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of HAWAII\*  
**HILO**

Office of the Chancellor

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December 22, 2014

**OFC. OF ENVIRONMENTAL  
QUALITY CONTROL**

Ms. Jessica Wooley, Director  
Office of Environmental Quality Control  
State of Hawai'i  
235 South Beretania Street, Room 702  
Honolulu, Hawai'i 96813


**FILE COPY**

**JAN 08 2015**

**Subject: Environmental Impact Statement Preparation Notice for New Master Leases for the Mauna Kea Science Reserve and Related Facilities and Easements**

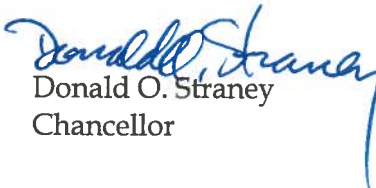
Dear Director Wooley:

The University of Hawai'i (UH) has determined at the outset that it will prepare an Environmental Impact Statement (EIS) for its proposed new Master Leases for the Mauna Kea Science Reserve and related facilities and easements.

UH will prepare the EIS in accordance with the provisions and requirements of Hawai'i Revised Statutes (HRS), Chapter 343. Pursuant to HRS §343-5(c), an Applicant Action Publication Form and Environmental Impact Statement Preparation Notice (EISPN) are attached. The EISPN includes a description of the requested leases and a brief discussion of the kinds of potential environmental impacts which will be analyzed in the forthcoming EIS. 

In accordance with Hawai'i Administrative Rules, Section 11-200 we respectfully request that you publish this notice in the next available edition of *The Environmental Notice* for the public to submit comments to UH during the statutory 30-day public consultation period. If you have any further questions about this letter or its attachments, please call me at (808) 922-7348.

Sincerely,

  
Donald O. Straney  
Chancellor

Attachments:

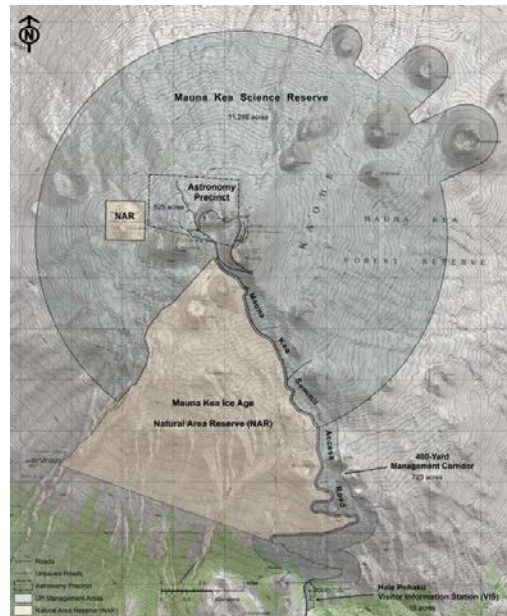
1. OEQC Applicant Action Publication Form
2. EISPN for New Master Leases for the Mauna Kea Science Reserve and Related Facilities and Easements

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# *Environmental Assessment/Environmental Impact Statement Preparation Notice (EISPN)*

## **NEW MASTER LEASES FOR MAUNA KEA SCIENCE RESERVE & RELATED FACILITIES & EASEMENTS**



**PROPOSING AGENCY:  
UNIVERSITY OF HAWAII AT HILO**

This Environmental Document was Prepared Pursuant to Chapter 343, Hawai'i Revised Statutes, and Chapter 200 of Title 11, Hawai'i Administrative Rules, Department of Health, Environmental Impact Statement Rules.

