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Minutes
Regular Meeting

Mauna Kea Management Board
Wednesday, May 11 2016

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

Attending

MKMB: Chair Gregory Mooers, 1st Vice Chair Hannah Kihalani Springer, 2nd Vice Chair/Secretary Gregory Chun, Roger Imoto, Herring Kalua and Douglas Simons

BOR: Wayne Higaki and Barry Mizuno

Kahu Kū Mauna: Shane Palacat-Nelsen

OMKM: Wally Ishibashi, Fritz Klasner, Stephanie Nagata, Scotty Paiva, Dawn Pamarang, Lukela Ruddle, Amber Stillman, Sage Van Kralingen, Darcy Yogi and Joy Yoshina

Others: Mark Chun, John Coney, Kathy Cooksey, Jesse Eiben, Sunil Golwala, N. Gonsalves, Saeko Hayashi, Clyde Higashi, Stewart Hunter, Patrick Kahawaiola'a, Paula Kekahuna, David Lonborg, Wendy Light, R. Pierre Martin, Warren Matsumoto, John McBride, Shirley Pedro, John Roberts, Marianne Takamiya, Barry Taniguchi, Nicolette Thomas, Dwight Vicente, Keahi Warfield, Ross Wilson Jr., and Dwayne Yoshina

I. CALL TO ORDER

Chair Mooers called the meeting of the Mauna Kea Management Board (MKMB) to order at 10:00 a.m.

II. APPROVAL OF MINUTES

Upon motion by Kihalani Springer and seconded by Greg Chun the minutes of the March 9, 2016, meeting of the MKMB were unanimously approved.

III. DIRECTOR'S REPORT

A. Thirty-Meter Telescope (TMT) Contested Case

On May 6th the Board of Land and Natural Resources (BLNR) denied the petitioners' request to have Judge Riki May Amano disqualified as the hearing officer for the TMT contested case because of her family membership in the 'Imiloa Astronomy Center. The BLNR found that "under applicable legal standards, a reasonable person knowing all the facts would not doubt the impartiality of Judge Amano." Based on case law, a hearing officer is entitled to a "presumption of honesty and integrity," and in the case of Judge Amano, that presumption remains in tack. The BLNR also denied the petitioner's objections to the selection process which they believed was improper. The BLNR provided a full discussion that the process they followed was legally sound.

A pre-hearing conference has been set for Monday, May 16 on Oahu. The purpose of this conference is to discuss: 1) the record; 2) the parties; 3) anticipated prehearing motions; 4) motions hearing(s) schedule; and 5) other procedural and logistical matters.

B. Incident at the Very Long Baseline Array (VLBA) Facility

On March 29th there was an incident at the VLBA facility on the mountain involving a man who used his pickup truck to try to gain entry into the VLBA building by ramming his truck into the front doors of the building. He was successful in breaking through the front doors of the atrium, but was unable to get through the second set of doors. The two employees inside the building were shaken but safe. Rangers, police, Division of Conservation and Resources Enforcement (DOCARE), and Pōhakuloa Training Area (PTA) fire all responded to the scene. The scene was secured after the intruder walked out to the main road on his own recognizance.

C. Missing Hiker

The past Monday the Office received a call from hikers who were lost due to fog while hiking the Humuʻula trail. Fortunately they were in cell phone range and were able to talk with the rangers. The rangers tried to isolate the general location of the hikers using the horns on their vehicles and responses from the hikers. Fortunately, the hikers were able to walk out on their own. The Natural Area Reserves office was contacted as well as DOCARE who sent two officers with an all-terrain vehicle.

D. Ingress/Egress Capital Improvement Project

Facilities and procurement are working on finalizing the contract with Jas. Glover on the ingress/egress project fronting the Visitor Information Station (VIS). Because the lowest bid came in relatively high, there is only enough funds to construct a flow through traffic lane alongside the main road and where cars and vans can drop off their passengers on the same side of road as the VIS. A gravel parking lot will be made just below the VIS. This will eliminate parking along the road and across from the VIS reducing the potential for pedestrian accidents, especially at night when the area is completely dark. The ingress/egress and parking on the same side as the VIS is a Comprehensive Management Plan (CMP) management action.

E. Outreach

As in the past years we are visiting new and revisiting previous community groups to update them on the management of University lands on Maunakea. To date, Director Nagata has presented at the Hawaii Leeward Planning Conference and the North Hawaii Rotary Club. We are trying to schedule with other groups around the island.

The celebration of Prince Kuhio's birthday at Panaewa on March 26th was a great event. The Office of Maunakea Management (OMKM) and the Maunakea observatories had fun games, activities, solar viewing, and exhibits for the keiki. The highlight for the keiki was the Easter egg hunt, many of which contained hidden prizes provided by OMKM and the observatories. Free hamburgers, cooked by Doug Simons, were also offered as prizes. It was an opportunity to share with the community some of the wonders of astronomy and what we do on the mountain.

For the second year, OMKM was invited by Kealakehe Elementary School to participate in their Science Day, an afternoon of fun science with students and parents. There were hands-on learning stations and activities provided by OMKM, College of Agriculture, Forestry, and Natural Resource Management, Institute for Astronomy, Thirty-Meter Telescope, Summit Kinetics, and West Hawaii Astronomy Club. This year featured ʻImiloa's portable planetarium MANU (**M**odern and **A**ncient ways of **N**avigating our **U**niverse).

F. Staff Training

As called for in the CMP, training has been initiated for OMKM, VIS and Maunakea Observatories Support Services (MKSS) staff. These are actually overviews and updates of OMKM and what is being done on the mountain. Starting off the training is an overview of the Master Plan, the establishment of a new management structure, the project review process, the CMP and some of the work that OMKM has done over the years. Future sessions will cover in greater detail studies and their findings. These sessions are to keep staff up-to-date and informed so that they in turn can share the information about the resources with the public.

G. Research

The Office is funding a wēkiu bug habitat restoration study which will help to understand if and how wēkiu bug habitat can be restored or created. We are also funding a vector study on how effective various mechanisms, such as vehicles, transport invasive species. Finally, we will be funding a multi-year seabird and bat survey. More details on these projects will be provided as we move forward.

IV. KAHU KŪ MAUNA COUNCIL (KKMC)

Shane Palacat-Nelsen reported the Council's last meeting was on April 12 at Halepōhaku. Canada-France-Hawaii Telescope hosted a tour for Council members. The decommissioning of Caltech Submillimeter Observatory (CSO) and

Hoku Keʻa were discussed. This was the first consultation with the Council regarding decommissioning and the Council had a lot of questions and concerns regarding decommissioning.

Also discussed were CMP management actions CR-6, 8 and 12 regarding visitation of ancient shrines, scattering of cremated remains, and the establishment of buffers around historic sites. Other items discussed were CR-5 and CR-7, removal and placement of offerings and construction of new sites, respectively.

A meeting has been scheduled for May 21 to continue consultations with Native Hawaiian groups and families.

The Maunakea Observatories Support Services ice sensor project proposal was reviewed. The Council's concerns will be addressed when that agenda item is discussed.

