MASTER PLAN FOR THE UNIVERSITY OF HAWAIʻI MAUNAKEA LANDS
E Ō I NĀ LEO (LISTEN TO THE VOICES)*
VOLUME 1



* *The name of this plan, E Ō I Nā Leo, and its translation was provided by noted Native Hawaiian scholar Larry Kimura, Associate Professor at UH Hilo. The authors express their deep gratitude for this gift.*

ADOPTED BY THE UNIVERSITY OF HAWAIʻI BOARD OF REGENTS ON JANUARY 20, 2022
PROPOSED REVISION ASSOCIATED WITH ACT 255 AS AMENDED/HRS CHAPTER 195H

PREPARED FOR:
University of Hawaiʻi

PREPARED BY:
Planning Solutions, Inc.
Hoʻokuleana, LLC

~~**JANUARY 20, 2022**~~**OCTOBER 26, 2026**

Section 4.1.2 UH Commitments is the first section with proposed revisions. For context, Chapter 4 addresses the Mauna Kea Science Reserve and Section 4.1 addresses the MKSR's Planning Context.

4.1.2 UH COMMITMENTS

UH's vision and goals recognize that astronomy on Maunakea can only continue to the extent that (*i*) it is sensitive to and respectful of Maunakea's cultural landscape and natural resources, and (*ii*) it contributes to the area's stewardship, preservation, and utilization by others. Accordingly, UH has committed to reducing the number of operating astronomy facilities. Although a reduction in the number of astronomy facilities may adversely affect UH's astronomy program and the MKOs in the short-term, UH believes it is likely to contribute substantially to the achievement of non-astronomy goals and objectives while also allowing the State and its residents to continue to reap the substantial scientific, cultural, and economic benefits that astronomy facilities in the MKSR provide.

This Master Plan reflects UH's specific commitments, which include:

- By December 31, 2033, and throughout the remainder of the time covered by this plan, there will be not more than nine (9) operating astronomy facilities in the MKSR.[24]
- Astronomy sites where existing uses are proposed for decommissioning or former uses have been decommissioned will be prioritized for reuse over previously undisturbed lands when new astronomy or ~~Five of the 14 astronomy sites that existed in 2020 will be ineligible for future astronomy facility use once the existing astronomy facilities on them have been decommissioned.[25] They may be considered for~~ non-astronomy uses consistent with this Master Plan's framework are proposed.[26]
- Astronomy Site 13 will be the last new site developed for an astronomy use in the MKSR. All future astronomy facilities will remain within the astronomy sites described in this Master Plan (Appendix F) ~~that remain eligible for future astronomy facility use~~.
- No land uses will be considered on major undeveloped cinder cones (pu'u) in the MKSR; this includes Pu'uala, Pu'uhoaka, Pu'ulīlīnoe, Pu'umāhoe, Pu'umākanaka, Pu'upoepoe, and Pu'uula.[27]

[24] UH presently holds a General Lease from BLNR under which it grants rights to non-profit entities to construct, operate, and maintain astronomy facilities within the MKSR, in exchange for, among other things, access to world class facilities and research coordination. The General Lease expires at the end of 2033, before this Master Plan's 20-year planning horizon. This Master Plan is essential to UH's management efforts at least until 2033. After 2033, if UH is not granted a land authorization that includes the MKSR, whatever entity takes UH's place might adopt some, all, or none of this Master Plan in its planning efforts. It is possible that, per the General Lease and subleases, that all the existing astronomy facilities will need to decommission by the end of 2033 if UH or another entity is not granted a land authorization for all or portions of the MKSR.

~~[25] As described in Section 4.3.4.3, a portion of Astronomy Sites 7 and/or 8 may continue to be utilized for astronomy if one of those sites is decommissioned and the other is selected for recycling.~~

[26] When the VLBA on Astronomy Site 14 is decommissioned, Astronomy Site 14 will not be available for future astronomy use unless the Management Plan in force at that time does not expressly prohibit its reuse (in 2026, the in force CMP's Decommissioning Plan (2010) states in Section 5.3: "The VLBA … will not be replaced by another telescope once it is decommissioned").

[27] Pu'upoli'ahu and Pu'ukūkahau'ula are not included in this list, although they were mentioned in CMP management action FLU-2, because they are not undeveloped and land uses, including habitat restoration, may be proposed on those pu'u.