**DECEMBER 2014**

# 1 PURPOSE AND NEED

## 1.1 INTRODUCTION AND OVERVIEW

### 1.1.1 EXISTING UNIVERSITY OF HAWAII PROPERTY ON MAUNAKEA

The University of Hawai'i (UH) currently leases (a) the 11,287.854-acre Mauna Kea Science Reserve (MKSR; TMK 4-4-015:009) under general lease S-4191<sup>1</sup>, which expires December 31, 2033; and (b) the 19.261 acre Halepōhaku mid-level facility (TMK 4-4-015:012) under general lease S-5529 which expires in 2041. The Board of Land and Natural Resources (BLNR) established the MKSR in 1968 to be used as a scientific complex including a buffer area to protect astronomical research. These two properties together with a 70.798 acre roadway easement and associated buffer between the two properties make up the "UH Management Area" on Maunakea<sup>2</sup> (Figure 1.1).<sup>3</sup>

The first Maunakea observatories were built in the 1960s. Eight optical and/or infrared observatories are currently present in the MKSR's 525-acre "Astronomy Precinct". Each optical/infrared observatory consists of a single telescope, except the W.M. Keck observatory which houses two. The MKSR also hosts three submillimeter observatories and a radio antenna.

The Halepōhaku mid-level support facilities at roughly 9,200 feet on the southern slope of Maunakea include the Onizuka Center for International Astronomy, a visitor information center and comfort station, construction workers' cabins, and stone cabin facilities constructed by the Civilian Conservation Corps in the 1930s. The current Mauna Kea Access Road was improved in the late 1980's. The *Revised Management Plan for the UH Management Areas* approved by BLNR in 1995 added a 400-yard wide corridor on either side of the roadway. The total area of the Mauna Kea Access Road corridor is approximately 723 acres.

UH has expanded its management objectives for the UH Management Area over the years to include many factors in addition to astronomical research. The Maunakea *Comprehensive Management Plan*<sup>4</sup> (CMP), approved by the BLNR in April 2009, provides the management framework for the UH Management Area. The CMP addresses scientific (including astronomical), natural, and cultural resources.

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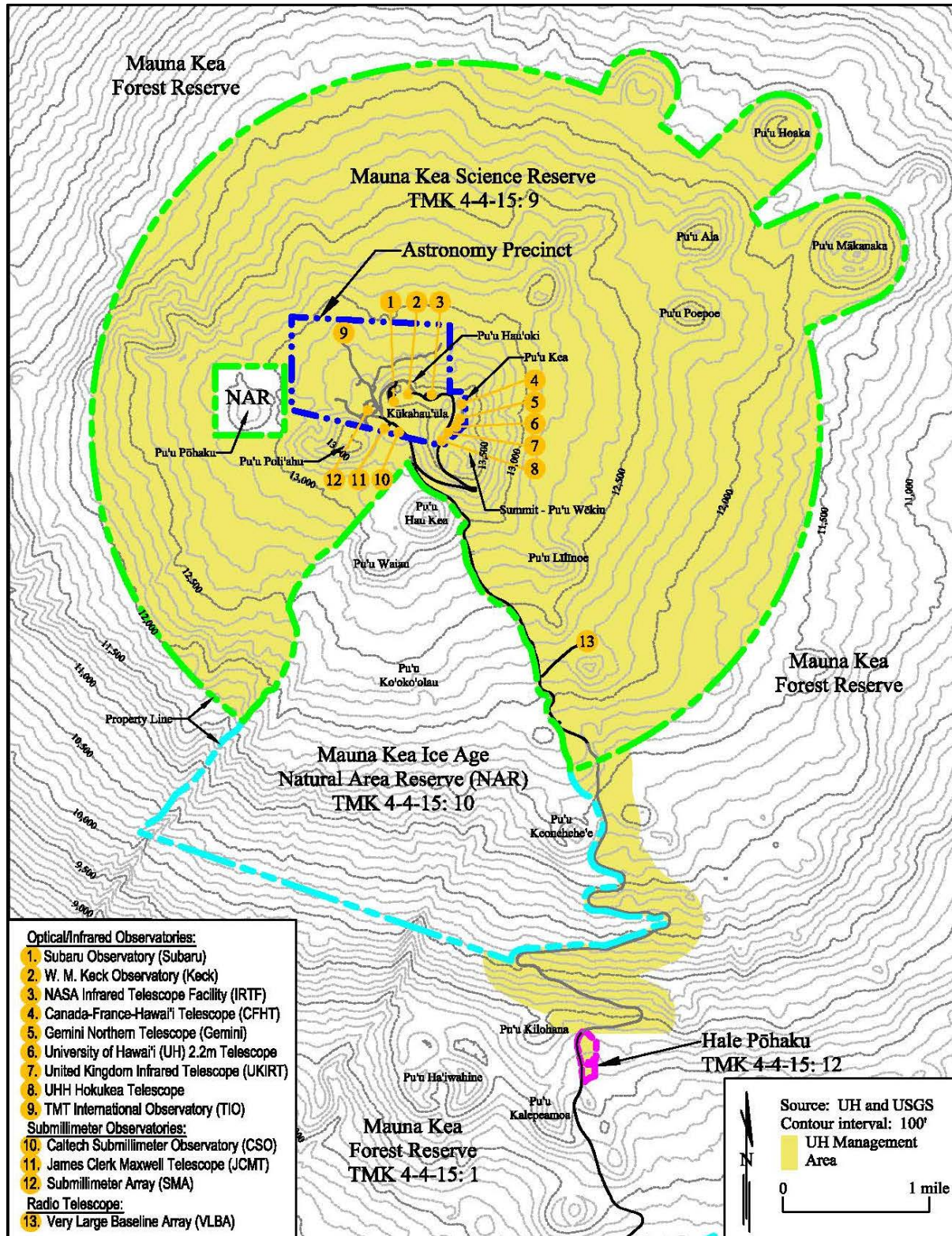
<sup>1</sup> This general lease is considered a "master lease" because UH has entered into subleases with various entities for the development, operation, and decommissioning of observatories within the MKSR with the approval of the BLNR.

