DEPT. COMM. NO. 280

JOSH GREEN, M.D.
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SYLVIA LUKE
LIEUTENANT GOVERNOR



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Chairperson

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RYAN KANAKA'OLE
KALEHUA KRUG
BEN KUDO
LANAKILA MANGAUIL
RICH MATSUDA
NOE NOE WONG-WILSON

*ex-officio

MAUNA KEA STEWARDSHIP AND OVERSIGHT AUTHORITY

688 Kino'ole Street #212, Hilo, HI 96720
Telephone (808) 272-0259
Website: http://dlnr.hawaii.gov/maunakea-authority/

January 1, 2026

The Honorable Ronald D. Kouchi, President
and Members of the Senate
Thirty-Second State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Nadine K. Nakamura, Speaker
and Members of the House of Representatives
Thirty-Second State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Nakamura, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the third Annual Report from the Mauna Kea Stewardship and Oversight Authority (Authority) on the management actions, plans, reports, reviews, assessments, and impacts on Mauna Kea during the past twelve months of work, as required by Act 255, Session Laws of Hawaii 2022.

In accordance with Section 93-16, Hawaii Revised Statutes, a copy of this report has been transmitted to the Legislative Reference Bureau and the report may be viewed electronically at:
https://files.hawaii.gov/dlnr/reports-to-the-legislature/2026/CO26-MKSOA-Report-FY25.pdf

Sincerely,

John De Fries
Executive Director

Enclosure

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FY25 ANNUAL REPORT TO THE HAWAIʻI STATE LEGISLATURE
ACT 255, SLH 2022 | HRS § 195H



JANUARY 1, 2026

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I. Introduction

The Mauna Kea Stewardship and Oversight Authority (Authority; MKSOA) was established through Act 255, Session Laws of Hawai‘i 2022, codified in Hawai‘i Revised Statutes (HRS) § 195H, “to protect Mauna Kea for future generations and manage the lands for the purpose of fostering a mutual stewardship paradigm in which ecology, the environment, natural resources, cultural practices, education, and science are in balance and synergy.” The summit region of Mauna Kea is a spiritual and special place of significance that is home to cultural landscapes, fragile habitats, and historical and archaeological artifacts. Herein, Act 255 and HRS § 195 will be used interchangeably.

The Legislature acted with vision and urgency in creating MKSOA in 2022 and giving the Authority a five year timeframe to establish a new State agency and adopt a Strategic Framework and Management Plan that will honor Mauna Kea‘s cultural and environmental significance and “bring about a more harmonious coexistence of . . . uses atop the mountain.” (HRS § 195H-1).

The Authority is working diligently to fulfill its legislative mandate to stand up a new agency and shift the management paradigm within a challenging timeframe. Efforts over the past two years to build understanding, relationships, systems, infrastructure, and a team, provided a firm foundation for the Authority to turn its focus to launching six critical work streams that will lead to timely completion of essential steps for transition, detailed below.

The Authority is in the third year of its transition period, ending on June 30, 2028; thereafter, the Authority will assume full responsibility for the Mauna Kea lands under the existing lease agreements between the University of Hawai‘i (UH) and the Department of Land and Natural Resources (DLNR). The Authority continues to be directed by a 12-member board (11-voting members), consisting of the following individuals in their respective seats as described in HRS §195H-3(b):

- Chairperson John Komeiji: An individual with business and finance experience who has previous administrative experience in managing a large private-sector business;

- Mayor Christian (Kimo) Alameda: The Mayor of the County of Hawai‘i, or the Mayor's designee;

- Pomaikalani Bertelmann: An individual who is a lineal descendent of a practitioner of Native Hawaiian traditional and customary practices associated with Mauna Kea;

- Neil Hannahs: An individual with ʻaina (land) resource management expertise and specific experience with Hawaiʻi island-based management;

- Paul Horner: One (1) member who shall be appointed by the Governor from a list of three (3) names submitted by the President of the Senate;

- Bonnie Irwin: University of Hawaiʻi at Hilo Chancellor (ex-officio, non-voting member)

- Ryan Kanakaʻole: The Chairperson of the Board of Land and Natural Resources, or the Chairperson's designee;

- Gary (Kalehua) Krug Jr.: An individual who is recognized as possessing expertise in the fields of p-12 public education or post-secondary education;

- Benjamin Kudo: The Chairperson of the Board of Regents of the University of Hawaiʻi; provided that the Chairperson of the University of Hawaiʻi Board of Regents may designate a: Member of the Board of Regents; or Past member of the Board of Regents with experience with Mauna Kea, to serve as the Chairperson of the University of Hawaiʻi Board of Regents' designee;

- Joshua (Lanakila) Mangauil: An individual who is a recognized practitioner of Native Hawaiian traditional and customary practices;

- Richard (Rich) Matsuda, Second Vice-Chair: A representative who shall be appointed by the Governor from a list of three names submitted by the Maunakea Observatories;

- Michelle Noe Noe Wong-Wilson, First Vice-Chair: One (1) member who shall be appointed by the Governor from a list of three (3) names submitted by the Speaker of the House of Representatives;

This report is respectfully submitted pursuant to HRS § 195H-10.

II. Management Actions

Contained within Act 255 are several requirements which the Authority must complete by or before the end of the transition period on June 30, 2028. The Authority is required under HRS § 195H-10(1) to provide a review of management actions taken. The management actions over the past year have been developed and undertaken pursuant to these requirements, as well as what are referred to in Act 255/HRS § 195H as “powers and responsibilities” generally, toward the objective of a successful transition from the University of Hawaiʻi to the Authority. Due consideration should also be given

to the complexity of this undertaking overall; the diversity of stakeholders and their respective interests; limitations of staff capacity; and realistic processing times.

A. Executive Summary

- Joint Management Committee (JMC). HRS § 195H-6(a): “the authority shall jointly manage Mauna Kea lands with the University of Hawaii; provided that the authority's day-to-day operations shall be carried out by the center of Mauna Kea stewardship for the transition period.” Ongoing efforts of the MKSOA-CMS JMC, MKSOA approval of Types B & C (ground disturbance) projects.
- Strategic Framework. Development of the core values and guiding principles of MKSOA to guide the creation of the management plan and foster community engagement. Not specifically required by Act 255, but developed to align values and guiding principles among all stakeholders.
- Management Plan. HRS § 195H-6(b): “The authority shall develop a management plan to govern land uses; human activities, other uses, and access, including . . . stewardship; education; research; disposition; and overall operations.” Consultants hired and on track to develop a draft plan by late-2026, adoption by mid-2027.
- Community Engagement. HRS §195H-10(6): “The authority shall submit an annual report to the legislature no later than twenty days prior to the convening of each regular session, beginning with the regular session of 2024. Each annual report shall include . . . A review of all community dialogue, outreach, engagement, and consultation.” Extensive community engagement; 6 productive community meetings held, and 10 community workshops scheduled in Q1 2026. Project website launch in Q1 2026.
- Organizational Development. HRS §195H-5(a)(5) “the [A]uthority, as it pertains to the Mauna Kea land area, may . . . Appoint officers, agents, and employees who may be exempt from chapter 76, prescribe their duties and qualifications, and fix their salaries.” Development of hiring strategy that: fills all 13 authorized positions in a manner which meets the transition-specific needs; reconfigures the MKSOA Organizational Chart to account for the anticipated integration of Center for Maunakea Stewardship (CMS) employees; utilizes three Special Projects positions authorized by the Governor; and includes office space considerations, Halepōhaku and Institute for Astronomy Offices.
- Long Term Transition Working Group (LTTWG): Asset Transfer. Legal counsel and working group have completed full review of CMS document inventory including, but not limited to, leases, operating agreements, permits. Detailed transfer plan with recommendations on assignability anticipated completion by

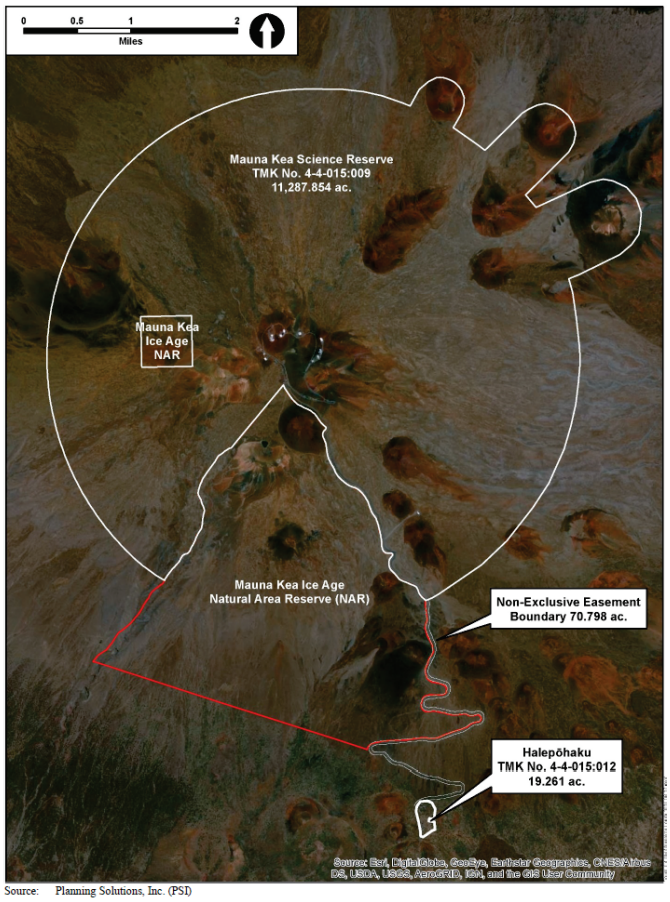
March 2026, asset transfer on track for completion by end of transition period, June 2028.

B. Joint Management

HRS 195-H-6 (a) The authority shall have a transition period of five years beginning July 1, 2023; provided that all of the initial members have been confirmed by the senate. During the transition period, the authority shall jointly manage Mauna Kea lands with the University of Hawaii; provided that the authority's day-to-day operations shall be carried out by the Center for Maunakea Stewardship (CMS) for the transition period established in this subsection.

Joint Management Committee (JMC):

In accordance with Act 255, MKSOA shall jointly manage the Mauna Kea lands with the University of Hawaii's CMS during the five-year transition period that terminates on June 30, 2028.



Source: Planning Solutions, Inc. (PSI)

Figure 1. JMC-Managed Lands

This JMC is co-chaired by the CMS executive director Dr. Greg Chun and the MKSOA executive director, John De Fries.

The JMC is organized into two separate tiers of decision-making and dispute resolution (if needed):

1. Executive Management Board (EMB), comprised of the UH Board of Regents (BOR) Chairperson and an additional BOR member; and the MKSOA Chair and an additional MKSOA member.
2. JMC, composed of the CMS executive director and CMS senior staff; and the MKSOA executive director and MKSOA senior staff. The JMC meets bi-weekly.

Each organization (CMS and MKSOA) operates within their respective legal authorities and obligations in fulfilling the decision-making responsibilities within the JMC. An unsettled dispute at the JMC level will move up to the EMB for resolution and if necessary, to the BOR and MKSOA Board.

From a functional standpoint, the JMC operates under UH's current Master Plan, Comprehensive Management Plan and Administrative Rules until at such time, MKSOA's new plan and administrative rules respectively, take effect. The development of MKSOA's management plan is now underway and scheduled for completion and formal adoption by the board in Q2 2027.

In accordance with UH's Master Plan (January 20, 2022), proposed projects fall under one of three categories:

1. UH Type A: minor alteration; minor repair; replacement.
2. UH Type B: moderate alteration; repair, maintenance, operation.
3. UH Type C: new facility; new project.

Proposed projects in the B and C categories are subject to the advance review and approval of the MKSOA Board.

Additionally, the JMC is focused on matters that range from: strategic issues, operational updates, budgeting, staffing, emergency response, program enhancements, violations to leases, permits or general rules, preparation of annual reports and setting the stage for a seamless and HR-compliant transfer of CMS personnel to MKSOA; prior to the expiration of the transition period on June 30, 2028.

Highlights**:**

Two Type B projects were subject to MKSOA Board's review and vote of approval:

1. Site Plan Application – Canada France Hawaii Telescope; Ohana Conduit Removal – Approved.
2. Site Plan Application – NASA Infrared Telescope Facility; Geophysical Testing – Approved.

Also reviewed and approved by the MKSOA Board:
The Comprehensive Management Plan (CMP) Subplan which was created as part of Management Action IM-5, *Develop and Implement a Debris Removal, Monitoring and Prevention Plan*, as outlined in the 2022 CMP Supplement.

C. Strategic Framework

The Strategic Framework is intended to serve as a guiding document for the development of the MKSOA Management Plan, as well as a guide for the overall work of the transition period. Act 255, as the Authority's founding legislation, accomplishes this end to an extent. The Strategic Framework was drafted to elaborate on the Values and Principles expressed in Act 255 and to create a focal point for community input. Discussions with the community will continue and be expanded to address other elements of the Management Plan. More details are provided in Section II.e. Community Engagement.

In drafting the Strategic Framework, there was a specific desire and intent to ensure a firm cultural foundation, as described in HRS §195H-6(b)(6), where the Authority is given directive and license to do so: "The management plan shall . . . [i]ncorporate indigenous management and cultural processes and values."

The Strategic Framework is broken down into four general sections:

- Legislative Finding and Intent
- Mission and Purpose
- Core Values
- Guiding Principles

In addition, there was also a desire by the Authority to honor the work that went into the 2022 Mauna Kea Working Group Report, the precursor to Act 255. For example, the four kānāwai ("laws of nature") referenced in the Working Group Report are incorporated into the Core Values section and were explained at community meetings by renowned Native Hawaiian cultural practitioner and scholar Dr. Pualani Kanahele. The current version of the Strategic Framework is attached as Appendix 1.

D. Management Plan

Creation of a Management Plan is currently in progress as mandated under HRS §195H-6. This section is included pursuant to HRS §195H-10(2), which requires a review of "the implementation of all legislatively required plans."

A total of two Requests for Proposals (RFPs) were issued for consulting services to develop the MKSOA Management Plan. The first request posted in October 2024 yielded only one offeror, whose proposal was deemed insufficient by the Permitted Interaction Group (PIG) for RFP evaluation. An amended RFP with clearer cultural

competency and community engagement requirements was issued in April 2025. The selected offeror, SSFM International, Inc. (SSFM) was notified in May 2025, with a contract start date of August 2025 and a projected completion in October 2029.

SSFM, as the primary contractor/consultant has assembled a project team of subcontractors, collectively referred to as Kua o Wākea, who bring a diverse range of multidisciplinary expertise to the planning process. Please see Appendix 2 for the Kua o Wākea Management Plan Project Introduction.

The management planning process is divided into a four-phase work plan. A high-level overview of these phases includes:

Phase 1: Moʻokūʻauhau – Research and Discovery

- Pre-planning, coordination, and orientation
- Existing document and compliance literature review
- Site visits
- Audit of existing plans, permits, and approvals

Phase 2: Moʻolelo – Planning and Engagement

- Develop plan for and facilitate community workshops statewide
- Archaeological and cultural field site visits
- Environmental legal review

Phase 3: Moʻokaʻi – Management and Strategic Plan

- Develop:
    - Strategic planning framework
    - Plan implementation strategy
    - Land use governance framework
    - Climate change mitigation strategy
    - Financial stewardship and sustainability model
    - Permitting framework
    - Administrative rulemaking plan

Phase 4: Moʻowaiwai – Reporting and Transition Guide.

- Develop a Transition Guide
- Review and finalize the plan for rollout

Base cost submitted with the Offer is $2,210,000. Excluded from the Management Plan deliverables are the Organizational Structure and the Financial Sustainability requirements, which will be awarded either via an amendment to the contract or through a subsequent RFP.

E. Community Engagement

This section is included pursuant to HRS §195H-10(6), which requires “A review of all community dialogue, outreach, engagement, and consultation,” and includes the completed and planned community engagement efforts focused around the preliminary guiding document referred to as the “Strategic Framework” covered above in II.c., and the upcoming community outreach sessions focused on the MKSOA Management Plan.





Figures 2 and 3. Community Talk-Story sessions on Hawai‘i Island

1. Strategic Framework

A series of six "Community Talk-Story” sessions were held around Hawai‘i Island from April through October 2025 for the purpose of educating the community on the history and purpose of MKSOA; socializing the Draft Strategic Framework; and seeking community input on the intent, scope, and language of the document. These gatherings were facilitated, live-streamed and recorded to enable the broadest community participation possible. Meeting agendas included: an introduction to the Authority, members and staff; a discussion of the purpose for the Strategic Framework with background on its development based on prior public input documented in the Working Group Report and Act 255; a discussion of kānāwai in a video by Dr. Pualani Kanahele; interactive sessions where community members with diverse perspectives engaged in small group discussion; and an open-ended question and answer period that gave the

community an opportunity to raise matters of concern. These productive and respectful community interactions signaled the Authority‘s commitment to inclusion and began the education and trust-building essential for harmonious co-existence. The Authority is currently synthesizing all input and considering revisions to the Strategic Framework based on the feedback. These will be completed and available in Q1 of 2026. Community Talk-Story Sessions Preliminary Findings can be found in Appendix 3.



Figure 4. Community Talk-Story session in Waimea

F. Organizational Development

1. Hiring and Integration

CMS is comprised of five (5) UH positions and fifty-eight (58) RCUH positions, and the Authority is seeking to transfer both groups of CMS employees to MKSOA prior to the end of the transition period on June 30, 2028. It has been determined through the pre-integration work of the transition, however, that in order to ensure continuity of operations, both UH (5) and RCUH (58) employees from CMS would need to transfer to MKSOA at the exact same time. Otherwise, should the (5) UH employees transfer to MKSOA at a different time, there would be administrative issues with those employees not being permitted under current rules to manage or comply with management (e.g., task management, leave

requests, performance reviews) should their respective teams be spread across two separate organizations.

Further, although the transfer of the (58) RCUH employees should be an administrative function, the integration also requires the reconciliation of business processes (e.g., HR policies) and transfer of assets (e.g., IT infrastructure and data) that are currently utilized at CMS, which is not yet complete.

Accordingly, in order to accelerate the transfer of employees, MKSOA is developing a plan to contract all of CMS by Q2 2026. This will enable MKSOA and CMS to complete the integration tasks (i.e., reconciliation of business processes and transfer of assets), while CMS is operating under MKSOA – with the official transfer of both UH and RCUH employees to be completed by June 2027.

Finally, because it should be an administrative function to transfer the (58) RCUH employees from CMS to MKSOA, MKSOA has held positions open (that may be re-described and re-positioned in the organizational chart as necessary) for only the (5) UH employees: Cultural Specialist (96032C), Authority Education Specialist (96034C), Authority Environmental Specialist (96035C), Authority Accountant (96036C), Authority Account Clerk (96037C). However, the pre-integration work has surfaced business transformation tasks that require additional resources; therefore, MKSOA is seeking to repurpose the Cultural Specialist (96032C) that has been held for a UH employee (the remaining four positions would be held open until an official transfer is initiated by June 2027).

