



University of Hawai'i at Hilo

640 N. A'ohoku Place, Room 203, Hilo, Hawai'i 96720

Telephone: (808) 933-0734 Fax: (808) 933-3208

Mailing Address: 200 W. Kawili Street, Hilo, Hawai'i 96720

**Minutes
Regular Meeting**

Mauna Kea Management Board
Tuesday, November 28, 2017

Kukahau'ula, Room 131
640 N. A'ohoku Place
Hilo, Hawaii 96720

Attending

MKMB: Chair Gregory Chun, Roger Imoto, Herring Kalua and Gregory Mooers

Absent/Excused: Doug Simons and Lehua Veincent

BOR: Wayne Higaki and Benjamin Kudo (via phone)

Kahu Kū Mauna: Shane Palacat-Nelsen (via phone)

OMKM: Fritz Klasner, Stephanie Nagata, Dawn Pamarang, Lukela Ruddle, and Joy Yoshina

Others: Dave Corrigan, Cory Harden, Grant Hill, Stewart Hunter, Ashley Kierkiewicz, Simon Radford, Debbie Ward, and Peter Young

I. CALL TO ORDER

Chair Chun called the meeting of the Mauna Kea Management Board (MKMB) to order at 10:00 a.m. Chair Chun noted those in attendance constitute a quorum.

II. APPROVAL OF MINUTES

Upon motion by Gregory Mooers and seconded by Herring Kalua the minutes of the May 10, 2017, meeting of the MKMB were unanimously approved.

III. DIRECTOR'S REPORT

A. Thirty-Meter Telescope (TMT) Contested Case

The Hearing Officer submitted her Findings of Fact and Conclusions of Law on July 26, 2017, recommending that the permit be granted with conditions. All parties of the contested case were given the opportunity to submit exceptions to the Hearing Officer's recommendations followed by response briefs to the exceptions. The Board of Land and Natural Resources (BLNR) heard final arguments on September 20, 2017, in Hilo. On September 27, 2017, the BLNR issued their decision granting the permit for the construction of the TMT.

Prior to the BLNR's decision, several motions to stay were filed and subsequently denied because the motions were premature. One motion for reconsideration was filed which the BLNR denied. Appeals to the Supreme Court by parties opposing the permit for the TMT project have been filed.

B. Flores vs. Board of Land and Natural Resources Lawsuit

In June 2017, the Hawaii Supreme Court accepted the transfer from the Intermediate Court of Appeals (ICA) Kalani Flores' appeal of BLNR's denial of his request for a contested case. Mr. Flores' appeal is about his request for a contested case regarding BLNR's granting a consent to the University to enter into a sublease agreement with the Thirty-Meter Telescope International Observatory. Briefs and answering briefs were filed by the parties including

the Department of Land and Natural Resources (DLNR) and the University. The Supreme Court has not yet scheduled a date for oral arguments.

C. Office of Hawaiian Affairs (OHA) Lawsuit

The Office of Hawaiian Affairs filed a Complaint for Declaratory and Injunctive Relief, Accounting, Restitution, and Damages against the state, University of Hawaii, DLNR, and others. The complaint was filed in Circuit Court on November 7, 2017. To date OHA has not yet served the university.

D. Updates on Summit Projects

The University of Hawaii 2.2-meter telescope repair and maintenance project is nearly complete. The project designer, contractor, and University of Hawaii at Hilo (UHH) Facilities and Planning are going through the punch list. This project involved the repainting of the dome, replacement of the siding of the facility, and some electrical and internal upgrades.

The NASA Infrared Telescope's (IRTF) dome refoil project got underway in August. This project involves removing the existing foil and resurfacing the dome with a new metallic foil.

E. Hoku Ke'a Telescope

UH Hilo will be issuing a request for proposals (RFQ) seeking bidders to remove the non-working telescope in the Hoku Ke'a summit facility. It is anticipated that the RFQ may be out in late November or early December. It is estimated that a contractor will be selected sometime in February 2018.

F. Court Case Involving Graffiti in the Mauna Kea Science Reserve and Mauna Kea Ice Age Natural Area Reserves

The individual suspected of criminal property damage by defacing the Submillimeter Array (SMA) property and rocks in the Natural Area Reserves with graffiti appeared in court on June 20, 2017. Maunakea Chief Ranger Paiva, with a Hawaii County police officer as a witness, served the suspect with a trespass notice barring her from entering University of Hawaii's (UH) managed lands for one year. Court dates were set and subsequently cancelled or deferred. Two Maunakea rangers have been called as witnesses.

G. Annual Report to the Board of Land and Natural Resources (BLNR)

The annual report to the BLNR on the status of the implementation of the Comprehensive Management Plan (CMP) was submitted in August 2017. Most of the management actions are considered on-going meaning these are part of the Office of Maunakea Management's (OMKM) stewardship responsibilities for which there is no end date unless OMKM or UH is no longer managing the mountain. Many of the other management actions are considered as in-progress and are currently being worked on.