<sup>2</sup> Maunakea is spelled as one word in this document because it is considered the traditional Hawaiian spelling (Ka Wai Ola, Vol. 25 No. 11). Maunakea is a proper noun, therefore spelled as one word in Hawaiian. This spelling is found in original Hawaiian language newspapers dating back to the late 1800s when the Hawaiian language was the medium of communication. In more recent years Maunakea has been spelled as two words, which literally mean "white mountain." Spelled as two words it is a common noun that could refer to any white mountain verses the proper name of this particular mountain on Hawai'i Island. The common "Mauna Kea" spelling is only used in this document where Mauna Kea is used in published or public documents, such as the "Mauna Kea Science Reserve."

<sup>3</sup> The entire UH Management Area is designated as part of the Conservation District, resource subzone.

<sup>4</sup> While ultimate authority over the management of the MKSR is retained by the Board of Land and Natural Resources (BLNR), certain responsibilities are performed by UH as provided in the BLNR-approved *Mauna Kea Comprehensive Management Plan (CMP)* and its subplans (*Cultural Resources Management Plan*, *Natural Resources Management Plan*, *Public Access Plan*, and *Decommissioning Plan*). These serve as the BLNR-approved management documents for land use and activities within the MKSR. In this document the "CMP" includes the CMP document and its four subplans.

Figure 1.1: Current “UH Management Area”



Source: University of Hawai'i

### **1.1.2 REQUEST FOR NEW MASTER LEASES AND RELATED EASEMENT**

UH is seeking to replace both of its existing leases with new leases well before they expire and to extend the term of the road easement, which is presently due to expire at the same time as the existing master lease. More specifically, by letter dated August 22, 2013, the UH Board of Regents requested the mutual cancellation of the existing leases for MKSR (GL No. S-4191) and the Halepōhaku Mid-Level Facilities (GL No. S-5529), and the issuance of new 65-year leases for the premises. At the same time it asked that Grant of Easement No. S-4697 covering the Mauna Kea Access Road be amended so that it would be coterminous with the new general leases.

## **1.2 OBJECTIVES OF THE PROPOSED ACTION**

The primary objective for requesting a new master lease for the UH Management Area is to maintain a physical and administrative environment that will allow the continuance of cutting edge astronomy research on Maunakea. While this would include continuing and upgrading some of the existing operations in the summit region of Maunakea and accommodate potential development of new facilities on previously disturbed sites over the next 65 years, it would also minimize the area disturbed by physical structures within the UH Management Area by requiring the re-use of existing facilities or sites, as well as the decommissioning of facilities and the restoration of impacted sites. The benefit anticipated by UH in requesting a new master lease is summarized in the August 22, 2013, letter from Mr. John Holzman, Chairman of the UH Board of Regents, to BLNR in which UH identified the following four purposes for its request:

- (1) The need to address internal changes made by UH in how it manages lands on Maunakea;
- (2) The need to reflect management actions and reporting requirements adopted by the BLNR;
- (3) To assist in implementing legislation concerning the Maunakea lands managed by UH; and
- (4) To provide the basis for developing sublease agreements with current and any potential future telescope projects.

