



MEMORANDUM

August 14, 2025

TO: Mauna Kea Stewardship and Oversight Authority

FROM: Greg Chun, Executive Director, CMS

SUBJECT: Informational-only: Gemini North Ladder Replacement

- Proposal rec'd: 5/27/2025
- Type **A** / B / C
- CMS Project #361
- ED review: 7/9//2025
- EC review: 7/10/2025
- KKM review: N/A
- MKMB review: 8/5/2025
- MKSOA review: 8/14/2025

I. Project Description

The Gemini North Observatory (GNO) requests to replace an outdoor ladder with a newer model for facility access. The handrails and top rungs of the new model will rise a foot or so above that portion of the wall where installed, and may be slightly visible to observant visitors parked nearby.

II. Resources Identified

Although the project area is located within the following identified historic properties, project activity is limited to the GNO sublease parcel in which no identified cultural resources have been identified:

- Mauna Kea Summit Region Historic District, State Inventory of Historic Places (SIHP) Site #50-10-23-26869;
- Mauna A Wākea Traditional Cultural Property and District, SIHP Site 31382; and
- Kūkahau'ula Traditional Cultural Property, SIHP Site 21438.

No rare, threatened, or endangered species have been documented at the site. Recreational visitors stop by, primarily during the day and at sunset for sightseeing. The facility may observe astronomical resources at any time of day.

III. Impacts Identified

As the work is limited to existing infrastructure, will not extend or enlarge GNO's footprint, and does not change the permitted use of the facility, the applicant does not anticipate any impacts to any identified historic properties or cultural resources, nor to any natural (geological and hydrological), biological, recreational, or scientific resources.



IV. Recommended Mitigation

CMS identifies the land use as HAR §13-5-22, P-8, Structures and Land Uses, Existing (A-1) *Minor repair, maintenance, and operation to an existing structure, facility, use, land, and equipment*. Office of Conservation and Coastal Lands (OCCL) orally advised CMS on Wednesday, July 30, 2025 that this project did not require their notification, review, or approval; by that time, however, the project was undergoing committee review pursuant to CMS policies. Standard Best Management Conditions and applicable approval conditions will be complied with.

V. Compliance with Maunakea Comprehensive Management Plan

The request is consistent with the 2022 Comprehensive Management Plan (CMP), approved by the Board of Land and Natural Resources. In fulfillment of the CMP's community review requirements, the project was reviewed by the Environment Committee on July 10, 2025 and Maunakea Management Board on August 5, 2025, to no concerns or objections. The proposed land is also consistent with UH's General Lease for the Science Reserve (S-4191) and GNO's sublease. Further, CMS' review of the project complies with the following CMP Actions:

- NR-1: Limit threats to natural resources through management of permitted activities and uses. Habitat alteration and disturbance will be minimized via implementation of Construction Guidelines detailed in the CMP's six Permitting and Enforcement Actions, including:
 - P-1: Comply with all applicable federal, state, and local laws, regulations, and permit conditions related to activities in the UH management Areas.
 - P-2: Strengthen CMP implementation by recommending that compliance with the CMP be a condition of permits and agreements.
 - P-4: Educate management staff and users of the mountain about all applicable rules and permit requirements
- IM-5: Develop and implement a Debris Removal, Monitoring and Prevention Plan, particularly that "All incidental rubbish and debris shall be secured in a windproof rubbish bin or kept indoors."
- C-9: Inspection of construction materials. Shipping containers and crates will be inspected by a DLNR-approved biologist or by Department of Agriculture personnel prior to arriving at Maunakea. Identified mitigation measures will be complied with.
- EO-2: Require orientation of users. All project workers will be required to successfully complete the Maunakea Resource Orientation prior to working onsite.
- AR-2: Prevent light pollution, radio frequency interference (RF) and dust. Contractors and staff will be informed to keep within posted speed limits to minimize dust.



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VI. Center for Maunakea Stewardship Recommendation

CMS recommends the project proceed in accordance with the standard project conditions in the attached list.

Facility Project Proposal for the UH-Managed Lands

for projects anticipated to be classified as having “Minimal Impact”

Proposals due by the 15th monthly

Please mark all that apply to your project

☐_YES_ Project was reviewed in a 3-Year Plan

☐_NO_ Project is a CMP, lease, or sublease compliance measure (e.g., keeps the site in safe working order)

☐_NO_ Project involves heavy machinery

☐_NO_ Project requires ground disturbance such as digging or trenching

☐_NO_ Project will result in a change to the facility footprint

Facility Name

NOIRLab Gemini Observatory

Brief Descriptive Title of Project

Replace ladder to building rear chemical storage room

Project Description

We have long used a fiberglass/aluminum ladder to access the chemical storage room at the north side of the Gemini summit facility (facing CFHT). However, that ladder, although employed for many years, is not permanently installed and we wish, as stated in our three-year plan spreadsheet, to replace it with a more permanent one, fixed to the concrete of the storage space.