These commitments will support UH's compliance with existing permits, legislation, and governmental approvals. Which nine facilities continue to operate beyond 2033 in compliance with the first commitment will be established via the process outlined in Appendix E. Those not selected to continue will be decommissioned prior to the end of 2033.

Two astronomy facilities, Hōkū Kea (Astronomy Site 9) and Caltech Submillimeter Observatory (Astronomy Site 10), have already self-selected cessation of operations and have made substantial progress toward decommissioning.[28] In addition, the Very Long Baseline Array (Astronomy Site 14) will not be among the facilities selected to continue operation beyond 2033.[29] ~~Those three sites, Astronomy Sites 9, 10, and 14, will be among the five ineligible for future astronomy facility use once the existing astronomy facility is removed.~~ One or two additional astronomy facilities, depending on whether an astronomy facility is operating on Astronomy Site 13, will not be selected to continue operation beyond 2033 and therefore be decommissioned before December 31, 2033.[30] ~~Astronomy uses, including continued operation, modification, and recycling described in Section 4.3, will continue on eligible Astronomy Sites.[25]~~

UH believes that the scheduled reduction in astronomy facilities between now and 2033 will make an important contribution towards achieving the goals stated in Part 1, Section 1.4 of this Master Plan. When realized, it will allow a sufficient number of astronomy facilities to remain on Maunakea to maintain its and Hawai'i's position as a world center of astronomical research. At the same time, it will provide space, facilities, and encouragement for non-astronomical research, education, and other activities that will foster the responsible stewardship and sustainable use of Maunakea and a balance among those seeking their place on the mountain.

[28] Since adoption of the 2022 Master Plan, Hōkū Kea and Caltech Submillimeter Observatory have fully implemented all removal and restoration tasks per their UH-approved and DLNR-approved site decommissioning plans. The only remaining decommissioning tasks are associated with restoration monitoring.

[29] Among the reasons the VLBA is specified for decommissioning in this Master Plan are (*i*) it was identified in the Decommissioning Plan (2010) that VLBA would be decommissioned prior to the end of the current lease term and not be replaced by another telescope, and (*ii*) Condition 11 of CDUP HA-3568 (2017) states that the VLBA is to be decommissioning by December 31, 2033.

[30] Since adoption of the 2022 Master Plan, UKIRT on Astronomy Site 8 has submitted its Notice of Intent (NOI) to decommission, making it the third astronomy facility to submit a NOI. UH has accepted the NOI and UKIRT has begun to prepare its Site Decommissioning Plan.

Section 4.3.2 Astronomy Decommissionings and Section 4.3.3 Continued Operation, Modifying, and/or Recycling Astronomy Sites and Facilities are the next sections with proposed revisions. For context, Chapter 4 addresses the Mauna Kea Science Reserve and Section 4.3 addresses Education, Research, and Astronomy Facilities.

4.3.2 ASTRONOMY DECOMMISSIONINGS

This Master Plan calls for there to be no more than nine (9) astronomy sites with operational astronomy facilities in the MKSR by the end of 2033 (Section 4.1.2). This section outlines the process by which UH will accomplish this commitment.

4.3.2.1 Ongoing Decommissioning of Two Astronomy Sites

As summarized below, the sponsors of the CSO (Astronomy Site 10) and Hōkū Kea (Astronomy Site 9) have each already submitted a decommissioning Notice of Intent (NOI), MKMB and DLNR have approved their NOIs, and they are fully engaged in the decommissioning process laid out in the CMP.[35] They have also both issued Draft Environmental Assessments detailing their proposed decommissioning efforts and associated impacts (Caltech 2021, UH Hilo 2021). The decommissioning of these two facilities partially fulfills CDUP HA-3568 Special Condition #10, which states "The University will decommission three telescopes permanently, as soon as reasonably possible."[36]

~~UH has decided that these two sites will not be available for future astronomy use, including recycling. As discussed in Section 4.2 of this Master Plan, some non-astronomical use of portions of Astronomy Site 9 may be considered during or after the decommissioning process.~~