H. Environmental Assessment (EA) for the Ingress/Egress and Parking Project at the Visitor Information Station (VIS)

The final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) was published in the August 23, 2017, publication of the Environmental Notice. No legal challenges to the FONSI were filed. A Conservation District Use Application was prepared and submitted to the Office of Conservation and Coastal Lands (OCCL) on November 20, 2017. Once OCCL reviews the application for completeness the BLNR will have 180 days, unless extended, to take action.

I. Outreach

OMKM continues its outreach efforts to groups who are interested in learning about stewardship on Maunakea. Presentations have been made to various community groups. OMKM attended a community event in Keaukaha showcasing Maunakea's unique biota and offering children's activities. Director Nagata was invited to do an interview with Sherry Bracken on OMKM's management activities and other mountain-related matters. The interview aired on October 22, 2017, on Lava 105.3 and can also be heard on podcast on the station's webpage.

Background information on the current management structure, roles and responsibilities of OMKM, MKMB, and Kahu Kū Mauna Council (KKMC) was provided to Roy Takemoto, executive assistant to Mayor Kim. Doug Simons and Director Nagata hosted Representative Mark Nakashima and showed him a site west of Halepōhaku as a potential area for a well-designed visitor center and discussed the challenges UH faces in managing the mountain. In November 2017 OMKM, 'Imiloa, Maunakea Support Services, and Keck Observatory hosted the House Finance Committee and staff members to a visit to Maunakea showing them the potential site for a visitor center. Short presentations were given during lunch followed by a tour of the Keck Observatory.

J. Kona-Kohala Chamber of Commerce Award for Cultural Heritage

The Kona-Kohala Chamber of Commerce honored OMKM with its 2017 Pualu Award for Cultural Heritage. OMKM was recognized for its long-term monitoring plan which provides action steps to monitor, protect and preserve the more than 200 historic properties in the Science Reserve.

K. Administrative Rules

There has been no movement on the rules. The last we heard is that the governor requested the UH Board of Regents (BOR) not to submit the draft rules to him for his consideration and approval to allow UH to hold public hearings on the draft rules. Rules would help facilitate OMKM in its management of some major issues such as access.

Gregory Mooers asked what was involved in the process of drafting the rules. Director Nagata explained the process involved consultation with DLNR and other agencies. We are obligated by law to make sure our rules are consistent with DLNR's rules including the Forest Reserve and NAR, which surrounds UH's managed lands. During that process open houses were held where the public could review and comment on the draft rules. Short surveys were also handed out to those who attended the open houses. Based on the survey, most agreed with the draft rules because it would protect the resources as well as insure the safety of those visiting the mountain. Comments received were taken into consideration and a final draft of the rules was prepared. The final draft was taken to Kahu Kū Mauna (KKM) for review and then to this Board for its review and recommendation. A recommendation was given by this Board that the UH BOR adopt the rules and forward it to the governor for his approval to give the university the authority to take the rules out for public hearings. An action memo was sent to the BOR, but it has not yet been put on the agenda.

Chair Chun stated this has been a concern for many of us. He discussed with Director Nagata about making a request to the University seeking a legal opinion regarding what the office can legally do to enforce the principles and intent of those rules in the absence of rules.

Mr. Mooers suggested adding a second part to that of which if we do not have the authority to enforce rules now, give us a process by which we could enforce rules. If we do not have the authority now, what will we have to do in order to get that authority?

Roger Imoto commented requesting legal opinion is one thing but working with enforcement personnel would be very difficult. Unless you have rules, they cannot enforce it.

Regent Benjamin Kudo did not see any problem with the request. It would be a benefit to the Board to have that request and a reply in writing so that if the question arises in the future, the Board has a legal opinion to rely on provided it does not breach any client privilege.

Regent Wayne Higaki agreed with Regent Kudo. In addition, he would look for an avenue to request the BOR for some additional help as well.

Action

Chair Chun asked for a motion requesting a legal opinion from the University Office of General Counsel on what authority OMKM/MKMB has in the absence of rules, as well as a process for enforcement to the extent that this situation continues.

It was moved by Gregory Mooers and seconded by Herring Kalua to request for a legal opinion from the Office of General Counsel. The motion was carried unanimously.

IV. KAHU KŪ MAUNA COUNCIL (KKMC)

Shane Palacat-Nelsen (by phone) reported the Council had preliminary discussions on the decommissioning of the Caltech Submillimeter Observatory (CSO). The Council recognizes this is the first telescope to be decommissioned and setting the ground work for future telescopes. Other topics include the CRs (CMP management actions related to cultural matters); safety and maintenance concerns for the mauna, particularly with regard to cultural and natural resource sites; and nomenclature, naming of celestial bodies; and outreach.

Chair Chun expressed appreciation on behalf of the MKMB of the work the Council does and acknowledged that when the CRs were returned back to the Council it caused some frustration and consternation. There was quite a bit of community concern regarding the CRs.