This does not affect footprint and will not require ground disturbance or heavy machinery. All work will be completed per any applicable approved codes or standards required by the authority having jurisdiction (AHJ), as applicable.

Proposed Commencement Date

Late August 2025.

Proposed Completion Date

Approximately one week from commencement.

Estimated Project Cost

\$100 for new ladder.

Total size / area of proposed use

Building footprint will remain the same, and all within the concrete area in front of the door to the chemical storage space. The difference will be that the safety handrails at the top of the new ladder will be visible above the wall, as is the current ladder's top rungs. See pictures below.



Figure 1 - The existing ladder (photographed by the Maunakea Rangers). The replacement ladder would mount to the wall, but otherwise in a similar location.



Figure 2 - Replacement ladder: the steel structure lying horizontally. The top-end safety hand rails are to the upper left in this image. These will be above the upper wall edge on the left in Figure 1.

Project Purpose and Need

Why is it needed?

The replacement ladder with top-end handrails is much more stable and safe for employees.

What function does it serve?

Allows improved, safer access to the chemical storage room below the north-facing end of the Gemini North summit building.

Does it address a lease or CMP requirement, etc. (if so, do not submit the CMP matrix)?

No.

Is there a health and safety reason?

Yes; we seek to employ a safer ladder.

Does it make operations more efficient or reduce energy needs?

Not in any substantial way.

Is there a cost savings?

No.

Does it enhance scientific activities?

No.

Is it a replacement for an existing part/system?

Yes, as above.

Has professional peer-review occurred

Not applicable

Are there any related ongoing, pending, or planned projects associated with this submission?

No.

Description of the Project

Location

The work will be on the rear exterior of the Gemini building. The external change will be minimal, but will include a few feet of top-end gate protruding above the concrete edge.

Description of the process of completing the project

The existing ladder will be removed and either brought to Hilo for disposal or reused within the building. The replacement ladder will be installed; fixtures will be drilled into the concrete (see picture above). No cinder will be disturbed and the anticipated minimal concrete debris will be removed and brought to Hilo for disposal.

Who will do the work?

Gemini facility staff and mechanical team.

Equipment & Transportation

No vehicles needed in addition to our normal day crew transport. The replacement ladder is already in storage at the observatory facility.

Measures to protect the environment and/or mitigate impacts

Impacts

We do not anticipate significant debris from this work, as attaching the ladder to the wall will require only minimal drilling. Any debris will be removed and disposed of.

Compliance with Lease, Sublease, or Comprehensive Management Plan (CMP)

N/A.

Identify other required or associated permits

None

Community Benefits

Benefits to other Maunakea entities and/or global astronomy community

Nothing beyond what is described above.

Benefits to the Hawaii Island community

None direct.

Will data, publications, or other products be free and available to the public?

Not applicable.

For internal use only by CMS

Review checklist

☐_Y_ Staff review and report

☐_N/A_ Outside agency review or approval required

☐_Y_ Environment committee, if environmental impacts are anticipated

☐_N/A_ Kahu Ku Mauna, if cultural impacts are anticipated and KKM requested consultation, or the project was not included in a 5YP or 3YP

☐_Y_ Maunakea Management Board

Project approval conditions

Prepare to Start the Project

- Identify and comply with other permit requirements, such as County of Hawai'i building permits or Department of Land & Natural Resources permits (see *both*/any applicable DLNR permit and [HAR §13-5-42 Standard conditions](#)).
- Use of real-time GPS during any surveying or equipment operation requires advance written approval from CMS and the Institute for Astronomy. GPS use should be requested at least four (4) weeks prior to the proposed activity.
- Any required Best Management Practices, Communication Plans, contract scope questions, etc. must be finalized and approved by CMS prior to final approval.
- CMS will provide a final, written notice explicitly stating whether the project is approved to commence (i.e., issue a "Notice to Proceed"). The Notice to Proceed will include any additional, project-specific conditions. **No project work may commence before this time.**
- Project approval may not be transferred or assigned without prior authorization. A copy of the approval/permit must be present on-site and available for review at all times while working on UH-managed lands.
- Applicant shall comply with all actions and measures described in the proposal, including (community) benefits, CMP compliance list, and mitigation measures.