4.3.2.2 Upcoming Decommissioning of Additional Astronomy ~~Sites~~Facilities

Which astronomy facilities ~~and sites~~ will continue beyond 2033 and which shall be decommissioned will be established via the process outlined in Appendix E. Per this Master Plan, CDUP HA-3568 Condition 11, and the Decommissioning Plan (2010), ~~It is known that~~ VLBA, on Astronomy Site 14, ~~will be~~ is programmed to be decommissioned prior to the end of 2033. One or two additional facilities, depending on if an astronomy facility is developed on Astronomy Site 13, will not be selected for continued operation via the process outlined in Appendix E. Selections are expected by the end of 2025, allowing seven years for the owners/operators of any not selected to completely decommission prior to the end of 2033.[36]

~~UH has decided that the sites once occupied by those facilities not selected to continue operation via the process outlined in Appendix E will not be available for future astronomy use, including recycling. However, as discussed in Section 4.2 of this Master Plan, some non-astronomical use of portions of decommissioned astronomy sites may be considered during or after the~~

[35] Since adoption of the 2022 Master Plan, Hōkū Kea and Caltech Submillimeter Observatory have fully implemented all removal and restoration tasks per their UH-approved and DLNR-approved site decommissioning plans. The only remaining decommissioning tasks are associated with restoration monitoring.

[36] Since adoption of the 2022 Master Plan, UKIRT on Astronomy Site 8 has submitted its Notice of Intent (NOI) to decommission, making it the third astronomy facility to submit a NOI. UH has accepted the NOI and UKIRT has begun to prepare its Site Decommissioning Plan.

~~decommissioning process. In addition, as described in Section 4.3.4.3 and shown in Figure 4-4, a portion of Astronomy Sites 7 and/or 8 may continue to be utilized for astronomy in the event that one of those sites is decommissioned and the other is recycled.~~

4.3.3 CONTINUED OPERATION, MODIFYING, AND/OR RECYCLING ASTRONOMY SITES AND FACILITIES

4.3.3.1 Continued Operation of Existing Facilities

Over the 20-year period of this Master Plan most astronomy facilities not decommissioned will likely continue to operate in their current general configuration. Internal alterations (e.g., installing new instrumentation, replacing mechanical and electronic equipment, etc.) are likely to be made in virtually all of these at the discretion of the facility owner and operator. Work needed to maintain the exterior of the facilities (e.g., resurfacing the dome or parking areas) and minor alterations that affect the exterior of the facility may also occur. External maintenance and alteration projects will need to follow the project review process described in Part 3 of this Master Plan. Examples of possible alterations may include such things as the attachment of equipment such as cameras, weather equipment, or adaptive optics equipment to the exterior of a dome to aid observing or attaching photovoltaic (PV) panels to the roof of support buildings.[37]

4.3.3.2 Potential Modification and Recycling Projects

As used in this Master Plan:

- "Modification" of an astronomy facility entails changes to an existing facility that are made to modernize or improve its capabilities that go beyond the alterations discussed in Section 4.3.3.1. Examples of possible modifications include enlarging or reconfiguring a dome to accommodate a larger telescope or constructing additional building space to accommodate more equipment or support infrastructure.
- "Recycling" an astronomy site involves the complete removal of an existing astronomy facility and the construction of a new astronomy facility in its place. Recycling is consistent with preserving nine operating astronomy facilities at any one time and ~~keeping facilities on existing, previously disturbed~~ restricting future astronomy uses to the astronomy sites identified in this plan (Appendix F).

Modification and/or recycling will be considered only at astronomy sites ~~not eliminated from consideration for future astronomy facilities~~ per the commitments outlined in Section 4.1.2. They will also need to address the design guidelines outlined in Part 3, Chapter 7, which, among other things, require astronomy facilities be confined to the defined astronomy sites. Other than the possible adjustment to Astronomy Site 7 and Astronomy Site 8 boundaries outlined in Section 4.3.4.3 (which would result in a site roughly equivalent in size to the average of the two), modification and recycling projects will not involve a change in the size or boundaries of the astronomy sites.

[37] PV panels have been added to the Keck and Gemini support buildings. Other astronomy facility operators are also likely to add them to support buildings in the coming years.

