

UH Managed lands – Project Proposal

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

Name: [Smithsonian Astrophysical Observatory (SAO) – Submillimeter Array (SMA)]

Project Name: [SMA Informational Poster]

- **Brief Description of the Project**

[Install an informational poster to educate visitors about research at the SMA. The poster will be updated from time to time. The poster will be housed in a weatherproof frame attached to an exterior wall of the existing SMA hangar on Maunakea.]

- **Identified Land Use (see HAR § 13-5-22 through 13-5-25)**

[HAR §13-5-22, P-7 SIGNS (B-1) Signs, including safety signs, danger signs, no trespassing signs, and other informational signs. No signs shall exceed twelve square feet in area and shall be non-illuminated. All signs shall be erected to be self supporting and be less than or equal to eight feet above finished grade.]

- **Identify the existing CDUP this proposal alters or affects, if any**

[HA-2728, 1994. SMA]

- **Identify [University of Hawai'i exemption](#) per HAR § 11-200-8(a), if any**

[Exemption Class #6: Construction or placement of minor structures accessory to existing facilities. #4. Within the building footprint and envelope (building perimeter and height) construction of additional building floor area limited to no more than 10% of the existing building floor area.

The poster frame will be mounted on an exterior wall of the existing SMA hangar.]

- **Tax Map Key(s):** [4-4-015:009 – Mauna Kea Science Reserve (por.)]

- **Proposed Commencement Date:** [April 2019]

- **Proposed Completion Date:** [April 2019]

- **Estimated Project Cost:** \$ [500]

- **Total size / area of proposed use:** [3 ft x 4 ft = 12 sq ft poster frame]

Project Purpose and Need

- [Public education and outreach are important facets of observatory operation. The Smithsonian operates the SMA with federal funds so the public deserves an explanation of its purpose, operation, and results.
- At present, there is no interpretive information for the many visitors to the SMA on Maunakea. SMA staff are happy to answer questions for weekday visitors when they are encountered, but this information does not reach evening or weekend visitors or if staff are not available during the day.

- An informational poster will briefly describe the characteristics and operation of the SMA and will highlight some of the astronomical research (Figure 1).
- The poster will be updated from time to time to include new results.

Existing Conditions at Project Site(s)

- **Geology, Climate, & Hazards**

Maunakea is considered an active, post-shield phase volcano (USGS) rising to nearly 13,800 ft. Climate conditions at altitudes of 12,500 ft and above are often below freezing and when combined with humidity above 100% or precipitation, on the surfaces resulting in natural cinder movement from geophysical processes. The project site is a wall of the existing SMA hangar.

- **Flora, Fauna, Ecology, Water Resources**

None. The project site is an exterior wall of the existing SMA hangar. OMKM performs routine monitoring for invasive species.

- **Cultural Resources**

The nearest Historic Property is over 900 feet away from the SMA hangar. The site is part of the Maunakea Summit Region Historic District, SIHP # 26869. A comprehensive inventory of the site was completed in 2006. The “Archaeological Inventory Survey of the Mauna Kea Science Reserve” was completed in 2010, and annual routine monitoring continues by OMKM.

- **Recreation**

None. Visitors to Maunakea may read the informational poster.

- **Built Infrastructure**

The poster frame will be installed on an exterior door of the SMA hangar adjacent to an entry door (Figure 2).

- **Landscaping & Visual Conditions**

The poster frame will be installed on an exterior door of the SMA hangar adjacent to an entry door (Figures 2 & 3). The location is protected by an overhang. The poster will be legible by visitors standing nearby. From further away, the poster be unobtrusive. The poster will be unlit, i. e., there will not be any artificial lighting.

Description of the Project

- **Describe the process of completing the project.**

A waterproof aluminum poster frame will be mounted on an exterior wall of the existing SMA hangar adjacent to an entry door. The frame is 3 ft x 4 ft (Figure 1). The top of the frame will be less than 8 ft above natural grade.

- **Location**

A waterproof aluminum poster frame will be mounted on an exterior wall of the existing SMA hangar adjacent to an entry door (Figures 2 & 3).