These purposes are the objectives that UH is seeking to achieve through its request.

## **1.3 PURPOSE OF THIS DOCUMENT**

Issuing a new master lease requires the BLNR to take an action that is subject to Chapter 343, Hawai'i Revised Statutes (HRS) and its implementing regulations Hawai'i Administrative Rules (HAR) §11-200. Chapter 343, HRS, establishes a system of environmental review intended to ensure that decision-makers consider environmental objectives in concert with the economic and technical objectives.

UH has decided that it will meet its Chapter 343 obligations by preparing an Environmental Impact Statement (EIS). HAR §11-200-15 describes the consultation that is appropriate prior to filing a Draft Environmental Impact Statement (DEIS). The purpose of this document is to facilitate the consultation that is called for in the regulations by providing a detailed description of the proposed action and the alternatives that UH is considering, identifying the kinds of environmental consequences which it believes each of these alternatives is likely to cause, and describing the specific analyses that it intends to conduct in order to be able to characterize the environmental effects of each alternative.

## 2 ALTERNATIVES CONSIDERED

### 2.1 INTRODUCTION

#### 2.1.1 BACKGROUND

Hawai'i Administrative Rules (HAR), §11-200-17 addresses the content requirements of draft and final environmental impact statements (EIS). Subsection §11-200-17(f) states:

*(f) The draft EIS shall describe in a separate and distinct section alternatives which could attain the objectives of the action, regardless of cost, in sufficient detail to explain why they were rejected. The section shall include a rigorous exploration of the environmental impacts of all such alternative actions. Particular attention shall be given to alternatives that might enhance environmental quality or avoid, reduce, or minimize some or all of the adverse environmental effects, costs, or risks. Examples of alternatives include:*

- (1) The alternative of no action;*
- (2) Alternatives requiring actions of a significantly different nature which could provide similar benefits with different environmental impacts;*
- (3) Alternatives related to different designs or details of the proposed action which would present different environmental impacts;*
- (4) The alternative of postponing action pending further study; and*
- (5) Alternative locations for the proposed project.*

In order to achieve the objectives of the proposed action, the BLNR must grant a long-term master lease that will allow astronomical viewing and related activities in the summit region of Maunakea. UH believes that planning for the longest feasible duration will best provide for stable management and for secure funding supported by sublease commitments aligned with the useful life of observatory facilities. A 65-year lease term will align with the longest expected useful life of any current or planned observatory. For other observatories with shorter anticipated useful lives, shorter sublease terms may be appropriate and will be considered. However, UH believes that the kinds of investments needed to attain the action's objectives require the certainty that a 65-year lease term provides. Hence, UH does not believe that a shorter lease term is a viable alternative.

The original MKSR was established to allow management oversight of all the land where activities likely to affect astronomical activities might occur. UH believes that continued control of the current MKSR is the alternative that would best achieve the objectives stated above, but UH no longer considers control of the entire MKSR essential. UH believes that the majority of its goals and objectives could be achieved if it retained management control over a smaller area of the summit region.

#### 2.1.2 OVERVIEW OF ALTERNATIVES THE EIS WILL ADDRESS

In view of the foregoing, UH has tentatively determined that the EIS will address the potential effects of two "action alternatives", one that entails a master lease of all of the area covered by the existing master lease and the other a master lease that reduces the portion of the summit under UH's control.

The EIS will also address the "No Action Alternative" — i.e., no granting of a new master lease. This alternative does not achieve the objectives that are laid out in Section 1.2, but HRS Chapter 343 and HAR §11-200 require that it be discussed in the same depth as the action alternatives that the proponent prefers. Furthermore, because UH feels it provides the clearest and most compelling explanation of the need for the proposed action, this description of the master lease alternatives begins with the "no action" alternative.