V. Committee Reports

Environment Committee

Fritz Klasner reported the Environment Committee last met on May 3rd. A wēkiu bug habitat mapping presentation was given by Nathan Stephenson. In a nutshell, mineralogy is important. Mr. Stephenson can present at a future meeting if there is interest.

The Committee also discussed the decommissioning review. The committee felt it is important to clearly define the concept of restoration and goals. Comments will be submitted as individuals. Two letters were received and will be shared later in the meeting.

Volunteer Events

A weed pull volunteer event with Pahoa Rotary and others from the public was held on May 7 at Halepōhaku. We anticipate summer activity program volunteers in June/July. The second half of the year volunteer dates will be scheduled in the near future and entities that have expressed interest will be contacted.

Invasive Species

Monitoring of invasive species is ongoing. No 'new' news is good news. The Standard Operating Procedures (SOP) presented at the last meeting is undergoing review and edits.

Inventory, Monitoring and Research

OMKM has initiated a project with Dr. Jesse Eiben, at UH Hilo, to evaluate invasive species cleaning/inspection requirement efficacy. This will include technical feasibility of a vehicle car wash facility as identified in the CMP.

Preparations are being made for the annual summer monitoring of invasive species, wēkiu bug and integrated historic property/biota monitoring.

Dr. Julien Pettillion, a visiting researcher from France who has been studying lycosa/hogna spider, will be giving a public presentation on the lycosa/hogna spider at the Institute for Astronomy Hilo on May 27th at 4 p.m. for the Hawaiian Entomological Society.

Outreach

Amber Stillman has revised the resource brochure with assistance from Kahu Kū Mauna; Ena Media; Sustainable Resources Group International, Inc.; U.S. Geological Survey; Hawaiian Volcano Observatory; Dr. Jesse Eiben; and the Natural Area Reserves program.

Staffing

OMKM will have two Pacific Internship Programs for Exploring Science (PIPES) interns this summer, one will be working with OMKM and the other with Dr. Ryan Perroy on his erosion project. In addition, a Hawaii Community College Forest Team student will be interning with OMKM.

Amber Stillman will be going back to school at the University of Hawaiʻi at Mānoa pursuing a Master in Science degree in Hawaiian Studies, Mālama ʻĀina track (resource management). Over the past three years she has been instrumental in both Geographic Information Systems (GIS) data organization, map preparation and a multitude of outreach materials.

VI. NEW BUSINESS

A. Subaru Telescope - Install a Sign and Marking on the Roof of their Facility

As a safety measure, Subaru is seeking to install safety signs on its summit facilities to stop people from walking onto the rooftop. Other physical barriers such as temporary and permanent ropes, fencing and poles were

considered, but were ruled out due to impacts on the landscape, ineffectiveness, and maintenance or other associated costs.

The signs are a means of warning people to stay off the roof. Currently, people are able to access the enclosure support building (ESB) rooftop by walking around the guardrails. Subaru is concerned that people could potentially fall off either side of the curved-shaped roof.

Cautionary signs would be added to existing infrastructure at the following locations:
1. Paint "DO NOT ENTER!" [at least 2" high lettering], on the corridor roof, at the ESB end.
2. Attach a small, square metal sign (maximum size 2 feet by 2 feet) about halfway along the corridor rooftop: "DO NOT ENTER!"
3. Place two small signs (maximum size 2 feet by 2 feet) on both sides of the corridor wall that read, "Do not climb cinder."
4. Attach two small signs (maximum size 2 feet by 2 feet) to the guardrails that read, "Do not step over."

Kahu Kū Mauna Council

Kahu Kū Mauna Council reviewed the proposal as part of Subaru's 5-Year Plan on January 20, 2016. The Council encouraged efforts to first address safety concerns without adding barriers (fencing, rope, etc.); and determined that no further consultation was necessary if only signage was to be used.

DLNR Rules

Department of Land and Natural Resources (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 project addresses sub-lease requirements to maintain safe conditions and was reviewed for compliance with the Comprehensive Management Plan.

Recommendation

OMKM recommends this project be classified as Minimal Impact based on the following:
1. The proposed request does not increase the size of the facility.
2. No ground disturbance or excavation is involved.
3. The impact to the immediate surroundings and summit region is minimal.
4. This installation addresses safety and Conservation District Use Permit (CDUP) and sub-lease compliance.

If this project is classified Minimal Impact, OMKM recommends Subaru 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. Employ invasive species prevention best practices, including inspections of materials by a DLNR-approved biologist as appropriate prior to entering UH managed lands.
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.
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. Use a 4-wheel drive vehicle when traveling above Halepōhaku.
10. The 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.
11. No use of mechanized equipment is allowed unless authorized by this permit.
12. Notify OMKM in writing when field activity associated with the project is completed.

13. 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.

Discussion
Chair Mooers noted the concern of equipment and debris potentially being blown around during construction. He is concerned with signage and sharp metal signs and that they are designed and installed in a manner that will withstand the types of severe weather on the mountain. He suggested including to these conditions, and all future conditions, that all improvements be designed and installed to withstand the severe weather conditions on the mountain.

Actions
It was moved by Kihalani Springer and seconded by Herring Kalua to classify this project as Minimal Impact. The motion was carried unanimously.

It was moved by Greg Chun and seconded by Kihalani Springer to approve the project with the conditions as amended to include that all improvements be designed and installed to withstand severe weather conditions and to allow Subaru to proceed with the permit application. The motion was carried unanimously.

B. W. M. Keck Observatory - Permanent Installation of Photovoltaic Panels

The W.M. Keck Observatory seeks to install a 144kW photovoltaic (PV) system on the flat rooftop area between the two telescope domes. This system is in compliance with Hawaii Electric Light Company's (HELCO) Standard Interconnection Agreement (SIA).

The purpose of this project is to invest in a solar PV system to lower Keck's annual operating expenses and to minimize future increases in energy costs. This PV system is part of Keck's goal of "going green" by reducing CO_2 emissions. Keck expects an estimated 10%-15% reduction in current electrical usage and to offset over 482,000 pounds of carbon annually.

This project involves the installation of 360 solar panels, associated equipment, and an electrical interconnect box mounted to Keck's north-facing exterior wall. Phase one involves the installation of a rooftop racking system for the panels followed by the second phase involving the installation of individual panels and the electrical system. Parts of the first and second phases may overlap and performed simultaneously. A forklift will be used to move materials and supplies from the ground level to the roof and will be staged outside of the facility and within Keck's sublease area during periods of construction.

Kahu Kū Mauna
Kahu Kū Mauna Council reviewed the proposal as part of Keck's 5-Year Plan on January 20, 2016. The Council determined that no in-depth consultation beyond the 5-Year Plan consultation already conducted was necessary and that it was consistent with goals of reducing environmental impacts without expanding observatory footprint or presence.

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
This project aligns with CMP management actions IM-11, 12 and 13, relating to energy usage, use of sustainable technologies, and alternative energy sources.