UH's assessment of the likelihood that facilities at each of the astronomy sites will be modified or recycled over the life of this plan is summarized in Table 4-2. As indicated in Table 4-2, the only presently known potential modification or recycling project in the MKSR is the modifications to CFHT (Astronomy Site 5) that is under discussion to accommodate the Maunakea Spectroscopic Explorer (MSE) project. If implemented, the MSE project, which has not yet been evaluated or approved by UH, would transform the CFHT 3.6-meter telescope into a 10-meter class dedicated multi-object spectroscopic facility with an ability to simultaneously observe more than four thousand objects. It is not yet known if the MSE project will be officially proposed to UH. If it is, it will most likely be considered a modification project because, as envisioned now, it would retain the existing CFHT foundation and base structure.

Table 4-2: Probability of Modification or Recycling of Astronomy Uses by Astronomy Site

Astronomy Site	*Modification and Recycling Probability*	*Discussion*
Site 1: Subaru	Highly unlikely	Japan sets funding of the facility in 10-year increments and does not show any signs of shifting priorities away from Subaru, its principal astronomy asset. Subaru is likely to complement the MSE project, which will add to its long-term utility if the MSE project becomes a reality.
Sites 2 and 3: Keck I & II	Highly unlikely	Keck is the single most impactful astronomy facility in the world. Investments in internal instrumentation by Keck will enable it to continue its leadership.
Site 4: IRTF	Slight	The IRTF provides critical support for NASA's exploration of the Solar System. There is no evidence that NASA's priorities will change in a way that would substantially reduce the need for IRTF. However, this astronomy site is one of the few that hosts a relatively small telescope (4-meter class) and is of sufficient area and remoteness from other facilities that it could be recycled with a larger facility (10-meter class, perhaps a facility similar to the Vera C. Rubin Observatory facility in Chile).
Site 5: CFHT	Moderate	CFHT has been working on the MSE concept for a decade and continues to pursue partners to make that a reality; therefore, it has the highest probability of modification or recycling.
Site 6: Gemini North	Highly unlikely	The AURA manages this facility in concert with the Gemini South facility in Chile. Continued investment by NSF and other Gemini partners is anticipated, as well as technology sharing among the two Gemini telescopes and other NSF-supported facilities.
Site 7: UH 2.2m (88")	Slight to moderate	UH considered this site for recycling when the Pan-STARRS project was being planned. The size and geometry of the site and its proximity to Gemini North and other resources mean that this site is unlikely to be recycled to host a facility substantially larger than the existing structure. See Section 4.3.4.3 regarding possible recycling once site boundary is altered.
Site 8: UKIRT	Slight to moderate	UKIRT has been one of the most impactful facilities in recent years due to its wide-field camera and ability to engage in time-domain astronomy. As its efforts with the wide-field camera wind down over the next decade, the likelihood of modification or recycling may increase. The size of the site and proximity to other resources suggest that its recycling would not yield a facility substantially larger than the existing one. See Section 4.3.4.3 regarding possible recycling once the site boundary is altered.
Site 9: Hōkū Kea	Highly unlikely~~None~~	This facility has~~will~~ been decommissioned, and the area is now used for public parking. ~~and the site will not be~~ Astronomy Site 9 is available for future astronomy use, but no use has been proposed, and the prospect of a future proposal is considered highly unlikely due to the small size, location, and shape of this astronomy site.

Astronomy Site	*Modification and Recycling Probability*	*Discussion*
Site 10: CSO	ModerateNone	This facility will has been decommissioned, and the site will not be . Astronomy Site 10 is available for future astronomy use, but no use has been proposed.
Site 11 – JCMT	Highly unlikely	JCMT continues to be very impactful and is part of the Event Horizon Telescope, which is a long-baseline submillimeter interferometer. Maunakea will continue to play an important role in such efforts due to its latitude. However, it is unlikely that modification or recycling will occur due to the large and ongoing investment in submillimeter facilities in the southern hemisphere. Located in "submillimeter valley," this site is not attractive for recycling to an optical or infrared facility.
Site 12 – SMA	Highly unlikely	Factors discussed above related to JCMT apply to the SMA as well, and the Smithsonian has not indicated any change in priorities or funding.
Site 13 – TMT	Highly Extremely unlikely	The TMT has a CDUP to build on this site during the term of this Master Plan. If constructed, it will have an operating life of at least 50 years.
Site 14 – VLBA	Highly unlikelyNone	This facility will be decommissioned, and the site Following the decommissioning of VLBA, Astronomy Site 14 will not be available for future astronomy use per UH's CMP and CDUP-3568; Astronomy Site 14 could only be reused for astronomy purposes if CDUP-3568 is not exercised and the Management Plan does not expressly prohibit its reuse.