HAR §11-200-17 (F) also provides that for agency actions the discussion of alternatives include, where relevant, those alternatives not within the existing authority of the agency. No such alternatives have yet been identified for the present action. The rules require that in each case the analysis be sufficiently detailed to allow a comparative evaluation of the environmental benefits, costs, and risks of the proposed action and each reasonable alternative.

## **2.2 ALTERNATIVE 1: NO ACTION ALTERNATIVE**

### **2.2.1 ASTRONOMICAL FACILITY OPERATIONS OVER REMAINDER OF EXISTING LEASES**

Under Alternative 1, the No Action Alternative, the existing MKSR master lease (S-4191) would run its course and UH and its sublessees would terminate their uses no later than the end of 2033. Since all of the subleases that UH has issued (see Table 2.1) have the same termination date as the existing master lease and there is no provision for early termination of the master lease by the BLNR, none of the present uses would be forced to terminate prior to December 31, 2033.

UH's lease on Halepōhaku (S-5529) does not terminate until 2041. However, UH would have no further use for the facility if its activities within the MKSR were to cease, as would be the case by the end of 2033 under the No Action Alternative. Therefore, UH would continue to utilize Halepōhaku much as it does today until the astronomical facilities in the MKSR close and then likely take advantage of the early termination provisions in the Halepōhaku lease.

### **2.2.2 DECOMMISSIONING OF ASTRONOMICAL FACILITIES WITHIN THE MKSR**

The manner in which observatories would close is governed by the CMP's Decommissioning Subplan (University of Hawai'i, January 2010). The CMP notes that the existing subleases specify terms for the disposition of observatory facilities in the event of termination or expiration of tenancy (Table 2.1). Unless and until existing observatories revise their subleases, they are obligated to comply with only their existing sublease terms. In general, the terms require sublessees either:

- (1) Remove the facilities and restore the property at the expense of the sublessee;
- (2) Sell the facilities to UH or a third party; or
- (3) Surrender the facilities to UH upon approval of UH and the Chairman of BLNR.

The impact analysis presented in the EIS for Alternative 1, the No Action Alternative, will assume that all of the existing facilities would eventually be removed as described according to the terms of the lease or subleases.

Subleases are terminated upon conclusion of operation of a particular telescope by a sublessee, expiration of tenancy at the end of a lease, or revocation of a sublease by UH. Unless the facility is recycled, it must be deconstructed and the site restored per the terms of the sublease.<sup>5</sup> As described in the CMP's *Decommissioning Plan*, decommissioning entails the removal of the facility and restoration of the observatory site to either "even grade" or "original condition". The subleases do not state whether removal means complete removal of all facilities and infrastructure.

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<sup>5</sup> Section 2.2.4 of the *Decommissioning Plan* addresses the actions that would be taken in the unlikely event that a sublessee was to abandon an observatory in place, without deconstructing and site restoration. It notes that if this happens, UH, as the lessee to DLNR, will ultimately be responsible for the site through the terms of their master lease.

