**UNIVERSITY OF HAWAI'I AT HILO**

UH Hilo Administration
**Office of the Chancellor**

May 8, 2010

Clarence "Ku" Ching
64-823 Mamalahoa Hwy
Kamuela, HI 96743

**Subject:** **Comments Received on Draft Environmental Impact Statement and Final Environmental Impact Statement**
**Thirty Meter Telescope Observatory Project**
**Maunakea, Hawai'i Island**

Dear Clarence "Ku" Ching:

The University of Hawai'i at Hilo (UH Hilo) issued a Draft Environmental Impact Statement (EIS) for the Thirty Meter Telescope (TMT) Project on May 23, 2009. This letter is in response to substantive comments received from you on the Draft EIS during the comment period, which concluded July 7, 2009. The Final EIS identifies the "13-North" (13N) site as the Project, as the Draft EIS did, and this site remains the focus of the Final EIS. The selection of the 13N site was based on consideration of the impacts of both the 13N site and the Project alternatives considered.

The attached provides a copy of the comments received from you and responses to those comments in a side-by-side format.

UH Hilo appreciates your interest in the Project. The Final EIS, a copy of which is included on the enclosed CD, has been issued in conjunction with the distribution of this letter. Acceptance of the Final EIS by the Governor of the State of Hawai'i is the next anticipated action and will conclude the Hawai'i Revised Statutes (HRS) Chapter 343 environmental review process for this Project. If you have any questions, please call Helen Rogers at (808) 974-7444.

Sincerely,

Rose Tseng, Chancellor
University of Hawai'i at Hilo

Attachment/Enclosure
Response to your comments
CD with Final EIS

200 W. Kawili Street, Hilo, Hawai'i 96720-4091
Telephone: (808) 974-7444, Facsimile: (808) 974-7622, www.uhh.hawaii.edu

**Subject:** **Draft Environmental Impact Statement**
**Thirty Meter Telescope (TMT) Observatory Project**
**Maunakea, Hawai'i**

Dear Participant:

The University of Hawai'i has prepared the attached Draft Environmental Impact Statement (DEIS), which was prepared pursuant to the EIS law (Hawai'i Revised Statutes, Chapter 343) and the EIS rules (Hawai'i Administrative Rules, Title 11, Chapter 200). Due to your interest expressed in the Project we are providing the document to you for review. The following information summarizes the Project and commenting process.

| | |
|---|---|
| Name of Project: | Thirty Meter Telescope Observatory Project |
| Island: | Hawai'i |
| District: | Hāmākua, South Hilo, and South Kohala |
| TMK: | 4-4-15: 9 and 12; 2-4-1: 7; and 6-7-2: undetermined parcel |

Comments are required to be submitted or postmarked by July 7, 2009. Comments can be submitted via the website (www.TMT-HawaiiEIS.org), the toll-free hotline (1-866-284-1716), at public meetings, or mailed to:

**Original to:**
TMT Observatory Project
Office of the Chancellor
University of Hawai'i at Hilo
200 W. Kāwili Street
Hilo, Hawai'i 96720-4091

**Copy to:**
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawai'i 96813

Public meetings will be held as follows:

| Date | Area | Location | Time |
|---|---|---|---|
| June 16 (Tue) | Kamuela (Waimea) | Waimea Elementary School Cafeteria | 5-8pm |
| June 17 (Wed) | Hilo | Hilo High School Cafeteria | 4-8pm |
| June 18 (Thr) | Pāhoa / Puna | Pāhoa High School Cafeteria | 5-8pm |
| June 22 (Mon) | Ka'ū / Pāhala | Ka'u High/Pāhala Elementary School Cafeteria | 5-8pm |
| June 23 (Tue) | Hāwī / Kohala | Kohala High School Cafeteria | 5-8pm |
| June 24 (Wed) | Kona | Kealakehe Elementary School Cafeteria | 5-8pm |
| June 25 (Thr) | Honolulu | Farrington High School Cafeteria | 5-8pm |

A comment form is provided in Appendix C of the DEIS; however, comments do not need to be submitted on this form. The form is provided for convenience only.

If you no longer need this EIS, please recycle it. Thank you for your participation in the EIS process.

1

1
We appologize for this error, the meeting in Hawi/Kohala was held at the Kohala Cultural Center, not the High School. However, it was correctly listed in other announcements, including newspaper ads and page 1-6 of the Draft EIS, and signs were put up on the doors of the cafeteria that corrected the location of the meeting .

To: TMT Observatory Project
Office of the Chancellor
University of Hawai`i at Hilo
200 W. Kawili Street
Hilo, Hawai`i 96720-4091

Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawai`i 96813

**(Sent via electronic mail and/or U.S. Postal Service Certified-Return Receipt, postmarked 7/7/09)**

**DATE:** July 7, 2009

**RE:** The Thirty Meter Telescope Draft Environmental Impact Statement

Aloha Pumehana Chancellor, TMT Board Members and Representatives,
Please find enclosed comments regarding the TMT Draft Environmental Impacts State (DEIS) filed on behalf of Ms. Kealoha Pisciotta, Mauna Kea Anaina Hou, Mr. Paul K. Neves, Royal Order of Kamehameha I and Mr. Clarence Kukauakahi Ching. We thank you for your time and consideration.

## I. Introduction

Mauna Kea Anaina Hou (MKAH) represented by Ms. Kealoha Pisciotta, The Royal Order of Kamehameha I, Moku O Mamalahoa, Heiau Mamalahoa Helu `Elua (ROOK I) represented by Ali`i Aimoku Ali`i Sir Paul K. Neves, and individual Hawaiian Practitioner Mr. Clarence Kukauakahi Ching (Ching) are dedicated to preserving, protecting and perpetuating Native Hawaiian Traditional and Customary practices, including cultural and religious practices relating to Mauna Kea.

Mauna Kea Anaina Hou (MKAH), The Royal Order of Kamehameha I (ROOK I), Sierra Club (SC), individual practitioner Clarence Kukauakahi Ching (Ching) and others have been actively involved in legal action for the protection and conservation of Mauna Kea since 1995. We participated in two audits called by the State Legislature, recording 30 years of mismanagement on Mauna Kea at the hands of the State' Board of Land and Natural Resources (BLNR) and University of Hawai`i (UH). The State Auditor, found that Mauna Kea's resources had suffered at the expense of unregulated astronomy development, stating in relevant part,

1. **"[T]he University of Hawai'i's management of the Mauna Kea Science Reserve is inadequate to ensure the protection of natural resources, and that the Department of Land and Natural Resources [DLNR] needs to improve its protection of Mauna Kea's natural resources."** (1998 Audit of Management of Mauna Kea and Mauna Kea Science Reserve, P.15.)