Recommendation
OMKM recommends the MKMB classify this proposal a minimal impact project based on the following:
1. The proposed request does not increase the size of the facility and is solely a request for updated permitting of existing infrastructure.
2. Does not impact any archaeological sites or historic properties, as there are none in the immediate area.
3. Does not require excavation or ground disturbance.
4. The project maximizes infrastructure use with negligible impact to the immediate surroundings and Maunakea Science Reserve.

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

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.
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 appropriate 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. The 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.
12. No use of mechanized equipment is allowed unless authorized by this permit.
13. Notify OMKM in writing when field activity associated with the project is completed.
14. The project must be completed within the timeframe specified. Projects not completed within this timeframe are not allowed to continue (or commence) without explicit, prior, written approval from OMKM.

Discussion

Chair Mooers asked if weather conditions on the mountain would be a problem for their engineering. Mark Devenot, Keck Project Manager, explained M3 Engineering was hired last year to provide the feasibility study for this racking system. It is a very unique racking system where cinder is used to ballast the roofing membrane that keeps weather out of the building. Current building codes and required county codes were used in the calculations that M3 Engineering provided them. With that feasibility study they have a preliminary set of drawings and it is a very well thought out solution for the very special type of roofing system they have. They feel confident that it will withstand any of the adverse weather conditions on Maunakea.

Rich Matsuda added the panels are set back from the edge of the roof because the biggest wind uplift would be near the edges. For snow and ice falling off of the domes, the panels have been set back 30 feet from the spring line of the domes on each side.

Chair Mooers asked if Keck would have any problems accepting the conditions as defined. Mr. Matsuda's reply was no,that would be fine.

Roger Imoto thought that HELCO limited the interconnect to 100kW. Mr. Matsuda explained they are not going to do a Net Metering Agreement, but instead will be doing a Standard Interconnection Agreement. Their usage of power is so high 24 hours a day that there is no return of energy back to the grid. They are in the process of getting the agreement with HELCO.

Actions

It was moved by Kihalani Springer and seconded by Doug Simons to classify this project as Minimal Impact. The motion was carried unanimously.

It was moved by Kihalani Springer and seconded by Greg Chun to approve the project with the conditions as amended to include that all improvements be designed and installed to withstand severe weather conditions and to allow Keck to proceed with the permit application. The motion was carried unanimously.

C. Maunakea Observatories Support Services - Installation of Road Surface Ice Detectors

The Maunakea Observatories Support Services (MKSS) requests to install road surface detectors at five locations on the summit access road prone to (black) ice. This request is a follow-up of the successful operation of a road ice

sensor that was installed on the United Kingdom Infrared Telescope (UKIRT) summit facility in 2013. Over the past three years, this sensor has provided accurate information about road surface conditions, particularly black ice which is virtually invisible to the human eye.

Road surface conditions vary along the summit road; black ice can form on the pavement on some areas, and not in others. Of particular concern are areas prone to black ice, especially on portions of the road with steep declines, limited communication capabilities exist, and there is no public emergency warning infrastructure. There have been incidences in the past where vehicular accidents occurred, some including multiple vehicles, where the presence of black ice was undetected.

This request is to install five, pole-mounted and solar-powered road surface sensors along the Summit Access Road; each with a public emergency warning light and antenna; and one new building-mounted antenna (at W.M. Keck). These sensors will improve the detection and notification of black ice road conditions. In addition, this system will make road closures more strategic by informing the Maunakea Rangers exactly where ice is present on the roadway, and will reduce exposure to hazardous conditions to personnel investigating road conditions.

Pending necessary approvals and weather, MKSS will incrementally install sensors, working from the summit to lower elevation. Installation of each sensor will take approximately one week, followed by a period of adjusting and calibrating the sensor and communication infrastructure. Complete network installation, including testing and calibration could take up to 2 ½ years. All work will be conducted by MKSS.

Kahu Kū Mauna Council
Kahu Kū Mauna Council initially reviewed the proposal as part of MKSS's 5-Year Plan and was consulted again on April 12, 2016. The Council expressed concern regarding employee safety and process of digging holes to support the posts. MKSS will address these concerns during the installation process.

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 is obtained and conditions, if any, incorporated into the project.

Comprehensive Management Plan Compliance
The project was reviewed for compliance with the Comprehensive Management Plan.

Recommendation
OMKM recommends the MKMB classify this proposal a minimal impact project based on the following:
1. The proposed installations occur within five feet of existing pavement and in previously-disturbed ground.
2. There are no archaeological sites in the immediate area.
3. There will not be any impacts to any identified plants, insects or animals in the proposed installation locations.

If this project is classified minimal impact, OMKM recommends MKSS be allowed to proceed, pending DLNR approval and compliance with any requirements.

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.
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. Invasive species prevention best practices will be employed, including inspections of materials by OMKM staff prior to entering UH Managed lands.

10. The 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.
11. No use of mechanized equipment is allowed unless authorized by this permit.
12. Notify OMKM in writing when field activity associated with the project is completed.
13. The project must be completed within the timeframe specified. Projects not completed within this timeframe are not allowed to continue (or commence) without explicit, prior, written approval from OMKM.

Discussion
Chair Mooers asked Mr. Palacat-Nelsen if the Council was comfortable with the assurance from Stewart Hunter, with MKSS, that they will work with the Council regarding their issues; or if he would prefer the Board defer action until the issues are resolved. Mr. Palacat-Nelsen replied the Council is comfortable with the project as it is minimal impact.

Mr. Imoto asked about the holes and sleeving of the holes to put the poles in. Stewart Hunter replied they are not sure yet what is underneath the surface. There is a roadbed there so they can take rocks to build up the roadbed. He does not know if it is strictly cinder. Once they look into that and start then they can make a better determination.

Kihalani Springer asked if erosion does occur while construction is in progress, what would the action be? Mr. Hunter replied if they determine they have to move a large amount of material they will stop, evaluate the situation, and look to sleeve it.

Action
It was moved by Herring Kalua and seconded by Doug Simons to classify this project as Minimal Impact. The motion was carried unanimously.

It was moved by Doug Simons and seconded by Kihalani Springer to approve the project with the conditions as stated and to allow MKSS to proceed pending DLNR approval and compliance with any requirements. The motion was carried unanimously.

D. Cultural Resources - Comprehensive Management Plan Management Actions

Lukela Ruddle reported on the implementation of the following CMP Cultural Resources (CR) management actions:

1. CR-6 - Policy Regarding Guidelines for the Use & Visitation of Ancient Shrines
   CMP item CR-6 states: Develop and adopt guidelines for the visitation and use of ancient shrines. The purpose for developing guidelines is to devise a mechanism that allows for access and use of ancient shrines by cultural practitioners but still being able to preserve the integrity of these historic properties.

   Proposed Policy
   Visitation and use of ancient shines for Hawaiian Cultural observances is allowed, on a case by case basis, on Maunakea lands managed by the University of Hawaii provided the use does not violate Chapter 6E, Hawaii Revised Statutes. The Office of Maunakea Management (OMKM) shall be notified a week prior to any such visit. Notification can be in writing or via email. See the Office of Maunakea Management website for contact information. If there is a group of more than 10 people who wish to visit an ancient shrine they must also submit a Special Request form found on the Mauna Kea Visitor's Center website in addition to the notification to the Office of Mauna Kea Management.