Notifications

- Applicant may request to arrange a pre-construction meeting with CMS before work commences. These meetings review orientation content, implications of project non-compliance, project-specific concerns regarding resource protection, health and safety, visitor and/or traffic impacts, etc. Meetings may be held in person or via phone, webinar, or other means.
- Notify CMS in writing via email to cmshilo@hawaii.edu at least five (5) days prior to beginning field work on UH-managed lands (Halepōhaku, Road Corridor, Maunakea Science Reserve, or Astronomy Precinct) with the following:
 - Identify the date that onsite work will commence.
 - Identify by name-of-entity all observatories, contractors, vendors, suppliers, etc. anticipated to be associated with and substantively present on UH-managed lands for the project.
 - Identify the individual(s) who will be coordinating all invasive species inspections.
 - Attest that the observatory or relevant entity will ensure compliance with all permit conditions and communicate with CMS if there is any uncertainty.
 - Notify CMS in writing of any other entities responsible for elements of compliance.
 - Attest that all individuals anticipated to be associated with the project have completed the Maunakea User Orientation.
 - CMS is not liable or responsible for delays due to inadequate or late submissions or submissions requiring verification.

Onsite Activity

General

- Use of lighting from sunset to sunrise is prohibited unless described in the project proposal and approved.
- Use of cell-phones, other than in airplane mode, is prohibited except in case of emergency.
- Placement of permanent markers, monuments, mag nails, or survey pins, etc. is not allowed without explicit prior approval from CMS (and the State if required). ALL surveyors' work must be shared with CMS in digital format with coordinate info stored in and using a common, transferrable coordinate reference system such as "State Plane Coordinates (NAD83), Hawai'i Zone 1".
- Allow CMS Rangers to visit and monitor activities.

Transportation and Motorized Equipment

- No use of mechanized equipment is allowed unless authorized by this permit.
- 4-wheel-drive required for travel above Halepōhaku.
- Large, heavy, non-4-wheel-drive or oversized loads must submit notification to the Maunakea Road Conditions listserv, MK-ROAD-CONDITIONS@lists.hawaii.edu, at least one day prior to transit. Loads requiring an escort on public roadways must have this escort accompany them to the final destination. Projects failing to submit notification or arrange for escort to the summit may be denied entry to Halepōhaku or above.
- During public closures of the Summit Access Road, vehicle access above Halepōhaku is limited to explicitly-marked observatory, CMS, federal, or state of Hawaii vehicles. Vehicles must be operated by approved employees or representatives on official business and possessing requisite orientation, training, safety, and rescue supplies.
- Motorized equipment, when stationary, must have a drain-pan in place suitable for catching fuel or fluid leaks.

Debris Prevention and Severe Weather Concerns

- Ensure that any debris, tools and equipment are secured to avoid becoming windblown and are properly stored at the end of each day.
- Projects occurring in the summit region must verify that temporary and permanent infrastructure and improvements can sustain 120 MPH winds and severe weather.

Environmental Concerns

- All perishable items including food, food wrappers, and containers must be removed from the site daily and properly disposed of.
- Remove and properly dispose of all waste material.
- Nēnē (*Branta sandvicensis*) may be present. If a nēnē appears within 100 feet (30.5 meters) of ongoing work, all activity shall be temporarily suspended until the animal leaves the area of its own accord. Federal law prohibits feeding or any "taking" (e.g., harassing, harming, killing) of nēnē.
- Best Management Practices for seabirds, including the endangered Hawaiian petrel (*Pterodroma sandwichensis*)
 - Use red light bulbs outside to the maximum practicable extent.
 - Fully shield outdoor bulbs so the light is only visible from below.
 - Install motion sensors or turn off lights when human activity is not occurring in the area.

- September-December: Avoid nighttime construction.
- Best Management Practices for the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*)
 - No barbed-wire fencing allowed.
 - June-November: Do not trim, remove, or disturb trees over 15 feet tall.

Invasive Species Prevention

- Employ invasive species prevention best practices, including inspections of materials by a DLNR-approved biologist, as identified in the Maunakea Invasive Species Management Plan prior to entering UH-managed lands.
 - Inspections can only occur at locations where landowners have given permission (i.e. facilities, baseyards, and vendor locations).
 - Inspections shall not occur on UH-managed lands on Maunakea, at State or County parks, along public roadsides, or on Department of Hawaiian Homelands lands.

Upon Project Completion

- The project must be completed within the time frame specified in the proposal and, when applicable, as specified by DLNR. Projects that cannot be completed within this timeframe are not allowed to continue (or commence) without explicit prior written approval from CMS.
- Notify CMS in writing when field activity associated with the project is completed.
- Unless otherwise stated in the proposal, copies of all data, field notes, photos, log books, collected specimens, and other forms of documentation will be shared with CMS for future, unrestricted use by CMS or its designee. All geospatial data, metadata or applications must be in a format compatible with CMS GIS software or other industry standard identified in advance.
- Collected specimens that are not consumed in analysis will be returned to CMS unless otherwise specified.
- Provide CMS with electronic and paper copies of all publications resulting from the work. When applicable, annual, final reports must be submitted to CMS.
- When applicable, a brief, approximately 1-page, non-technical summary suitable for public outreach (school groups, community meetings, newsletter articles, etc.) must be provided to CMS within 90 days of project completion or publication. Photos and illustrations are encouraged.