This plan is being developed in consultation with members of the Authority's Performance and Oversight PIG, as well as representatives of CMS, DLNR, and RCUH. It will be submitted for full Authority approval in Q1 of 2026. Upon approval, MKSOA will work with CMS, DLNR, and RCUH to facilitate implementation.

2. Office Space

<u>HP & IFA Offices</u>
MKSOA utilizes a small office at the Halepōhaku Midlevel Facilities (HP), in a currently unused dormitory building for a nominal monthly rent. Access to a workspace on Mauna Kea for MKSOA use is of particular importance due to the need for ever-increasing MKSOA presence, particularly for the weekly JMC, CMS managers', and CMS ranger morning meetings .

Additionally, CMS has graciously provided MKSOA with office space and use of meeting facilities at the Institute for Astronomy building in Hilo, where MKSOA currently holds its regular Board meetings until the Authority's long-term office, meeting and baseyard facilities can be secured.

The availability of workspaces in UH facilities for MKSOA use has been helpful and appreciated, not only in enabling MKSOA's basic functionality, but also as the close proximity to CMS operations serves to facilitate a smooth integration during the transition. In practice, the proximity that originated out of need, is now deliberately maintained so that MSKOA staff is able to directly observe CMS operations and administrative functions, cultivate relationships with CMS and IFA staff, and develop its own understanding of processes and needs from a transition-oriented perspective.

688 Kinoʻole and 427 E. Kāwili

MKSOA currently holds a one-year lease, with a one-year extension option for a commercial office unit at 688 Kinoʻole Street in Hilo. This unit is intended to serve as the interim office for the Authority while a larger, longer term commercial unit is found. MKSOA staff have not yet fully moved into this location due to delays in procurement and production of office furniture, which was preceded by a protracted lease negotiation between DAGS Leasing Division, the Office of the Attorney General, and the property owner. Currently, MKSOA is awaiting delivery of office furniture and installation/activation of ETS-compliant internet service.

Initially, a lease and Right of Entry was granted by the Board of Land and Natural Resources (BLNR) for the former Bank of Hawaii building at 427E. Kawili Street, also in Hilo. However, the Authority found that despite an agreement for rental relief in exchange for improvements at MKSOA's expense, the property would ultimately not meet post-transition space needs, primarily that of a baseyard to house vehicles and adequate parking for both daytime-administrative, and nighttime-mountain staff. Late-night safety and security for staff coming down from the mountain and returning to their vehicles was also of concern. MKSOA officially relinquished its Right of Entry to BLNR at the December 12, 2025 BLNR meeting.

G. LTTWG: Asset Transfer

The Long-Term Transition Working Group (LTTWG) was formed by the Authority in late 2023 for review, analysis, and recommendation on which UH-held assets and liabilities associated with Mauna Kea and astronomy-related facilities should be transferred to

MKSOA per the directive found in Act 255, SLH 2022 Part II, Sections 7 and 9. The LTTWG includes Authority members Ben Kudo and Paul Horner, MKSOA staff, CMS staff, UH General Counsel, and DLNR Land Division and Office of Conservation and Coastal Lands. MKSOA has also retained outside legal counsel for document review and to provide legal analysis and recommendations on asset transfer.

The UH document inventory provided by CMS, which was partially inherited from its predecessor the Office of Maunakea Management, includes, but is not limited to, the UH General Lease, the MKO subleases, operating agreements, easements, and miscellaneous permits, meeting minutes and numerous other categories of documents. This inventory contains many thousands of pages spanning decades, the review of which has been extensive.

The LTTWG's first main deliverable was a document inventory matrix, which included a brief recommendation on assignability to MKSOA. The Master Transfer Plan (MTP), is expected to articulate the information contained in the matrix in greater detail. The draft MTP will be transmitted to the UH Board of Regents, MKSOA, and DLNR for review and comment. Upon final approval of the MTP by the UH Board of Regents and the MKSOA, the LTTWG will commence the implementation phase of work, with the objective of transfers/assignments to be completed on or by July 1, 2028.

III. Financial, Budget, Expenditures

Per HRS § 195H-10(2) " Each annual report shall include . . . financial and management reports, budgets, expenditures, and plans."

Due to the Governor's Administrative Restriction of $391,316, and the transfer of $10,000,000 from the Approved Legislative Appropriation for Fiscal Year ending June 30, 2025, MKSOA dedicated its efforts and available funds toward: administrative support, transitional legal services and contracting for the development of the MKSOA Management Plan. MKSOA was authorized in April 2025, to commit $5,000,000, of which $2,400,000 was utilized currently with the Research Corporation of the University of Hawaii in assisting in the development and public posting of a Request for Proposal, and awarded a contract for the MKSOA Management Plan in August 2025 to SSFM International, Inc. The balance, $2,600,000, has been encumbered in fiscal year 2026 for future management plan related expenditures.

A Recurring Budget was requested for the Biennial Budget Cycle for Fiscal Years ending June 30, 2026, and June 30, 2027, Due to the complexity of transitioning the responsibilities from the University of Hawaii to the Mauna Kea Stewardship and

Oversight Authority, MKSOA requested flexibility in its requested Budget Appropriations from the Legislature.

At the time of the reporting period, MKSOA had three active encumbrances:

McCorriston Miller Mukai MacKinnon LLP: Legal services for LTTWG, Original Contracted Amount: ($392,000)	$284,794
Hawaii Alliance for Community Based Economic Development (HACBED): Community Meeting Support,	$90,000
Maunakea Shared Services: Halepōhaku Space Use Fee:	$4,200

Additional formal encumbrances (after June 30, 2025 reporting period):

Research Corporation of the University of Hawaii: Mgmt Plan, Other.	$2,600,000
Hatada Realty: MKSOA Commercial Office Space at 688 Kino‘ole St.,	$21,768

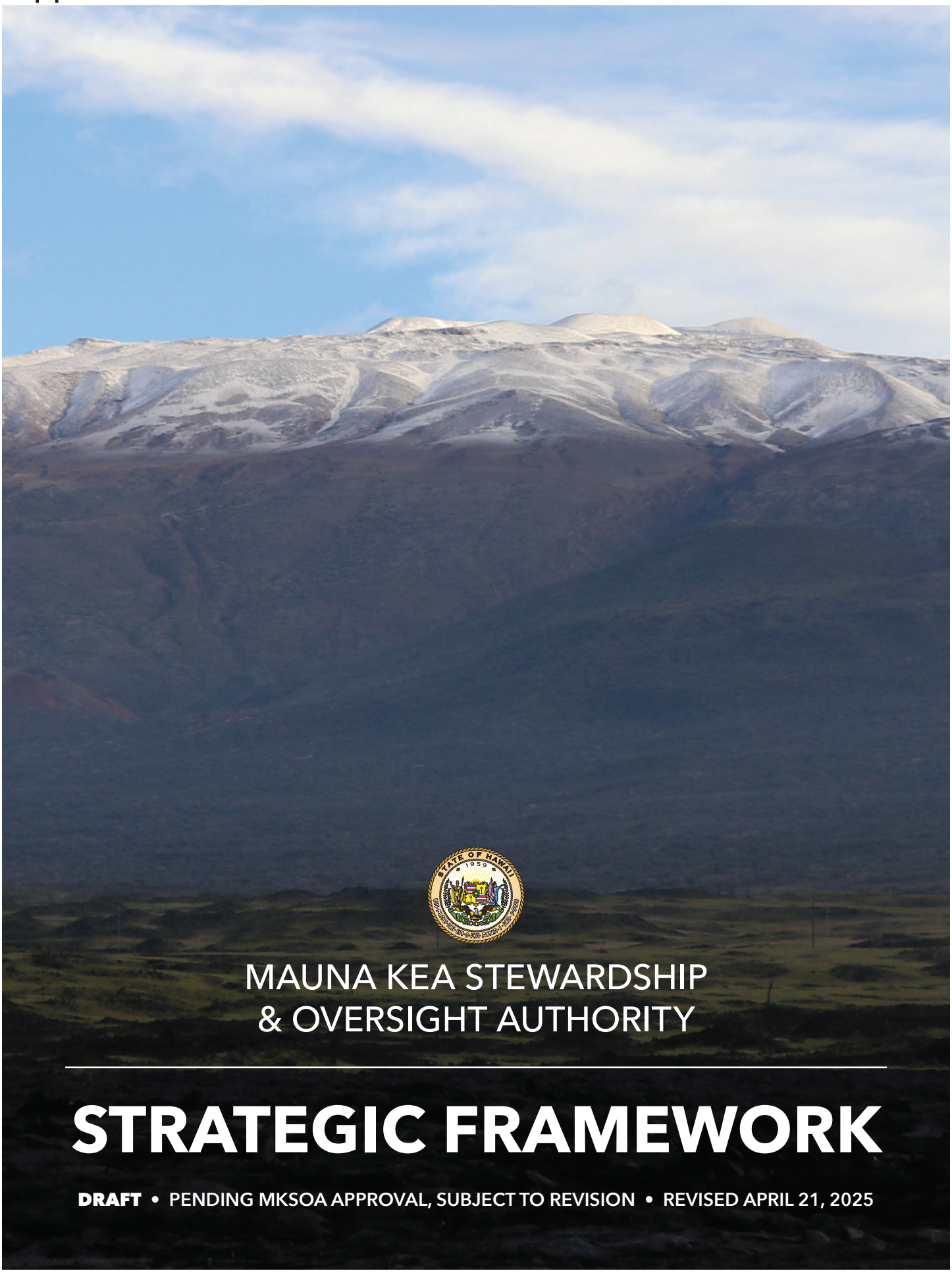
Financial, Budget, Expenditures for Fiscal year July 1, 2024- June 30, 2025

Legislative Appropriations for Fiscal year 2025:	$14,000,000
Administrative Governor’s Restriction:	$391,316
Net Transfer for Maui Disaster Fund:	$10,000,000
Net Available for Fiscal year 2025:	$ 3,608,684

Fiscal Year 2025 Expenditures:

Salaries:	$568,846
Office Expenses:	$61,990
Travel:	$29,335
Attorneys Fees:	$107,206
RCUH Advance for Consulting Services	$2,400,000
Encumbrances (Legal, Meetings, Rent)	$381,413
Total Expended:	$3,548,790

Please see Appendix 4 for details contained in FY26-27 DLNR Budget Briefing Testimony.



MAUNA KEA STEWARDSHIP
& OVERSIGHT AUTHORITY

STRATEGIC FRAMEWORK

DRAFT • PENDING MKSOA APPROVAL, SUBJECT TO REVISION • REVISED APRIL 21, 2025

LEGISLATIVE FINDING AND INTENT

The summit region of Mauna Kea is a spiritual and special place of significance that is home to cultural landscapes, fragile habitats, and historical and archaeological artifacts. Due to its topographical prominence, Mauna Kea is also a highly valued site for astronomical study, which produces many significant discoveries that contribute to humanity's study and understanding of the universe.

In the face of protests and concerns raised about the impacts upon the spiritual significance and environment of this natural resource engendered by the growing astronomy research facilities, the Mauna Kea Stewardship and Oversight Authority (MKSOA) was created under Act 255, Session Laws of Hawai'i 2022 to bring about a more harmonious coexistence of these and other uses atop the mountain.

MISSION AND PURPOSE

To protect Mauna Kea for future generations, by fostering a mutual stewardship paradigm in which the ecosystem of natural resources, cultural practices, education and science is in balance and synergy.

CORE VALUES

1. Mauna Aloha – Understanding the responsibility to reciprocate for the Mauna's value to humanity by making a long-term commitment to maintaining the integrity of Mauna Kea's spiritual significance and extraordinary environmental qualities.

2. 'Ōpū Kūpuna – Understanding and embracing a duty and accountability to Mauna Kea and the natural environment, as well as perpetuating the Native Hawaiian traditional and customary practices embedded in the landscape of the Mauna.

3. Holomua 'Oi Kelakela – Driven by creativity and innovation, constantly challenging the status quo with a commitment to stewardship of Mauna Kea that is informed by existing wisdom and traditions, as well as expanding knowledge. The Authority shall be mindful and considerate of the impacts generated by current and future needs, trends and research opportunities and shall seek ways to move forward which enhance the ability to serve as responsible stewards without jeopardizing the foundation of 'āina aloha.

4. Kānāwai – Observing four laws of nature that govern our relationship to our 'āina that are meant to ensure the health of the 'āina so that it will continue to nurture all life forms.

(a) Hoʻokikī Kānāwai – the edict of continuum, cycles that balance and regulate our environment.

(b) Kuaʻā Kānāwai – the edict of emergency, cycles replete with natural phenomena and elemental activity that forecast impending disaster.

(c) Kaiʻokia Kānāwai – the edict of boundaries, delineations of the divisions of earth established by lava flows, rivers, valleys, ocean, shoreline, land, sky and forest.

(d) Kīhoʻihoʻi Kānāwai – the edict of regeneration, reflecting the resilience of land and an ability to recover from destructive actions and reestablish its natural regenerative cycles.

5. ʻOhana – ʻOhana holds people in kinship and in relationship to place, recognizing the interwoven nature of different needs and desires while focusing on what may be possible together with Mauna Aloha at the center, carrying out responsibilities and possibilities over multiple generations.

6. Kuleana – We are accountable to the Mauna and the people of this place; striving to foster good relationships, respectful dialogue, broad engagement, mutual education and collaborative work.

GUIDING PRINCIPLES

(Listed in Alphabetical Order)

Commitment to Community Engagement - Planning and execution of programs will involve dialogue with the people of Moku o Keawe (Hawaiʻi Island), the public, cultural practitioners, experts of the land and natural resources, educators, and scientists. In addition, other segments of the Hawaiʻi Island community, as well as the citizens of the State of Hawaiʻi will also be included within the scope of community engagement.

Land Use Controls - Human activity may be authorized for specific purposes, subject to regulatory oversight and restoration of the site upon conclusion of the permitted use. Land use regulations will control impacts, foster coexistence of users, minimize ground disturbance, and promote sustainable land uses and practices (e.g., energy, wastewater, potable water, gas emissions, visual intensity of use, etc.)

Protection of Native Hawaiian Rights - As set forth in the Hawaiʻi State Constitution, traditional and customary Native Hawaiian rights, shall be supported and protected

MKSOA BOARD MEMBERS

John Komeiji
Chair

Noe Noe Wong Wilson
1st Vice Chair

Rich Matsuda
2nd Vice Chair

Mayor Kimo Alameda

Pomai Bertelmann

Neil Hannahs

Paul Horner

Bonnie Irwin

Ryan Kanaka'ole

Kalehua Krug

Benjamin Kudo

Lanakila Mangauil

MKSOA STAFF

John De Fries
Executive Director

Bill Stormont
Project Director

Lloyd Unebasami
Interim Administrative Services Officer

Pua'ena Ahn
Executive Assistant

without unduly burdening individuals exercising these rights. Plans and permitted activities will appropriately incorporate indigenous management and cultural processes and values. Initiatives that increase understanding of Native Hawaiian history and cultural practices related to Mauna Kea should also be enabled.

Restoration of Natural Resources - The management of human activity on the Mauna, including interactions with and restoration of natural resources, will use an ecosystem approach.

Significance of the Mauna - The Mauna is a unique cultural and scientific resource within an ecologically fragile environment. Only activities reflecting the highest standards and practices should be allowed on the Mauna.

Support of Astronomy - The support of astronomy, consistent with a mutual stewardship paradigm in which ecology, the environment, natural resources, cultural practices, education and science are in balance and synergy, is a policy of the State.

ADDITIONAL RESOURCES

Mauna Kea Working Group Report HR33 SLH 2021

Act 255, Session Laws of Hawai'i 2022

Mauna Kea Stewardship & Oversight Authority Website

Appendix 2

MKSOA 6884-2005-01

Consulting Services to Develop a Management Plan for the Newly Established Mauna Kea Stewardship and Oversight Authority (MKSOA)

KUA O WĀKEA

SSFM dtl ekl MAHINA PAISHON CONSULTING

NOVEMBER 13, 2025



KUA O WĀKEA

SSFM International

dtl

ekf

MAHINA PAISHON CONSULTING

Kōnane Law

Ho'opili Hou Research Group LLC

'ĀINA ARCHAEOLOGY

Mana'o'i'o

SOLUTIONS PACIFIC

HUI ALAKA'I



April Surprenant, AICP



Malia Ka'aihue, Ph.D



Huihui Kanahele-Mossman, Ph.D



Mahina Paishon

SSFM International

dtl

ekf

MAHINA PAISHON CONSULTING

PROJECT TEAM

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Heather Bartlett

DTL


Malia Ka'aihue, Ph.D


Jason Antonio


Kahanu Palencia-Cuban


Lane Maki


Keanuenue DeSoto


Kaulana Ing

Edith Kanaka'ole Foundation


Huihui Kanahele-Mossman, Ph.D


A.Kalei Nu'uhiwa, Ph.D


Kalaionamoku Luka Kanaka'ole

Mahina Paishon Consulting


Mahina Paishon


Jessica Poniala Kaneakua


Mehana Blaich Vaughan, Ph.D


Mehanaokalā Hind

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N. Mahina Tuteur, Esq.

Ho'opili Hou


Samuel Kamuela Plunkett Jr.

'Āina Archaeology


Tanya Lee-Greig, M.A.