   Kahu Kū Mauna Council
   This guideline was developed after consultation with the Kahu Kū Mauna Council at its April 12, 2016 meeting. The Council agreed to the proposed guideline which included the language that OMKM be notified prior to visiting any ancient shrines.

   Discussions
   Mr. Imoto commented on the limit of 10 people per group. Ms. Ruddle explained there is currently a policy in place where more than 10 people requires a Special Request (SR). Mr. Imoto inquired if groups are getting around that by signing up in groups of 10 with different times, will that be okay? Director Nagata replied the number 10 is based on the Natural Area Reserve (NAR) policy and we are trying to be consistent with our neighbors.

   Mr. Palacat-Nelsen stated the Council's discussion was not to police the visitor, but that OMKM needs to be informed. This is for safety reasons and to make sure the visitor has what they need on the mauna from the management perspective. They hope everyone will understand that it is best practices in our community and

that we are not policing people. Most of the heiau and places visited are not even on our property. They are hoping that practitioners will understand the reason why we have this notification process.

Ms. Springer asked how will people in the community know of these recommended best practices? Ms. Ruddle replied they can go on our website. If there are additional ways to get the information out to the public we can consider that as well. Ms. Springer stated there are a lot of us that do not check websites and suggested an article in the Office of Hawaiian Affairs newspaper or to the Civic Clubs where there is an effort to get the information out to the community.

Gregory Chun commented it is important for people to understand that if it is less than 10 it is a notification to OMKM and not a request for approval. If a group is larger than 10 then besides notifying OMKM, a Special Request must be submitted.

Mr. Imoto asked how this will work with the NAR and their required permits. Ms. Ruddle was not familiar on how it would work with the NAR. Mr. Imoto suggested checking into that.

Action
It was moved by Kihalani Springer and seconded by Herring Kalua to accept the proposed language in the proposed policy as presented to the Board. The motion was carried unanimously.

2. CR-12 Policy Regarding the Establishment of Buffer Zones Around Known Historic Sites in the Astronomy Precinct
The CMP item CR-12 states: "Consult with Kahu Ku Mauna about establishing buffers (preservation zones) around known historic sites in the Astronomy Precinct, to protect them from future development." The establishment of buffer zones for future developments in regard to historic sites will protect and preserve those historic sites from development activities. It will also allow for visitation by cultural practitioners.

Proposed Policy
CR-12: Buffers or preservation zones around known historic sites in the Astronomy Precinct shall be established to protect these sites from potential future development. A buffer zone shall be established on a case by case basis after the Area of Potential Effect (APE) has been determined and approved by the State Historic Preservation Division.

Kahu Kū Mauna
Kahu Kū Mauna reviewed the material at its April 12, 2016 meeting and concurred with the policy that is presented today.

Discussion
Doug Simons asked how many of these sites actually exists now within the Astronomy Precinct? The answer was six. Mr. Simons asked how far away are they from the observatories - roughly? Director Nagata replied there are several in the plateau area between the base of the puu below Subaru and the TMT site. There is one on Puuwēkiu, but it is more than 200 feet from any existing observatory.

Mr. Imoto felt that since these sites are registered with State Historic Preservation Division (SHPD) this policy would be duplicating what SHPD is already doing.

Ms. Ruddle explained our archaeologists monitor once a year and that she is not familiar with SHPD's monitoring of those sites. The buffer zone has been established on these sites already. This would apply to any new development. Any new development would have to go through SHPD. The APE, which may or may not include these sites, would need to be reviewed SHPD. It may be a duplication, but it would be better to have this policy on the books.

Mr. Palacat-Nelsen agreed with the overlapping, however 1) the CMP calls for this process for their own record and, 2) not necessarily because it is registered with SHPD, but to ensure there a monitoring plan or follow up. There is a little overlap on the policy, but he feels it is necessary to bridge it between SHPD and OMKM.

Action
It was moved by Roger Imoto and seconded by Doug Simons to accept and approve the proposed policy as presented to the Board. The motion was carried unanimously.

E. Overview of Decommissioning - Information Only

Mr. Klasner provided a briefing on the decommissioning process as outlined in the CMP. The CMP has two management actions that are directly applicable:

SR-1 Require observatories to develop plans to recycle or demolish facilities once their useful life had ended, in accordance with their sublease requirements, identifying all proposed actions.

SR-2 Require observatories to develop a restoration plan in association with decommissioning, to include an environmental cost-benefit analysis and a cultural assessment.

Site Decommissioning Plan Steps:

1. Notice of Intent (NOI)
   Propose whether a site will be removed, continue operation by a third party, or retrofitted for a different use.
2. Environmental Due Diligence
   Identify if *recognized environmental conditions* exist or possibly exist, such as hazardous material, petroleum products, etc, that pose a material threat to the ground, ground water, or surface water.
   - Phase 1 (survey)
   - Phase 2 - if needed
   - Remedial Action Plan - of needed
3. Site Deconstruction & Removal Plan
   Methods for demolishing, in part or total, observatory, infrastructure, grading, grubbing, etc.
   - Complete removal (starting point for all planning), or
   - Infrastructure capping, or
   - Some combination
4. Site Restoration Plan
   Objectives: 1) Restore the look and feel
   2) Provide habitat for arthropod fauna
   Levels of Restoration:
   - Full restoration - Return the site to its original topography (starting point for all planning)
   - Moderate restoration - Enhance the structure of the physical habitat
   - Minimal restoration - Remove all man-make materials and grade the site

With each step:

- Kahu Kū Mauna Council is consulted
- Environment Committee reviews
- Maunakea Management Board: a) approves, b) not approves, c) request revision and resubmission
- UH President approves only the Remedial Action Plan, Site Deconstruction & Removal Plan, Site Restoration Plan)
- DLNR (OCCL) reviews

Compliance & Permitting

- Environmental Assessment (EA)
  - Alternatives, from Site Decommissioning Plan
  - Cost Benefit Analysis
  - Cultural Assessment
  - Cultural, Natural and Scientific Resources Impacts
  - Identifies a Recommended Alternative
- State Historic Preservation Division
  - Review
- Conservation District Use Application (CDUA)
  - Board-issued Permit

Decommissioning Planning Guidance:

Decommissioning Review Committee (Steps 3 and 4):

- Identify details and considerations to address alternatives
- Help ensure consistency

- Review and provide feedback on Site Deconstruction and Removal Plan and Site Restoration Plan
- Suggested Participants:
  - Decommissioning Facility
  - Landscape Architect
  - Engineer
  - Planner
  - Environmental Consultant
  - Kahu Kū Mauna
  - Environment Committee
  - Maunakea Management Board
  - Institute for Astronomy
  - OMKM

F. Caltech Submillimeter Observatory (CSO) Notice of Intent to Decommission

The Caltech Submillimeter Observatory is requesting approval of their Notice of Intent (NOI) to decommission their telescope. Pursuant to the 2009 Comprehensive Management Plan (CMP) and the 2010 Decommissioning Plan (DP), CSO submitted their NOI to decommission in November 2015. CSO began operating in 1986 and ceased operations in 2015. They first announced their intent to decommission back in 2009.