V. Committee Reports

A. Environment Committee

Fritz Klasner reported there has been two committee meetings since the last Board meeting in May. In late May, Jordan Zarders presented his preliminary thesis results, reviewing elements of the Maunakea Invasive Species Management Plan. On November 8th Heather Stever presented a summary of her Ph.D. thesis topic as well as on behalf of Brad Riell, both of whom are working on their Ph.D. at UH Mānoa in entomology. Ms. Stever will be looking at the genetics of the wēkiu bug and aʻa bug. Mr. Riell is looking more broadly at arthropod community food webs.

On November 14th the oral thesis defense was held for both Jessica Kirkpatrick and Jordan Zarders. Their written portion is anticipated in early January. Ms. Kirkpatrick's presentation was on wēkiu bug habitat restoration and she has some recommendations for restoration. Mr. Zarders' thesis was on invasive species detection and prevention methods in the context of existing Maunakea Invasive Species Management Plan protocols. These protocols are the policies and practices that we currently have in place. His study also includes identification of potential threats to alpine ecosystems that may be present at observatory base facilities. A few highlights of his presentation include regular cleaning of vehicles being more effective at reducing potential threats over once a year cleaning, cleaning at lower elevations rather than at the Saddle Road junction, and considering prophylactic bait in vehicles as a supplement. Upon completion of his thesis, OMKM will evaluate the Invasive Species Management Plan and amend accordingly.

Norbert Schorghofer published a paper on Maunakea permafrost. There was also a paper on snow cover trends on Maunakea and Mauna Loa from the UH Mānoa Meteorology Department. Tom Giambelluca submitted a draft for internal review on his climate monitoring proposal.

The annual monitoring of wēkiu bugs, alien species, and historic properties was completed over the summer. No new threats were identified. Of interest was the discovery of a cat skeleton at Halepōhaku.

Darcy Yogi started graduate school in August. We are currently in the process of recruiting for her position. Ms. Yogi presented at the Hawaii Conservation Conference on some of the work she had been doing this past summer.

Kālepa Baybayan will be speaking on traditional navigation at this Thursday's Maunakea Speaker Series. The attendance at these speaker series are increasing as well as the interest in presenting.

Chair Chun commented on how pleased he is with the relevance of the work our students are doing to what the office does and is actually used to help inform our management plans.

B. Cultural Resources

Lukela Ruddle reported the 2017 annual assessment of historic properties on UH-managed lands has been completed. The monitoring of historic properties is in fulfillment of the CMP management action CR10. The end-of-field report has been submitted.

The first draft of the education and outreach plan has been prepared and is undergoing review. This plan is called for in the CMP (EO-1).

We are working on new outreach materials such as an activity book for elementary school students. If this is well received, we have content for more books along this line.

While this is not a specific management action throughout the CMP, the use of interpretive signs is mentioned, particularly in the cultural resources management plan. KKMC did not want site specific signs as it would call too much attention to the site, nor a proliferation of signs. The signs for both natural and cultural resources will be more general topics such as cultural landscape without pinning it to a specific site. Placement of these signs will be in places that do not cause traffic problems.

John De Fries and Kaʻiu Kimura gave a presentation on the naming of celestial bodies. Doug Simons gave a great presentation on how things are named. One idea is that we could have astronomers get together with language students to name some of the celestial bodies. Mr. Klasner had a great idea about expanding naming to places on the mountain that do not have an official map name.

We are working on cultural displays, in conjunction with 'Imiloa, for the Visitor Information Station (VIS). One suggestion was to use the Hawaiian moon calendar which could be changed according to the Hawaiian moon phases. We are also working with the VIS on product selection and placement of more culturally relevant products. Ms. Ruddle thanked Stewart Hunter, Janno Scheer and the VIS staff for a well-organized VIS and store. They have dedicated a room for cultural displays.

Mr. Imoto inquired if already named sites would be looked into. Sometimes the name of a site might not be relevant. Ms. Ruddle stated that is an interesting idea and something that could be looked into as well.

VI. NEW BUSINESS

A. Approval of Kahu Kū Mauna Council Nominee - Chad Kālepa Baybayan

(This agenda item was addressed after Mr. Palacat-Nelsen's report under IV. Kahu Kū Mauna Council.)

Chair Chun stated the nominee is Chad Kālepa Baybayan who is familiar with the function of the Office and responsibility of the Council.

Mr. Palacat-Nelsen commented that Mr. Baybayan was the chair when he was appointed to the Council. His depth of leadership qualities and knowledge will bring a lot to the Council. The Council still consults him even as a non-member on many things. Mr. Baybayan would be a great asset to the Council.

Action

It was moved by Gregory Mooers and seconded by Herring Kalua to approve the nomination of Chad Kālepa Baybayan to the KKMC. The motion was carried unanimously.