Mana'o'i'o


Kalani Flores

Solutions Pacific


Rebecca Soon

PROJECT SCHEDULE

	2025					2026									
	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O
Phase 1: Moʻokūʻauhau - Research & Discovery	■	■	■												
Phase 2: Moʻolelo - Planning & Engagement			■	■	■	■	■	■							
Phase 3: Moʻokaʻi - Management & Strategic Plan									■	■	■	■			
Phase 4: Moʻowaiwai - Reporting & Transition Guide													■	■	■



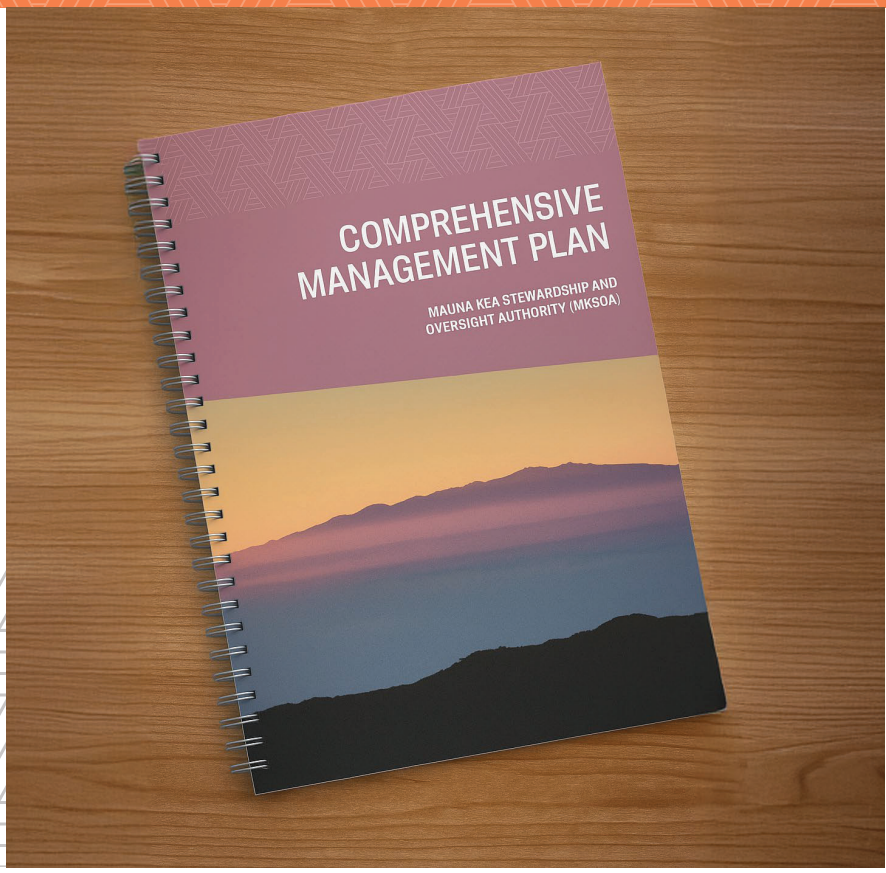
10 COMMUNITY WORKSHOPS CALENDAR

PROJECT OUTCOMES

A Comprehensive Management Plan that includes:

- Community Engagement Plan
- Strategic Framework
- Implementation Roadmap (Transition Guide)
- Management & Strategic Plan

FINAL DELIVERABLE:
OCTOBER 2026




KUA O WĀKEA
MAHALO NUI

Appendix 3

Community Talk Story Sessions Preliminary Findings

An Update for the Mauna Kea Stewardship & Oversight Authority



MAHINA
CONSULTING

November 13, 2025

Agenda

Mahina Consulting to provide a walkthrough of the following:

- Overview of Community Talk Story Scope & Process
- Review of Preliminary Findings
- Q&A



Executive Summary:

Community Feedback on the Draft MKSOA Strategic Framework

Overview

1. What is not understandable — the areas where language, structure, and concepts are unclear or inaccessible.
2. What is missing — the critical elements, perspectives, and systems needed to make the Framework complete, culturally grounded, and actionable.

> **Across both themes, participants called for clarity, transparency, inclusivity, and cultural integrity in all aspects of the Framework.**

Executive Summary:

Community Feedback on the Draft MKSOA Strategic Framework

Conclusion

Community feedback underscores a shared desire for a *Strategic Framework* that is:

- Culturally grounded in Kānāwai and ʻike kūpuna,
- Transparent and accessible to all audiences,
- Educational and intergenerational, and
- Action-oriented, measurable, and restorative in its outcomes.

To honor the community's feedback and input, moving forward, the Framework must evolve from a conceptual document into a living guide—one that honors the Mauna, restores balance, and empowers the people of Hawaiʻi to steward Mauna Kea with integrity, accountability, and clarity.

Key Findings

1. Clarity, Language, and Accessibility

- Complex and academic language makes the Framework difficult for general audiences to understand.
- Plain-language explanations, including a glossary and use of ʻŌlelo Hawaiʻi, are needed for key terms such as kānāwai, stewardship, and ecosystem approach.
- Calls for keiki-friendly and bilingual versions, visual aids, and multimedia storytelling to make the Framework more inclusive and accessible.
- Participants requested clearer, more directive and action-oriented language, replacing abstract phrasing with concrete examples of how values and principles are practiced.

Key Findings

2. Legal and Governance Transparency

- There is limited understanding of Act 255 and how it shapes the Authority's powers, governance, and responsibilities.
- Stakeholders want plain-language summaries of the law, inclusion of direct statutory language, and visuals that delineate jurisdictional boundaries (MKSOA, UH, DLNR, DHHL).
- Participants called for clear accountability structures, an organizational chart, and explicit information on who oversees the Authority.
- Missing acknowledgment of lineal descendant rights, land ownership (crown and ceded lands), and unresolved legal disputes.

Key Findings

3. Core Values, Guiding Principles, and Vision

- The distinction between Core Values and Guiding Principles is unclear, and both are perceived as too linear, conceptual, and disconnected.
- Participants want these concepts shown as interconnected and relational, grounded in kuleana, respect, and the perspective of the Mauna itself as a living being.
- Vision and inspirational language are missing—stakeholders called for a forward-looking statement that reflects mutual benefit, healing, and hope for the people of Hawai‘i and Mauna Kea.
- The term “Authority” was described as triggering and colonial; community members suggested titles that reflect stewardship and partnership instead.

Key Findings

4. Cultural Integrity and Historical Context

- Missing acknowledgment of generational trauma, U.S. occupation, and historic injustices tied to land use, permitting, and telescope construction.
- Respondents emphasized the need for a restorative justice lens that acknowledges harm and seeks healing.
- The Framework should explicitly integrate Native Hawaiian cultural practices—including ceremonies, celestial navigation, and ancestral sciences—as living components of stewardship.
- Calls for broader inclusion of Native Hawaiian culture beyond ceremonial references, ensuring cultural knowledge informs all governance decisions.

Key Findings

5. Education and Youth Engagement

- Education is underrepresented in the current Framework. Stakeholders want it embedded as a core component of stewardship, science, and cultural continuity.
- Recommendations include:
  - » Curriculum integration across school levels (e.g., a “Mauna Kea unit”).
  - » Creation of interactive educational materials (videos, maps, visuals).
  - » Youth engagement pathways through partnerships with organizations such as the Hawai‘i Council Youth Commission, Indigenous Youth Alliance, and Kū Ānuenue.

Key Findings

6. Community Engagement and Communication

- Feedback emphasized the need for ongoing, transparent, and reciprocal dialogue rather than one-time consultations.
- Requests include clear articulation of how community talk-story sessions inform Master and Management Plans, and mechanisms for regular updates through local and social media.
- Missing elements include short, accessible educational videos, multilingual resources, and collaborative outreach with schools and community organizations.



Key Findings

7. Environmental Stewardship and Land Use

- The Framework's environmental approach is viewed as too limited and reactive, focusing on restoration without clear links to preservation, protection, and prevention.
- Stakeholders seek measurable, long-term sustainability goals and ecological indicators, particularly regarding waters, streams, and ecosystems.
- There is a call for explicit land use controls that prevent desecration of sacred or culturally significant sites, and for recognition of Pōhakuloa as ecologically connected to Mauna Kea.



Key Findings

8. Science and Knowledge Systems

- The Framework equates science primarily with astronomy, excluding other disciplines and ʻike kūpuna (ancestral knowledge).
- Respondents recommend expanding science to include ecology, geology, biology, and cultural sciences, validating both Indigenous and contemporary ways of knowing.
- Inclusion of ʻike kūpuna and Native Hawaiian celestial navigation would reinforce a holistic model of stewardship.



Key Findings

9. Kānāwai and Indigenous Governance

- Stakeholders called for a dedicated Kānāwai section explaining its principles, cycles, and application to governance and land control.
- Inclusion of Dr. Pua Kanakaʻole's Kānāwai teachings, with accompanying definitions and visuals, would demonstrate its centrality to the Framework.
- Participants also requested opportunities for ongoing conversations about Kānāwai, linking it to both cultural education and legal practice.



Key Findings

10. Funding, Resources, and Implementation

- The Framework lacks a sustainable funding plan for stewardship, regulation, and enforcement.
- Suggested solutions include:
  - » Fee structures and concession revenues to support conservation.
  - » Transparent allocation of funds toward ecological restoration and cultural education.
  - » Development of an economic model that aligns resource use with stewardship principles.
- Respondents also requested implementation tools—timelines, milestones, and measurable outcomes—to translate values into concrete action.

Cross-Cutting Themes

Theme	Community Priorities
Transparency & Clarity	Explain Act 255, roles, and governance in plain language; use visuals and accessible tools.
Cultural Integrity & Restorative Justice	Acknowledge trauma, history, and U.S. occupation; embed healing and justice into stewardship.
Education & Youth Empowerment	Make education and youth engagement central to the Framework's mission.
Inclusive Communication	Commit to sustained, reciprocal dialogue and accessible outreach.
Environmental & Cultural Stewardship	Expand restoration to include preservation, prevention, and spiritual renewal.
Integration of Knowledge Systems	Elevate ʻike kūpuna alongside contemporary science.
Language & Representation	Increase ʻŌlelo Hawaiʻi, define key terms, and represent the Mauna's voice as living.
Sustainability & Funding	Establish a clear, transparent funding model for long-term stewardship and accountability.
Vision & Inspiration	Add a forward-looking vision statement that unites ecological, cultural, and communal aspirations.


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Appendix 4

Department of Land and Natural Resources
Active Contracts as of December 1, 2025

Table 10

Prog ID	MOF	Contract No.	Amount	Frequency (M/A/O)	Max Value	Outstanding Balance	Date Executed	From	To	Entity	Contract Description	Explanation of How Contract is Monitored	POS Y/N	Category E/L/P/C/G/S/*
LNR909	A	00072492-29	$ 273.06		$ 273.06	$ 273.06	8/29/2024			STARCOM BUILDERS, INC.	DLNR HR OFC IMPROVMENTS KALANIMOKU BLDG RM 231 HNL OAHU HI	(Dept Pro Rata)	Y	S
LNR909	A	00073032-01	$ 392,000.00	M	$ 392,000.00	$ 213,600.72	5/6/2025	10/11/2024	7/1/2028	MCCORRISTON MILLER MUKAI	MKSOA SDAG CONTRACT F/LONG TERM TRANSTION GRP #24-08335	MKSOA Board Member, Deputy AG	Y	C
LNR909	A	00073073-02	$ 2,600,000.00	O	$ 2,600,000.00	$ 2,291,731.00	5/20/2025	4/10/2025	6/30/2028	RESEARCH CORPORATION OF THE	MGMT PLAN MAUNA KEA STEWARDSHIP & OVERSIGHT AUTHORITY	MKSOA ASO	Y	S
LNR909	A	00073450-01	$ 21,768.24	M	$ 21,768.24	$ 14,512.16	9/30/2025	8/1/2025	7/31/2026	HATADA REALTY LLC	OFC LEASE AGREEMENT #71-23-0692 688 KINOOLE ST, STE 212 HILO HI 96720	MKSOA Project Director	N	L

Department of Land and Natural Resources
Work-Related Travel as of November 30, 2025

Prog ID	Sub-Org	Position Number	Job Title	Start Date	End Date	Justification for Travel	Full Agenda Y/N?	Meetings Attended Y/N?	Training Sessions Y/N?	Total Cost of Trip	Cost Paid by State or Other Entity?	Final Report of Travel Y/N?
LNR909	10		DLNR ADA/LEP Coordinator	11/4/2024	11/4/2024	ADA inspection for MKSOA interim office lease	N	N	N	238.60	State	Y
LNR909	10	124605	Executive Assistant	7/28/2024	7/29/2024	Meet w/ ASO, DLNR-Fiscal, Community outreach	N	Y	N	427.97	State	Y
LNR909	10	125366	Project Director	9/3/2024	9/3/2024	Planning meeting w/ MKSOA leadership	N	Y	N	208.76	State	Y
LNR909	10	125366	Project Director	9/9/2024	9/9/2024	Meeting w/ MKSOA Chair & Exec. Staff	N	Y	N	202.61	State	Y
LNR909	10	125346	Administrative Svcs Officer	5/22/2024	5/24/2025	Meet w/ Mauna Kea Shared Svcs, Mauna Kea site visit	Y	Y	N	776.53	State	Y
LNR909	10	125346	Administrative Svcs Officer	8/7/2024	8/9/2024	MKSOA Board meeting, Exec. staff meeting	Y	Y	N	632.36	State	Y
LNR909	10	125346	Administrative Svcs Officer	9/18/2024	9/18/2024	Maunakea Observatories Qtrly meeting	Y	Y	N	178.59	State	Y
LNR909	10	125090	Executive Director	5/17/2024	5/18/2024	Meet w/ ASO, OHA Trustee, Kalani Meinecke	N	Y	N	570.19	State	Y
LNR909	10	125090	Executive Director	4/16/2025	4/16/2025	Senate WAL confirm. hearing for MKSOA members	Y	Y	N	225.26	State	Y
LNR909	10	125090	Executive Director	4/18/2024	4/19/2024	Meet w/MKSOA Chair, CalTech Board, Wes Machida, TIO	N	Y	N	513.93	State	Y
LNR909	10	125090	Executive Director	4/22/2024	4/23/2024	Sen. floor confirm. for MKSOA members, Convening our Communities event	Y	Y	N	461.23	State	Y
LNR909	10	125090	Executive Director	6/26/2024	6/28/2024	Meet w/ UH Pres. & Regents, DLNR, AG, MKSOA Chair	N	Y	N	943.88	State	Y
LNR909	10	125090	Executive Director	9/9/2024	9/10/2024	Management Plan PIG meeting prep, HNN Interview	N	Y	N	493.48	State	Y
LNR909	10	125090	Executive Director	9/25/2024	9/27/2024	Meet w/ AURA, NSF, BLNR & MKSOA Chairs, Deep Sky Presentation	N	Y	N	757.65	State	Y
LNR909	10		Board Vice-Chair	1/16/2024	1/17/2024	Management Plan PIG meeting, Legislature opening	N	Y	N	587.36	State	Y
LNR909	10		Board Member	12/10/2024	12/10/2024	Mauna Kea site visit	Y	Y	N	136.60	State	Y
LNR909	10		Board Member	5/9/2024	5/10/2024	MKSOA Board meeting, Comm. Talk Story, PIG mtg	Y	Y	N	479.46	State	Y
LNR909	10		Board Chair	12/13/2023	12/13/2023	Meet w/ Canada France Hawaii Telescope Board	N	Y	N	157.20	State	Y
LNR909	10		Board Chair	2/8/2024	2/8/2024	MKSOA Board meeting	Y	Y	N	177.60	State	Y
LNR909	10		Board Chair	1/9/2024	1/9/2024	Meet w/ Delegation from India	N	Y	N	143.59	State	Y
LNR909	10		Board Chair	8/3/2023	8/3/2023	Meet w/ MKSOA Board members	N	Y	N	115.21	State	Y
LNR909	10		Board Chair	3/27/2025	3/27/2025	Meet w/ Gerald De Mello, Mayor Alameda, Hilo Business leaders	N	Y	N	369.00	State	Y
LNR909	10		Board Chair	10/27/2023	10/27/2023	Meet w/ Senators Elefante & Richards	N	Y	N	197.20	State	Y
LNR909	10		Board Chair	11/8/2023	11/8/2023	Senate WAM meeting	Y	Y	N	163.19	State	Y
LNR909	10		Board Chair	7/11/2024	7/11/2024	Meet w/ MKSOA Exec. staff	N	Y	N	183.61	State	Y
LNR909	10		Board Chair	6/13/2024	6/13/2024	MKSOA Board meeting	Y	Y	N	188.59	State	Y
LNR909	10		Board Chair	11/21/2024	11/21/2024	Meet w/ Mayor Alameda	N	Y	N	198.51	State	Y
LNR909	10		Board Chair	6/19/2024	6/20/2024	Meet w/ MKSOA Exec. staff, attend Japanese Chamber of Industry & Commerce event	N	Y	N	486.74	State	Y
LNR909	10		Board Chair	4/17/2025	4/18/2025	MKSOA Community Talk Story, PIG meeting, meet w/ staff	Y	Y	N	819.10	State	Y
LNR909	10		Board Chair	3/13/2025	3/13/2025	MKSOA Board meeting	Y	Y	N	209.01	State	Y
LNR909	10		Board Chair	2/13/2025	2/13/2025	MKSOA Board meeting	Y	Y	N	213.99	State	Y
LNR909	10		Board Chair	1/9/2025	1/9/2025	MKSOA Board meeting	Y	Y	N	188.59	State	Y
LNR909	10		Board Chair	5/16/2024	5/16/2024	Gemini Observatory Board meeting	Y	Y	N	197.61	State	Y
LNR909	10		Board Chair	11/14/2024	11/14/2024	MKSOA Board meeting	Y	Y	N	193.60	State	Y
LNR909	10		Board Chair	11/7/2024	11/7/2024	Meet w/ Canada France Hawaii Telescope director, Keck Observatory Board meeting, Shane Nelsen	Y	Y	N	188.59	State	Y

Mauna Kea Stewardship Oversight Authority

Mid-Year (FY 2026) Status Report: Management actions and initiatives currently underway

Contents

- Context and Purpose
- High-Level Timeline
- Table of Contents
- Management Actions and Initiatives

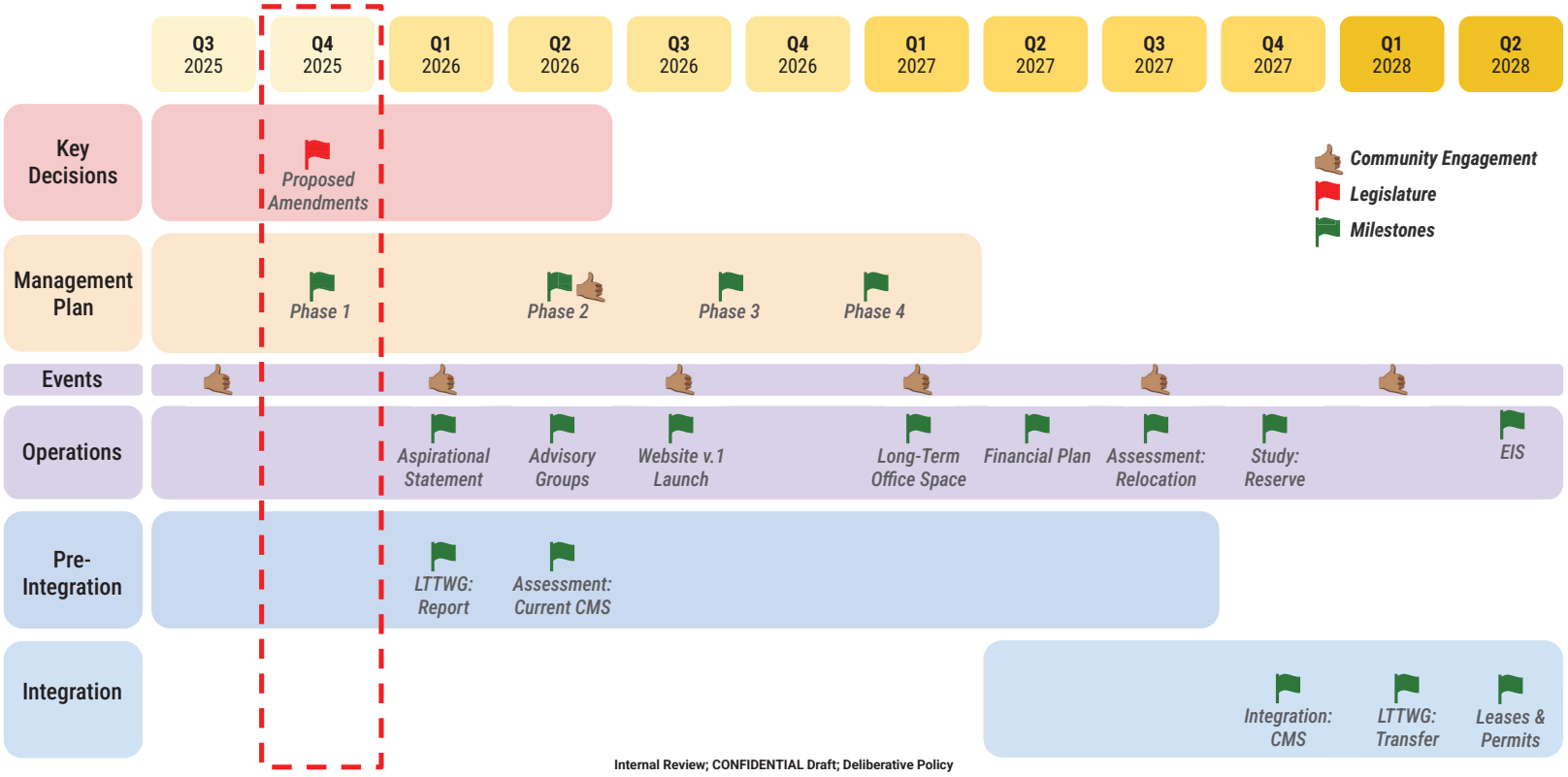
Mauna Kea Stewardship Oversight Authority
Appendix to Annual Report: Mid-Year (FY 2026) Status Report
December 31 2025

Context and Purpose

The Authority is working diligently to fulfill its legislative mandate within a challenging time frame. Efforts over the past two years to build understanding, relationships, systems, infrastructure, and a team provided a firm foundation for the Authority to turn its focus to launching critical work streams that will lead to timely completion of essential steps for transition.