Purpose

The purpose of the NOI is to notify UH of an observatory's intention to: 1) propose whether their site will be removed; 2) continue use of the observatory by a third party, or 3) retrofit the facility for a different use. The NOI should contain the following:

1. Intentions for site restoration.
2. Site description summarizing of the overall condition and land use, including a description of all structures, equipment and other appurtenances.
3. Site plan(s) drawn to scale showing all existing structures, above and below grade.
4. Available historical information on the development, operation, and use of the site.
5. A description of the pre-construction condition of the site based on available information.
6. Site restoration will be based on pre-construction, topographic condition prior to construction of the observatory.

Proposed Activities

CSO's intent is to remove the observatory and restore the site (as opposed to transferring the site to a 3rd party or retrofit the facility for a different use). CSO intends to:

1. Remove all above ground structures, all surface infrastructure, all conduits and sewer lines, and the top six inches of concrete and asphalt.
2. Backfill the cesspool with native material.
3. Restore the ground by grading the site to approximate pre-construction topography and leave a visual appearance consistent with the original condition.

CSO's NOI contained a site description including a list of the structures and improvements, historical documents, a scaled site layout and grading plan and foundation drawing, and photographs depicting the site prior to construction. CSO recognizes their proposed actions may likely undergo modification to address concerns raised by Kahu Kū Mauna and others during the decommissioning review process.

The CSO started their environmental due diligence process and have all but completed Phase 1. They had a hydraulic oil spill that was identified in early 2000 which constitutes a potential recognized condition and they will need to go to Phase 2.

Kahu Kū Mauna

Kahu Kū Mauna Council was consulted on April 12, 2016. The Council requested that OMKM and CSO proceed with preparation of the Site Deconstruction Plan assuming a starting point of complete infrastructure removal and full restoration, reaffirming the stated DP expectation. OMKM and CSO concur and subsequent documents will be prepared accordingly while complying with the DP and Environmental Assessment requirements to identify alternatives that include infrastructure capping and minimal or moderate restoration levels. Decisions regarding removal and restoration options will be made after consultation with the Council and submittal to the Board.

The Council questioned when doing the cost benefit analysis if economics or money would trump culture. Kahu Kū Mauna also expressed their appreciation to CSO for providing a detailed proposal.

Maunakea Environment Committee
The Environment Committee chose to submit comments on an individual basis, rather than reviewing the NOI as a committee. The Committee requested that the NOI be made publicly available. The Committee remains interested in consulting on details regarding environmental due diligence along with alternatives and choices associated with infrastructure removal and site restoration.

Dr. Jesse Eiben summarized his written testimony urging the Board to consider the total impacts of ecological effects of construction (including decommissioning) and not just single projects. Also make sure it is clear that the two telescope sites are not likely to be ideal restoration sites for endemic arthropods, especially the wēkiu bug. Lastly, to his knowledge, there has not been public justification to the Board, or from the Board, or from the Governor's Office concerning why or how accelerating three telescope decommissioning processes and potentially changing management of 10,000 acres from OMKM to the DLNR Department of Forestry and Wildlife (DOFAW) is to be handled to ensure continued high quality and accountable environmental stewardship of alpine stone desert of Maunakea.

Department of Land and Natural Resources
The Department of Land and Natural Resources, Office of Conservation and Coastal Lands (OCCL) indicated that an Environmental Assessment (EA) should be prepared along with completion of the Site Decommissioning Plan and that a CDUP will be required.

Comprehensive Management Plan Compliance
The decommissioning process is detailed in the 2010 Decommissioning Plan for the Maunakea Observatories, a sub-plan to the 2009 Maunakea Comprehensive Management Plan. The OMKM and Caltech are committed to implementing the decommissioning process in accordance with these plans. Should the Board approve the NOI, OMKM will work with Caltech to establish a "Decommissioning Advisory Committee" to help guide preparation of the Site Deconstruction and Removal Plan, Site Restoration Plan, and Environmental Assessment. This committee would include subject matter experts in fields such as construction management (i.e. civil engineering) and landscape architecture, planning, environmental consulting as well as representation from the Kahu Kū Mauna Council, the Environment Committee, and the Maunakea Management Board.

Recommendation
Approval of CSO's NOI is recommended. CSO has fulfilled the content requirements of the NOI, including existing historical documents. Should the Board approve the NOI, OMKM will work with Caltech to conduct the Environmental Due Diligence review for submittal to the Board for approval and establish the Decommissioning Advisory Committee to advise on preparing a Site Decommissioning Plan and Environmental Assessment.

Discussion
Chair Mooers stated the critical decision here is to see if CSO reviewed their three options and if this is the appropriate action to take. He believes CSO has evaluated all their options and that this is the appropriate course of action for them.

Ms. Springer commented since CSO indicated their intent as far back as 2009, it seems as though they have been moving progressively and deliberately towards this NOI.

Dr. Simons stated they have seen this coming for years and the need to decommission it is mostly driven by the lack of finances. CSO has been a state-of-the-art telescope. There simply is not enough money to keep it afloat and now is the time, as they have hinted for years, to remove the facility. From his perspective within the observatory community, CSO has met the requirements of the NOI and people should understand that when you lack the resources to run these facilities it is a natural consequence to take it down.

Dr. Chun stated relative to this particular matter, he does not see any public submission questioning its decommissioning, or removal, or any desire to take over. He assumes that at some level that conversation has been thought through by different people. He did want to go back to Dr. Eiben's testimony because somewhere in this process, and it may not be during the NOI step, we have to be thinking about the collective impact of decommissioning. He is not sure where in the process this would fit.

Chair Mooers commented that during Chapter 343, the portion that talks about cumulative impacts when doing the environmental analysis would be the opportunity to review cumulative impacts in conjunction with Chapter 343.

Sunil Golwala, CSO director, stated the issue of total impact is one of the things that will be considered and discussed in future plans for submittal. We need to consider not just the impact of the removal of the observatory and the infrastructure, but impacts elsewhere on the mountain such as fill in holes in the foundation. There will be an analysis of different options to see what these total impacts are.

Ms. Springer asked about outreach to the community concerning the letters received. She felt a letter acknowledging receipt would be the standard operating procedure.

Action
It was moved by Doug Simons and seconded by Greg Chun to approve Caltech Submillimeter Observatory's Notice of Intent to decommission its telescope. The motion was carried unanimously.

G. Hoku Keʻa Telescope Notice of Intent to Decommission

The University of Hawaii at Hilo (UHH) is requesting approval of their Notice of Intent (NOI) to decommission its telescope. Pursuant to the 2009 Comprehensive Management Plan and the 2010 Decommissioning Plan, the UHH submitted its NOI to decommission in September 2015. Hoku Keʻa telescope is located in an observatory structure originally constructed in 1968, and renovated under a permit issues in 2007, for teaching and educational purposes.