We also participated in two major lawsuits in the US. District Court (Hawai`i), and the Third Circuit (Hilo) relating to the conservation of Mauna Kea. The cases were brought against the University (UH), University's Institute for Astronomy (UHIFA), State of Hawai`i's Board of Land and Natural Resources (BLNR), The University of California (UC), The California Institute of Technology (Caltech), the William M. KECK Foundation (KECK) and The National Aeronautics and Space Administration (NASA).

The NASA Federal Environmental Impact Statement (EIS) compelled by the federal court (OHA v. NASA, Civil No. 02-00227 (SOM/BMK), 2003) determined that the cumulative impact of thirty years of astronomy development had resulted in "substantial, adverse, and significant" impacts on the cultural and natural resources of Mauna Kea." (Please see NASA FEIS, 2005, at p. *xxi*).

Last year we provided extensive scoping comments relating to the proposed Thirty Meter Telescope Project (TMT). These comments included concern over TMT's compliance with, among other things, relevant state and federal laws, such as the National Environmental Policy Act as amended 1969

1



1

The obligation to evaluate and disclose environmental impacts under the National Environmental Policy Act (NEPA) is triggered by a major Federal "action." A major Federal action, as defined in 40 CFR Section 1508.18, includes actions with effects that may be major and which are potentially subject to Federal control and responsibility, such as:
1. A project funded (including grants and loans) by a Federal agency,
2. A project located on Federal land, and/or
3. The issuance of a Federal permit, license, or other approval.

The Thirty Meter Telescope Project is not a Federal action because it (a) has not received funding or pledges of support from any Federal agency for the physical construction, operation, or decommissioning of any facility; (b) has no facility planned on Federal land; and (c) has not applied for and does not require a Federally-issued permit, license, or approval for the construction, operation, or decommissioning of facilities. Therefore, there is no extant major Federal action, and, thus the United States' obligations under NEPA have not been triggered.

Similarly, Section 106 imposes obligations only on a Federal "undertaking", which is defined as a project, activity, or program carried out under the jurisdiction of a federal agency.

The Project, as defined in Chapter 2 of the Draft EIS, is not a Federal undertaking because it is not being carried out under the jurisdiction of any Federal agency. Thus, Section 106 consultation requirements have not been triggered. The Draft EIS addressed consultations with Native Hawaiians and cultural practitioners through the Cultural Impact Assessment and HRS Chapter 6E Historic Preservation processes, as discussed in Sections 3.2, Cultural Resources, and Section 3.3, Archaeological/Historic Resources. Additional information has been included in these sections in the Final EIS.

The Project will comply with all applicable rules and regulations. A description of the land use plans, policies, and controls is described in Section 3.10 of the EIS.

(NEPA) the National Historic Preservation Act (NHPA), Section 106 (Consultation with Native Hawaiian Organizations), Hawai`i Revised Statutes 183C (HRS 183C), Hawai`i Administrative Rules 13-5 (HAR 13-5) relating to Conservation, HRS 343 and HAR 11-200 (relating to environmental and cultural preservation), Hawai`i State Constitution Article 12, Section(s) 1, 9 (relating to environmental protection and conservation), Section 7 (relating to certain Hawaiian traditional and customary practices).

2 In our scoping comments we also formally requested that TMT begin NHPA, Section 106 Consultations. The TMT DEIS fails to address the issues previously raised in our scoping comments, therefore, we incorporate by reference our previously filed scoping comments (October 22, 2008).

## II. GENERAL ISSUES

**Wasting public funds, and burdening the courts and the public**

To be clear, UC and Caltech were parties (along with NASA and KECK) of the Outrigger Telescope(s) Project proposed for Mauna Kea in the 1990s. The Outrigger Telescope(s) project was opposed and eventually challenged in two courts of law (federal and state). We too were involved those lawsuits and the courts found in our favor in both cases.

The federal court ordered NASA *et al,* to comply with the National Environmental Policy Act (NEPA). The state court vacated the Conservation District Use Permit, for construction of the four to six Outrigger Telescope(s) and ordered a Comprehensive Management Plan (CMP) be competed prior to considering any further development on Mauna Kea. The Outrigger Project was not built here in Hawai`i.

3 There is no question the TMT Project must comply with both state and federal law. The TMT Project currently is complying with neither. Taking the same path the courts previously rejected is unreasonable.



**2**
As discussed in response to an earlier comment, NEPA and other Federal requirements, such as Section 106, have not been triggered.

**3**
The TMT Project is in the process of complying with HRS Chapter 343. As disclosed in Section 3.10.3 of the Draft EIS, the Project will comply with applicable land use plans, policies, and controls. In addition, Section 3.1.3 of the Draft EIS lists some of the applicable rules, regulations, and requirements with which the Project will comply. As discussed in response to an earlier comment, NEPA and other Federal requirements, such as Section 106, have not been triggered. If any of these federal requirements are triggered in the future, it will be the United States' obligation to comply with them, which presumably it will do.

**Good Science-but at what cost?**

TMT Representatives, (particularly UC and Caltech) your institutions are important academic institutions to the nation and the world. You have achieved great academic success. With greatness, comes great responsibility also. This responsibility, we hope includes caring for the land and its people. We have always supported good science. The TMT will produce good science, but, the real question is at what expense.

4 Is it good science to destroy the habitat of plant and animal species found
5 nowhere else on earth—including those on brink of extinction? Is it good science to destroy the landscape used in traditional Hawaiian ceremonies that provided the knowledge for our navigators to traverse, more than 10 million square miles of the Pacific, before the birth of Christ? Is it good science to build such a large
6 telescope atop our temple? Is it good science if the rule of law must be ignored to
7 achieve it? Is it good science, to push to built the TMT in Hawai`i, when you have already identified an environmentally preferred site (a site with less impact then Mauna Kea)—in Chile?

This DEIS is *not* representative of your past academic achievements and we pray, not your future academic achievements.