The purpose of this mid-year status report is to provide timely information to elected officials about the status of critical work streams in the current fiscal year (Q3 and Q4 2025); these updates are not included in the Annual Report for the 2026 Regular Session because that report ends with the prior fiscal year (Q2 2025).

Internal Review; CONFIDENTIAL Draft; Deliberative Policy



Internal Review; CONFIDENTIAL Draft; Deliberative Policy

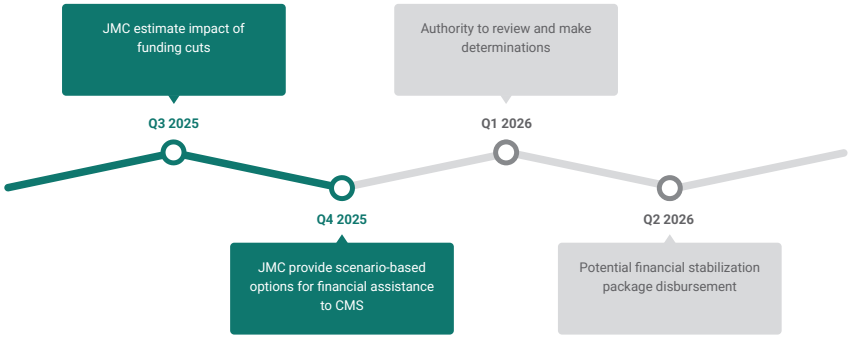
Table of Contents

- Joint Management Committee (JMC)
  - Financial Stabilization Package for Center for Maunakea Stewardship
  - Lease Negotiations
- Management Plan
  - Administrative Rules
- Community Engagement
  - Governor and Hawai‘i Congressional Delegation (TIO Request)
  - Communications Strategy
  - Advisory Groups
- Organizational Development
  - Hiring and Integration
- Long-Term Transition Working Group (LTTWG): Asset Transfer

Joint Management Committee: Financial Stabilization Package for Center for Maunakea Stewardship

Background: Due to the loss of RTRF and TMT lease payments, revenues for CMS are projected to be reduced by $2M in FY26. This reduction risks CMS maintaining current staffing and service levels, as well as the timeline for transition per Act 255. Accordingly, MKSOA is exploring options to provide CMS financial assistance.

Timeline:



Key Milestones

September 2025: JMC estimated total impact of funding cuts.

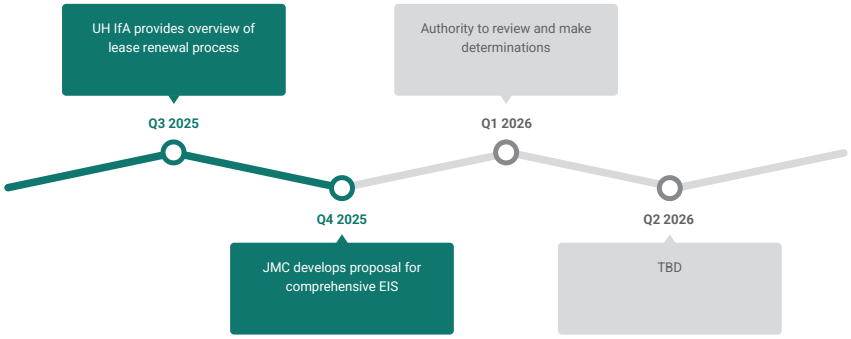
October 2025: JMC developed multiple scenario-based options for MKSOA to provide CMS financial assistance.

Internal Review; CONFIDENTIAL Draft; Deliberative Policy

Joint Management Committee: Lease Negotiations

Background: Act 255 prohibits new leases on Mauna Kea until after the transition period. Negotiations for new leases, however, are a multiyear process. As such, the JMC is exploring ways in which UH and MKSOA may proceed with prerequisite tasks of lease negotiations while MKSOA in parallel develops its management plan.

Timeline:



Key Milestones

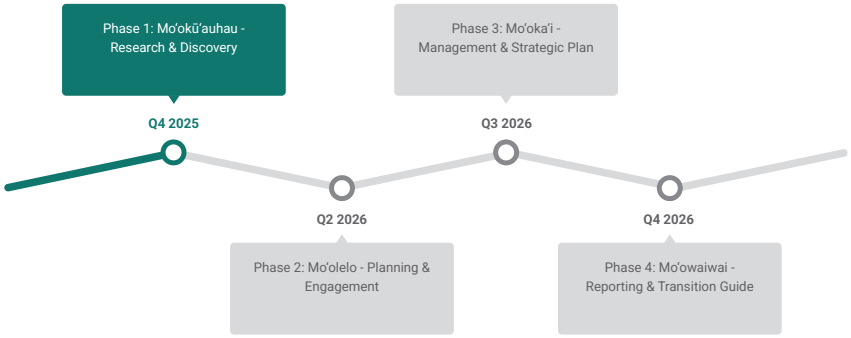
September 2025: UH Institute for Astronomy provided an overview of the lease renewal process; expressing urgency, and that waiting for the completion of the management plan may result in substantial disinvestment by observatories.

November 2025: JMC developed a proposal for MKSOA to initiate a comprehensive EIS, which would be a prerequisite for lease renewals/negotiations, while developing its management plan in parallel.

Management Plan

Background: Act 255 requires the development of a comprehensive management plan. An RFP was developed in the prior fiscal year, and awarded in Q3 2025 after a competitive bid process. The development of this management plan will take place in four phases – with a completion date in Q4 of 2026.

Timeline:



Key Milestones

July 2025: RFP awarded to Kua o Wākea after competitive bid process.

August 2025: Project kick-off.

October 2025: Phase 1 submitted.

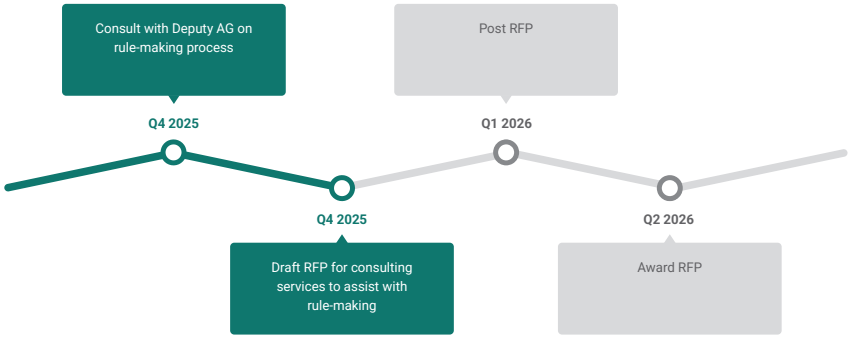
November 2025: After WAM discussion, met with State Procurement Office and developed project controls for implementation with Kua o Wākea.

December 2025: Kua o Wākea initiated engagement with Maunakea Observatories to understand operations.

Management Plan: Administrative Rules

Background: In anticipation of the rule-making process to supplement the management plan, an RFP has been developed to procure consulting services to review the existing rules and assist with the development of new rules to accompany the forthcoming management plan.

Timeline:



Key Milestones

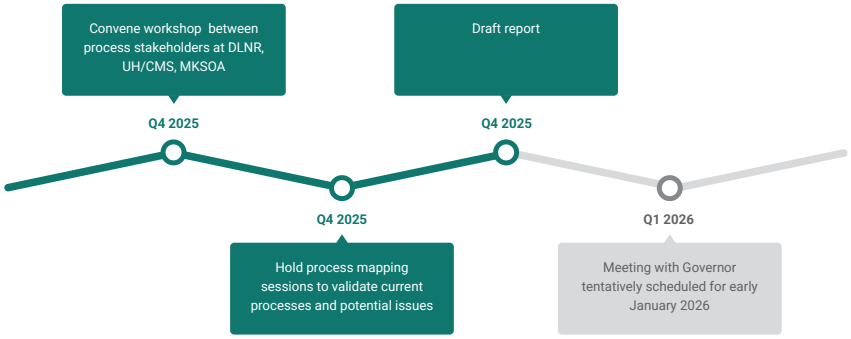
November 2025: Consulted with Deputy AG on rule-making process and outlined scope of work.

December 2025: Drafted RFP to procure consulting services to review existing rules and assist with development of new rules.

Community Engagement: Governor and Hawai‘i Congressional Delegation (TIO Request)

Background: Governor Josh Green, M.D. and all members of the Hawai‘i Congressional delegation sent a letter to the TIO, copying Wendy Hensel (UH) and John Komeiji (MKSOA), calling for the establishment of procedures for obtaining the necessary permits associated with a decommissioned site.

Timeline:



Key Milestones

October 2025: Workshop convened between process stakeholders at DLNR, UH/CMS, and MKSOA.

November 2025: Process mapping sessions held with process owners to validate a shared understanding of the current processes associated with the request – as well as surface unsettled questions or potential issues accounting for the transition period.

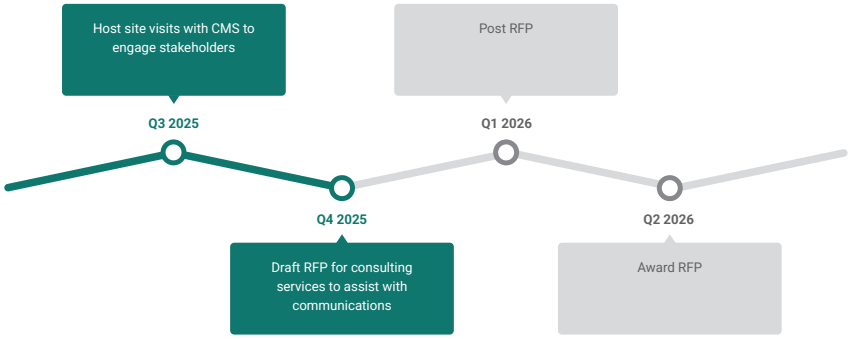
December 2025: Draft report documenting all processes and issues specific to TIO request completed.

Internal Review; CONFIDENTIAL Draft; Deliberative Policy

Community Engagement: Communications Strategy

Background: MKSOA and CMS have hosted site visits to engage stakeholders about stewardship and observatory operations, and visitor activities. Community meetings have also been held to discuss the Strategic Framework. RFP has been drafted for communication services to further build upon community engagement and strengthen intragovernmental communications.

Timeline:



Key Milestones

July 2025: Hosted with CMS site visit of Mauna Kea for DLNR staff.

August 2025: Hosted with CMS site visit of Mauna Kea for Hawai'i House of Representatives.

September 2025: Hosted with CMS site visit of Mauna Kea for Kua o Wākea.

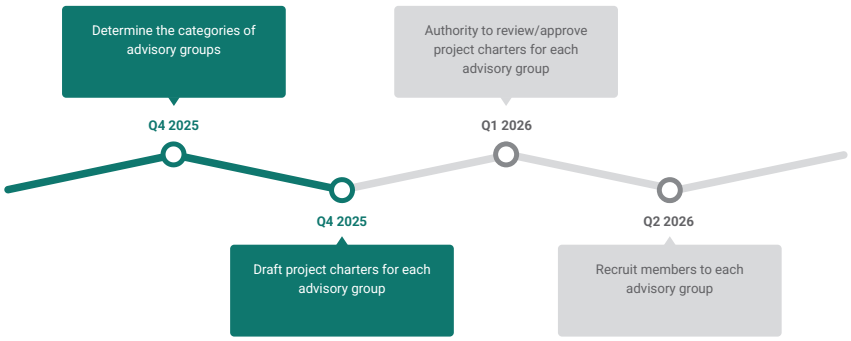
December 2025: Drafted RFP to procure consulting services to assist with communications.

Internal Review; CONFIDENTIAL Draft; Deliberative Policy

Community Engagement: Advisory Groups

Background: Act 255 requires the establishment of advisory groups. The Authority has determined they will proceed with advisory groups for Astronomy, Cultural Resources, Education, and Natural Resources.

Timeline:



Key Milestones

September 2025: Determined the categories of advisory groups.

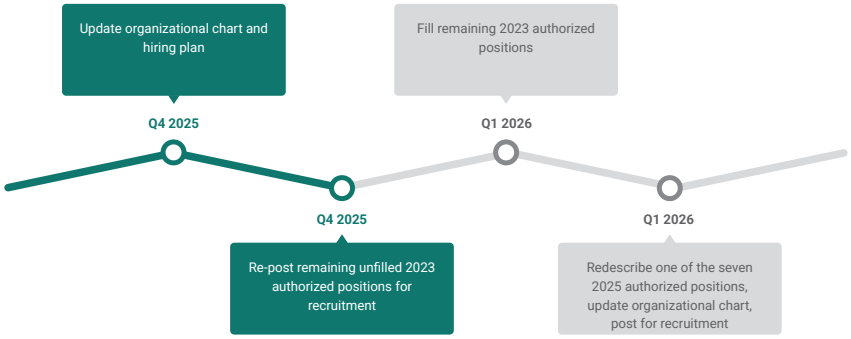
November 2025: Drafted project charters created for each advisory group, outlining mission, scope, membership requirements, meeting protocols.

Internal Review; CONFIDENTIAL Draft; Deliberative Policy

Organizational Development: Hiring and Integration

Background: The work of integrating CMS with MKSOA will require expertise not immediately available to either organization: business process transformation and integration. Accordingly, MKSOA has updated its organizational chart and hiring plan from the prior fiscal year to account for these critical and evolving needs.

Timeline:



Key Milestones

November 2025: Workshop completed to update organizational chart with 2025 authorized positions to account for business process transformation and integration needs and update hiring plan accordingly.

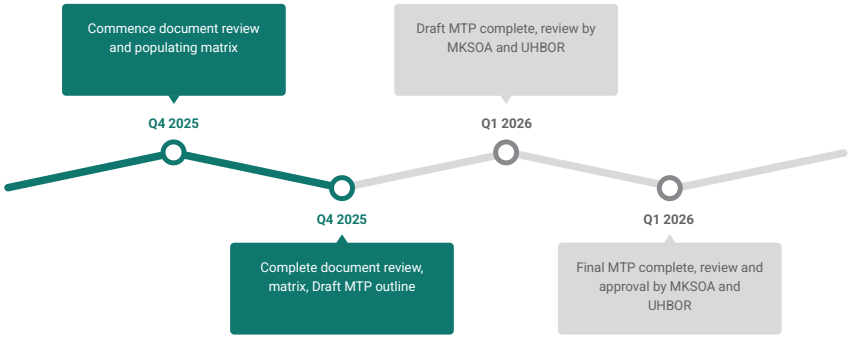
December 2025: Re-posted remaining open positions from 2023 authorized positions. Work underway to prepare remaining new positions for recruitment.

Internal Review; CONFIDENTIAL Draft; Deliberative Policy

Long-Term Transition Working Group (LTTWG): Asset Transfer

Background: Formed in 2024 for the inventory and analysis of UH held assets and liabilities related to the Mauna Kea lands in order to provide recommendations for transfer. Outside counsel has also been retained to assist in drafting a Master Transfer Plan; on-track to execute transfers within the transition period.

Timeline:



Key Milestones

October 2024: Commenced review of UH document inventory; initiated compiling assignability matrix.

October 2025: Completed document inventory review and assignability matrix.

December 2025: Completed draft MTP outline; approved by LTTWG to proceed with Draft MTP.

UNIVERSITY OF HAWAIʻI SYSTEM ANNUAL REPORT

REPORT TO THE 2026 LEGISLATURE

Annual Report on the Mauna Kea Lands

HRS 304A-1905

December 2025

REPORT TO THE THIRTY-THIRD LEGISLATURE
STATE OF HAWAII
2026 REGULAR SESSION

ANNUAL REPORT ON THE MAUNA KEA LANDS

Pursuant to Hawai‘i Revised Statutes (HRS) § 304A-1905, “Mauna Kea Lands; reporting requirements,” the University of Hawai‘i (UH) respectfully submits its report on (1) Maunakea lands activities; (2) current and pending lease agreements and fees; (3) the status of current and pending administrative rules; (4) income and expenditures of the Mauna Kea lands management special fund established in HRS § 304A-2170; and (5) other issues that may impact the activities on the Mauna Kea lands. Consistent with past practice, this report covers the fiscal year 2024 (FY24), which started on July 1, 2023, and ended on June 30, 2024, but may also include matters and data outside FY24 where relevant.

I. Current and Pending Lease Agreements and Fees

In 1964, the Hawai‘i State Legislature passed Senate Concurrent Resolution 16 (SCR 16) stating that the “State of Hawaii and its citizenry are most desirous and willing to co-operate and aid in the promotion of our nation’s space program and research to the benefit of the County of Hawaii, the state and the nation.” It was resolved that the governor set aside and establish an appropriate area on the summit of Maunakea for the installation and operation of a telescope observatory and astronomical activities. In fulfillment of SCR 16, the Mauna Kea Science Reserve (MKSR) was established in 1968, and the Board of Land and Natural Resources (BLNR) and UH entered into an agency-to-agency lease granting UH a lease of the Science Reserve for a term expiring on December 31, 2033 (MKSR General Lease). The lease is gratis, a common practice for government agency leases and one that supports the goal of benefiting the County of Hawai‘i, the State, and the Nation.