B. Request to Install New Exterior Transformer at the W. M. Keck Observatory

The W. M. Keck Observatory (WMKO) proposes to remove an existing HELCO transformer (750 kVA) from within the observatory and replace it with a new, weatherproof equivalent at a safer location immediately outside the summit facility. This exterior configuration is similar to other summit observatories whose transformers are located outside their facilities.

Purpose and Benefits

WMKO proposes to install a new transformer outside its summit building and remove their interior HELCO transformer. WMKO is concerned that the aging interior transformer poses a risk of fire and significant potential harm/damage to WMKO personnel, the facility, and the public. HELCO has reviewed and approved this proposal and will coordinate on the removal and new installation.

Kahu Kū Mauna Council

This proposal was included in WMKO's 5 Year Plan to OMKM and in-depth consultation was requested. KKMC reviewed the proposal on September 17, 2017. As a result of the consultation with the Council, WMKO revised its proposal by clarifying the number of bollards needed and the advantages of locating the transformer outside the building.

DLNR Rules

DLNR will be contacted and applicable site plan or permits obtained pursuant to administrative rules in the Conservation District. The project will not proceed until appropriate approval is obtained.

Comprehensive Management Plan

WMKO's proposal contains a list of relevant CMP actions and measures and describes compliance actions.

Recommendation

OMKM recommends the MKMB classify this proposal a minimal impact project based on the following:

1. The proposed request seeks to replace aging equipment and reduce risks to persons and property.
2. The project does not increase the size of the facility or area of disturbance.
3. There are no archaeological sites in the immediate area.
4. It is expected that the immediate surroundings and summit region will experience negligible impact from this project.

If this project is classified minimal impact, OMKM recommends WMKO be allowed to proceed with the permit application.

Conditions

OMKM recommends the following conditions:

1. 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).
2. All project participants must attend a Maunakea orientation *prior to* participating in field work.
3. Use a 4-wheel drive vehicle when traveling above Halepōhaku.
4. Allow OMKM Rangers to visit and monitor activities.
5. Comply with all actions and measures described in the proposal, including (community) benefits, CMP compliance list, and mitigation measures.
6. Ensure that loose tools or equipment are not left unattended and are properly stored at the end of each day.
7. 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 120mph winds.
8. All improvements shall be designed and installed to withstand the severe weather conditions on the mountain.
9. 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.
10. Employ invasive species prevention best practices, including inspections of materials by a DLNR-approved biologist, as identified in the *Maunakea Invasive Species Monitoring Plan*, as appropriate prior to entering UH managed lands.
11. 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 ¾ full prior to transport to the summit (unless used as the fuel source for transport to the summit).
12. 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.
13. Nēnē (*Branta sandvicensis*) may be present. If a nēnē appears within 100 feet (30.5 meters) of ongoing work, all activity should be temporarily suspended until the animal leaves the area of its own accord. Feeding of nēnē is prohibited.
14. The project approval may not be transferred or assigned. All persons associated with this project must carry a copy of the permit while they are working on University-managed lands.
15. Unless otherwise stated in the proposal, upon project completion copies of all data, field notes, photos, log books, collected specimens, and other forms of documentation will be shared with OMKM for future, unrestricted use by OMKM or its designee. All geospatial data, metadata or applications must be in a format compatible with OMKM GIS software or other industry standard identified in advance.
16. No use of mechanized equipment is allowed unless authorized by this permit.
17. Electronic and paper copies of all publications resulting from the work will be provided to OMKM.
18. Identify and comply with other permit requirements, such as County of Hawaii building permits or Department of Land & Natural Resources (see both any applicable DLNR permit and [HAR §13-5-42 Standard conditions](#)).
19. 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.”
20. 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 four weeks prior to the proposed activity.
21. 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 (when applicable) DLNR approval. Projects not completed within this timeframe are not allowed to continue (or commence) without explicit, prior, written approval from OMKM.

Discussions

Mr. Mooers asked if this project will require a Conservation District Use Permit (CDUP). Director Nagata replied if this project is approved, DLNR will be contacted for the permitting process.

Action

It was moved by Gregory Mooers and seconded by Herring Kalua to classify this as Minimal Impact and recommend WMKO be allowed to proceed with the permit application with conditions as proposed. The motion was carried unanimously.

C. Biosecurity Signs - Relocate from the Natural Area Reserves to the Mauna Kea Science Reserve

OMKM proposes to install boot brush stations at three locations jointly selected by OMKM and DLNR's Division of Forestry and Wildlife (DOFAW). Stations are identical to those installed previously by DLNR on DOFAW lands. Two stations will be installed at the Halepōhaku midlevel area. A third station would be relocated from its current site in the Mauna Kea Ice Age Natural Area Reserve (NAR) to the adjacent lower Lake Waiau trailhead at Park 2. If approved, installation should be completed in 2018.

Purpose and Benefits

Boot brush stations were most recently developed by DLNR to educate the public about reducing the spread of Rapid 'Ōhi'a Death (ROD) and other invasive species risks. Stations are proposed only for use on existing disturbed and developed lands, in conjunction with other access infrastructure.