**Table 2.1: Existing Facilities and Decommissioning Terms**

<i>Facility</i>	<i>Sublessee</i>	<i>Sublease Terms Regarding Decommissioning</i>
UHH Hokukea Telescope	UH owned no sublease,	Remove or dispose of by UH at the expiration or sooner termination of the lease, unless BLNR Chair approves that facilities may remain in place.
UH 2.2-m Telescope	UH owned, no sublease	Same as UHH Hokukea Telescope
United Kingdom Infrared Telescope (UKIRT)	UH owned, no sublease	Same as UHH Hokukea Telescope
NASA Infrared Telescope Facility (IRTF)	NASA	Surrender to UH subject to approval of UH and BLNR Chair or removal of facilities and restoration of property at expense of sublessee. The minimum period of advance notice for terminating sublease in writing by sublessee is not specified.
Canada-France-Hawai'i Telescope (CFHT)	Canada-France-Hawai'i Telescope Corporation	Same as NASA except that sublease has provision that allows termination by sublessee with six (6) months' notice.
W. M. Keck Observatory I	Caltech	(1) Removal of facilities and restoration of property at expense of Caltech; (2) sale to UH; (3) sale to a 3rd party, contingent upon the execution of a new Sublease and operating and site development agreement between the 3rd party and UH; (4) surrender in place. Options 2, 3, and 4 require approval of UH and DLNR. If none of these options are available, option 1 must be completed within 1 year of termination. Sublease has provision that allows termination by sublessee with two (2) years notice.
W. M. Keck Observatory II	Same as Keck 1	Same as Keck 1
Subaru Telescope	National Astronomical Observatory of Japan (NAOJ).	Same as Keck 1 except NAOJ is responsible.
Gemini North Telescope	US National Science Foundation (NSF)	Same as Keck 1 except NSF is responsible.
Caltech Submillimeter Observatory (CSO)	Caltech	Same as Keck 1.
James Clerk Maxwell Telescope (JCMT)	UK Science and Technologies Facilities Council (STFC) (see note)	Same as Keck 1 except STFC is responsible and period for removal is 6 months instead of 1 year.
Submillimeter Array (SMA)	Smithsonian Astrophysical Observatory/Taiwan	Same as Keck 1 except SAO is responsible
Very Long Baseline Array (VLBA)	US National Radio Astronomy Observatory (NRAO) and Associated Universities Inc.	Same as Keck 1 except NRAO is responsible and sublease provision for termination by sublessee has one-year notice (instead of 2).
Note: JCMT is expected to be a UH facility by the end of January, 2015.		
Source: University of Hawai'i		



While there is no legal mandate that will force observatories to close prior to 2033, the relatively short term remaining in the master lease is likely to forestall capital investment in entirely new facilities and discourage investment in the equipment needed to keep the existing facilities functional and competitive. As a result, the absence of a new master lease is likely to cause astronomical use of the mountain to begin to decline before master lease termination. The exact closure scenario that will be used for the purpose of the EIS in the absence of a new master lease is still being developed in coordination with the individual facility operators. However, in general it can be said that Caltech Submillimeter Telescope (CSO) is likely to be decommissioned no later than 2020, while the others would be decommissioned in the 2025-2033 time frame.

### **2.2.3 SUPPORT FACILITY OPERATIONS AND DECOMMISSIONING OVER REMAINDER OF EXISTING LEASES**

UH is responsible for maintaining the infrastructure within the UH Management Area (i.e., the MKSR, Halepōhaku, and the Mauna Kea Access Road). Under the terms of the existing Halepōhaku lease, the property would either be returned to the BLNR with the then-existing facilities or BLNR could require UH to remove some or all the improvements prior to its return. The University will maintain the facilities until the point of lease termination so that they can be used by observatory staff and by workers involved in the decommissioning process. Consequently, they will be fully usable up until the time of surrender.

The Department of Land and Natural Resources (DLNR) Land Division has indicated that as the surrender date approaches, it would determine the remaining useful life of the property and the opportunities for alternate uses. If its study concludes that such uses are viable, the BLNR could accept the facilities. Should the Land Division conclude that no such alternate uses are likely to be viable, it would ask UH to remove the facilities in accord with the terms of the existing lease.

Infrastructure utilized by multiple parties within the UH Management Area, such as utilities, would be decommissioned once it was no longer needed. The analysis presented in this EIS assumes that under the No Action Alternative, this decommissioning would include the removal of all above ground utility infrastructure within the UH Management Area, such as switch gear and transformers. Infrastructure that is buried or flush with the ground surface, such as electric power lines and conduits, utility pull boxes, and roadway pavement, would not be removed.

### **2.2.4 UH MANAGEMENT ACTIVITIES OVER REMAINDER OF EXISTING LEASE**

UH is required to comply with and implement the CMP throughout the life of its existing master lease. Generally, the components of the CMP will continue to be implemented in the order of their assigned priority.