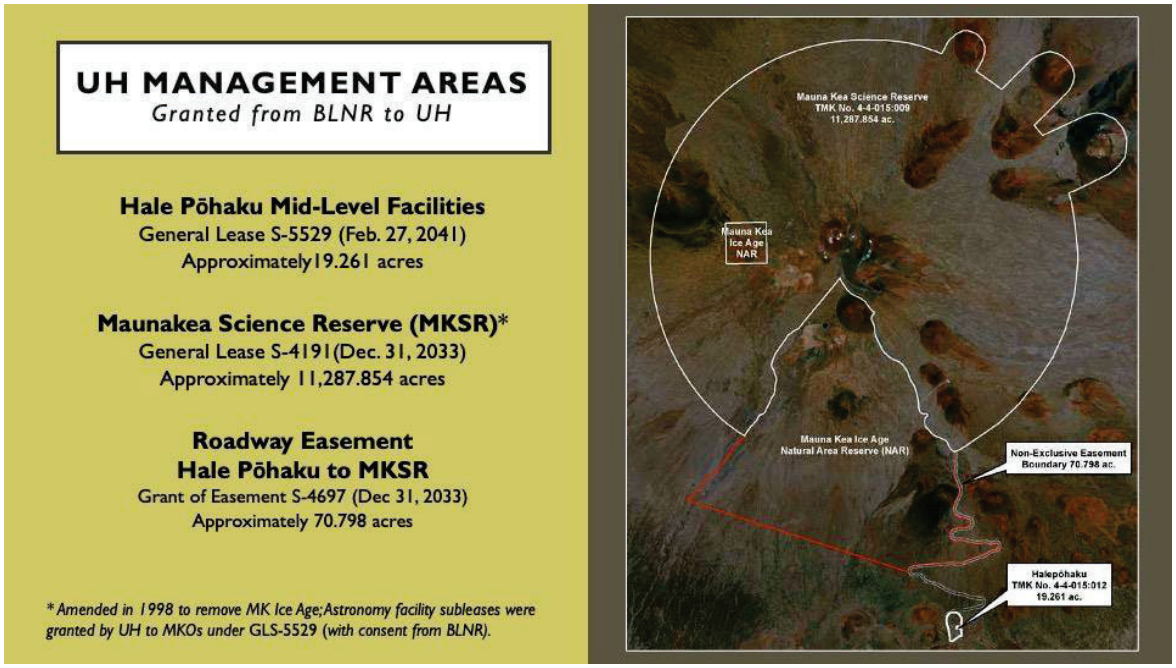


Figure 1. UH-Managed Lands

In a State-supported effort to establish astronomy as a viable research endeavor and establish Hawai'i as a center for astronomical research, UH entered subleases with 11 organizations to operate astronomical observatories. BLNR approved all subleases, which are co-terminus with the MKSR General Lease. Each sublessee is obligated to provide UH with a guaranteed percentage of viewing time. Viewing time provides invaluable opportunities to advance UH, Hawai'i's only State-funded institution of higher education, as a center of excellence in research, including astronomy. Sublessees also agreed to pay for the costs of research support operations provided by UH, contributed to an infrastructure fund, and, in some cases, paid for the construction of support facilities.

Subleases

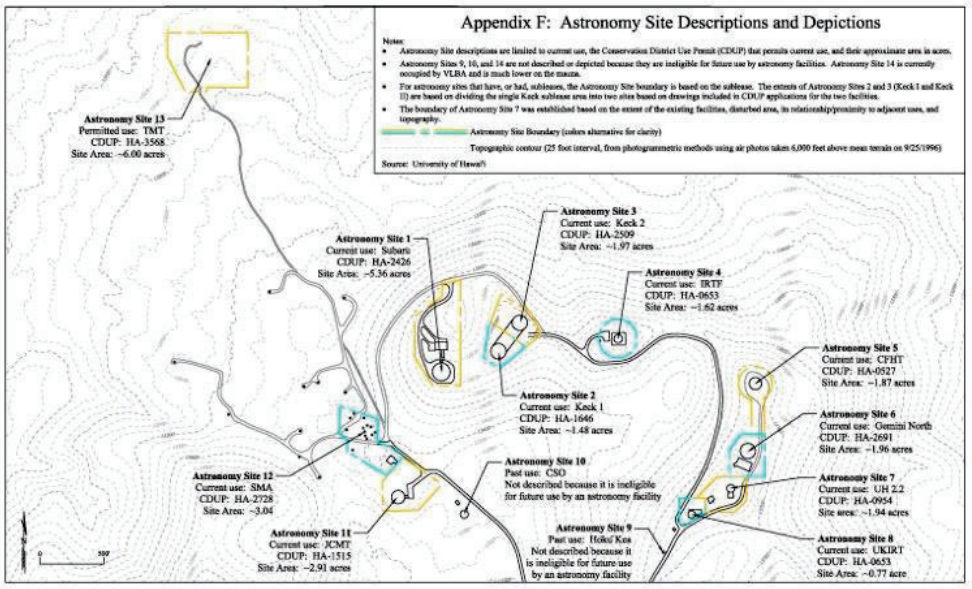


Figure 2. Observatory Subleases

At little monetary cost to the State and with minimal development risk, UH is recognized as one of the Nation's leading astronomical research institutions and, globally, as the center of excellence for astronomical research. This recognition contributes significantly to the State's efforts to expand its high-technology sector. The annual economic impact of astronomy in the State in 2019 was $220.95 million ($261.33 million in 2022 dollars (CPI-U)), with the most significant impacts found on Hawai'i Island and Honolulu, $101.68 million ($120.26 million in 2022 dollars (CPI-U adjusted)) and $86.96 million ($102.85 million in 2022 dollars (CPI-U adjusted)), respectively. Additional benefits accrue to the State and local communities through opportunities in scientific, professional, technical, and administrative employment within the local community.

A. UH Plan Updates and Environmental Impact Statement (EIS).

In preparation for seeking a new land authorization (e.g., a new general lease from the BLNR beyond 2033), UH updated the "Mauna Kea Science Reserve Master Plan," adopted by the UH Board of Regents (BOR) in 2000, and the "Mauna Kea Comprehensive Management Plan," adopted by the BLNR in 2009 (collectively, "Plans"). The effort to update the Plans involved significant community and stakeholder

input over multiple years from the Maunakea Management Board, Kahu Kū Mauna, ʻImiloa Astronomy Center, existing Maunakea Observatories, and other community stakeholders, regarding, among other things, the restructuring of governance of and stewardship of Maunakea. This effort included multiple permitted interaction groups of the Board of Regents, as well. UH's new master plan, E O Nā Leo: Listen to the Voices, was adopted by the Board of Regents in January 2022, and the updated Mauna Kea Comprehensive Management Plan, Comprehensive Management Plan 2022 Supplement, was approved by the BLNR in July 2022. Among other things, the Plans integrate management actions that strive for a renewed balance across the cultural, natural, educational, and recreational values that Maunakea provides to the State. The Plans also address UH's decommissioning commitments and the replacement of the UH Hilo's educational telescope from the summit to the mid-level facilities at Halepōhaku.

Knowing that investment on the part of observatory partners (foreign and the United States government agencies, universities, and corporate entities) would be critical for the sustainability of astronomy on Maunakea, as early as 2018, UH had begun preparing an environmental impact statement (EIS) for UH's proposed new land authorization to continue astronomy on Maunakea beyond 2033. That work ended with the passage of Act 255 (2022).

Act 255 established the Mauna Kea Stewardship and Oversight Authority (MKSOA), which, as of July 1, 2023, assumed management responsibilities for the former UH-managed lands on Maunakea. MKSOA is comprised of eleven voting Board members and one non-voting ex officio member (UH Hilo Chancellor). Act 255 set a five-year transition period ending July 1, 2028. During the transition period, UH and MKSOA will "jointly manage" Maunakea while MKSOA is formally organized and prepares to assume all legal and operational responsibilities currently under UH management (e.g., UH's two general leases, grant of easement, and all conservation district Use Permits (CDUPs) held by UH for third-party non-UH astronomy facilities and buildings, physical assets, vendor contracts, liabilities, etc.). Act 255 also granted MKSOA specific land disposition responsibilities currently under the jurisdiction of the BLNR and appropriated $14M for MKSOA start-up.

Act 255 prohibits new leases on Maunakea until after the transition period ends and leases are taken over by MKSOA. Given questions arising from Act 255 about MKSOA's authority and the change of control from BLNR to MKSOA, all UH work on the EIS, new land authorizations from BLNR, and new real property sub-agreements with Maunakea observatories have ceased. UH has communicated to MKSOA its recommendation that MKSOA commence an EIS or continue the EIS work already completed by UH as soon as possible.

As referenced in Act 255, the decommissioning and removal of two astronomy facilities by UH was underway at the time the Legislature passed the Act: (1) Caltech Submillimeter Observatory (CSO), a private facility, and 2) UH Hilo's Hōkū Keʻa teaching telescope, with both projects completed in FY24.

B. New Maunakea Observatory (MKO) Agreements

In FY21, UH initiated discussions with MKO Directors regarding new agreements for the period after 2033, when their current subleases terminate. Those discussions continued into FY22 and covered various terms, including rent, stewardship fees, community benefits, shared use and maintenance costs, and property or use rights. The goal of these negotiations was to have an agreed-upon set of terms by the end of 2022 —the process for developing these new agreements included community discussions.

After the passage of Act 255, in addition to stopping UH's work on a new general lease from BLNR, UH has also halted all of its work on new MKO subleases. Act 255 states that the MKSOA "shall develop a management plan," and that the management plan shall, among other things, "[p]repare for and establish the framework, criteria, and procedures for any leases and permits." MKSOA has begun preliminary work on a management plan, and UH has recommended that MKSOA begin discussions as soon as possible to advance MKO subleases.

C. Thirty Meter Telescope (TMT) Sublease

On September 27, 2017, the BLNR issued its 271-page Findings of Fact, Conclusions of Law and Decision and Order containing 1,070 Findings of Fact and 512 Conclusions of Law, for the CDUP, allowing the construction and operation of TMT. On October 30, 2018, the Hawai'i Supreme Court affirmed the CDUP after various parties appealed. The process for obtaining CDUP approval took approximately seven years from the initial submission of the permit application in 2010, including two contested cases, several judicial appeals, and two Hawai'i Supreme Court decisions. Parties continue to challenge the TMT project.

Unlike the other existing observatory subleases, which provide for nominal rent in exchange for viewing time and sublessee contributions to shared operations, maintenance, and stewardship of Maunakea, the TMT International Observatory (TIO) sublease provides for substantial lease rent payments in addition to these other terms. Pursuant to TIO's sublease, annual lease rent started at $300,000. The lease rent schedule is phased, with increases based on construction activity adjusted for CPI. Full annual lease rent payments of $1,080,000 a year began in FY 2025, despite cessation of all construction activities on Maunakea. In FY25, TMT paid $1,417,704.16 in lease rent and, to date, TIO has paid UH $6,431,562.58 in rent, all of which has supported the stewardship and care of Maunakea. These payments are deposited into the Mauna Kea Lands Management Special Fund as the legislature directed in 2009 Hawai'i Session Laws Act 132 (codified at HRS § 304A-2170)[1].

TIO is currently awaiting National Science Foundation (NSF) funding to commence with construction. NSF initiated a Section 106 consultation process as part of its review of TIO's funding application. This process, conducted by NSF, involved months of pre-consultation meetings with the community, followed by three public meetings on Hawai'i Island in 2022. NSF is still reviewing comments submitted during the public comment period. NSF has not set a date for issuing its report nor for restarting the Section 106 process.

At their September 9, 2025, MKSOA Board meeting, TMT was invited to provide an update on the status of their project and publicly stated their openness to relocating it to the former CSO site, which was

[1] On July 28, 2025, TIO requested a three-month deferral of rent payments from UH due to the lack of sustained, access to the TMT project site, which has prevented TIO from quiet enjoyment of the subleased property. On October 30, 2025, in recognition of TIO's financial challenges and Governor Green's and Congressional Delegation guidance, UH agreed to allow additional time for Sublease rent payments until sustained, continual project site access is achieved, and it was agreed that UH and TIO will continue discussions and negotiations regarding the specific details, as permitted under the terms of the Sublease. UH also agreed with TIO that THINK Fund payments, intended to support community benefits during construction, are not required at this time, given TIO's continued lack of access to the site. To date, TIO has contributed $5.5 million dollars to the THINK Fund and at least $25,000 to programs that assist at-risk youth, specifically focusing on the children of incarcerated parents.

decommissioned in 2024. In a letter dated October 2, 2025, from TIO Board Chair Henry Yang and Co-Chair Saku Tsuneta to UH President Wendy Hensel and Board of Regent Chair Gabe Lee, TIO requested information and clarification on ***"regarding the procedures, anticipated timing, and likely duration, including administrative and legal processes, required for TIO to pursue the necessary permits and lease on a decommissioned site."*** On October 24, 2025, Governor Green and members of Hawai'i's Congressional Delegation ("CODEL") responded that ***"The Governor and appropriate officials in his Administration will work with the Board of the Mauna Kea Stewardship and Oversight Authority (MKSOA) and the University of Hawai'i to promptly establish a clear and transparent procedure for obtaining the necessary permits associated with a decommissioned site."*** This request and the Governor's response come in the context of TIO conducting its due diligence on an offer by Spain for financial support to relocate to La Palma and the current federal decision-making regarding funding to build TMT in Hawai'i.

UH, MKSOA, DLNR, and the AG have held joint and independent meetings to discuss and clarify current processes for TMT relocating to a new site. MKSOA has taken the lead on outlining the process TMT would follow, which is still being developed at the time of this writing.

II. Administrative Rules

Hawai'i Administrative Rules Chapter 20-26, "Public and Commercial Activities on Mauna Kea Lands," was adopted by the BOR on November 6, 2019, and approved by Governor David Ige on January 13, 2020 (MK Rules). UH has no pending administrative rule amendments related to Maunakea at this time. BOR's adoption of the administrative rules is being challenged by opponents in *Flores-Case 'Ohana v. University of Haw.*, No. SCRQ-22-0000118.

Act 255 repeals all UH plans and the MK Rules after the transition period and grants MKSOA the authority to develop its own plans and administrative rules. There have been discussions that MKSOA may adopt UH's MK Rules until it promulgates a new set of rules.

III. Income and Expenditures of the Mauna Kea Lands Management Special Fund (HRS § 304A-2170)

During FY25, $247,396 in fees were collected from commercial tour operators, $1,000 in fees collected from film permit applicants, $1,417,704.16 in lease fee payments from TMT, $1,302,609.21 carryover from FY 2024, and $65,278.22 in interest for a total of $3,033,988. A total of $1,069,731.87 was used to help defray the cost of operating the Maunakea Ranger program, VIS, and road, facility, and infrastructure maintenance.

Total payments of $331,296.43 were made to the Office of Hawaiian Affairs (OHA) in FY25, as follows: $9,434.80 (FY24 4th Quarter payment) and $321,861.63 (total of 1st through 3rd Quarter payments). A payment of $11,258.40 for the 4th Quarter 2025 was paid to OHA following the start of FY26.

HRS § 304A-1905 requires reporting in this annual report of "income and expenditures of the Mauna Kea Lands Management Special Fund established in HRS § 304A-2170." However, it is important to note that the Mauna Kea Lands Management Special Fund accounts for only a fraction of the revenue required to cover UH's overall direct costs for the management and stewardship of Mauna Kea. In FY25, the Mauna Kea Lands Management Special Fund covered approximately 62% of UH's direct management costs. A combination of UH tuition, fees, and research funds covered the remaining 38%. In addition to management expenses as part of its stewardship responsibilities, UH has funded between

$500,000 and $1.2M annually to cover operations, planning, permitting, and legal expenses needed to ensure compliance with conservation district rules and lease requirements.

Act 255 repeals the Mauna Kea lands management special fund on July 1, 2028, with any remaining balance being transferred to the new Mauna Kea management special fund established thereunder. UH's direct costs for management, stewardship, planning, permitting, litigation, and compliance will need to be paid for by MKSOA through other funding sources.

A. Financial Stability Planning

The total impact of reductions in federal support for UH research on our stewardship operations is still emerging, but funding from UH's Research and Training Revolving Fund (RTRF) that CMS has received in years past has already ceased. For FY26, it is forecast that without replacement funding, CMS will finish with a deficit of ~$62,000 for the period, with significantly larger deficits forecast for FYs 27 (~$1.3M) and 28 (~$2.6M). UH and MKSOA share a mutual interest in ensuring reductions in our RTRF do not impact current services provided by CMS, so, consistent with Part III Section 10 of Act 255, calling for equitable funding during the transition period, UH staff and MKSOA staff are in discussions on options to equitably share operational costs for the remainder of the transition period. The MKSOA Board, via Executive Director DeFries reported at the December 2025 meeting that this item would be considered at their January 2026 meeting.

In addition, as part of their operating agreements with UH, the Maunakea Observatories ("MKOs") pay for services that support their operations, which also provide a public benefit. These include Visitor Information Station operations, safety, road maintenance, road repair and snow removal that provide access to the summit. While UH does not rely on federal funds directly for these services, several of the observatories that receive services from UH do. Federal funding varies from observatory to observatory: some receive a large portion of their budget from the federal government, while others depend on no federal funds at all. The proposed federal budget cuts by the current administration have created uncertainty amongst some observatories about whether they will be able to meet their financial obligations to fund these critical support services. To address these uncertainties, UH has been working closely with all observatories to develop potential scenarios that would allow UH to continue providing the required services while adjusting to their financial capabilities.

HRS Section 195H-6(c) requires that MKSOA adopt a financial plan that strives for financial self-sustainability after the sixth year following the transition period (by 2036). The fewer the number of observatories, the greater the financial burden for each observatory. UH will continue to work with MKOs and MKSOA to address the financial sustainability of astronomy on Maunakea, given that Act 255 established this as a matter of statewide policy.

IV. Maunakea Lands Activities and Other Activities

A. Commercial Tour Operations

Nine commercial tour operator permits were transferred from the State of Hawai'i Department of Land and Natural Resources (DLNR) to UH in 2005. Two operators have gone out of business, and seven operator permits remain active. During the pandemic, only six were operating; the seventh was planned to restart in 2022, but has not yet done so. That permittee continues to pay their monthly minimum payment to keep their permit active.

Each commercial tour operator (CTO) is charged a $6.00/tour passenger fee, which is submitted to the Center for Maunakea Stewardship (CMS) (formerly the Office of Maunakea Management (OMKM)) every month. All fees are deposited into the Mauna Kea Lands Management Special Fund and are used to cover management and stewardship activities on Maunakea. Twenty percent of the fees collected are set aside for payment to OHA. In FY25, a total of $247,396 was collected from commercial tour operators.

In August 2025, the Board of Regents ("BOR") approved an increase in commercial tour operator fees to $20/tour passenger to more fairly cover stewardship costs associated with commercial operations. Those fees took effect in November 2025. The full impact of this increase in revenues received from the CTOs will not be known until FY27, but CMS projects a threefold increase.

B. Decommissioning

Pursuant to the CDUP for the TMT project, the BLNR imposed special conditions regarding the decommissioning of telescopes on Maunakea, including the following:

> Special Condition 10. The University will decommission three telescopes permanently, as soon as reasonably possible, and no new observatories will be constructed on those sites. This commitment will be legally binding on the University and shall be included in any lease renewal or extension proposed by the University for Mauna Kea.
>
> Special Condition 11. Notwithstanding any lease renewal or extension, consistent with the Decommissioning Plan, at least two additional facilities will be permanently decommissioned by December 31, 2033, including the Very Long Baseline Array antenna and at least one additional observatory.