Kahu Kū Mauna Council

Kahu Kū Mauna Council (KKMC) reviewed the proposal on July 13, 2017. Council members asked what would happen to all the material brushed off from boots. Material brushed off by the boot brushes would be removed as part of Invasive Species Monitoring. The KKMC consensus decision was to proceed with this installation.

DLNR Rules

DLNR will be contacted and applicable site plan or permits obtained pursuant to administrative rules in the Conservation District. The project will not proceed until appropriate approval is obtained.

Comprehensive Management Plan Compliance

The proposal contains a list of relevant CMP actions and measures and describes compliance actions.

OMKM Recommendation

OMKM recommends the MKMB classify this proposal a minimal impact project based on the following:

1. This project is a collaborative effort with the DLNR DOFAW.
2. Signs and infrastructure are provided by DLNR and identical to boot brush stations already in place at trailheads to the Humu'ula Trail on adjacent DLNR NAR and Forest Reserve lands.
3. This project will help educate the public on reducing the spread of Rapid 'Ōhi'a Death (ROD) and other invasive species risks.
4. There are no archaeological and no historic sites in the immediate area.
5. It is expected that the immediate surroundings and summit region will experience negligible impact from this project.

If this project is classified minimal impact, OMKM recommends it be allowed to proceed with the permit application.

Conditions

OMKM shall comply with the following conditions:

1. All project participants must attend a Maunakea orientation *prior to* participating in field work.
2. Use of 4-wheel drive vehicles when traveling above Halepōhaku is required.
3. Allow OMKM Rangers to visit and monitor activities.
4. Comply with all actions and measures described in the proposal, including (community) benefits, CMP compliance list, and mitigation measures.
5. Ensure that loose tools or equipment are not left unattended and are properly stored at the end of each day.
6. In preparation for high wind conditions protocols must include measures to ensure debris and equipment are not blown from the job site.
7. All improvements shall be designed and installed to withstand the severe weather conditions on the mountain.
8. 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.
9. 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.
10. 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.
11. 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.
12. The project must be completed within the time frame specified in the proposal and (when applicable) DLNR

approval. Projects not completed within this timeframe are not allowed to continue (or commence) without explicit, prior, written approval from OMKM.

Discussions

Mr. Mooers asked if the boot brush that will be relocated from the NAR will be maintained or just relocated. Director Nagata replied it will just be relocated.

Action

It was moved by Herring Kalua and seconded by Gregory Mooers to classify this as Minimal Impact and recommend OMKM be allowed to proceed with the permit application with conditions as proposed. The motion was carried unanimously.

D. Request to Install an All-Sky Meteor Orbit System (AMOS) at the Submillimeter Array (SMA)

The SMA requests to install an AMOS on Maunakea (AMOS-MK) camera as part of the Video Meteor Detection Above Pacific Ocean project from the SMA hangar rooftop to conduct automated meteor observations.

Purpose and Benefits

The Pacific Ocean is not currently covered by any meteor detection system. AMOS-MK will provide monitoring coverage for meteor activity of the Pacific Ocean region and increase the global longitudinal detection coverage for meteors as well as meteor orbits. A single AMOS station can detect 20,000 meteors per year, and a pair of nearby stations, such as AMOS on both Maunakea and Haleakalā, can derive meteor orbits. The public will have access to a variety of information about meteor activity and orbits, meteor still frames, observing conditions, and cloud coverage.

Kahu Kū Mauna Council

Kahu Kū Mauna Council (KKMC) was consulted on October 24, 2017. This is a new project that was not previously included in SMA's Five Year Outlook 2018-2022. The council considered the proposal to be related to operational activities as it did not affect or alter the visual profile or facility viability and simply made use of existing roof space.

DLNR Rules

DLNR will be contacted and applicable site plan or permits obtained pursuant to administrative rules in the Conservation District. The project will not proceed until appropriate DLNR approval has been obtained and any conditions incorporated into the project.

Comprehensive Management Plan Compliance

The proposal contains a list of relevant CMP actions and measures, and describes compliance actions.

OMKM Recommendation

OMKM recommends the MKMB classify this proposal a minimal impact project based on the following:

1. Installation activity will occur entirely upon the existing SMA facilities; specifically, the hangar rooftop.
2. No excavation is involved.
3. There are no historical or archaeological sites in the immediate area.
4. The proposed request does not increase the size of the facility.
5. It is expected that the immediate surroundings and summit region will experience negligible impact from this project.

If this project is classified minimal impact, OMKM recommends SMA be allowed to proceed with the permit application.

Conditions

OMKM recommends the following conditions:

1. 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 Best Management Practices (BMPs), Communication Plans, contract scope questions, etc. must be finalized and approved by OMKM more than 5 days in advance of project commencement).
2. All project participants must attend an OMKM orientation *prior* to participating in work on Maunakea.
3. Use of 4-wheel drive vehicles when traveling above Halepōhaku is required.
4. Allow OMKM Rangers to visit and monitor activities.