Act 132 (SLH 2009) authorizes UH to adopt administrative rules pursuant to HRS Chapter 91 to regulate public and commercial activities in the UH Management Area. UH is in the process of developing administrative rules based on the principles and policies in the CMP (specifically the Public Access Plan). The initial steps are: (i) coordinating with DLNR to ensure the rules are consistent with those that govern state lands adjacent to the UH Management Area; and (ii) coordinating with the Office of Hawaiian Affairs (OHA) and DLNR regarding the rules. UH anticipates that the rules will be approved sometime in 2015 or 2016.

In this No Action Alternative, commercial tours will continue to operate under the current permit process managed by the Office of Mauna Kea Management (OMKM). Fees will be collected from the tour operators at a rate of \$6/tour passenger or at whatever alternative rate is negotiated and approved, and these funds will be used toward managing the mountain including implementing the CMP, management programs, operating the Maunakea ranger program, the Visitor Information Station (VIS), and to maintain the road and facility infrastructure. Twenty percent of the fees collected will be provided to OHA.

As the end of the current master lease approaches, the decommissioning of facilities will place an increasing financial burden on UH in its effort to comply with the CMP. This will occur because: (i) the decommissioned observatories would no longer contribute to road maintenance and snow removal; and (ii) as observatories decommission, commercial tour demand may decrease resulting in reduced income from the per passenger fee collected. Reduced financial contributions would result in management activities scaled down to a maintenance level, rather than a proactive and dynamic management function. For instance, cost prohibitive management functions such as studies and surveys of the resources would be terminated, and resource monitoring would be reduced in scope and scale or eliminated. The ranger corps would also be trimmed, along with health and safety assistance, and monitoring as the number of workers and visitors to the summit region declines. Furthermore, capital investment in facilities related to CMP implementation would likely cease. Retaining qualified staff will also become a challenge as the end of the lease approaches because employees will look for positions elsewhere with long-term stability and opportunity.

### **2.2.5 POST-2033 DLNR MANAGEMENT OF SURRENDERED LAND**

Under the No Action Alternative, land currently leased or under an easement by UH would be returned to DLNR for management at the end of 2033 when the current master lease expires. At that point UH's CMP would no longer apply to the land. The DLNR would decide a preferred management regime and/or use for the land. Based on discussions with DLNR, it appears most likely that the MKSR and Halepōhaku would be integrated into the Forest Reserve system, since that is where it resided prior to the creation of the MKSR. Alternatively, some or all of the land could be made part of the Mauna Kea Ice Age Natural Area Reserve (NAR). In either case, the DLNR would follow the requirements for the action of changing this land designation, which would include a public hearing.

Once the surrendered land is again part of the Forest Reserve system (or is assigned to the NAR), DLNR would manage the returned land similarly to the way it manages other lands within the Forest Reserve and NAR lands on Maunakea. DLNR's management of these lands is passive in nature, it does not have a comprehensive management plan for the Mauna Kea Forest Reserve or the Mauna Kea Ice Age NAR, or resources to implement such a management plan. Although uncertain, the analysis presented in the EIS will assume the following will occur, once UH returns the properties to DLNR:

- The County of Hawai'i would continue to maintain the portion of the Mauna Kea Access Road between the Saddle Road and Halepōhaku.
- DLNR would reduce the level of maintenance on the existing roadway between Halepōhaku and the summit to the level given to roads across other unimproved lands in Forest Reserves and other unencumbered State property. This means that it would immediately (i.e., beginning in January 2034) become unusable during the winter and would be reduced to 4-wheel drive-only use during all seasons very shortly thereafter.<sup>6</sup>
- The stargazing program and escorted public summit tours would terminate.
- DLNR would determine the remaining useful life of the VIS and other facilities at Halepōhaku property and evaluate the potential for alternate uses. DLNR would use the results of this study together with community input to determine the highest and best use of the facilities. If the results of this analysis and consultation indicate it is desirable, the VIS and other facilities at Halepōhaku would be turned over to DLNR; if not, UH would remove the facilities.
- Examples of the kinds of management activities DLNR is likely to undertake on land that reverts to its sole control include such things as: (i) feral ungulate eradication; (ii) invasive species control;

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<sup>6</sup> The analysis makes an assumption that the DLNR would erect a gate and signage prohibiting vehicular use of this portion of the roadway soon after it reverts to its control.