- **Who will do the work?**

SMA staff will install the poster frame. SMA staff will update the poster from time to time. OMKM will be notified of updates and given the opportunity to review if requested. Reviews are anticipated primarily only if poster content encompasses subjects beyond the subject of the SMA facility and research highlights

- **Equipment & Transportation**

No transport of large equipment is anticipated. Supplies and small parts for installation and repairs, etc., will be transported in SMA light vehicles.

Measures to protect the environment and/or mitigate impacts

- **Protective Measures**

Notify OMKM in writing at least 5 days prior to beginning field work on UH-managed lands (Halepōhaku, Road Corridor, Maunakea Science Reserve, or Astronomy Precinct). No project notification will be accepted by OMKM until all permit requirements are submitted to and approved by OMKM (i.e. any required BMPs, Communication Plans, contract scope questions, etc. must be finalized and approved by OMKM more than 5 days in advance of project commencement).

All project participants must attend an OMKM orientation *prior* to participating in work on Maunakea.

Use of 4-wheel drive vehicles when traveling above Halepōhaku is required.

Allow OMKM Rangers to visit and monitor activities.

Comply with all actions and measures described in this proposal, including (community) benefits, CMP compliance list, and mitigation measures.

Ensure that loose tools or equipment are not left unattended and are properly stored at the end of each day.

In preparation for high wind conditions, protocols must include measures to ensure debris and equipment are not blown from the job site. Projects occurring in the summit region must verify that temporary and permanent infrastructure can sustain 120 mph winds.

All improvements shall be designed and installed to withstand the severe weather conditions on the mountain.

Remove and properly dispose of all waste material. All perishable items including food, food wrappers and containers, etc., shall be removed from the site at the end of each day and properly disposed.

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.

Motorized equipment, when stationary, must have a drain-pan in place suitable for catching fuel or fluid leaks. To allow for expansion with reduced atmospheric pressure, fuel tanks should not be more than 3/4 full prior to transport to the summit (unless used as the fuel source for transport to the summit).

Large, heavy, or oversized loads must submit notification to the Maunakea Road Conditions listserve at least one day prior to delivery. Loads requiring an escort on public roadways must have this escort accompany them to the final destination. Projects choosing not to do so must obtain approval from the Maunakea Rangers before arriving at Halepōhaku. Projects failing to submit notification or arrange for escort to the summit may be denied entry to Halepōhaku or above.

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. Feeding of nēnē is prohibited.

The project approval/permit may not be transferred or assigned. A copy of the approval/permit must be present on-site and available for review at all times while working on University-managed lands.

No use of mechanized equipment is allowed unless authorized by this permit.

Identify and comply with other permit requirements, such as County of Hawaii building permits or Department of Land and Natural Resources (see both any applicable DLNR permit and HAR §13-5-42 Standard conditions)

Placement of permanent: markers, monuments, mag nails, survey pins, etc. is not allowed without explicit prior approval from OMKM (and the State if required) for this purpose. ALL surveyors work must be shared with OMKM in digital format (i.e. CAD file as well as PDF) with coordinate info stored in and using a common, transferrable coordinate reference system such as “State Plane Coordinates (NAD83), Hawaii Zone 1.”

Use of real-time GPS during any surveying or equipment operation requires advance written approval from OMKM and the Institute for Astronomy. Written approval should be requested at least 4 weeks prior to the proposed activity.

Electronic and paper copies of all publications resulting from the work will be provided to OMKM.

Notify OMKM in writing when field activity associated with the project is completed.

The project must be completed within the time frame specified in the proposal and DLNR approval. Projects not completed within this timeframe are not allowed to continue (or commence) without explicit, prior, written approval from OMKM.

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

During the proposed work, SAO/SMA will comply will all applicable OMKM policies and procedures.