Proposed Activities
UHH indicated in its NOI it intends to remove the observatory and restore the site (as opposed to transferring the site to a 3rd party or retrofit the facility for a different use). UHH intends to deconstruct and remove the telescope and observatory structure and restore the site according to a Site Deconstruction and Removal Plan and Site Restoration Plan, both of which will be developed and implemented in accordance with the DP. For documentation and site-specific detail, UHH references the 2006 Environmental Assessment and 2007 Conservation District Use Permit Application.

Kahu Kū Mauna
Kahu Kū Mauna Council was consulted on April 12, 2016. The Council noted that Hoku Keʻa's decommissioning NOI had very limited detail, especially compared to CSO's NOI, and thus the Council had no comments other than to reiterate their position that any decommissioning proceed with preparation of the Site Deconstruction Plan assuming a starting point of complete infrastructure removal and full restoration, reaffirming the stated DP expectation.

At the Council's meeting, three letters were submitted and given in-person. These were testimonies by members of the Native Hawaiian community stating their position against the decommissioning of the Hoku Kea and UKIRT telescopes. The Keaukaha Community Association and Panaʻewa Hawaiian Home Lands Community Association each submitted a letter expressing concern over the potential loss of on-mountain, site-specific education and training opportunities while expressing an interest to "adopt" Hoku Keʻa and UKIRT and continue to have the UHH operate the telescopes should UHH decide not to change their position on the decommissioning of both telescopes.

Keaukaha and Panaʻewa communities together are effectively acting as a third party by ʻadoptingʻ Hoku Keʻa as a demonstration of their support and commitment to the educational and work force opportunities provided by Maunakea astronomy. The third letter was from an individual also expressing similar concerns over the loss of on-mountain, site-specific education and training for local, especially Native Hawaiian, students.

Maunakea Environment Committee
Dr. Eiben's written testimony and comments also apply to Hoku Keʻa's decommissioning. Written testimony was also received by Ms. Heather Kaluna. In summary she urges to not remove the telescope and references the governor's press release from May 2015 and the political implications with TMT. Her vision for Hoku Keʻa is that it can help serve as a bridge within the community and help broaden the base for support for as long as astronomy remains on the mountain.

Department of Land and Natural Resources
The Department of Land and Natural Resources, Office of Conservation and Coastal Lands (OCCL) indicated that an Environmental Assessment should be prepared along with completion of the Site Decommissioning Plan and that a Board of Land and Natural Resources issued CDUP will be required.

Comprehensive Management Plan Compliance
The decommissioning process is detailed in the 2010 Decommissioning Plan for the Maunakea Observatories, a sub-plan to the 2009 Maunakea Comprehensive Management Plan.

The CMP emphasizes OMKM‘s and the Board's focus on engaging with the local community (in the case of OMKM) and serving as a voice for the community (in the case of the Board). Given the testimony submitted at the April 2016 Kahu Kū Mauna Council consultation, where community concern over the explicit loss of educational and career opportunities associated with the decommissioning of the Hoku Ke‘a Telescope, questions arose over the motivation for the UHH to decommission at this time. The governor's press release of May 26, 2015, which identified that the University is to decommission “as many telescopes as possible with at least 25 percent of all telescopes gone by the time TMT is ready for operation” was identified as one motivating factor. As there appears to be differing community opinions on review of this NOI, even within the Native Hawaiian community, UHH should consider consulting and communicating its proposed action with the affected community.

Recommendation
It is recommended that the Board consider its role as the voice of the community and take necessary action to ensure the community’s concerns are heard and addressed.

Should the Board approve the NOI, OMKM will work with UH Hilo to conduct the Environmental Due Diligence review for submittal to the Board for approval and establish the Decommissioning Advisory Committee to help guide the preparation of the Site Decommissioning Plan and Environmental Assessment. This committee would include subject matter experts in fields such as construction management (i.e. civil engineering) and landscape architecture, planning, environmental consulting as well as representation from the Kahu Kū Mauna Council, the Environment Committee, and the Maunakea Management Board.

Should the Board return the NOI to UH Hilo with comments and request revisions prior to any resubmission, OMKM will work with Hoku Ke‘a and the University administration to ensure that the University conducts actions requested by the Board. Disapproval or deferred action by the Board would be consistent with the 2000 Master Plan which established the Office of Maunakea Management, the Maunakea Management Board, and Kahu Kū Mauna Council – and reaffirmed in the 2009 Maunakea Comprehensive Management Plan. The Board could consider the following actions: 1) University of Hawaii at Hilo led community consultation should include, but not limited, to the entities that have to-date expressed concern over proposed decommissioning; 2) a written report reviewing the results of this consultation while addressing the context of the governor's May 2015 press release and positive and negative aspects of proceeding with decommissioning at this time; and 3) a presentation to the Board which includes invitations to the entities contacted during consultation.

Discussion
Chair Moore stated obviously on the surface it appears to be a political response to a situation that he finds rather distasteful in his personal opinion. He would like to understand from Dr. Pierre Martin what his vision is for Hoku Ke‘a, what the purpose is, what its function is and why we should remove this educational opportunity for our kids.

Dr. Pierre Martin, Director of Hoke Ke‘a, explained UH Hilo is ready to train the future workforce. The Department of Astronomy’s mission is to train new astronomers, new observatory staff, or educators. To achieve that they need a state-of-the-art facility where students can be taught how to operate observatories and how to do science. Having this kind of facility is a key. It is a resource they need. This is not a new vision. In about 2006-2007, UH Hilo decided to replace its observatory on the summit of Maunakea because the observatory there was obsolete. That change was made because mistakes were made which resulted in an observatory that did not work. When he came on board in 2012, he was hired to review that situation. Chancellor Straney wants UHH Astronomy to become one of the best, if not the best, undergrad program in the country. To achieve this he recommended that they again replace the observatory with the state-of-the-art telescope. It took some time to get funding, and now the observatory is being delivered piece by piece. He has received all the computers, the instrumentation suite is supposed to be delivered tomorrow, the dome will be shipped in five weeks, and the telescope should be ready by the end of this year/early next year. They worked with the best reputable companies in the world to do this. The goal was to put this on Maunakea.

Last year the University decided, for several reasons that Maunakea should not be considered any more. There is no site for Hoku Kea. There are options, but the preference is to keep the telescope on Maunakea. Working with the local community and kids in the last month or so, Native Hawaiian children have been telling him that they would like to become astronomers or work in an observatory. At the moment they are stuck. He will have a super facility and lab somewhere in the basement on campus and looking to put it on a site that will be excellent. Maunakea is unbeatable for that. There are extraordinary kids with tremendous talent on this island. The largest and most important question in the history of mankind is are we alone? Is there life out there? We will probably get an answer in 10-20 years from now. There is absolutely no reason why this discovery should not be led by a kid from

the Big Island. It could be a Native Hawaiian kid becoming an astronomer. It could be someone who received a bachelor's degree at UH Hilo learning how to operate a telescope. All we are asking is to give these kids a chance.