5. Comply with all actions and measures described in this proposal, including (community) benefits, CMP compliance list, and mitigation measures.
6. Ensure that loose tools or equipment are not left unattended and are properly stored at the end of each day.
7. 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.
8. All improvements shall be designed and installed to withstand the severe weather conditions on the mountain.
9. Removal and proper disposal 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.
10. 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.
11. 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).
12. Large, heavy, or oversized loads must submit notification to the Maunakea Road Conditions listserv 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.
13. 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.
14. 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.
15. Unless otherwise stated in the proposal, upon project completion, copies of all data, field notes, photos, log books, collected specimens, and other forms of documentation will be shared with OMKM for future, unrestricted, use by OMKM or its designee. All geospatial data, metadata or applications must be in a format compatible with OMKM GIS software or other industry standard identified in advance.
16. No use of mechanized equipment is allowed unless authorized by this permit.
17. 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).
18. 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.”
19. 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.
20. Electronic and paper copies of all publications resulting from the work will be provided to OMKM.
21. Notify OMKM in writing when field activity associated with the project is completed.
22. The project must be completed within the time frame specified in the proposal and (when applicable) DLNR approval. Projects not completed within this timeframe are not allowed to continue (or commence) without explicit, prior, written approval from OMKM.

Discussions

Debbie Ward asked if this was the installation previously called HATS. Both Mr. Mooers and Chair Chun replied it was not. Ms. Ward then asked if it was being run by the same organization. Director Nagata replied yes.

Action

It was moved by Gregory Mooers and seconded by Herring Kalua to classify this as Minimal Impact and recommend SMA be allowed to proceed with the permit application with conditions as proposed. The motion was carried unanimously.

E. Request to Install ‘Ike Wai Precipitation Collector on the University of Hawaii (UH) 88-inch Telescope Project Request

On behalf of the UH School of Ocean and Earth Science and Technology, OMKM proposes to install a precipitation collector on the roof of the UH88” telescope. The collector is passive, i.e., collecting only precipitation. It will be

visited (emptied) quarterly by UH Mānoa graduate students. If approved, installation would occur in early 2018 and remain for up to five years.

Purpose and Benefits

The purpose of this 'Ike Wai component is to construct a model of flow and connectivity that integrates isotope measurements, general groundwater chemistry, with land use and aquifer matrix geochemistry. Precipitation samples will be collected along transects on the major mountains, and where possible, co-located with existing precipitation measurement stations.

Kahu Kū Mauna Council

Kahu Kū Mauna Council (KKMC) was consulted on October 24, 2017. No concerns were identified.

DLNR Rules

DLNR will be contacted and applicable site plan or permits obtained pursuant to administrative rules in the Conservation District. The project will not proceed until appropriate approval is obtained.

Comprehensive Management Plan Compliance

The proposal contains a list of relevant CMP actions and measures, and describes compliance actions.

OMKM Recommendation

OMKM recommends the MKMB classify this proposal a minimal impact project based on the following:

1. This project is a collaborative effort with UH Mānoa and other land managers including the DLNR.
2. There are no archaeological and no historic sites in the immediate area.
3. It is expected that the immediate surroundings and summit region will experience negligible impact from this project.

If this project is classified minimal impact, OMKM recommends it be allowed to proceed with the permit application.

Conditions

UH School of Ocean and Earth Science and Technology shall comply with the following conditions:

1. 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).
2. All project participants must attend a Maunakea orientation prior to participating in field work.
3. Use of 4-wheel drive vehicles when traveling above Halepōhaku is required.
4. Allow OMKM Rangers to visit and monitor activities.
5. Comply with all actions and measures described in the proposal, including (community) benefits, CMP compliance list, and mitigation measures.
6. Ensure that loose tools or equipment are not left unattended and are properly stored at the end of each day.
7. 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 120mph winds.
8. All improvements shall be designed and installed to withstand the severe weather conditions on the mountain.
9. Removal and proper disposal 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.
10. 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.
11. 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.
12. 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.
13. No use of mechanized equipment is allowed unless authorized by this permit.
14. Identify and comply with other permit requirements, such as County of Hawaii building permits or Department of Land & Natural Resources (see both any applicable DLNR permit and HAR §13-5-42 Standard conditions).

15. 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”.
16. Electronic and paper copies of all publications resulting from the work will be provided to OMKM.
17. Annual and final reports must be submitted to OMKM. OMKM will provide guidance on content to be included in such reports.
18. A brief, approximately 1-page, non-technical summary suitable for public outreach (school groups, community meetings, newsletter articles, etc.) must be provided to OMKM within 90 days of project completion or publication. Photos and illustrations are encouraged.
19. Notify OMKM in writing when field activity associated with the project is completed.
20. The project must be completed within the time frame specified in the proposal and (when applicable) DLNR approval. Projects not completed within this timeframe are not allowed to continue (or commence) without explicit, prior, written approval from OMKM.