On November 6, 2019, the BOR adopted Resolution 19-03, "Resolution to Act on Items Relating to Maunakea Management" (later revised in part by BOR Reso. 21-02) (BOR Reso. 19-03). Accordingly, a schedule to decommission CSO and Hōkū Keʻa by December 31, 2021, was presented to the BOR. This presentation, including the schedule, is available at 02.20.20 BOR Decom Presentation. This schedule was updated due to COVID-19 and permitting delays with the new projected timelines discussed below.

BOR Reso. 19-03 established a December 30, 2025, deadline to determine which three additional telescopes will be decommissioned in compliance with existing or future permits or governmental approvals. UH began discussions with sublessees to prepare a decision-making framework for public comment and review as part of the Plans update process. However, these discussions between UH and sublessees stopped with the passage of Act 255, which will transfer the CDUP for TMT to MKSOA in 2028 after the transition period. UH Plans will also no longer be applicable after the transition period, during which UH committed to nine (9) operating astronomy facilities on Maunakea after decommissioning conditions had been met. It is important to note that subleases are co-terminus with the MKSR General Lease, which expires in 2033. The subleases and MKSR General Lease all provide provisions for the removal or transfer of ownership of astronomy facilities on Maunakea on or before 2033.

As reported in UH's 2025 Annual Report to the Legislature, in June 2024, UH announced the completion of the Hōkū Keʻa decommissioning UH News re HK Decommissioning.



Figure 3. Hōkū Keʻa Decommissioning: Before and After

In July 2024, UH announced the completion of the CSO decommissioning [UH News re CSO Decommissioning].

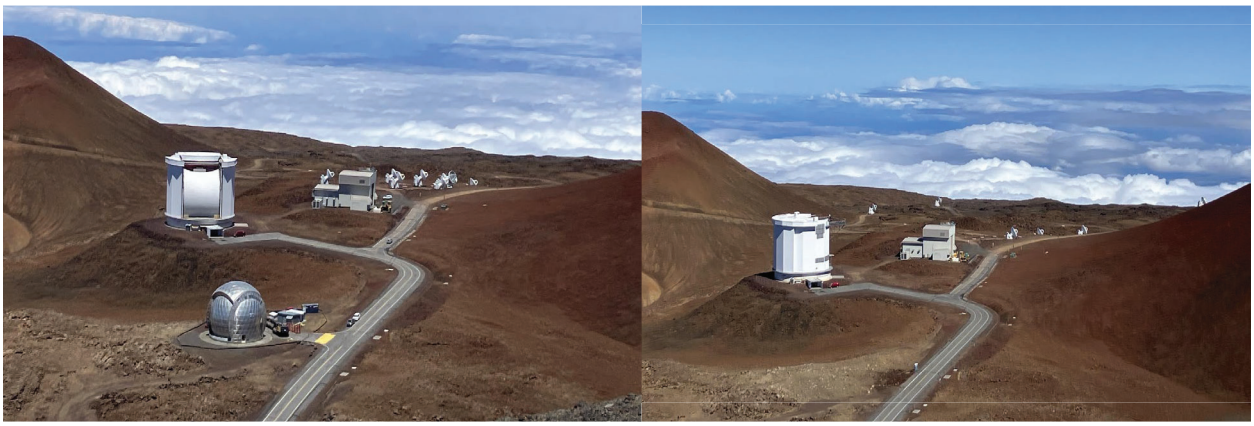


Figure 4. CSO Decommissioning: Before and After

In addition to CSO and Hōkū Keʻa, finding of fact 171 of the TMT CDUP issued for TMT identified the United Kingdom Infrared Telescope (UKIRT) for decommissioning by the time the TMT project becomes operational, and the BLNR identified the Very Long Baseline Array (VLBA) for decommissioning in Special Condition 11 of the same CDUP. Act 255 contemplates the transfer of all CDUPs issued to UH for astronomy facilities owned by third parties, like TMT, to MKSOA. Act 255 also directs MKSOA to develop a framework for future astronomy development on Maunakea, as codified under HRS § 195H-6:

> (d) The authority shall be responsible for the establishment of a framework for astronomy-related development on Mauna Kea. The framework may include: (1) Limitations on the number of observatories and astronomy-related facilities, or an astronomy facility footprint limitation; (2) Prioritizing the reuse of footprints of observatories that are scheduled for decommissioning, or have been decommissioned, as sites for facilities or improvements over the use of undeveloped lands for such purposes; and (3) A set of principles for returning the lands used for astronomy research to their natural state whenever observatories are decommissioned or no longer have research or educational value.

Consequently, MKSOA will be determining the future status of these permit conditions and future decommissioning requirements.

C. Stewardship

The 2020 CMP Update provided a status update on all 103 management actions contained in the plan. In FY24, CMS updated the status of the 103 action items, of which 16 are now deemed completed, 13 are deemed completed/ongoing, and 74 are classified as ongoing[2]. There is no change to this status update for FY25.

In accordance with the CMP, UH's resource management team carried out management actions in FY2025. Key accomplishments included:

- Cultural site monitoring: Annual surveys conducted at 91 of the 263 cultural sites.
- Arthropod monitoring: Surveys completed at 111 sites.
- Invasive plant removal: 11,740 pounds removed through volunteer programs (engaging 234 community members) and staff efforts.
- Vehicle inspections: 75 inspections performed to prevent invasive species introduction. One load was rejected due to termites, while three were remediated (washed and treated) and subsequently approved.
- Facility inspections: Annual reviews of base yard facilities for weekly delivery companies (e.g., water delivery and portable toilet services) as well as observatories.



Figure 5. Restoration Volunteers Receiving Training

A major highlight of UH's resource management team's stewardship efforts in FY25 was the out planting of 698 seedlings across four acres of land, including the 2.2-acre 'Āhinahina (Silversword) enclosure in partnership with the DLNR Division of Forestry and Wildlife (DOFAW).

Protecting Maunakea from invasive insects remains a critical priority. In FY25, no new invasive arthropods were detected within UH-managed facilities, and the team continued targeted treatments for the single ant species already present, *Cardiocondyla kagutsuchi*.

[2] Completed means the management action is done; completed/ongoing means the management action required a discrete task to be done, which has been completed but requires an ongoing element which is never completed; and ongoing means this is a management action that never ceases.

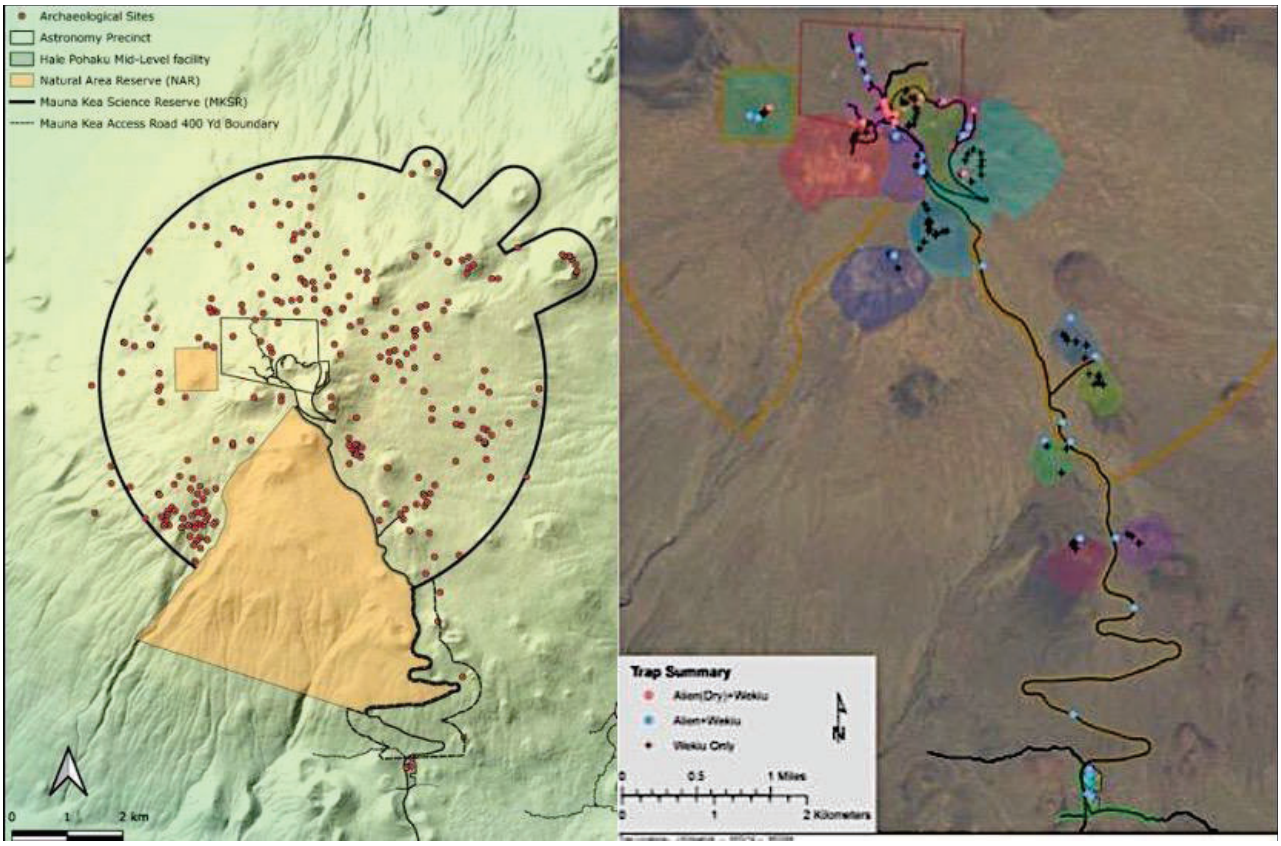


Figure 6. Historic (left) and Arthropod (right) Survey sites.



Figure 7. Resource Management Team Conducting Annual Arthropod and Historic Site Survey.

D. Public and Commercial Access

Our Rangers and VIS staff provide important education and information to residents and visitors on how to safely and respectfully experience Maunakea. In FY25, approximately 130,705 vehicles drove to the Visitor Information Station. Of those, approximately 35,241 visitor vehicles (i.e., non-employee, non-contractor, non-commercial) drove to the summit with an estimated 99,383 passengers. In addition, our

Rangers monitored approximately 4,917 hikers who crossed UH-managed lands to reach DLNR lands, then crossed back onto UH managed lands to reach the summit. All vehicles going to the summit and all hikers receive a safety briefing before ascending to educate them about altitude sickness, safe 4WD driving, emergency contacts, sensitive cultural sites, and visiting respectfully. In FY25, there were 3,563 commercial tour operator trips to the summit with 37,555 visitors. Commercial tour operators and our Rangers together provide these safety briefings.

Our administrative rules allow UH to close the summit road due to natural disasters, inclement weather, and/or other emergency situations that make going to the summit unsafe. In FY25, the Rangers had to implement partial-day closures on 66 days and full-day closures on another 6 days.

A key element of our safety prevention program involves brake checks by our Rangers upon descent for all visitor vehicles. Vehicles with temperatures above 300 degrees are advised to stop at the VIS to cool before continuing their descent. In FY25, 13% of visitor vehicles were identified as having heated brakes, and of those, 20% had temperatures exceeding 500 degrees.



Figure 8. Sunset Viewing Traffic

E. Planning and Permitting

CMS is responsible for ensuring that all activities on the mauna comply with existing land use agreements, entitlement permits, applicable statutes, UH administrative rules, and the BLNR-approved CMP.

UH processed ten (10) projects in FY25 proposed by either an observatory or UH itself. All underwent review from our UH advisory groups and by MKSOA for those projects that had been agreed upon for review and approval. All projects were approved by DLNR (OCCL) and are either completed, underway, or awaiting start.

In addition to the commercial tour permits, our administrative rules allow UH to issue film, research, and special use permits. There were twenty (6) film permit applications processed in FY25; one (1) was withdrawn. Two (2) research permits were reviewed and approved, and two (2) special use permit applications were submitted and approved.

F. Fuel Underground Storage Tank Removal and Replacement

As per HAR 11-280.1.21 (Upgrading UST Systems): No later than 07/15/2028, all tanks and piping installed before 08/09/2013 must be provided with secondary containment that meets the requirements of section 11-280.1.24.

To comply with this new regulation, CMS/MKSS opted for the removal of the three existing single wall fiber glass fuel storage tanks (12,000 gal diesel; 4,000 gal gasoline; 2,000 gal gasoline) the existing buried distribution lines and the dispensing pumps and replace them with two 3,000 gal double walled metal tanks with fuel dispensing systems integrated into them (one for gas one for diesel). Per OCCL, the removal of the tanks and buried lines requires an Environmental Assessment (EA). Sustainable Resources Group International Inc (SRGII) was contracted to perform the EA and Archaeological Monitoring Plan (AMP), and to obtain the CDUA/CDUP for the project.

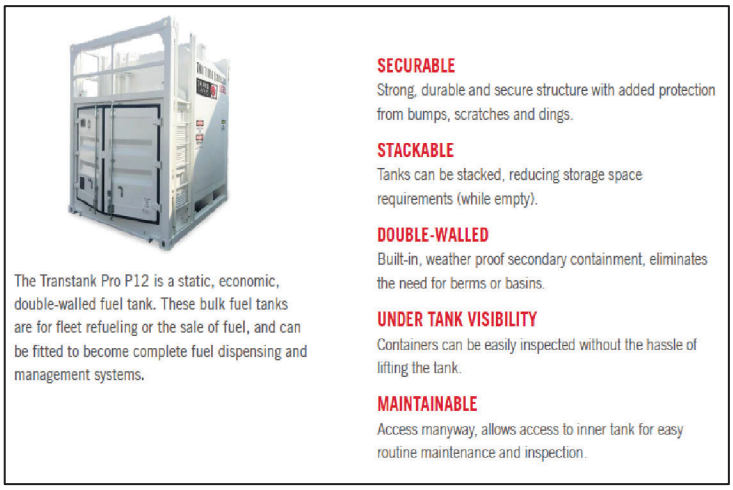


Figure 9. Above Ground Replacement Tanks

After consultation with Hawaiian cultural practitioners, UH's advisory groups, and approvals by the Maunakea Management and MKSOA boards, the Draft EA and Findings of No Significant Impact (FONSI) were published for public comment on December 8, 2025. The EA is anticipated to be completed in the summer of 2026. The development of the specifications, contract, and selection of a contractor to execute the project are anticipated to take place in the second half of 2026, with project start targeted for the first calendar quarter of 2027. The estimated cost of the project in 2024 is $1,200,000, but this figure is anticipated to increase due to recent international trade tariffs on imported goods.

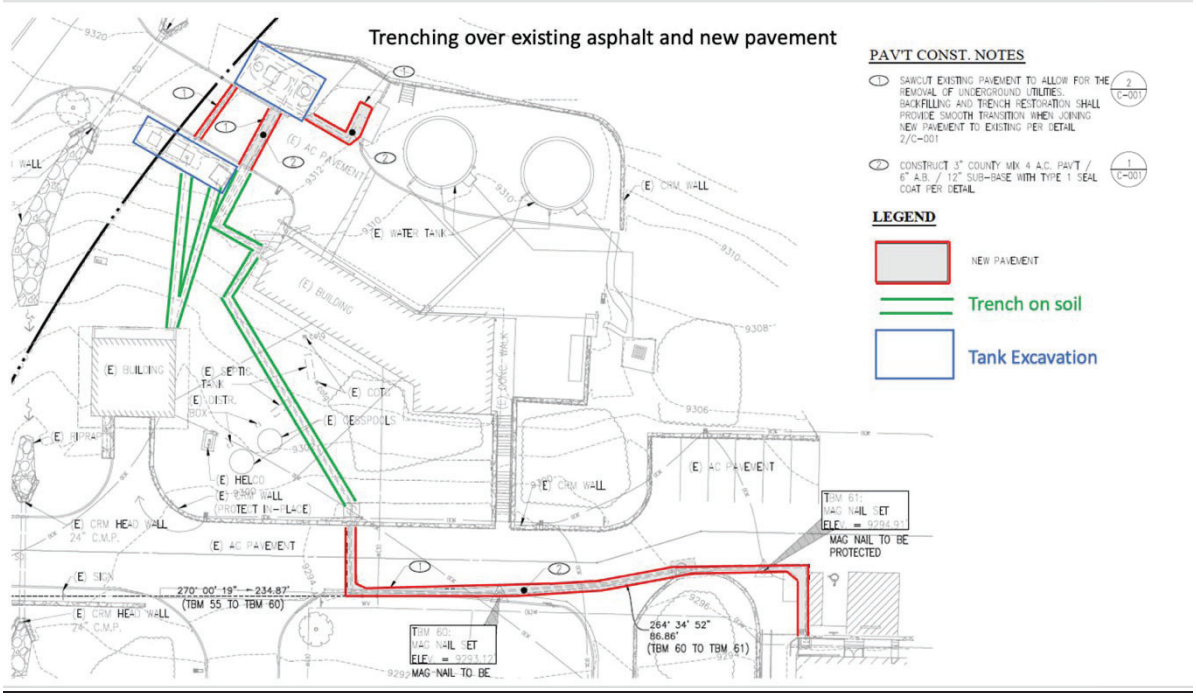


Figure 10. UST Replacement - Project Scope

G. Education and Outreach

Under the guidance of CMS's new Education and Outreach Coordinator, the updated Education program was launched with three primary areas of focus: Exploration, Conservation, and Community. Central to the initiative is building collaborative partnerships with UH's programs, the State of Hawai'i Department of Education (DOE), and other community organizations.

An important first step, and very well received by staff, has been the introduction of twice-monthly staff development sessions that emphasize natural and cultural resource education and training in cultural protocols.

The team is also collaborating with Visitor Information Station (VIS) staff to create a VIS-led program to deepen the public's understanding of Maunakea's resources and Hawaiian culture. This program is scheduled for official rollout in FY 2026.

In FY2025, the Education & Outreach program welcomed 32 groups, engaging more than 685 participants for Mālama 'Āina weed pull events from a wide range of classes, including UH Hilo's *Kuleana and Community* course, Hawaiian Studies classes, Lanakila Learning Center, Kipuka, UH Mānoa's Master of Education program, as well as Hawai'i Island high schools and charter schools.

CMS also partnered with several local organizations for Mālama 'Āina weed-pull events, including the Hawai'i Island Health Center, Teach America, Colorado Peak Charter School, the State of Hawai'i Summer Youth Employment Program, and others.

Beyond these efforts, CMS actively participated in community outreach programs, including the Hawai'i Career Expo, STARS program, and the Hawai'i Conservation Conference, and delivered numerous presentations to classes across the island.

In FY2025, CMS unveiled a new interactive exhibit at the Visitor Information Station, offering visitors an up-close look at both native and invasive insects found on Maunakea. The display also features tactile opportunities to explore the remarkable Maunakea Koʻi (Adze).

CMS continues to enhance and update educational signage, ensuring the protection of Maunakea's unique natural resources while promoting visitor safety.