**III SPECIFIC ISSUES**

**The TMT Draft EIS is filled with inaccuracies, misleading and/or false information and is wholly inadequate**

**1. TMT claims no federal funding used for Project**

The TMT DEIS states,

> Federal rules, such as the National Environmental Policy Act (NEPA), do not apply to the Project, no Federal agency is involved



**4**
Section 3.4 of the Draft EIS discusses potential impacts on biological resources and Section 3.16 of the Draft EIS discusses cumulative impacts. The Thirty Meter Telescope Project is working with the community and scientists to avoid, minimize and mitigate for potential impacts to plant and animal species. As stated on page 3-42 of the Draft EIS, "There are no currently-listed threatened or endangered species known to occur in the Astronomy Precinct." Section 3.4.1 of the Final EIS, based on comments received during the Draft EIS comment period, has been revised to acknowledge that the endangered Hawaiian Hawk has been observed circling the summit region.
Also, while there are a number of threatened and endangered species potentially present at Hale Pohaku, as stated on page 3-45 of the Draft EIS, "A recent arthropod and botanical survey of the proposed TMT Mid-Level Facility site found no species listed as endangered, threatened, or that are currently proposed for listing under either Federal or State of Hawaii endangered species statutes."
Mitigation measures outlined in the Draft EIS to reduce the potential impact of the Project on threatened, endangered, or other native species include the Invasive Species Prevention and Control Program, outlined in Section 3.4.3, pages 3-48 and 3-49, and Section 3.15.1, pages 3-147 and 3-148. Please see Sections 3.4 and 3.15 of the Final EIS for additional information regarding the Project's potential impacts on biological resources and associated mitigation measures.

**5**
The Thirty Meter Telescope Project is working with the community and agencies to avoid, minimize, and mitigate potential Project impacts to cultural resources. Section 3.2 of the Draft EIS documents the Project's potential impacts and mitigation measures related to cultural resources. Please see Section 3.2 of the Final EIS for additional details related to cultural resources.

**6**
As discussed in reponse to previus comments, the TMT Project is in the process of complying with HRS Chapter 343 and will continue to comply with the rule of law.

**7**
No site was identified as an "environmentally preferred" site in the Draft EIS. Chapter 5 of the Draft EIS discusses the a site in Chile considered by the TMT Observatory Corporation; however, as explained in that Chapter, "it is not considered an 'alternative' for UH because UH cannot approve locating the TMT in Chile."

in the Project, **no Federal Funding is being use for the Project**, and the Project does not use Federal Land."
(TMT DEIS at p. 3-105, emphasis added)

A TMT representative publicly asserted the same during public scoping meetings (http://www.bigislandvideonews.com/maunakea/20081020dawson.htm). The TMT DEIS statements are false. The TMT project has received substantial federal funding from the National Science Foundation (NSF). NSF Award 0443999 confirms this. The NSF Award also confirms that $13 million federal tax dollars where awarded to the TMT and Giant Magellan Telescope (GMT), for *"(1) The Design and development phase for a 30-meter diameter segmented-mirror, optical/infrared telescopes, the Thirty Meter Telescope (TMT)."* Further confirmation of federal funding used by TMT is found in the Executive Summary second paragraph (http://www.noao.edu/dir/spo/GSMT-annual-report08.pdf).

8

**Following NEPA**

NEPA is the nation's law for protecting the environment.

The NEPA rules state,

> NEPA is not to generate paper work, even excellent paper work, but to foster excellent action... The NEPA process is intended to help public officials make decision that are based o the understanding of the environmental consequences, and take actions that protect, restore and enhance the environment." (40 CFR § 1500.1, 1502.1)

The National Science Foundation (NSF) funding of the project, constitutes a significant federal undertaking. Neither NSF as the funding agency nor the TMT as the receiving agency has prepared a federal level environmental review document (i.e. an Environmental Assessment (EA) or Environmental Impact Statement (EIS)) pursuant to the National Environmental Act, as amended 1969, relevant federal rules and regulations, and legal precedent (court made law).

Listing the University of Hawai`i at Hilo (UHH)–a state agency, as the proposing agency on the TMT DEIS does not allow the Project to escape federal

9



**8**

The TMT Observatory Corporation has received limited funding from the National Science Foundation (NSF) for the development of technology that can be used on other telescopes. With respect to the construction, operation, or decommissioning of the Thirty Meter Telescope Project, no Federal agency, including the NSF, has provided or pledged funds for such construction, operation, or decommissioning. Nor is TMT required to obtain a permit, license or other approval from the United States prior to the construction or operation of the Thirty Meter Telescope (TMT) Project. Federal funding alone does not trigger an obligation on the part of the United States to comply the National Environmental Policy Act (NEPA) or the National Historic Preservation Act (NHPA). For example, the United States' obligation to undertake an environmental review under NEPA is triggered only if a "major Federal action" may significantly affect the environment. Similarly, the United States' obligation to comply with the NHPA is triggered only if there is a federal "undertaking" which is defined as an activity or project carried out under the jurisdiction of a federal agency. The United States' obligation to comply with NEPA and the NHPA has not been triggered with respect to this Project.

**9**

The obligation to evaluate and disclose environmental impacts under the National Environmental Policy Act (NEPA) is triggered when a federal agency proposes a major federal action that would significantly affect the environment. Neither the University of Hawaii at Hilo (UH Hilo) nor the TMT Observatory Corporation is a federal agency. Further, neither UH Hilo nor the TMT Observatory Corporation has received funding or pledges of financial support from any Federal agency for activities that will or may significantly affect the environment, nor has either entity applied for any federally-issued permit or license. Therefore, the United States' obligations under NEPA have not been triggered.

legal requirements, it means either the UHH will be "federalized" for the purpose of fulfilling NEPA and the NHPA, or will cause UHH to be enjoined in any legal challenges brought against this process.

**Following NHPA**

10 The TMT is proposing to use Mauna Kea summit lands, which are eligible for listing on the National Historic Register, yet TMT has not begun Section 106
11 consultations under the National Historic Preservation Act (NHPA). Again, we made formal requests in our scoping comments calling for NHPA, Section 106 Consultation to begin. The U.S. District Court (Hawai`i) affirmed,

> NHPA mandates that a federal agency "shall consult... with any Native Hawaiian organization that attaches religious and cultural significance" to properties eligible for the inclusion on the National Register." (OHA v. NASA, Civil No. 02-00227 (SOM/BMK), 2003, p. 18 of 39)

The **State Historic Preservation Office**, TMT DEIS review letter dated June 26, 2009, states:

> Agencies Involved: Section 2.0 states that the TMT Observatory Corporation is a private non-profit partnership. Your memo dated May 28, 2009 notes that the National Science Foundation released the DEIS, There is no mention of the NSF in the DEIS, and we presume that is the case. If the NSF is involved, this project is subject to review under the National Historic Preservation Act, Section 106 (36 CFR 800).
>
> And,
>
> The DEIS and draft archeological Assessment for Area E (Appendix E) does not address impacts to the Mauna Kea Summit Historic District.