The following individuals testified in support of astronomy education and keeping the telescope:

Keahi Warfield stated language and culture are the reasons he is here today. He represents a Native Hawaiian community, born and raised in Keaukaha. He currently oversees an after-school-program for Native Hawaiian children. They are trying to get kids motivated at an early age by creating pathways. We have to look at what benefits everybody, but there is one host culture and that is Hawaiians.

He talked about a non-profit organization entitled P.U.E.O. (Perpetuating Unique Educational Opportunities). Its mission is to work across organizations to fulfill the educational opportunities available in Hawaii for the sustainable future of Hawaii's people. OMKM is just one organization. They work with the Keaukaha Community Association and after-school-programs run under the Keaukaha One Youth Development. He is employed by the UH Hilo to oversee these projects. He continued saying there are interests in the mountain and how the lands are utilized and sees through our process that there are many hard decisions to be made. As you move up the mountain, DHHL becomes involved. His goal is to influence everyone to see the big picture - education and tying in all the different entities together. There is talk about decommissioning of telescopes on Maunakea. There are those that have no use for and should be rid of. Then there are those that can be utilized for the education of our youth - such as Hoku Keʻa and UKIRT.

P.U.E.O. looks at how we can develop a framework that works from the Keaukaha community, connects up to the UH Hilo into the ʻImiloa Astronomy Center, OMKM, DHHL, and up to the telescopes on the mountain. Everyone is a significant player. Education is at the forefront of that vision. The mountain is really what will put Hawaii on the map, but it depends on how you manage the resources there. He is in support of education. With or without the construction of TMT, they are going in this direction of education. There are many unique opportunities that are right ahead of us. This is really where we should be putting our energy. You will be hearing a lot more of P.U.E.O. as we move forward into the future.

Hercules Freitas, a beneficiary with the Department of Hawaiian Home Lands (DHHL), stated he supports Dr. Martin. It is about astronomy. His granddaughter attends Kamehameha School and this is what she wants to be. He met with Dr. Martin, Doug, and Wally Ishibashi because this is an opportunity for all Hawaiian kids here. He believes everyone should support this very important issue.

Nicolette Thomas, an astronomy student at UH Hilo, stated she has had amazing opportunities at UH Hilo doing her own research. She can say firsthand that hands-on experience with science is what gave her the skills to be able to do what she is doing now. Without that, what will she put on her resume? How will she apply for grad school? How will she get in the industry? UH Hilo is on the base of one of the best mountains in the world to do astronomy. It should be the best program. It should have state-of-the-art facilities/instruments. There are schools that have astronomy programs that are not next to the best mountain that still have an observatory. Why can't we? She is not thinking about the past. She is thinking of the future because that is what is important. She is young and there will be more younger people who want to do want she does. Her question to the Board is: How can we say that we are investing in the future if we are going to take away the telescope that UH Hilo has? How can you promise me that you are investing in my future if you do that? You cannot.

John McBride stated he used to work with MKSS on Maunakea and he is in support of Dr. Martin because he has seen what it has grown to. A lot of local people, like himself, were provided with employment up there. Very few Hawaiians support the science and astronomy going up there. He supports it because there is some good to that. What Keahi Warfield talked about having navigation down at Keaukaha, blended together with astronomy opens the doors for education for whoever is interested. It provides opportunities. If we do not see opportunity, our vision is too short. We are not seeing far enough. This is a very small telescope. He knows because he had the opportunity to work on repairs for that telescope. We will not have the opportunity like Keck to have billions of dollars to invest. It is a smaller telescope with an open door for many opportunities for our kids. He supports to keep it open. It is already there. Why take something away that is already there? Let's make use of it.

Kathy Cooksey, assistant professor of astronomy with UH Hilo, speaking as a private citizen stated she started a little over two years ago and was very drawn to having a job here because of the potential. She heard about the observatory and was very interested in it. One reason why she is drawn personally to astronomy is because when she first took a class at age 16, she did not like being a student and astronomy seemed like something where she did not have to decide because it touches not only on all the natural sciences, including physics and chemistry, but also

mathematics, history, as well as some of the fundamentals of theology and philosophy. This is what led astronomers to fully acknowledge that we might be considered a gateway science in most locations because kids naturally like looking up and asking questions. She wholeheartedly supports the education priority by Mr. Warfield. Perhaps we could let Hoku Keʻa exist until the end of the master lease and give us a shot to see what potential and aspects that it has going forward so that we do not have to redo what has already been done in the past.

Patrick Kahawaiolaʻa, president of the Keaukaha Community Association, stated they support it for several reasons. He himself personally has no connection to astronomy, but who is he to say that the younger Native Hawaiian child living in his community does not aspire to go there. Based on your authority as a Board that controls the master lease, it is an opportunity. You have the authority if you wanted to. The Chair alluded to the fact that there may be a political reason why Hoku Keʻa is being sacrificed. That is one of the telescopes that our local students had the ability to access and learn not only about astronomy, but about the mechanical and technical parts of how a telescope operates. He testified in the TMT case that we do not want any development up there, but if we already have something up that was there in the 60s and use it to possibly educate our students, he would beg to differ with the Board to see if they can reconsider the decommissioning of this telescope (and UKIRT). It would be in the best interest of those students that are here now. This Board may have the authority to say wait, or defer it, or do something because as one of your Board members mentioned, Hoku Keʻa and UKIRT have not been vetted in the Native Hawaiian communities, and he can only speak for the Native Hawaiian communities. He would implore you to try to vet it out in the Native Hawaiian community. See if they would tell you to take this telescope that is already there, that can and is the only one servicing our children, and say take it away and get rid of it. We are not advocating to build a new one, but is advocating that with the processing that some of the Native Hawaiians are bringing forward that this is what we should do and advocate to make sure that an opportunity continues to exist and that there is outreach to Native Hawaiian communities to get more students into astronomy. The travels of the Hōkūleʻa Mālama Honua voyage are clearly bringing a focus on celestial navigation, which is part of the Hawaiian people's DNA. With this, he would implore this Board to seriously look at maintaining the opportunity for Native Hawaiian children to at least get educated if they so desire to. He ended by saying he knows Dwight (Vicente) for the longest time and he has not changed. You all have heard him speak and until those issues get resolved, you have that power to do what you need to do. The Constitution of this state says that the State and its people have an obligation to take care of the Hawaiian race. And, that is what he, Patrick, happens to be. He is not calling you on the carpet to say take care of the Hawaiian race. His action today is to ask this Board to please reconsider the fact that it is important that our children, Native Hawaiian children, to have the opportunity.

The following individuals sent in written testimony in support of education and keeping the telescope(s): Mary Begier, Heather Kaluna, Cari Rose Iverson, Jacqui Hoover, Mark Travalino, Clyde Hayashi, and Kirstin Kahaloa.