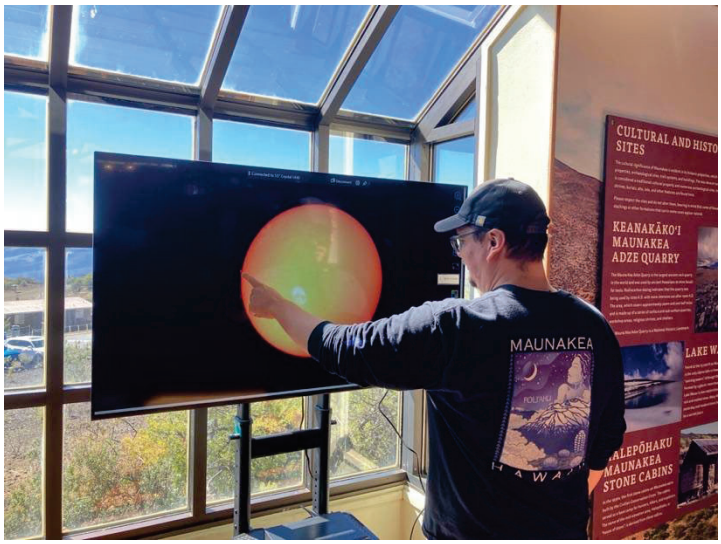


Figure 11. Interactive Solar Display and Updated Interpretive Signage at the VIS



Figure 12. Outreach Team Engaging Students at Hilo Career Expo

H. Emergency and Disaster Response

In our 2025 annual report to the legislature, UH provided an initial report on the impact of Hurricane Hone, which passed through the state on August 24-25, 2024, just after the conclusion of FY24. The

unique aspect of the hurricane was the intensity of its force at the summit, which occurred over a short period. Wind speeds exceeded 100 mph at the summit during the height of the storm, and 10 inches of rain fell in 24 hours. Runoff damage to the summit access road, the utility corridor, and certain observatory sites was significant, requiring a sustained repair effort. Upon completion of the repairs, it was determined that our Utilities team spent over 380 hours completing repair work on the access road and utility corridor, requiring over 320 equipment hours. While this repair work was completed with internal resources, it is estimated that the effort cost approximately $70,000, which was paid for by UH and the Maunakea Observatories ("MKOs"), ensuring safe access to the summit for the public and employees.



Figure 13. Hurricane Hone Damage.

I. MKSOA Transition

In FY24, MKSOA completed the recruitment and hiring of its core management team. UH, through the CMS, has provided its new team with comprehensive reviews covering all UH plans, policies, leases, finances, operations, and other matters for which MKSOA assumes responsibility in July 2028. The purpose of these reviews was to educate the MKSOA management team on the basic management functions they will assume responsibility for, providing a basis for developing their management plans, policies, administrative rules, and programs. Before their hiring, CMS provided similar reviews for the MKSOA Board. Reviews for MKSOA management and the board are ongoing and scheduled as needed, as issues arise that require education and clarification.

To facilitate and ensure open, ongoing communication with the MKSOA in support of our joint management responsibilities, CMS proposed and initiated the creation of a joint management committee (JMC) comprising the senior MKSOA and CMS management teams. The JMC meets bi-weekly

to discuss and decide on a variety of strategic and operational matters. The CMS Executive Director and the MKSOA Executive Director maintain regular communication to discuss strategy and coordinate on strategic issues. Additionally, CMS requested that MKSOA management representatives attend CMS managers, MKO Directors, and CMS advisory group meetings to provide updates on their transition progress so that these groups can hear and interact directly with MKSOA management on the work they are engaged in. Finally, the CMS Executive Director provides regular operational updates to the MKSOA board at their monthly board meetings. This is intended to keep the MKSOA board and management apprised of current issues and general matters UH is addressing on a day-to-day basis, which are likely to recur when MKSOA assumes management responsibility in July 2028.

In FY24, CMS compiled a comprehensive inventory of all assets and liabilities to be transferred from UH to the MKSOA under Section 9 of Act 255. A substantial portion of these items was identified and listed in a letter from CMS to the BLNR chair and MKSOA chair on August 1, 2023. This letter is posted by the DLNR Office of Conservation and Coastal Lands on its Maunakea Management website, at CMS Letter to BLNR.

In FY24, MKSOA established the Long-term Asset Transfer Working Group (TWG), to develop a plan for the transfer of assets and liabilities. Members of the TWG include CMS, UH BOR, DLNR, MKSOA management, MKSOA consultants, and our respective legal counsel. MKSOA Board member (and BOR representative) Ben Kudo serves as the TWG Chair, joined by fellow board member Paul Horner. The work of the TWG was delayed until MKSOA hired their attorney consultant, which they finalized in November 2024. The TWG completed its exhaustive review of the inventory in October 2025, and a draft of an asset transfer plan is expected to be ready for review in the first calendar quarter of 2026.

In support of MKSOA's requirements to develop a management plan per Act 255 and to support the transition in general, CMS developed a draft transition plan, which was provided to the MKSOA management team in June 2024. That plan identified the categories of work and major tasks required in developing their management plan, as well as the larger tasks required to effectuate the transition. The draft plan did not identify a timeline for the work, as MKSOA staff were still in the process of hiring their planning consultant, who will be engaged to establish their own plan. MKSOA has since hired a consultant to assist them with their transition plan. We have had, and continue to have, ongoing joint planning discussions informed by UH's experience and CMS's draft plan to support MKSOA's transition planning.

In October 2024, MKSOA issued an RFP for a planning consultant, with Kua O Wākea (KOW), a multidisciplinary team led by SSFM International, selected as the final choice in the Summer of 2025. UH has supported the start-up of KOW by conducting comprehensive informational briefings for the team on September 8, 9, and 24, 2025, and responding to ongoing information requests on all aspects of our plans, policies, operations, processes, and financials.

Lastly, in FY25, UH continued to provide support to MKSOA, which was now a new corporate body. Support has included logistical coordination for MKSOA board meetings, which now meet at the Institute for Astronomy (IFA) offices in Hilo; staff training; minor financial and administrative support; office space for MKSOA at IFA and Hale Pōhaku; and use of our four-wheel-drive fleet when they need to access the mauna.

J. 2026 Legislation

When Act 255 was enacted the Legislature anticipated that amendments would be required to address issues the law did not consider:

> **§ -1 Findings and purpose**
>
> *….It is expected that amendments and additions will need to be made in future legislative sessions to ensure a mutually beneficial balance is always maintained for Mauna Kea and the people of Hawaii.*

MKSOA has prepared draft legislation to introduce in 2026, intended to address several of these issues (MKSOA Draft Legislation). In particular, MKSOA seeks to: 1) hold title to the lands currently managed by UH in fee (as opposed to a lease from BLNR); 2) transfer UH-held Conservation District Use Permits to individual MKOs through the act of law; and 3) clarify their jurisdiction for regulating conservation district uses on the lands they will manage. Permitted Interaction Groups established by the BOR and MKSOA met on November 7, 2025, to discuss the draft legislation as well as other priority items related to the transition of management from UH to MKSOA. UH was invited to provide input on the legislation and our priority items and did so in a November 20, 2025, response to MKSOA (Nov 20 Correspondence from UH).

Highlighted in our response is UH's concern about the current status of new lease negotiations for ongoing astronomy operations on Maunakea, consistent with Act 255, which declares astronomy on Maunakea a policy of the State (and the county, as the Mayor has repeatedly stated). The absence of certainty of new leases has already resulted in disinvestment by observatories and is thus an immediate concern. The 2033 termination date of UH's General Lease and the MKO subleases requires MKO decommissioning to commence in 2028 at the latest if there is no future presence on Maunakea. Moreover, financial self-sustainability for MKSOA, as required by legislation, is highly dependent on lease rent payments to be agreed upon in new lease terms. Negotiation will be a complicated and lengthy process due to the federal and international composition of the respective ownership groups, and the basic need to determine how many observatories will be allowed going forward, as that sets the baseline for how many observatories MKSOA costs are spread across.

In their November 30, 2025, response, MKSOA indicated that their priority is to complete their management plan and work on building trust with the community, both of which they believe are critical before discussions can occur on future leases (Nov 30 MKSOA Response to UHS Leadership). Additional discussions are being planned between UH and MKSOA to work collaboratively to resolve these differences in priorities.

Summary Report on UH Institute for Astronomy Maunakea Observing Time in 2025



December 2025

Doug Simons
Director, UH Institute for Astronomy

Observing Time Allocations Overview – 2025A and 2025B

Observing time is awarded to IfA faculty, postdoctoral researchers and graduate students via peer reviewed proposals that are scored by IfA's Time Allocation Committee (TAC). The TAC is composed of IfA faculty, postdocs and graduate students, with memberships rotating every 3 years. A range of scientific expertise is reflected in TAC membership given the wide range of research opportunities possible on the Maunakea Observatories. Observing semesters run from February through July ("A" semester) and August through January ("B" semester). Each semester the TAC submits their evaluations of proposals, based upon scientific merit and technical feasibility, to the IfA Director for final review and execution. The TAC proposal evaluations lead to prioritized lists of observing programs that are awarded observing time, *utilizing all of the time available for each Maunakea Observatory (MKO)*. UH Hilo astronomy researchers also receive observing time through this system.

Listed in Appendix A are the titles of IfA observing programs executed on various Maunakea Observatories in 2025A and 2025B. These are provided to give visibility into the rich diversity of research IfA conducts due to MKO access. Some of these programs use more than one telescope, are recurring from one semester to the next as long-term programs, or involve other ground and space based astronomical research facilities. In other words, there are many inter-connections involving research, technology, and education associated with these program titles. It is also important to note that some programs require hundreds of nights to complete but only appear as a single title in the lists provided.



The UH 2.2 m telescope was awarded an IEEE Milestone in 2025, one of only 4 in the history of Hawai'i. This commemoration was based upon the UH 2.2 m being the highest altitude and first computer controlled telescope in the world, when it was built ~50 years ago. Today, the UH 2.2 m houses some of the most advanced electro-optics of any telescope on Maunakea, and will be the first fully robotic observatory on Maunakea. It is through continued investment of the latest technologies that the Maunakea Observatories combined remain the most scientifically productive observatory complex in the world.

Appendix B provides additional important background information about the State of Hawai'i's astronomy program, including international context and fractions of time provided by each facility.

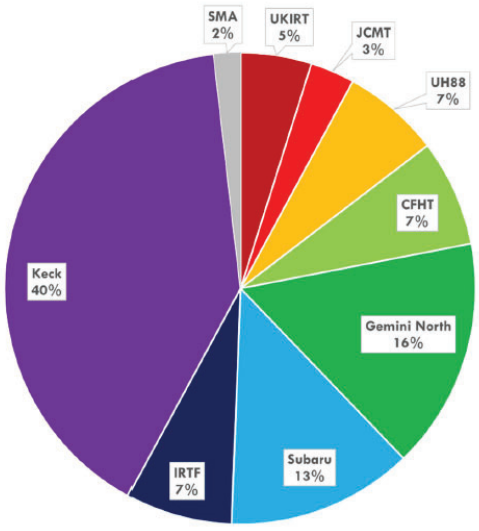
2024 Total and 2025 Year-to-Date Publications

During calendar year 2024, IfA researchers collectively published 314 refereed journal articles, of which 104 used data taken at one or more of the observatories atop Maunakea. Of these 104 articles, 42 listed one or more IfA grad students as a co-author, or 40% of 2024 papers. This is broken out by observatory in the tables and charts below. The table on the left lists the observatories by overall usage, while the table on the right lists the observatories by students' use. The largest optical/infrared facilities remain in high demand in particular, though key research is being done on all facilities which are 100% subscribed by IfA faculty, post docs, and students. Graduate students make exceptional use of the MKOs for their research – a resource that few university astronomy programs can offer students and making them particularly competitive post-graduation, as they forge their young careers. Graduate students at IfA serve is Principal Investigators for their observing proposals, and in that sense develop an end-to-end research experience during their graduate studies, from developing a concept for research, through submitting observing proposals, reducing their data, interpreting results, and having it published.

For calendar year 2025, as of December 3, IfA researchers have published 270 refereed journal articles of which 88 used MKO data. Of these 88 articles, 22 listed one or more IfA grad students as a coauthor,

	Total	Students
SMA	3	0
JCMT	5	0
UKIRT	8	4
UH88	11	5
IRTF	12	3
CFHT	12	2
Subaru	23	6
Gemini	26	11
Keck	66	36

	Total	Students
SMA	3	0
JCMT	4	0
CFHT	12	2
IRTF	12	3
UKIRT	8	4
UH88	11	5
Subaru	23	6
Gemini	26	11
Keck	66	36



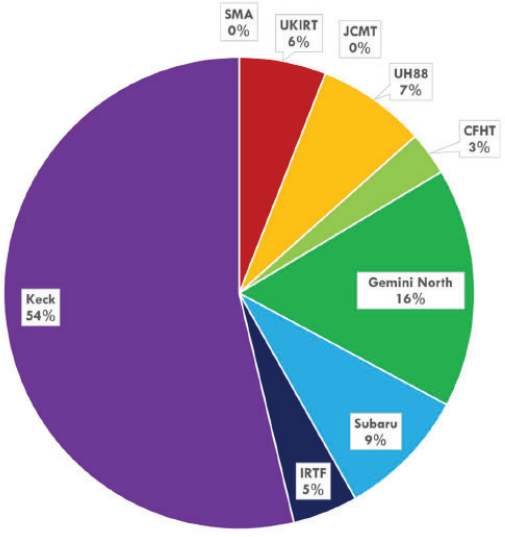


Figure 2 (left) – MKO data sources for IfA-coauthored refereed articles in 2024. Figure 3 (right) – MKO data sources for refereed articles with an IfA graduate student coauther in 2024.

or 25% of this year's papers. These publication data are also shown in the tables below (ordered by overall use on the left; ordered by student use on the right) and by Figures 4 and 5.

For the period 2024-2025, IfA published 584 refereed journal articles, of which 192 used data from one or more of the Maunakea Observatories. Of those 192 articles, 64 listed an IfA grad student as a coauthor.

	Total	Students
SMA	2	0
JCMT	3	0
UKIRT	5	2
UH88	5	5
IRTF	9	5
Gemini	14	4
Subaru	21	3
CFHT	22	5
Keck	48	13

	Total	Students
SMA	2	0
JCMT	3	0
UKIRT	5	2
Subaru	21	3
Gemini	14	4
UH88	5	5
IRTF	9	5
CFHT	22	5
Keck	48	13

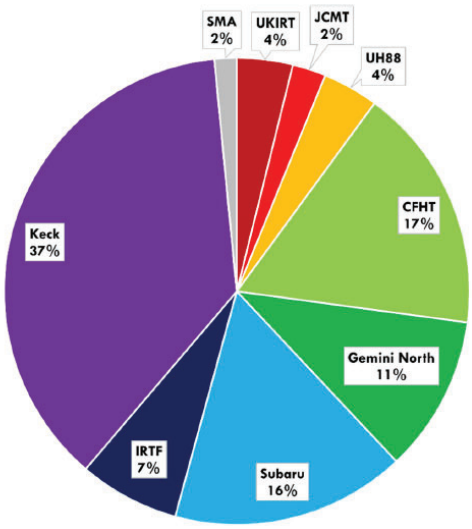


Figure 3. MKO data sources for IfA-coauthored refereed articles, 2025

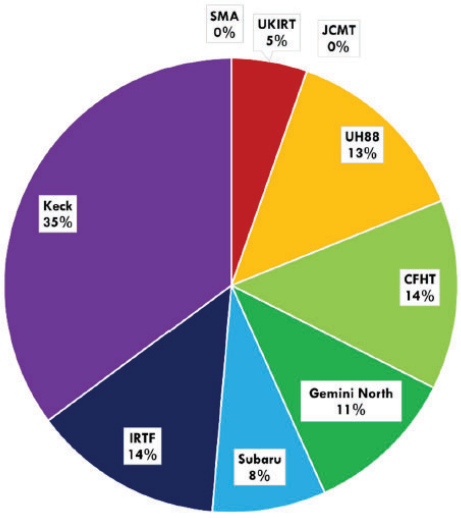


Figure 4. MKO data sources for refereed articles with an IfA grad student coauthor, 2025

Figure 4 (left) – MKO data sources for IfA-coauthored refereed articles in 2025. Figure 5 (right) – MKO data sources for refereed articles with an IfA graduate studet coauther in 2025.

Key Education and Research Outcomes

IfA students and faculty continued to receive prestigious UH awards for their research and education efforts. The 2025 recipients included two students (undergrad and grad) and a faculty member. Such representation at UH awards events help illustrate the exceptional work occurring at IfA in the broader context of UH research. IfA faculty have received numerous other national and international research awards, including Dr. Karen Meech for her numerous contributions to the study of the origins of water on earth.





Figure 6 – (Top) Students and faculty awarded for their research and education efforts from IfA include (left to right) UH Mānoa astrophysics undergraduate student Aláine Lee (Student Excellence in Research Award), IfA graduate student Nick Saunders (Student Excellence in Research Award), and IfA faculty member Mike Liu (Peter V. Garrod Distinguished Graduate Mentoring Award). (Bottom) Dr. Karen Meech was named a Fellow in the American Association for the Advancement of Science (AAAS) for her decades-long pioneering research in comets, asteroids, and interdisciplenary research on the origin of water on earth.

An excellent example of IfA collaboration with other UH Mānoa units, and leadership in astronomical engineering research and education, is the establishment of the Space Science and Engineering Initiative (SSEI). In 2023, in support of SSEI, the Legislature approved funding for 10 engineering faculty positions within the College of Engineering and $2M to conduct an architectural study for a new engineering support facility building next to Institute for Astronomy at Hilo (IfA-Hilo) to house SSEI and increase capacity for designing/fabricating instruments, enable new technology development, and provide internships for students. While functioning as one team, half of the new engineering faculty will be located at the College of Engineering in Mānoa and half at IfA-Hilo on the University of Hawai‘i at Hilo (UH Hilo) campus. The latter will teach pre-engineering classes for UH Hilo students as a pathway to acquiring degrees in several engineering fields via the College of Engineering. To date 6 of these faculty positions have been filled and we are finalizing the recruitments for the remainder now. For the first time, pre-engineering classes are being offered at UH Hilo for students as part of this exciting new program. Excellent progress has been made designing the new SSEI building. Joint administrative support for SSEI via UH Hilo, College of Engineering and the Institute for Astronomy has been established, startup funds provided by the legislature have been used to acquire equipment for SSEI, and the first Federal grant proposals from SSEI faculty have been submitted.