TMT representatives appear to understand what federal laws require, yet continue to ignore them. (Please see TMT comments below). The idea that TMT can move forward "independent of anything that happens with the



**10**

Section 106 of the National Historic Preservation Act (NHPA) imposes obligations on federal agencies, not state or local agencies or private entities. The actions of the National Science Foundation (NSF) to date and the Project, as defined in Chapter 2 of the Draft EIS, is not a Federal "undertaking," as defined by Section 106 and, thus, Section 106 consultation requirements have not been triggered by NSF's actions.
The Draft EIS addressed consultations with Native Hawaiians and cultural practitioners through the Cultural Impact Assessment and HRS Chapter 6E Historic Preservation processes, as discussed in Section 3.2, Cultural Resources, Section 3.3, Archaeological/Historic Resources, and Appendix D. Additional information has been included in these sections in the Final EIS.

**11**

As discussed in response to previous comment, the Project is not a Federal undertaking; therefore, although scoping comments requested Section 106 consultations be performed, they technically could not be done.
The Draft EIS addressed consultations with Native Hawaiians and cultural practitioners through the CIA and HRS Chapter 6E Historic Preservation processes, as discussed in Sections 3.2, Cultural Resources, and Section 3.3, Archaeological/Historic Resources; Appendix D contains the CIA. Additional information has been included in these sections in the Final EIS to address the comments of the State Historic Preservation Division.

12 Comprehensive Management Plan" is erroneous. The TMT may not move forward without a completed and approved CMP.

> "The federal government, federal agencies, they make that decision. We don't. And what triggers NEPA (National Environmental Protection Act) is a significant federal action," said Michael Bolte, director of California's Lick Observatory and member of the TMT Board of Directors.
>
> Regarding the Mauna Kea Comprehensive Management Plan, "we are an independent process. The legal opinions are that right now we can go forward completely independent of anything that happens with the Comprehensive Management Plan."
>
> Hawaii Tribune-Herald June 17, 2009, at
> http://www.hawaiitribuneherald.com/articles/2009/06/17/local_news/local03.txt

**2. State Law**

The TMT DEIS states;

> Today, there are 11 observatories...
>
> (TMT DEIS, p. P-3)

13 In 1983, yhe state set a limit on the size, dimension and number of the
14 *telescopes*. That legal limited has not been changed. There are currently 21 telescopes on Mauna Kea. The TMT DEIS, uses semantics and number games so that the preparers can count the giant twin Keck telescopes as one (because they have a single owner), the Smithsonian Array (which has eight individual six meter telescopes and potential for twelve more placed on 24 individual pads strewn across a half mile in diameter area), and then completely leave the Very Long Baseline Array (VLBA) out of the count.

15 State law requires (HRS 183C, HAR 13-5) an astronomy facility such as the TMT to obtain a Conservation District Use Permit (CDUP) issued by the Hawai`i Board of Land and Natural Resources (BLNR). A CDUP can only be issued after the completion of Comprehensive Management Plan (CMP). The Third Circuit Court in its recent ruling stated in relevant part,

> Hawai`i Administrative Rules (HAR) 13-5 (adopted September 6, 2006), are the rules adopted by the Department of Land and Natural Resources



**12**
The CMP was approved by the BLNR on April 9, 2009, with conditions. Certain individuals and organizations requested a contested case proceeding for the CMP approval. The BLNR denied the request since a contested case hearing was not required by law and those requesting it did not establish a property interest in the CMP or that the CMP would affect property in which they possessed an interest. In approving the CMP, the BLNR required that UH be responsible for the implementation of the CMP subject to oversight of the BLNR. Failure to comply with the BLNR's conditions of approval of the CMP may result in sanctions. Hence the CMP and its conditions of approval have legal force and effect.

**13**
There is no set "limit" on the number of telescopes or observatories on Maunakea. The 1983 Master Plan states on page 41, "Based on the RDP [Research Development Plan], the SRCDP [Science Reserve Complex Development Plan] identifies siting areas for a total of thirteen telescopes on the mountain by the end of the century. Although the actual number of facilities which will be realized by the astronomy program at Mauna Kea will depend on the demand and on the role determined for this activity by public policy makers, the University of Hawaii has determined that it is resonable and feasible to project a total of 13 telescopes on the mountain between now and the year 2000." The 1983 Master Plan is silent on the number of observatories that could be built after the year 2000 and overall the number of observatories is left to public policy makers.
The 2000 Master Plan, which is the most current master plan for the UH management areas, does not identify a limit on the number of observatories on Maunakea but does limit the area of future development to within the Astronomy Precinct.

**14**
An observatory is clearly defined in Section 2.1 of the Draft EIS as follows:
"An observatory includes the telescope(s), the dome(s) that contain the telescope(s), and the instrumentation and support facilities for the telescopes that fall under a common ownership."
By this definition there are 11 observatories and one radio telescope on Maunakea. Various other documents have failed to differentiate between an observatory and a telescope or defined an observatory in a variety of different ways without consistency. The information included in the Draft and Final EIS is meant to provide information about existing observatories and telescopes based on clearly defined parameters, as well as to provide consistency within the document.

**15**
As disclosed in Section 3.19, page 3-196, of the Draft EIS, the Project requires a CDUP. The BLNR's conditional approval in April 2009 stated that all CMP components are to be completed prior to a project submitting a Conservation District Use Application (CDUA); the Project has not yet submitted a CDUA and the conditions of CMP approval have now been met (completion of the four sub plans). Therefore, as required by BLNR's approval of the CMP and in HAR 13-5-24, an approved and complete management plan will be in place prior to BLNR's review of the Project's CDUA.

(DLNR) applicable to "Conservation Districts." The statutory authority cited in these rules is Hawai`i Revised Statutes (HRS) Chapter 183C...