Source: UH and the MKOs

Although the current MSE project concept involves the facility at Astronomy Site 5 (CFHT) becoming slightly taller (no change to building footprint at ground level), it is not a foregone conclusion that all modification or recycling projects will result in larger facilities. Instead, technological advances could result in larger aperture telescopes being developed on astronomy sites in ways that require minimal disturbance and result in minimal height and size increases, or even allow existing facilities to be replaced with smaller ones. Moreover, not all astronomical research requires large-aperture telescopes. There will always be demand for 2- and 4-meter class telescopes, and it is possible that an astronomy site that presently has a 2- or 4-meter class telescope could be modified or recycled with a similar size facility that takes advantage of the many technical advances that have occurred since the mid-1980s when telescopes of this size were last installed in the MKSR. Such recycling could substantially increase the scientific power of a site without increasing (and potentially decreasing) the footprint, bulk, and impacts of the facilities that are present.

Section 7.2 Guidelines Applicable to New Astronomy Facilities in the MKSR is the next section with proposed revisions. For contact, Chapter 7 addresses Design Guidelines.

7.2 GUIDELINES APPLICABLE TO NEW ASTRONOMY FACILITIES IN THE MKSR

Unlike previous master plans, which envisioned expansion of astronomy uses within the summit region, UH has committed to: (*i*) removing astronomy uses from some of the astronomy sites on which it is presently authorized (i.e., decommissioning); and (*ii*) confining new astronomy developments (i.e., modification and recycling projects) to the ~~remaining sites on which~~ astronomy sites described in this Master Plan (Appendix F) where astronomy facilities are ~~presently authorized~~not prohibited. The design guidelines presented in this section apply only to new or substantially modified facilities; they do not apply to continued operation of existing astronomy facilities where no substantial external changes occur or sites that are decommissioned. The fundamental purposes of the guidelines are to (*i*) encourage designs and the use of materials that are appropriate to the environment and place, and (*ii*) minimize the chance that modification or recycling projects will unduly degrade the existing cultural, natural, or astronomical resources present on UH Maunakea Lands while also allowing facility sponsors the flexibility needed to modify and/or upgrade their facilities in ways that will enable them to continue to achieve their intended scientific objectives and provide excellence worthy of Maunakea.

7.2.1 ALL IMPROVEMENTS TO REMAIN WITHIN SUBJECT ASTRONOMY SITE

Any new astronomy developments (modifications or recycling) that may occur over the term of this Master Plan will take place on, and be confined to, the astronomy sites described in this Master Plan (Appendix F) where astronomy facilities are not prohibited~~ that remain available for consideration~~. One possible exception involves the potential combination of Astronomy Sites 7 and 8 in a specific situation, which is detailed in Part 2, Section 4.3.4.3, of this Master Plan.

Limited grading (i.e., the removal or addition of material that alters topography) beyond the defined astronomy site boundaries may occur only if and where off-site grading occurred when the facility was developed.[53] For instance, where associated driveways and utility connections are not within the astronomy site, grading and other work needed to maintain those appurtenant facilities and build the proposed project may occur. Similarly, limited excavation within previously disturbed areas needed to accommodate complex-level underground infrastructure such as has been proposed for the conceptual Optical Hawaiian Array for Nanoradian Astronomy project (Part 2, Section 4.3.4.1), would be allowed. Past side-casting of material does not qualify an area as having been previously graded or disturbed; only designed cut and fill qualifies an area as previously graded or disturbed.

[53] In the case of the SMA site, which accommodates dispersed and mobile facilities, no new grading in the non-exclusive easement area other than that needed to maintain existing facilities will be allowed.

Minor revisions are proposed in Appendix E.

