03

Nā Kilo Hōkū
THE ONES WHO LOOK TO THE STARS
A Newsletter from the Institute for Astronomy, University of Hawai'i
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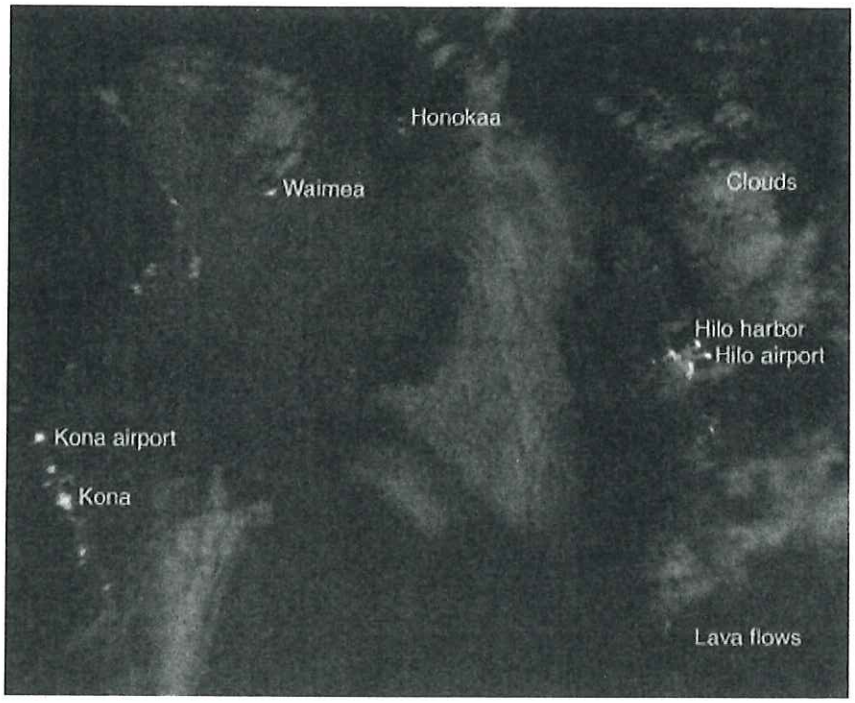
- American Astronomical Society Meets in Honolulu
- Heart to Heart
- IfA Students, Postdoc Attend Maui Teaching Workshop
- Na Kilo Hoku Staff

New Lighting Law Protects Observatories



Photograph of the island of Hawai'i taken from the International Space Station by astronaut and former IfA solar physicist Ed Lu shows the principal sources of light pollution on the Big Island. The Hilo and Kona airports and Hilo harbor are among the brightest sources of light. Lava flows from the ongoing eruption of Kilauea are also visible.

Dark sky advocates in Hawaii recently scored a victory. The governor has signed into law a bill that requires the state Department of Transportation to comply with county outdoor lighting ordinances that are more stringent than state regulations when installing new outdoor lighting at airports and harbors, and along highways. The purpose of the law is to preserve the dark skies over Haleakala and Mauna Kea Observatories.

The bill, H.B. 155, noted that "one of the most critical needs for preserving the value of these sites is to reduce bright sources of light that penetrate the dark night sky. Recent nighttime images from the international space station revealed that some of the brightest sources of light on Maui and Hawaii are the airports and harbors on both islands. Astronomers on Mauna Kea are now detecting artificial light sources from urban areas that are diminishing the telescopes' ability to do research."

Hawaii and Maui counties have lighting ordinances that apply to outdoor lighting. On the island of Hawaii, outdoor lighting must be shielded; most outdoor lighting must use low-pressure sodium (LPS) lamps, which are nearly monochromatic (emitting light of a single yellow-orange color). Astronomers are better able to filter out light from LPS lamps than from broad-spectrum sources. Low-pressure sodium lamps are also the most energy-efficient light source available.

The Maui county lighting ordinance, which became effective in January 2007, requires most light sources to be fully shielded. Fully shielded lights direct light downward only, emitting no light directly upward. The Maui ordinance will require replacement of noncompliant lights within 10 years.

Maui Representative Joe Souki introduced the bill. The new law went into effect on July 1.

BEFORE THE LAND USE COMMISSION

THE STATE OF HAWAI'I

In the Matter of the Petition of KU'ULEI HIGASHI KANAHELE and AHIENA KANAHELE, individuals, for a Declaratory Order Concerning the invalid classification of the de facto and improper industrial use precinct on approximately 525 acres of State Land Use Conservation District lands located in Mauna Kea and Hilo, County of Hawai'i, Tax Map Key No.: 4-4-015:009 (por.)	)	CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I HEREBY CERTIFY THAT a true and correct copy of the above was duly served upon the following parties by U.S. Mail, postage pre-paid certified mail with a return receipt requested or hand delivered on this date as follows:

Riley K. Hakoda
Leiopapa A Kamehameha Building 235
South Beretania Street, Room 406
Honolulu, Hawai'i 96813

Chief Clerk,
LAND USE COMMISSION, STATE OF HAWAI'I

DATED: Honolulu, Hawai'i September 3, 2019

LAW OFFICE OF BIANCA ISAKI
BIANCA ISAKI
Attorney for Petitioners