HAR 13-5-24 (c) (4) states, "Identified land use beginning with the letter (D) (***i.e.* such as Astronomy Facilities**) require a board permit, and where indicated, a management plan." (Emphasis added for clarity)

(Mauna Kea Anaina Hou *et al.*, Civil No. 4-1-397, 2006, p. 2-3)

3. **TMT DEIS cites to and relies upon documents that do not exist and/or have no force or effect of law**

The TMT DEIS states,

> The operation of the Project, in accordance with the CMP and proposed mitigation measures, would not result in a significant adverse impact....the Project would not significantly increase or reduce the existing level of cumulative impacts do to all past and present activities, which in some cases is significant. The potential impact associated with the Access Way Option 3 is considered significant because it would reshape, of "cut" the TCP of Kukahau`ula, the summit cinder cones. Access Way Option 3 would also displace some "good" Wekiu bug habitat, but in compliance with the CMP, should Access Way Option 3 be chosen, a Habitat Restoration Plan would be prepared and implemented to compensate for this potential impact." (Emphasis added for clarity)

TMT DEIS, at p. S-6

**There is no Comprehensive Management Plan**

There are a number of problems with the TMT DEIS statement cited above.

16 First, by law the BLNR must prepare and adopt a CMP, because the BLNR, NOT the UH, is the State agency statutorily and constitutionally mandated to oversee all Conservation Districts in Hawai`i. The UH's position has been and continues to be that they, instead of the BLNR can prepare the CMP. This is erroneous. The UH prepared their "Plan" anyways, but it was neither "comprehensive" nor a "management plan." It was incomplete omitting



16

The CMP was approved by the BLNR on April 9, 2009, with conditions. Certain individuals and organizations requested a contested case proceeding for the CMP approval. The BLNR denied the request since a contested case hearing was not required by law and those requesting it did not establish a property interest in the CMP or that the CMP would affect property in which they possessed an interest. In approving the CMP, the BLNR required that UH be responsible for the implementation of the CMP subject to oversight of the BLNR. Failure to comply with the BLNR's conditions of approval of the CMP may result in sanctions. Hence the CMP and its conditions of approval have legal force and effect.

entire sections and failed to provide a cumulative impact evaluation on the resources by further development - the very issue it was supposed to decide. How many telescopes will be located on the summit and where, and at what cost? Not the plan Judge Hara (Third Circuit) ordered.

**UH "Plan" not approved**

17 Second, while the UH did present their "Plan" to the BLNR, the BLNR agreed it was not comprehensive. The UH "Plan" was NOT approved by the Board of Land and Natural Resources in April, 2009. Environmental and Native Hawaiian groups requested a contested case hearing. When a request is submitted, no decision may be made until the hearing is finished. A judge can not decide a case before the evidence is submitted.

18 Third, while the state is still determining if they will grant a Contested Case Hearing, even if they do not grant the hearing the UH Plan will be challenged by us directly in to the court, because it has provisions that conflict with the state constitution including those that protect environmental and Native Hawaiian rights.

19 Four, the TMT DEIS may not rely on a document that does not exist to claim the Project "would not result in adverse impact."

**The UH Master Plan 2000**

20 The TMT DEIS repeatedly cites to and relies on the UH Master Plan 2000 (MP2000). This document was never approved by BLNR and therefore has no force or effect of law. Judge Hara of the Third Circuit court affirmed this, stating in relevant part,

> The Board of Regents did adopt a management plan for Mauna Kea in the year 2000. The Regents' management plan was not, however adopted by BLNR. It is clear from the context of the terms of HAR chapter 13-5, that the "management plan" as defined therein as required in order to permit R-3 use is one that must be adopted by the BLNR...The court concludes as a matter of law in construing the requirement of a "management plan" as required by HAR 13-5-24 R-3 that the UH submitted for the project



**17**
As discussed in response to previous comment, the CMP as approved is currently a valid enforceable plan, regardless of status of challenges.

**18**
As discussed in response to comment above, the CMP as approved is currently a valid enforceable plan, regardless of potential challenges.

**19**
As discussed in response to comment above, the CMP as approved is currently a valid enforceable plan. Furthermore, the Draft EIS relies on a number of studies, plans, scientific papers, and other sources to evaluate the Project's potential impacts on the environment.

**20**
The 2000 Master Plan is referenced throughout the Draft EIS, including Chapter 2 and Section 3.10. Section 3.10.3 of the Draft EIS outlines the Thirty Meter Telescope Project's consistency with land use plans, policies, and controls. The Draft EIS neither states nor suggests that the 2000 Master Plan was approved by the Board of Land and Natural Resources (BLNR). The 2000 Master Plan was prepared by UH through a process that included broad community input as well as coordination with governmental agencies, including the Department of Land and Natural Resources (DLNR). A Draft and Final EIS were prepared and the 2000 Master Plan was adopted by the University of Hawaii (UH) Board of Regents (BOR) and implemented. Although the 2000 Master Plan was not officially approved by the BLNR, the Master Plan is the guiding document for the University of Hawaii at Hilo (UH Hilo), the proposing agency for the Project. Therefore, the 2000 Master Plan, which built on the 1983 Master Plan, is pertinent to the Project. In addition, the wealth of scientific information in the 2000 Master Plan remains valid and valuable. References to the 1983 Master Plan have been included in the Final EIS for the Project where applicable, including Chapter 2 and Section 3.10. Like the 2000 Master Plan, the 1983 Master Plan was never approved by the BLNR.

(NOTE: UH submitted a second plan also) is one that does not meet the requirements of HAR 13-5.
(note added, see Mauna Kea Anaina Hou *et al.*, Civil No. 4-1-397, 2006, p. 4-8)

21 The Astronomy Precinct, the Office of Mauna Kea Management and other UH functionalities are established in the MP2000, which has no force or effect of law. While the UH may make rules and plans governing themselves (for the observatories), they do not have the constitutional and statutory mandate to oversee the Conservation District land. The UH is only renting the land, and a renter does not direct the landlord. The State is the land lord and holds all these lands (as Ceded and Conservation lands) in trust for the people of Hawai`i (specifically Native Hawaiians and the general public). Furthermore, the UH's lease requires the UH to comply with *all* state law, including the constitution.

The TMT DEIS may not rely on documents to evaluate the environmental impacts that have no force or effect of law.

**Cumulative Impact**

The TMT DEIS fails to adequately analyze cumulative impact the environmental and cultural resource of Mauna Kea.

22 First, on page S-6 the TMT DEIS contends, "The Project would not significantly increase or reduce the existing level of cumulative impacts due to all past and present activities, which in some cases is significant." On page 3-193, however, the DEIS states the opposite, "...the impact of past, present and the Project together with other reasonable foreseeable future actions on cultural resources is substantial, adverse and significant." The above statements are contradictory.