APPENDIX E. PROCESS TO ESTABLISH WHICH ASTRONOMY FACILITIES MAY CONTINUE AFTER 2033

As of October 2026, CSO (Astronomy Site 10) and Hōkū Kea (Astronomy Site 9) have been decommissioned, and UKIRT's (Astronomy Site 8) NOI to decommission has been accepted and work on a site decommissioning plan has begun. As a result, ten astronomy facilities (Subaru, Keck I, Keck II, IRTF, CFHT, Gemini, UH 2.2, JCMT, SMA, and VLBA) continue to operate in the MKSR. In addition, TMT has a valid permit (CDUP HA-3568) to build and operate an astronomy facility on Astronomy Site 13 in the MKSR; however, construction has been suspended and it is not known if or when construction will resume. This Master Plan states the VLBA will be decommissioned prior to 2033 because (*i*) the Decommissioning Plan (2010) states it will be decommissioned prior to the end of the current lease term and will not be replaced by another telescope; and (*ii*) Condition 11 of CDUP HA-3568 (2017) states that it is to be decommissioned by December 31, 2033. UH's commitment to have not more than nine (9) operating astronomy facilities in the MKSR by the end of 2033 will be fulfilled if UKIRT and VLBA cease operations in a timely manner and no astronomy facility is built on Astronomy Site 13. If UKIRT and VLBA do not cease operations in a timely manner or a new astronomy facility is built on Astronomy Site 13, then the process outlined below would be used to establish which nine astronomy facilities may continue to operate after 2033.~~In addition to the two facilities (CSO and Hōkū Kea) for which decommissioning notices have already been submitted, the VLBA Antenna (Astronomy Site 14) is also identified to be decommissioned as required by Condition 11 of the TMT CDUP. This leaves the following ten facilities with the potential to continue beyond 2033: Subaru, Keck I, Keck II, IRTF, CFHT, Gemini, UH 2.2, UKIRT, JCMT, and SMA. Of these, the 9 operating facility restriction discussed previously means that, with the TMT occupying Astronomy Site 13 and taking up one of the slots, only eight could continue; two more would need to be decommissioned by the end of 2033.~~[71]

At the appropriate time, UH will send letters to each of the facilities that are not both owned and operated by UH, asking them whether they wish to continue beyond 2033 or are committed to decommissioning by that date. The letters will be addressed to the official representatives of the organizations which own and/or operate each facility. In most cases this would be the agency that entered the current sublease. The letters will articulate the expected terms that would apply if their facility were to continue operations after 2033. The organizations will be given ample time to respond. On the same time scale, UH would decide which of the UH-owned and operated facilities it wishes to continue beyond 2033.

The appropriate time for sending the letter will be after the relevant terms of the new land authorization that UH is seeking are known, along with whatever other requirements might apply, some of which could be derived from this Master Plan. UH is already coordinating with the non-

~~[71] Without an operational astronomy facility located at Astronomy Site 13, only one, instead of two, would need to be decommissioned by the end of 2033. UKIRT submitted its Notice of Intent to decommission on November 7, 2025, and UH has approved it. UKIRT's and VLBA's timely decommission and no astronomy facility on Astronomy Site 13 would fulfill UH's commitment to have not more than nine (9) operating astronomy facilities in the MKSR by the end of 2033.~~

UH facilities on the terms that might be applicable in the event of a new agreement, and it is expected that discussions and negotiations will be ongoing up until the time that the facility-owner responses to UH are due. Simultaneously, UH will seek input from advisory bodies, community groups (including Native Hawaiian organizations), and the wider community and will consider the input it receives from these groups and individuals in its decision-making process.

Some level of flexibility needs to be incorporated into planning processes. For example, during the period leading up to the response deadline, some organizations might merge and support only one of their facility's operations beyond 2033. It is also possible that another organization might propose to take over a facility that the current operating organization decides not to support beyond 2033. These types of arrangements could also occur at other points in the process described in this section.

Once the responses have been received from the organizations responsible for all the facilities and UH has made its own decisions, it will be known whether or not there are more than nine facilities, including TMT, that wish to continue beyond 2033. If there are nine or less, then UH would enter into the new agreements with all the non-UH-owned facilities that have expressed their intent to continue operating. The organizations responsible for the facilities that will not be continuing would begin the decommissioning process in time to complete it by the end of 2033.