Discussions

There were no questions or comments from the Board or the public.

Action

It was moved by Roger Imoto and seconded by Gregory Mooers to classify this as Minimal Impact and recommend OMKM, on behalf of the UH School of Ocean and Earth Science and Technology, be allowed to proceed with the permit application with conditions as proposed. The motion was carried unanimously.

F. Information Only: Safety & Resource Protection - Parking Signs (Halepōhaku) and Preventing Vehicle Use Off-Road (Astronomy Precinct)

Mr. Klasner stated DOCARE pointed out some concerns about potential off-road vehicle use or people driving off of roads and suggested we put some rocks in areas where people are leaving the roadway. OMKM will be submitting a request to install traffic control signs below the VIS and off-road vehicle stops in the summit region. Both projects address immediate and ongoing public safety and resource damage concerns.

Purpose and Benefits

The purpose of installing traffic signage is to provide clearer directions to visiting motorists for improved traffic flow and safety around the public midlevel facilities. This is an interim management action and signage is expected to be revised pending the VIS Ingress/Egress project (HA-5B DEA).

The purpose of the vehicle stops is to protect resources and visitor safety in the summit region and assist the DLNR Division of Conservation and Resources Enforcement (DOCARE).

Kahu Kū Mauna Council

This project was not included in any prior 5 year plans. KKMC was consulted on November 14, 2017. No concerns were identified.

DLNR Rules

DLNR will be contacted and applicable site plan or permits obtained pursuant to administrative rules in the Conservation District. The vehicle stops project is designed in coordination with DOCARE. Any changes requested by DLNR will be implemented as soon as possible.

Comprehensive Management Plan Compliance

The proposal contains a list of relevant CMP actions and measures, and describes compliance actions.

G. Election of Officer - 1st Vice Chair

With the resignation of Hannah Springer, there is an empty seat for a 1st vice chair. Chair Chun opened the floor for the nomination of a 1st vice chair.

Herring Kalua nominated Doug Simons for 1st vice chair and Gregory Mooers seconded the motion. The motion was carried unanimously.

VII. OLD BUSINESS

A. Submillimeter Array - Request for Permanent Continuation of Hungarian Automated Telescope (HAT)

The SMA is requesting to make the HATs installation permanent in order to continue exoplanet surveys. The two existing HATs automatically perform astronomical observations every night the weather is suitable. No change in operations is anticipated.

Kahu Kū Mauna Council

KKMC was consulted on July 13, 2017. KKMC requested that if there are any issues or changes arising from the HAT, that these would be included on SMA's 5 Year Plan. Installation of the first HAT on the SMA hangar roof was approved on December 3, 2002. Installation of the second HAT was approved after-the-fact on June 26, 2012 along with authorization to operate both HATs for five years. Continuation of HAT operations was included in SMA's Five Year Outlook 2017-2021, submitted on December 1, 2016, and was also previously listed in the SMA Five Year Outlook 2016-2020.

DLNR Rules

DLNR will be contacted and applicable site plan or permits obtained pursuant to administrative rules in the Conservation District. The project will not proceed until appropriate DLNR approval has been obtained and any conditions incorporated into the project.

Comprehensive Management Plan Compliance

The proposal contains a list of relevant CMP actions and measures and describes compliance actions.

OMKM Recommendation

OMKM recommends the MKMB classify this proposal a minimal impact project based on the following:

1. No change in operations is anticipated.
2. No excavation is involved.
3. There are no historical or archaeological sites in the immediate area.
4. The proposed request does not increase the size of the facility.
5. It is expected that the immediate surroundings and summit region will experience negligible impact from this project.

If this project is classified minimal impact, OMKM recommends SMA be allowed to proceed with the permit application.

Conditions

OMKM recommends the following conditions:

1. All project participants must attend a Maunakea orientation *prior to* participating in field work.
2. Use of 4-wheel drive vehicles when traveling above Halepōhaku is required.
3. Allow OMKM Rangers to visit and monitor activities.
4. Comply with all actions and measures described in the proposal, including (community) benefits, CMP compliance list, and mitigation measures.
5. Ensure that loose tools or equipment are not left unattended and are properly stored at the end of each day.
6. 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 120mph winds.
7. All improvements shall be designed and installed to withstand the severe weather conditions on the mountain.
8. 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.
9. 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.
10. 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).
11. 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.
12. 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.
13. Unless otherwise stated in the proposal, upon project completion, copies of all data, field notes, photos, log books, collected specimens, and other forms of documentation will be shared with OMKM for future,

- unrestricted use by OMKM or its designee. All geospatial data, metadata or applications must be in a format compatible with OMKM GIS software or other industry standard identified in advance.
14. No use of mechanized equipment is allowed unless authorized by this permit.
 15. Identify and comply with other permit requirements, such as County of Hawaii building permits or Department of Land & Natural Resources (see both any applicable DLNR permit and [HAR §13-5-42 Standard conditions](#)).
 16. 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.
 17. Electronic and paper copies of all publications resulting from the work will be provided to OMKM.
 18. Notify OMKM in writing when field activity associated with the project is completed.
 19. The project must be completed within the time frame specified in the proposal and (when applicable) DLNR approval. Projects not completed within this timeframe are not allowed to continue (or commence) without explicit, prior, written approval from OMKM.