23 Second, the Executive Summary should contain accurate information regarding the cumulative impact the Project will have on the cultural resources, especially since decision makers with time constraints may get through the



21
The TMT Project EIS does not direct DLNR in anyway. The Project EIS was prepared to comply with applicable State laws, specifically HRS Chapter 343.

22
The statement in the summary section of the Draft EIS is general and recognizes that there are existing cumulative impacts, some of which (including cultural) are significant.
The statement in Section 3.16 of the Draft EIS is more detailed and recognizes that the impact of past, present, and the Project together with other reasonable foreseeable future actions (the cumulative impact) on cultural resources is substantial, adverse, and significant.
The two statements are not contradictory as they both come to the same conclusion: the level of cumulative impact to cultural resources is significant.

23
The fact that the cumulative impact to cultural, archaeological, and historic resources is significant and the cumulative impact to other resources has been added to the summary in the Final EIS. The Executive Summary in the Final EIS includes the following:
"Cumulative Environmental Impacts
"From a cumulative perspective, the impact of past and present actions on cultural, archaeological, and historic resources is substantial, significant, and adverse; these impacts would continue to be substantial, significant, and adverse with the consideration of the Project and other reasonably foreseeable future actions.
"The cumulative impact of past and present actions to geologic resources in the astronomy precinct has been substantial, significant, and adverse, primarily due to the reshaping of the summit cinder cones. The cumulative impact to the alpine shrublands and grasslands and mamane subalpine woodlands has also been substantial, significant, and adverse, primarily due to grazing by hoofed animals and establishment of invasive plants. These impacts would continue to be substantial, significant, and adverse with the consideration of the Project and other reasonably foreseeable future actions.
"The magnitude or significance of cumulative impact to the alpine stone desert ecosystem from activities to date is not yet fully determined.
"The cumulative impact of past and present actions to other resources, such as water resources, the sonic environment, and traffic, has been less than significant.
"The cumulative socioeconomic impact has been substantial and beneficial; the substantial and beneficial impact would continue should the Project and other reasonably foreseeable future actions occur.
"In general, the Project will add a limited increment to the current level of cumulative impact. Therefore, those resources that have been substantially, significantly, and adversely impacted by past and present actions would continue to have a substantial, significant, and adverse impact with the addition of the Project. For those resources that have been impacted to a less than significant degree by past and present actions, the Project would not tip the balance from a less than significant level to a significant level and the less than significant level of cumulative impact would continue."

summary as opposed to the entire document. Decision maker cannot make informed decisions without all of the necessary information.

24 Third, while the document acknowledges the Project will have substantial, adverse and significant impacts, it does not adequately describe all the impacts outlined in our scoping comments and cultural impact statement comments. (see below for more details on cultural and environmental impacts not considered in this DEIS).

25 Lastly, the cumulative impact assessment is not correct. The U.S. District Court (Hawai`i) explains more on Cumulative Impact,

> "Cumulative impact" is defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from other individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7. NASA's cumulative impacts section, which takes up only three pages in the 125-page EA, does not include an appropriate analysis. First, although the EA recognizes that cumulative impacts "refer to the incremental environmental impact of the action when added to other 'past, present, and reasonably foreseeable future actions, regardless of what agency . . . or person undertakes such other actions,'" the cumulative impacts analysis section omits any mention or consideration of the effects of past actions. See EA at 123-25 (citing 40 C.F.R.§ 1508.7).
>
> (OHA v. NASA, Civil No. 02-00227 (SOM/BMK), 2003, p. 20-21)

And,

> NASA's own contentions regarding the EA's discussion of cumulative effects suggest that NASA misunderstands the nature of the "cumulative impact analysis" required under NEPA. For instance, NASA contends that "[t]he EA presents a clear snapshot of past, present, and future activities,"...The cumulative impact analysis, however, requires more than a "snapshot" or mere description of past activities or existing environmental conditions. Rather, the EA must should analyze the effects of those activities. No such analysis is to be found in the EA. The EA focuses instead on existing conditions only to address the incremental impact of the outrigger telescopes project. See NASA Opp. at 40 (stating that the EA "reviews existing traffic levels, power usage, socioeconomic conditions



**24**

Responses are provided to detailed comment below.

**25**

Cumulative impacts are discussed in detail in Section 3.16 of the Draft EIS. Although the Draft EIS is not a NEPA document it does present a cumulative impact analysis that is consistent with NEPA requirements.

and addresses impacts from the Outrigger Telescopes Project in conjunction with these current conditions" and that the EA "reviews the impact of the Outrigger Telescopes on existing viewscapes through comparison to the current landscape"). The EA, however, should take into account more than the incremental change "in comparison to" the current environment, regardless of whether past changes in the environment are attributable to the agency or not. *Id.*, p. 25-26

**Impacts to Mauna Kea**

26 Mauna Kea's cultural and religious significance is well documented in oral and written historical archives, as well as in legislative and court records. Stating and/or discussing its significance of Mauna Kea to the Hawaiian people, does not qualify as assessing negative impact, nor does it qualify as mitigation.

Mauna Kea is revered in the same way that other religions revere their churches, temples, synagogues, and mosques. The upper regions of Mauna Kea reside in Wao Akua, the realm of the Akua-Creator. It is considered the Temple of the Supreme Being, and also home of Na Akua (the Divine Deities), Na 'Aumakua (the Divine Ancestors), and the meeting place of Papa (Earth Mother) and Wakea (Sky Father) who are considered the progenitors of the Hawaiian People. Mauna Kea, it is said, is where the Sky and Earth separated to form the Great-Expanse-of-Space and the Heavenly Realms. Mauna Kea in every respect represents the zenith of the Native Hawaiian people's ancestral ties to Creation itself.

27 Mauna Kea, as a Wahi Kapu, is dedicated to life, peace, and Aloha. Anything that is contrary to these mandates impacts the temple and those who worship there. While the Hawaiian (and Polynesian) people's relationship with Mauna

28 Kea dates back many millennia, the Mauna is used by many people today for spiritual practices and recreational enjoyment. What happens to the land and life forms of Mauna Kea impacts us all.



**26**

Section 3.2.1 of the Draft EIS documents Maunakea's cultural and religious significance. Section 3.2.3 of the Draft EIS discloses potential Project impacts to cultural resources. The Draft EIS does not claim that documenting Hawaiian traditions or beliefs in the EIS are mitigation measures.