If there are more than nine facilities that desire to continue operations beyond 2033, UH will develop and implement a process to determine which facilities may continue beyond 2033. Based on the goals and objectives described in this Master Plan, UH will propose alternative facility combinations for consideration, with each alternative consisting of nine facilities drawn from the up to 11 in the MKSR that may indicate an interest in operating beyond 2033. UH will also propose a decision-making process that will include consultation with the MKOs, with appropriate advisory groups, and with the wider community. This process will include consideration of the scientific value of each facility and its site, environmental considerations, and community interests. The cultural importance of each site will also be factored into UH's process to identify which facilities will continue operation beyond 2033. UH may propose an advisory committee be established to provide an independent expert assessment of the relative merits of the various facility combinations. Depending on the circumstances, UH may ask the committee for a recommendation in addition to the assessment. The selection process will end with a decision by UH on which facilities will continue after 2033. UH hopes to have this decision made by the end of calendar year 2026, to allow sufficient time for decommissioning under the Decommissioning Plan process.

UH's target date for having new agreements in place with the continuing non-UH facilities is January 1, 2027. Facilities not continuing would be expected to submit decommissioning NOIs by that date if they had not yet done so. This will allow seven years for them to complete the decommissioning process. ~~Five of the 14 astronomy sites will no longer be eligible for future astronomy facilities, including recycling, once existing astronomy facilities on them have been decommissioned. As discussed in Section 4.2 of this Master Plan, some non-astronomical use of certain astronomy sites may be considered during or after the decommissioning process.~~

Minor revisions to the maps in Appendix E are proposed.

APPENDIX F. ASTRONOMY SITE DESCRIPTIONS AND DEPICTIONS

Appendix F: Astronomy Sites 1 through 13 Descriptions and Depictions

Notes:

- Astronomy site descriptions are limited to ongoing or previously permitted use, the Conservation District Use Permit (CDUP) that permits current use, and their approximate area in acres.
- Astronomy Site 14 is currently occupied by VLBA and is much lower on the mauna (see separate drawing).
- For astronomy sites that have, or had, subleases, the astronomy site boundary is based on the sublease. The extents of Astronomy Sites 2 and 3 (Keck I and Keck II) are based on dividing the single Keck sublease area into two sites based on drawings included in CDUP applications for the two facilities.
- The boundary of Astronomy Site 7 was established based on the extent of the existing facilities, disturbed area, its relationship/proximity to adjacent uses, and topography.

Astronomy Site Boundary (colors alternative for clarity)

Topographic contour (25 foot interval, from photogrammetric methods using air photos taken 6,000 feet above mean terrain on 9/25/1996)

Source: University of Hawai'i

Astronomy Site 13
Permitted use: TMT
CDUP: HA-3568
Site Area: ~6.00 acres

Astronomy Site 1
Current use: Subaru
CDUP: HA-2426
Site Area: ~5.36 acres

Astronomy Site 3
Current use: Keck 2
CDUP: HA-2509
Site Area: ~1.97 acres

Astronomy Site 4
Current use: IRTF
CDUP: HA-0653
Site Area: ~1.62 acres

Astronomy Site 5
Current use: CFHT
CDUP: HA-0527
Site Area: ~1.87 acres

Astronomy Site 2
Current use: Keck 1
CDUP: HA-1646
Site Area: ~1.48 acres

Astronomy Site 6
Current use: Gemini North
CDUP: HA-2691
Site Area: ~1.96 acres

Astronomy Site 10
Past use: CSO
Former CDUP: HA-1492
Site Area: ~0.74 acres

Astronomy Site 7
Current use: UH 2.2
CDUP: HA-0954
Site area: ~1.94 acres

Astronomy Site 12
Current use: SMA
CDUP: HA-2728
Site Area: ~3.04 acres

Astronomy Site 9
Past use: Hōkū Kea
Former CDUP: HA-3406
Site Area: ~0.50 acres

Astronomy Site 8
Current use: UKIRT
CDUP: HA-0653
Site Area: ~0.77 acre

Astronomy Site 11
Current use: JCMT
CDUP: HA-1515
Site Area: ~2.91 acres

N

0 500'

Appendix F: Astronomy Site 14 Description and Depiction

Notes:

- Astronomy Site description is limited to ongoing permitted use, the Conservation District Use Permit (CDUP) that permits current use, and the approximate area in acres.
- The Astronomy Site 14 boundary is based on the sublease.