Discussions

Mr. Mooers asked if there has been any problem with the operations and if the footprint would change in any way. Director Nagata replied in the negative to both. Does it require any equipment as far as servicing and getting up? Simon Radford, with the SMA, replied these are automated telescopes and are mounted on the roof of the SMA hangar. There is an access ladder through the hangar through a hatch on the roof for personnel access. If in the future these devices need service, an existing SMA forklift would be used to remove the device from the roof for service and then it would be placed back on the roof.

Ms. Ward asked if this is a super telescope? Is this considered a telescope independent of the SMA? Does it have a sublease and is it paying rent?

Mr. Radford described this instrument and stated these are small sky survey telescopes and are operated by the Smithsonian Astrophysical Observatory (SAO) under the auspices of the scientific program of the SMA. The size is a little bigger than roughly half the size of one of these tables and are fully automatic. They open up when the sky is clear, take pictures all night, and then close in the morning. The SAO is the major partner of the SMA.

Ms. Ward inquired if a sublease is required and, if so, has that been considered or planned for. Director Nagata replied no because it is SAO and it is on their property. The SMA is an SAO property.

Ms. Ward further asked if this was an amendment to the sublease. Director Nagata replied no, it is not an amendment to the sublease. Ms. Ward asked why not? Chair Mooers explained typically you would have an amendment to a sublease if you were changing ownership or operational entities, but this is the same entity. It is a piece of equipment that is on their existing property. He would not characterize it as a new telescope. It is the same as these other projects. If we put a rain gauge up and put a bucket to collect rain, we would not do a new sublease because it is the same entity doing the work.

Action

It was moved by Gregory Mooers and seconded by Herring Kalua to classify this as Minimal Impact and recommend SMA be allowed to proceed with the permit application with conditions as proposed. The motion was carried unanimously.

B. Information Only: Caltech Submillimeter Observatory (CSO) Decommissioning

Peter Young (Ho'okuleana LLC) and Ashley Kierkiewicz (Hastings and Pleadwell) provided an update on CSO's decommissioning process. They are subcontractors under M3 Engineering, the primary contractor for CSO's decommissioning.

Mr. Young informed the Board that in 2009 Caltech indicated its intent to decommission the CSO. In 2015 they filed a notice of intent which later was presented to this Board. Mr. Young is here to personally inform the Board that the process is moving forward. A team has been selected, the process is starting, and as noted an environmental assessment is being prepared. There will be a pre-assessment consultation/scoping document to be distributed. They met with the Environment Committee as well as with KKMC and are here to inform the Board personally.

Chair Chun appreciated the personal appearance from Mr. Young and asked about a general timeline when the announcement may become public. Mr. Young stated it could very likely be as early as next week.

Herring Kalua thanked Mr. Young for taking the time and coming today. Communication is a very important thing.

Mr. Young stated they have a very good working relationship with OMKM. They have regular conference calls with a representative from Caltech as well as the planning and permitting team with OMKM. They have set up a regular schedule for that. They also hope to attend future meetings of this Board, KKMC, the environment committee and the soon-to-be formed decommissioning advisory committee.

Chair Chun asked who the principles on the planning team were. Mr. Young replied it is M3 Engineering, Hastings and Pleadwell, and Ho'okuleana LLC.

Mr. Mooers commented that this is the very first decommissioning and it is absolutely essential that we do this right and follow the Decommissioning Plan. Also, we must be thoughtful the entire way. This is going to be an extremely scrutinized process and we want to make sure we do not fumble the ball anywhere along the line. You are going to set the standard for every other decommissioning that comes after this. You are doing very important work.

Mr. Young replied they all recognize that and are all excited about participating in this process.

VIII. ANNOUNCEMENTS

A late announcement, but Mr. Klasner announced that Simon Radford was present for the SMA and Grant Hill was present for W. M. Keck Observatory. He apologized for neglecting to announce this earlier.

IX. NEXT MEETING

Board members will be polled for a January 2018 meeting date.

Chair Chun stated the UH Board of Regents will be holding their February 22, 2018, meeting in Hilo. This may be an opportunity for us to kuka with them a little bit and talk about communication between the two boards going forward. Chair Chun will work with Chair Sullivan to see if something can be set up.

Regent Higaki added it might be important for all of the regents to see all of you. Having faces associated with names sometimes help. He encouraged members of the board to be at the meeting if they can.

X. ADJOURNMENT

There being no further business Chair Chun adjourned the meeting at 11:00 a.m.

Respectfully submitted:

Signed by Dr. Gregory Chun
Dr. Gregory Chun, Chair, MKMB

1/30/2018
Date