**27**

Section 3.2.3 of the Draft EIS evaluates potential Project impacts to cultural resources, including potential impacts to cultural practices, page 3-20 and 3-21.

**28**

Potential Project impacts to spiritual practicies (cultural practices) are discussed in Section 3.2.3, pages 3-20 and 3-21, of the Draft EIS. Potential Project impacts to recreational enjoyment are discussed in Section 3.10.3, pages 3-120 and 3-121, of the Draft EIS. Potential Project impacts to land forms (geology) is discussed in Section 3.6.3 of the Draft EIS; and potential Project impacts to life forms (biological resources) is discussed in Section 3.4.3 of the Draft EIS.

29 The Mauna Kea protects all life big and small. When a species becomes extinct, it sets the process of creation unraveling. This impacts our relationship to all living things and our relationships with Akua, Na Akua and Na `Aumakua.

**Cultural Impacts not evaluated**

The historic properties that are of importance to Native Hawaiians and possess traditional cultural significance derived from associated cultural practices and beliefs (i.e. Traditional and Cultural Properties) of Mauna Kea include but are not limited to the following:

**1. The summit region from approximately 6,000 feet elevation to the Kukahau`ula (summit), including burial and burial complexes.**

30 The TMT DEIS inaccurately evaluated impacts on the ritual landscape and burial complexes of Mauna Kea.

> The cluster of pu`u (cinder cones) forming the Summit of Mauna Kea have been identified by the State Historic Preservation Division ("SHPD") of the Department of Land and Natural Resources ("DLNR") as a **Historic Property and the summit region of including most of the Mauna Kea Science Reserve has been identified by SHPD as a Historic District.** Both Historic Properties are eligible for listing on the National Historic Register.
>
> Generally a historic district is defined as a historic property that '...possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. The Mauna Kea Summit as a "cultural landscape" has been determined eligible for the National and State Register of Historic Places under multiple criteria including cultural significance to the native Hawaiian People (cf. letter of D. Hibbard to R. Evans, September 12, 1991). As a result, archaeologists with DLNR-SHPD have referred the summit region of Mauna Kea as a "ritual landscape," with all of the individual parts contributing to the integrity of the whole summit region. (pers. comm. P. McCoy and H. McEldowney; Group 70 meetings of September 10, 1998). *Id* Citing McCoy and McEldowney).



29
Section 3.4 of the Draft EIS discusses biological resources in the Project area and potential Project impacts to those resources. The Project would not result in the extinction of any species.

30
Section 3.3 of the Draft EIS discusses burials and possible burials. As discussed in Section 3.3.1, 26 burials or possible burials have been identified in the 11,288-acre Mauna Kea Science Reserve (MKSR). The Draft EIS, page 3-28, states "None of the sites identified as known or possible burials are within Area E, along the proposed Access Way, or in the Batch Plant Staging Area." Therefore, the Project would not impact any known or suspected burials in the MKSR. Since the completion of the Draft EIS, additional studies have been completed. The Final EIS has been updated to indicate 29 burials or possible burials have been identified in the MKSR; however, it is remains true that none of the site are within Area E, along the Access Way, or in the Batch Plant Staging Area.
Section 3.2.3, pages 3-21 to 3-23, of the Draft EIS disclose the Project's potential impact to the "spiritual and sacred quality of Maunakea." In response to a comment from the State Historic Preservation Division (SHPD), Section 3.3.3 of the Final EIS has been updated to include a discussion of the Project's potential impacts to Kukahaula, a Historic Property, and the Mauna Kea Summit Region State Historic District. The following are some of the additions made:
"Project Effects on Kukahau'ula
"As discussed in Section 3.2.3 and summarized in Table 3-1, the Access Way will disturb approximately 0.6 acre, except Access Way Option 3B which will disturbe approximately 0.4 acres, on the westernmost portion of the roughly 480-acre Kukahau'ula cinder cone complex. Roughly 0.4 acre of this area has been previously disturbed by roads, including a SMA road, the old blocked 4-wheel drive road, and the Mauna Kea Access Road Loop. The Access Way effect will primarily be associated with a 0.2-acre area of new disturbance. In addition, Options 2A and 3B require the construction of a retaining wall and installation of slope facing, respectively, which will affect Kukahau'ula. A roughly 600 foot-long section of the Access Way within Kukahau'ula would also be paved and a guard rail installed on the down slope side of the road.
"The area comprising Kukahau'ula has been significantly modified by previous development activities including eight optical/infrared observatories, a portion of the SMA observatory, and roads. Yet, it is still recognized as a culturally important landscape. Despite the historic physical changes associated with development within the Astronomy Precinct, the area has retained its integrity for some, but not all, native Hawaiians. The Project will alter a minimal portion of 480-acre Kukahau'ula along the Access Way (less than one-tenth of one percent of the area), but it will not substantially affect the overall integrity of the cinder cones. Consequently, the potential physical impacts to the Kukahau'ula from the proposed Project components are anticipated to be less then significant."
"Summary of Effect in Maunakea Summit Region
"The Project will not result in the loss or complete destruction of any historic properties within the Maunakea summit region. The physical impacts on the only historic property physically effected, Kukahau'ula, will be minimal and will not be significant.
"Impacts to the Historic District and its contributing properties will be confined to the impacts on Kukahau'ula and the introduction of the Project components into the Historic District. Although the TMT will be a new structure in the Historic District, it will be isolated in the Northern Plateau and will not be visible from most areas with the district. The district is currently recognized as a significant cultural landscape based on the multitude of historic properties in the area and despite the existence of the modern structures and numerous find spots in the area that may detract from its overall character.
"Because the Project will (a) have certain facilities within a Historic District, (b) affect a Historic Property within the district, and (c) provide treatments/mitigations to address those effects, it has been determined that the Project will result in an 'effect with treatment/mitigation commitments.'
"Because the Project will not result in the loss or complete destruction of any archaeologic/historic resource within the Maunakea summit region, this impact is considered to be less than significant."

The historic district of Mauna Kea incorporates virtually the entire Science Reserve area, and the Natural Area Reserve. The largest of the three traditional and cultural properties, 'Kukahau`ula refers to the cluster of three pu`u that merge and collectively make up the summit of Mauna Kea...The second property, 'Waiau' refers to the small lake and adjacent pu`u situated southwest of the summit and within the Natural Area Reserve. The third property, 'Lilinoe' refers to a pu`u situated southeast of the summit and within the Science Reserve.