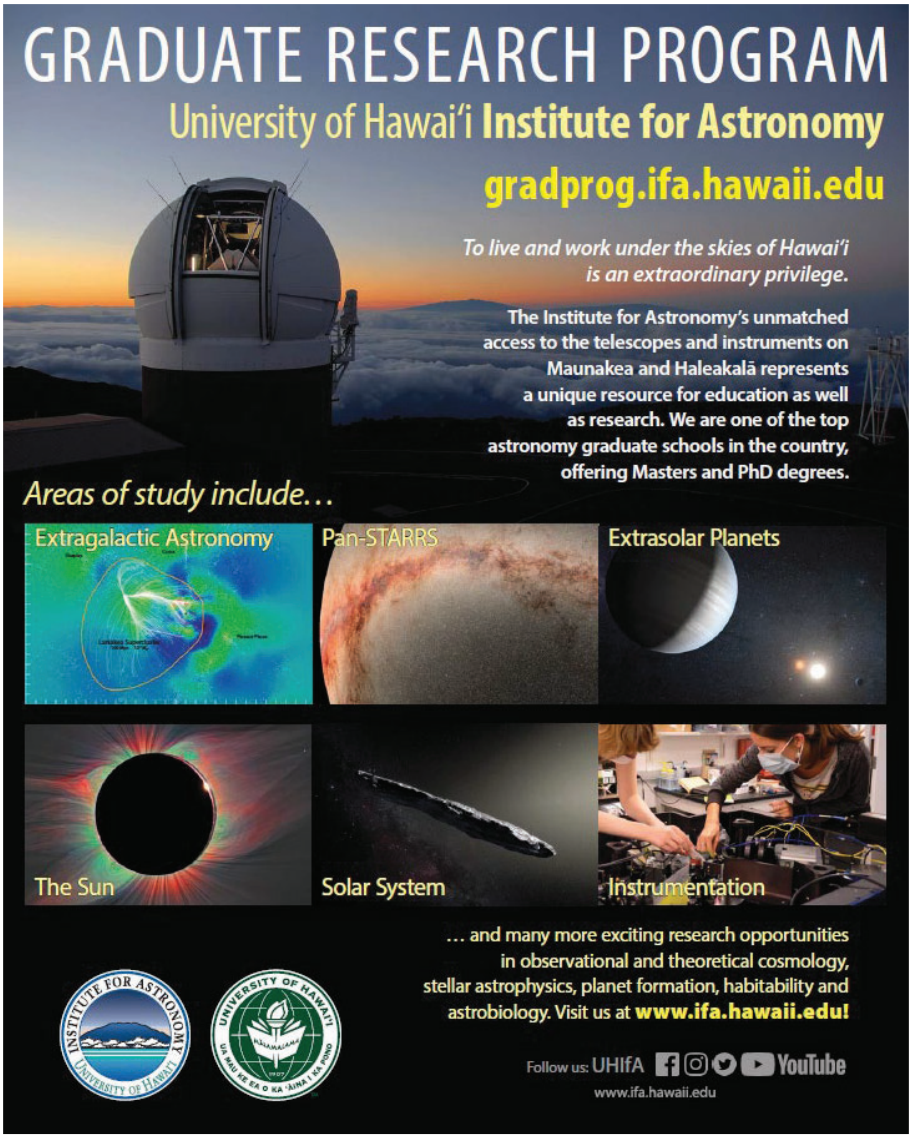


Figure 7 – Top left – Career panel day at Honoka'a High School. Top right – Star gazing at Mo'okini Heiau. Bottom left – Student tours of telescopes on Maunakea. Bottom right – Planting trees on Maunakea with the Maunakea Forest Restoration Project.

The reach of IfA's education program goes well beyond the confines of UH's campuses, thanks to extensive efforts on nearly all islands by IfA's staff, students, and faculty. Some of the IfA's signature programs include Astro Day in Hilo and Kona, held twice annually. These large events, conducted at shopping malls, attract thousands of people across Hawai'i Island and include booths and exhibits from dozens of STEM organizations that IfA partners with. On Maui IfA's Hi Star program engages high school students year-round, with an emphasis on research each summer through an intensive camp in which students expand their skills in data analysis and scientific methods, often going on to use what they've learned in local science fairs. At Mānoa IfA's annual open house program is a big hit with kids of all ages, who are treated to everything from craft booths, to rocket experiments and demonstrations of cryogenics. Maunakea Scholars continues at a good pace, including schools on the smaller neighbor islands (Lāna'i and Moloka'i) which have historically not received as much benefit from Hawai'I astronomy compared to other islands. Over 1300 students have participated in this program since its inception in 2015 and it remains the only program of its kind in the world, connecting high school students to Hawai'i's only billion-dollar research complexes on Maunakea and Haleakalā.

Summary

Observing time on the MKOs is fundamental to the success of the State of Hawai‘i’s astronomy program. From that key resource stems educational opportunities, scientific prestige and leadership for Hawai‘i, hundreds of millions of dollars in extramural funding, advanced technology development programs, broad economic benefit and diversification for our communities, and much more. The IfA’s program helps leverage that resource for multilateral benefits, consistent with the mission of the University of Hawai‘i, and the vision of those who inspired Maunakea astronomy decades ago.



Appendix A

IfA Observing Programs Selected for Execution - Semester 2025A

CFHT

- Rapid follow-up of kilonovae during LIGO/Virgo/KAGRA 4th observing run and other transients
- Rapid follow-up of important solar system discoveries from Pan-STARRS
- Observations of Near-Earth objects
- Modeling long-period comet sizes to probe the history of the Solar system
- Probing the magnetic field morphology of the grand-minimum star HD 166620
- Extending dynamical masses to the planetary-mass regime
- Characterizing the rotation and activity for comet 88P/Howell
- Hawaii+Euclid: the extragalactic deep fields of the next decade
- Fishing for debris disks with Espadons and ASAS-SN
- Dust in the wind: simultaneous dust & gas in disk winds with SPIRou and TESS
- Spectropolarimetric signal for stellar activity: spot, flare and CME

Gemini

- Spectroscopic observations of exciting ASAS-SN, ATLAS, PS, LIGO transients & novel small bodies
- Rapid follow-up of kilonovae during LIGO/Virgo/KAGRA 4th obs run and other transients
- Precise masses and compositions of extreme Earths
- 3I - Characterizing the 3rd interstellar object
- Characterizing the rotation and activity for comet 88P/Howell
- Rapid classif and comprehensive follow-up of thermonuclear SNe from HITS
- Modeling long-period comet sizes to probe the history of the Solar system
- Modeling long-period comet sizes to probe the history of the Solar system
- The first high-resolution infrared spectrum of a Class 0 protostar
- Grav lenses in UNIONS and Euclid: spectrosc confirm of strongly lensed galaxies
- The NIR lifetimes of SNeIa viewed through spectroscopy
- The NIR lifetimes of SNeIa viewed through spectroscopy
- Transmission and emission spectroscopy of ultra-hot Jupiters and warm Neptunes
- Tracing the formation of carbon monoxide in a nearby SE SN
- Weighing anchors on the cosmic shoreline with MAROON-X and JWST

JCMT

- Sub-mm follow-up of a newly discovered kilonova
- JWST, SCUBA-2, and the global star formation history
- Extra prop: structure and kinematics of Bok globule Barnard 62

Keck 1

- Spectroscopic observations of exciting ASAS-SN, ATLAS, PS, LIGO transients & novel small bodies
- JWST, SCUBA-2, and the global star formation history
- Transmission and emission spectroscopy of ultra-hot Jupiters and warm Neptunes
- Confirming the earliest galaxies with H20 and Euclid
- Exploring orbital architectures towards the planet - brown dwarf boundary
- Pan-chromatic SN studies: contemporaneous Maunakea and JWST spectra
- Hot Jupiter companions in evolved systems

Keck 2

- Spectroscopic observations of exciting ASAS-SN, ATLAS, PS, LIGO transients & novel small bodies
- Spectro-astrometry of disks around Herbig stars
- The Ly-alpha morphologies of z=6.6 ultraluminous Ly-alpha emitters
- Resolving spectroscopic variability in JWST-MIRI targets
- Grav lenses in UNIONS and Euclid: spectroscopic confirmation of strongly lensed galaxies
- Probing the origins of Ca-rich transients through their host-galaxy properties
- Extending dynamical masses to the planetary-mass regime
- Rescuing Kepler's false positive planets using Keck 2 / NIRC2 imaging
- 3-D morphology of exoplanet mass loss revealed by Keck/NIRSPEC
- Feeding time: high S/N optical spectroscopic follow-up of tidal disruption events and AN
- Pan-chromatic SN studies: contemporaneous Maunakea and JWST spectra

SMA

- Sub-mm follow-up of a newly discovered kilonova
- Extra prop: physical conditions toward icy massive young stellar objects

Subaru

- Ophiuchus disk survey
- High-resolution polarimetric imaging of debris disks
- Imaging disks around embedded protostars with SCExAO
- Characterizing young A stars identified through TESS asteroseismology
- Searching for high-redshift AGNs in the deepest hard X-ray image
- PFS observations of a complete sample of luminous AGNs in COSMOS
- Ly-alpha tomography of EDF-N with PFS
- Testing rotation-age relations using wide binary pairs

- WHIGS extension for the UNIONS survey and Euclid
- Chemical characterization of the ancient stellar halo of Leo A
- HSC search for near-Earth objects at small solar elongation
- Hawaii+Euclid: the extragalactic deep fields of the next decade
- Mapping the main body of the Sagittarius dwarf galaxy
- Extreme trans-Neptunian objects

UH 88”

- Spectroscopic observations of exciting ASAS-SN, ATLAS, PS, LIGO transients & novel small bodies
- Precise optical-IR spectroscopic extinction curves
- Observations of Near-Earth objects
- Filling the gap: follow-up observations of Pan-STARRS NEO candidates
- Rapid classification and comprehensive follow-up of thermonuclear SNe from HITS
- Long eclipse events in YSOs

UKIRT

- Rapid classification and comprehensive follow-up of thermonuclear SNe from HITS
- Long eclipse events in YSOs

IRTF

- Rapid SpeX and 'Opihi Follow-up of a New Kilonova
- Tracing Cosmic Origins: Investigating Molecule Formation in Nearby Core-Collapse Supernovae with Infrared Spectroscopy
- Near-Infrared Spectral Observations of High Priority Near-Earth Objects
- Strengthening the pre-peak SNe Ia NIR Spectroscopic Sample
- Rapid NIR Spectroscopic Follow-Up of Young Type Ia Supernovae
- Long-Baseline SpeX NIR Monitoring of Changing-Look AGNs
- Precise Optical-Infrared Spectroscopic Extinction Curves
- JWST Sunshield as Spectroscopic Calibrator
- SpeX Spectroscopic Monitoring of FUor-like eruptive YSOs Identified in the unWISE and SPICY Catalogues

IfA Observing Programs Selected for Execution - Semester 2025B

CFHT

- Rapid follow-up of important solar system discoveries from Pan-STARRS
- Probing surface activity of K dwarfs in the Hyades during stalled braking
- Rapid follow-up of kilonovae during LIGO/Virgo/KAGRA 4th obs run and other transients
- Observations of Near-Earth objects
- Modeling carbon-dioxide-rich comet 22P/Kopff - preparing for JWST
- Extending dynamical masses to the planetary-mass regime
- Modeling long-period comet sizes to probe the history of the Solar System
- The great escape: catching planet evolution in the act

Gemini

- Characterizing the third interstellar object
- Rapid follow-up of kilonovae during LIGO/Virgo/KAGRA 4th obs run and other transients
- Spectrosc obs of exciting ASAS-SN, ATLAS, PS, LIGO transients & novel small bodies
- Rapid classif and comprehensive follow-up of SNe Ia from the Hawaii infant transient survey
- Rapid classif and comprehensive follow-up of SNe Ia from the Hawaii infant transient survey
- Precise masses and compositions of extreme Earths
- Modeling long-period comet sizes to probe the history of the Solar System
- High-resolution spectroscopy of a very young population of protostars
- High-resolution spectroscopy of a very young population of protostars
- Fingerprinting mass loss: dusty clues in WR 140’s nested concentric shells
- Spectroscopic follow-up of a directly imaged planetary-mass companion in Taurus
- Transmission spectroscopy of a JWST young Neptune and a strange hot Jupiter
- Grav lenses in UNIONS and Euclid: spectroscopic confirmation of strongly lensed galaxies
- Tracing molecule formation in explosive environments: detecting CO in stripped envelope SNe

JCMT

- JWST, SCUBA-2, and the global star formation history
- Tracing protostellar evolution by outflows using JCMT
- Deep JCMT and Subaru imaging survey of the deepest ever Herschel field

Keck 1

- Spectroscopic observations of exciting ASAS-SN, ATLAS, PS, LIGO transients & novel small bodies
- Ly-alpha emitters from z = 0 - 1
- Pan-chromatic SN studies: advancing SN physics with contemporaneous MK and JWST spectra

- Asteroseismology of K-type stars: toward a complete census of stellar age
- Exploring the dynamical architecture of a brown dwarf transiting an old sub giant star
- Taking the dynamical temperature of planetary systems
- Star formation in the extended regions of asymmetric field galaxies

Keck 2

- Confirmation of an exceptional exoplanet directly imaged by JWST
- Spectroscopic observations of exciting ASAS-SN, ATLAS, PS, LIGO transients & novel small bodies
- Resolving protoplanetary disk kinematics to interpret JWST spectra
- Ly-alpha emitters from z = 0 - 1
- Pan-chromatic SN studies: advancing SN physics with contemporaneous MK and JWST spectra
- Rescuing Kepler's false positive planets using Keck/NIRC2 imaging
- The evolutionary state of a proto-BCG in a massive protocluster at z ~ 2.8
- Extending dynamical masses to the planetary-mass regime
- Grav lenses in UNIONS and Euclid: spectroscopic confirmation of strongly lensed galaxies
- Helium in Type IIb SNe: near-IR insights into progenitor structure
- 3-D morphology of exoplanet mass loss revealed by Keck/NIRSPEC
- Ly-alpha morphologies of z=6.6 ultraluminous Ly-alpha emitters
- Infrared AO survey for the nearest protoplanetary systems
- Early transient science with Keck and the Rubin observatory

SMA

- Measuring the mass of a very young brown dwarf companion to V347 Aur
- Mapping shock chemistry in and around planet-forming disks

Subaru

- Exploring extincted disks in Orion and Taurus
- Iron in the fire: gaseous metals from an evaporating planet
- High-resolution polarimetric imaging of debris disks
- Surface magnetism of oscillating red giants through the lens of chromospheric emission
- A MOIRCS narrow-band imaging survey of massive LATIS protoclusters
- Identifying and characterizing the Delta Scuti pulsators with the TESS mission
- Galaxy mergers and interactions within high-z protoclusters
- Spectroscopic follow-up of standard rod candidates in the Euclid Deep Field Fornax (EDF-F)
- Characterization of the ancient stellar halo of the Pegasus dwarf irregular galaxy
- Extreme trans-Neptunian objects

- HSC search for near-Earth objects at small solar elongation
- Mapping the main body of the Sagittarius dwarf galaxy
- Deep JCMT and Subaru imaging survey of the deepest ever Herschel field
- Hawaii+Euclid: the extragalactic deep fields of the next decade

UH 88”

- Spectroscopic observations of exciting ASAS-SN, ATLAS, PS, LIGO transients & novel small bodies
- Observations of Near-Earth objects
- Searching for multiple systems in the HWO targets
- Multiwavelength Reverberation Mapping of quasars at cosmic noon
- Precise optical-IR spectroscopic extinction curves
- Filling the gap: follow-up observations of Pan-STARRS NEO candidates
- Whole Earth Telescope asteroseismology of the white dwarf G29-38

UKIRT

- Pan-chromatic SN studies: advancing SN physics with contemporaneous MK and JWST spectra
- Rapid classification and comprehensive follow-up of SNe Ia from the Hawaii infant transient survey
- Near-IR search and identification of kilonovae from grav wave events
- Multiwavelength Reverberation Mapping of quasars at cosmic noon
- Rapid near-IR follow-up of electromagnetic counterparts of grav wave and neutrino events

IRTF

- High-resolution spectroscopy of a very young population of protostars
- SpeX Spectroscopic Monitoring of FUor-like eruptive YSOs Identified in the unWISE and SPICY Catalogues
- Rapid SpeX and 'Opihi Follow-up of a New Kilonova
- Rapid NIR Observations of Thermonuclear Supernovae with IRTF
- Strengthening the pre-peak SNe Ia NIR Spectroscopic Sample
- Near-Infrared Spectral Observations of High Priority Near-Earth Objects
- Unraveling Cosmic Dust Factories: How Core Collapse Supernovae Produce Molecules
- Precise Optical-Infrared Spectroscopic Extinction Curves
- Catching the Cosmic Flash: Probing Flash-Ionization in NIR spectroscopy of a Core-Collapse Supernova

Appendix B

Background

A number of major astronomical observatory complexes have been established at sites around the world. In exchange for site access to build and operate observatories, often the governing entities for those sites receive observing time as a form of compensation for land access. Examples of this include the governments of Chile, Spain, and Hawai‘i, all of which receive observing time on observatories they host, through their respective university systems. This allows each of these governments to support robust astronomy research and education programs at vastly reduced cost compared to building and operating entire observatory complexes themselves. In the case of the Maunakea Observatories (MKOs), the replacement cost for the existing observatories exceeds $1B. The vast majority of the construction and operating costs for the MKOs is provided by Federal research sponsors, including NASA, National Science Foundation, National Research Council (Canada), Centre national de la recherche scientifique (CNRS, France), the National Astronomical Observatory of Japan, etc. Astronomers worldwide are provided observing time, at no charge to researchers, through peer reviewed competitive proposal systems, that are synchronized to occur twice a year. In the US this Federal funding for astronomy research is akin to Federal sponsorship of research in medicine/health (NIH), chemistry, geology, mathematics, etc. After a proprietary period most of the data sourced by the MKOs is stored in public archives. This helps maximize the scientific product of and public access to this valuable resource.

The Hawai‘i State astronomy program emerged in 1964 when Governor Burns advanced a vision for Hawai‘i predicated on Hawai‘i’s unique natural resources, among them the pristine, clear and calm air above Maunakea. It was also motivated by the Hawai‘i Island community’s desire to rebuild and diversify their economy after the 1960 earthquake in Chile left Hilo in ruins through a devastating tsunami. That confluence of events, among other factors, led to Maunakea astronomy today being world leading in its total scientific impact – a metric that gauges the number and quality of peer reviewed research publications. The Hawai‘i State government identified the University of Hawai‘i as the host for the State’s astronomy program, which in turn led to the formation of the UH Institute for Astronomy (IfA) roughly 50 years ago. Today IfA has 35 faculty (26 are MKO users, the rest study solar, theory, etc.), 43 graduate students (32 are MKO users), and 17 postdocs (about a dozen are MKO users). Hawai‘i is now recognized internationally as a premier location to conduct astronomical research. The MKOs are an economic aggregator for international funds used to sponsor their operations. They employ ~600 people in what is likely the largest assemblage of STEM jobs on Hawai‘i Island.

Through its UH 88” telescope and agreements with non-UH MKOs, the IfA receives the following allocations of observing time on the MKOs -

UH 88”	100%
CFHT	15%
IRTF	15%
UKIRT	15%
JCMT	12%
Subaru	15%
Keck 1	10%
Keck 2	15%

Gemini	10%
SMA	15%

Not included on this list are CSO and Hoku Kea (both decommissioned) and VLBA, which operates only as a global interferometer, not standalone on Maunakea for UH access.