Mr. Palacat-Nelsen shared some of the detailed conversations that the Council had which is why they are still stewing like everyone else. With all respect to the astronomy education piece, the Council also listened to the cultural practices that actually take place. Cultural education of the mauna has been limited over the years. The Council took that into consideration also. Perhaps this could be leveraged as we make a decision on decommissioning - that we take a look at urging our Chancellor to provide cultural educational programs in addition to astronomy. The mauna is a lot of other things. As managers and stewards of the mauna, we need to take a look at the bigger picture. The Council looks at astronomy through the cultural lens.

Ms. Springer inquired if there was anyone from the University of Hawaii Vice Chancellor for Academic Affairs here today. David Lonborg stated he is probably the closest person from the President's Office. Ms. Springer continued stating there is reference in the letter that says the educational needs that Hoku Keʻa was intended to meet will instead be met with observing time on other Maunakea telescopes. There has been some discussion of also technical training that occurs. Will that area of education be handled by other facilities as well?

David Lonborg replied the intent is that will be handled by the telescope that Dr. Martin has on order that will be located somewhere else. That is what we have to figure out assuming that this decommissioning goes forward. Dr. Martin has been working on some site options. The intent is not to take the resource away, but to have it at a different location not on Maunakea at this point. This is the beginning of a process and it is a process that is intended to involve a lot of listening. We heard comments at Kahu Kū Mauna. We heard the comments here. So, we are listening and we are thinking.

Chair Mooers asked if there was any particular reason, as far as the timing. that the governor made recommending certain actions occur prior to TMT operations, which would be 10-12 years at the earliest. We have at least 10-12 years before that is the case. Is that the motivation for the time limit?

Mr. Lonborg explained that at the time that decision was made they were on a timeline shorter than 10-12 years, looking to 2023-2024 range as the TMT operational date. The driving factor behind the decision to decommission now is that what is up there now does not work. That is why Dr. Martin has this equipment on order. What is there now needs to come down. Not all of it, but it needs to come down in order to install new equipment, or it needs to stay down and the new equipment needs to go somewhere else. The decision was to take it all down, put the new equipment somewhere else rather than putting ourselves in a position of installing new equipment on the mountain at the time we were hearing very loudly that people, including the governor, were unhappy with the scale of activity on the mountain.

Chair Mooers commented you indicated that you have been listening to the community. Obviously there has been significant numbers of letters and comments being made of people wanting to maintain the telescope now. Is it reasonable to think that the University could work with the community and try to revisit this before we go forward with decommissioning?

Mr. Lonborg replied they would appreciate copies of submissions received. They will need to talk to people and have that conversation down a lot of channels. In terms of your action today, this is a Notice of Intent. It is a notice based on where we were at the time we submitted. It is intended to be an iterative process. Your acceptance of the notice today would not mean that we would not continue to listen. You do have the option to defer and ask us to do more work.

Chair Mooers stated he is trying to be cognizant of the fact that the Maunakea Management Board is supposed to represent the community. We do not work for the University. We advise the University based on our experiences. In that regard, it appears to him the community really wants more interaction and that is really where we got in trouble with the University in the past. We did not listen well enough. We came up with a number of plans and he believes the Office of Maunakea Management has done a very good job of listening to the community since they have come into existence and we are trying to perpetuate that. We might all have individual opinions, but it is important that we listen to the community and try to create that environment. His recommendation would be to defer this action and ask the University to meet with some of the people to determine if in fact there is a third party operator, or the fact that the community overwhelmingly supports the retention of this, or if there is still a strong feeling of no more telescopes and let's get them all off. If there is no compelling reason, and we have some time, he would rather not act in haste on this until there are more facilitated conversations with the community. That is something OMKM and Kahu Kū Mauna could certainly assist with so that we talk about these things - not only about astronomy, but also about the cultural resources on the mountain. We do not want to squander an opportunity that we may not get again. There is no reason to believe that we cannot always decommission. Chair Mooers felt uneasy taking that action until there is more input from the community.

Ms. Springer agreed adding she would appreciate the next time this comes before the Board that there be someone from the University in this capacity to step in front of the room and talk to us about the issue.

Bill Brown, president of the Panaʻewa Hawaiian Home Lands Community Association, stated you are welcome to defer. It speaks for itself - continuance of communication with the governor. The bottom line is we need to get to the table. Advocacy for all our homestead community is our children. We had the privilege of having OMKM at our Kuhio Day celebration. A kid came up to him and said he was not smart enough to be an astronomer. He does not have to be an astronomer. He can be something else that may help an astronomer to their end goal. Everybody here has an opportunity and mandate to make sure that this continues on. That education is open to our community. As far as their community, they want to adopt and be part of the program under Dr. Martin. They agree with decommissioning, but here is an opportunity for our people, our community members, to be a part of. They are asking. If they ask, they know something is happening. That is the advocacy that we as Native Hawaiians are seeking...just an opportunity for our children to be part of this.

Mr. Kalua asked that if Mr. Lonborg comes to the next meeting that he provide the Board with a timeline and an update on the governor's 10 actions. It is very important that you get down to the root of everything. When it involves the community he is very concerned.

Clyde Hayashi stated he and Mark Travalino are from the Laborers Union. They are, obviously, in support of construction, which has helped provide for many of their members over the years. They have many Native Hawaiian members, but members in general are looking for better opportunities for their children. Many of them have mentioned that their hope is for their kids and grandchildren to also have opportunities on the mountain. We all, as a community, are very supportive of astronomy for what it has done for jobs and also the opportunity for the kids. If there is going to be a discussion, we are more than willing to participate in those discussions. In the past,

every Union has been supportive of astronomy and what is happening on Maunakea.

Action
It was moved by Kihalani Springer and seconded by Herring Kalua to defer this agenda item until the next Maunakea Management Board meeting. Ms. Springer reiterated having a representative from the University present. We may also want to consider having representation from the Governor's Office or any other relevant agency or entity.

Dr. Chun added to the motion: To ask the University to go and consult with the community about what we have heard and seen. While we are considering the Hoku Keʻa NOI right now, a lot of the testimony that has been submitted was also in response to UKIRT. In that consultation he would like the University to talk with the community and report on what they have heard. He does not want to defer for another report. He would like to hear what they actually heard from the community.

Chair Mooers asked Ms. Springer if this was a friendly amendment. Ms. Springer stated it was, but wondered if the next Board meeting would give enough time for that action to occur.

Chair Mooers suggested deferring until the University has had the opportunity to consult with the community and asked Director Nagata to work with the University on that.

Chair Mooers asked Mr. Kalua if he was willing to accept the amendment for his second to which Mr. Kalua responded yes.

The question was called for all in favor of deferring this action until the University has had the opportunity to consult further with the community. The motion was carried unanimously.

VII. ANNOUNCEMENTS

There were no announcements.

VIII. NEXT MEETING

Board members will be polled for the next meeting date.

IX. ADJOURNMENT

There being no further business Chair Mooers adjourned the meeting at 12:40 p.m.

Respectfully submitted:

Signed by Dr. Gregory Chun — 6-22-16

Dr. Gregory Chun, Secretary, MKMB — Date