Applicable CMP management actions include:

COMPONENT PLAN: UNDERSTANDING AND PROTECTING MAUNA KEA'S RESOURCES			
EDUCATION AND OUTREACH		Subplans	Comments
Program Development			
EO-1	Develop and implement education and outreach program	NRMP 4.1 CRMP 4.3.3 PAP 2.7.1, 4.2, 5.2, 6.1, 6.3, 6.6	<i>An SMA informational poster will provide education and outreach to visitors.</i>

ASTRONOMICAL RESOURCES		Subplans	Comments
Protection of Astronomical Resources			
AR-1	Operate the UH Management Areas to prohibit activities resulting in negative impacts to astronomical resources.	PAP 5.1	<i>SMA will comply with applicable OMKM policies and procedures.</i>
AR-2	Prevent light pollution, radio frequency interference (RFI) and dust.	NRMP 4.2.3.2	<i>SMA will comply with applicable OMKM policies and procedures. The informational poster will not emit light, sound or any electromagnetic interference.</i>

- Identify other required or associated permits

[None]

- Five Year Outlook

[The informational poster is a new project. It was not included in previous SMA Five Year Outlooks.]

Community Benefits

- Benefits to other Maunakea entities and/or global astronomy community

[An informational poster at the SMA will increase public awareness of the research activities of the SMA and the Maunakea Observatories.]

- Benefits to the Hawaii Island community

[An informational poster at the SMA will provide members of the Hawaii Island community with information about the operation and research activities of the SMA.]

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

[This project is not anticipated to generate data, publications, or other products. The informational poster will be visible to all visitors.]



Figure 1. Draft SMA informational poster in waterproof frame. The overall size is 3 ft x 4 ft = 12 sq ft.



Figure 2. Entry door to SMA hangar on Maunakea. *Left:* Existing conditions (February 2019). *Right:* Proposed installation of (draft) informational poster in waterproof frame mounted on exterior wall.



Figure 3. The SMA hangar (center), JCMT (left), and SMA antennas (right) viewed from the Subaru catwalk. The entry door is near the north corner of the hangar (arrow).

DLNR Evaluation Criteria

After approval by the Maunakea Management Board, the Department of Land & Natural Resources or Board of Land & Natural Resources will evaluate the merits and approve the project based on the following eight criteria (§13-5-30). See <http://dlnr.hawaii.gov/occl/files/2013/08/13-5-2013.pdf>

1. The purpose of the Conservation District is to conserve, protect, and preserve the important natural and cultural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare. (ref §13-5-1) How is the proposed land use consistent with the purpose of the conservation district?

The project will help protect scientific resources on the summit and educate all visitors.

2. How is the proposed use consistent with the objectives of the Resource subzone of the land on which the land use will occur? (§13-5-13 The objective of this subzone is to ensure, with proper management, the sustainable use of the natural resources of those areas. This subzone shall encompass: lands necessary for providing future parkland and lands presently used for national, state, county, or private parks. Land suitable for outdoor recreational uses such as hunting, fishing, hiking, camping, and picnicking. [And other lands not applicable to Maunakea.]

The project will help promote the sustainable values and uses by educating visitors of the work being conducted and the resulting findings.

3. Describe how the proposed land use complies with the provisions and guidelines contained in chapter 205A, HRS, entitled "Coastal Zone Management".

The project is not near nor is there a direct hydrological connection to the coastal zone.

4. Describe how the proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.

The project is designed to protect resources in the surrounding area while educating visitors.

5. Describe how the proposed land use, including buildings, structures and facilities, is compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels.

The proposed use will only occur in areas of existing development yet supports continuation of existing, approved uses such as recreation which is one of the purposes the parcels are zoned for.

6. Describe how the existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon.

The poster frame would be located on an existing building and visible only to visitors in the immediate vicinity. No adverse resource is anticipated, rather the sign will help promote continued preservation of existing native resource characteristics.

7. If applicable, describe how subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District.

[]
[No subdivision of land will occur.]

8. Describe how the proposed land use will not be materially detrimental to the public health, safety and welfare.

[The poster frame is designed to withstand environmental conditions on the summit and will be monitored by SMA for wear and damage. Poster content can, if needed, be adapted to advise the public of safety, health, and welfare concerns.]

FOR BOARD ACTION