**2. Many of the Pu`u [cinder cones], associated burials and kinolau;**

31 The TMT DEIS fails to address the cumulative impacts to the kinolau (bodily forms of the deities) such those impact to the image of Poliahu seen from the east side of the island.

**3. View plane (including mauka-makai and makai-mauka view planes)**

32 The TMT DEIS fails to address the cumulative impacts of the practitioners view planes at the summit looking outward (makai-mauka).

The view plans (view scapes) cannot only be evaluated from sea level looking up. The impacts include the practitioners view planes which are view from t Mauna Kea to the sea, to the other islands and to the night sky.

**4. Mountain landscape in navigational traditions;**

33 The TMT DEIS, fails to evaluate the cumulative impacts on the ritual landscape including impact son solstice, equinox ceremonies and other ceremonies relating to navigation.

34 We wish also to state our objections to the TMT DEIS hearing presentations. The TMT hired people to give a presentation suggesting that modern astronomy is nothing more than and extension of what our ancestors accomplished. This is an unreasonable assertion. The two disciplines may not be reasonable compared; it is like comparing apples and oranges. Our ancestors may not have done what Plato did, but what they did accomplish was amazing. It is righteous to give credit where it is due.

The presentation is based on a book written about our past King, whom supported the construction of a small telescope in Honolulu. Unfortunately the book also claims, the King supported it because it would help prove to the Hawaiian people the earth was round. The



**31**

Section 3.16 of the Draft EIS discusses cumulative impacts. The Draft EIS does discuss how past actions have resulted in cumulative impacts to the "spiritual and sacred quality of Maunakea" on pages 3-165 and 3-166, and includes a quote from one of the comment authors which discusses how past actions have altered the images of deities because the puu were leveled and telescopes built on top of them. Based on this impact, among others, the Draft EIS states, on page 3-166, that "The existing level of cumulative impact on cultural, archaeological, and historic resources is substantial and adverse."

**32**

Potential visual impacts are discussed in Section 3.5.3, pages 3-59 through 3-74, of the Draft EIS. The visual analysis in this section indicates, and Figure 3-7 on page 3-61 in particular illustrates that the TMT Observatory would not be visible from the summit of Maunakea (Viewpoint 16; the summit of Kukahauula/Puu Wekiu). The Draft EIS includes a number of photo simulations from populated areas around the island from which the TMT Observatory would be visible.
In response to comments on the Draft EIS, an additional photo simulation of the TMT Observatory has been included in the Final EIS. The new simulation illustrates the view of a person standing near the Keck Observatory and looking toward the TMT Observatory 13N site. In addition to the simulation, the following information has been included in Section 3.5.3 of the Final EIS, "...the TMT Observatory will add a substantial new visual element in the landscape that will be visible from viewpoints along the northern ridge of Kukahauula and by people as they travel within the northern portion of the summit region."

**33**

Cumulative impacts are discussed in Section 3.16 of the Draft EIS. This section includes, on page 3-165, a discussion of past actions' impacts on cultural practices. The Draft EIS states, "the existing observatories have disrupted the ambiance necessary for Native Hawaiian religious observances." Due to this impact and others, the Draft EIS states, on page 3-166, that, "The existing level of cumulative impact on cultural, archaeological, and historic resources is substantial and adverse."

**34**

The commentor's views about presentations at the Draft EIS meetings are acknowledged, but do not address the Project's potential impacts on the environment evaluated in the Draft EIS.
For many, including presenters at the public meeting, modern astronomy is an extension of Hawaiian astronomy. By including information related to Hawaiian astronomy in presentations, the Project felt it was giving credit where it was due.

Hawaiian people certainly understood the earth was round- traditional knowledge dating back to before the time of Christ. They understood this because they could not have navigated and peopled 10 million square miles of the oceans and tiny islands without having known this.

The Kupuna (ancestors) understood this because they had identified a celestial equator, using knowledge kept in the traditions (and family mo`oleo) of Mauna Kea, which made the TMT presentations even more egregious. What our Kupuna (ancestors) accomplished was important to Polynesia but is also to the world, contributing to the global knowledge base. The Kupuna should be properly credited for this. Mauna Kea is the land of our history and knowledge—and it requires maximum protection.

**5. Lake Waiau and adjacent cinder cone;**

35 The TMT DEIS did not adequately address hydrology, hazardous materials and sewage treatment and their impacts to the lake, and the collection of water, ice and snow collected form Mauna Kea for healing, ritual and other ceremonies.

36 TMT must consider and evaluate the impacts from the use, storage and handling of hazardous materials, and sewage upon the Mauna Kea aquifer system (water shed lands of Mauna Kea). Mauna Kea is the principle aquifer and water shed for Hawai`i Island.

37 The waters, ice and snow collected from Mauna Kea are used for Native Hawaiian healing and other ritual and ceremony.There is serious concern also for the protection of the waters of Lake Waiau, and the other Pu`u (cinder cones) that also pool water. The Lake is a Traditional Cultural Property, and is home to deities. Waters are harvested from Lake Waiau, and other pooling waters.

38 During the NASA EIS process, copies of the over 10,000 Material Safety Data Sheets (MSDS) we received by subpoena in the State CCH. The TMT must consider the impacts of these hazardous materials on the TCP and associated Native Hawaiian practices (i.e. collection of snow, ice and snow) and should also consider the watershed conditions after thirty years of sewage and hazardous material release into the ground of Mauna Kea.

According to the Material Safety Data Sheets ("MSDS") received, the following Observatory/Telescope Facilities were found to use "elemental" mercury. The University Of Hawai`i 88 inch or 2.2 meter Observatory ("UH88") (Exhibit F-64), The Canada-France-Hawaii



**35**

Hydrology and sewage handling is discussed in Section 3.7 of the Draft EIS. Hazardous materials are discussed in Section 3.8 of the Draft EIS. As stated on page 3-84 of the Draft EIS, "Lake Waiau lies roughly 1.5 miles south of the TMT Observatory site, which would be on the opposite flank of Maunakea from the lake. The Project's Batch Plant Staging Area, roughtly 3,000 feet upslope of Lake Waiau, would not be located within the Lake Waiau watershed. As stated on page 3-89 of the Draft EIS, the Project will "install a zero-discharge waste system at the Observatory. Therefore, there would be no discharge of any wastewater, including domestic wastewater and mirror washing wastewater, at the summit. All wastewater would be collected and transported off the mountain for treatment and disposal." Therefore, the Project will not impact water, ice and snow within the watershed of Lake Waiau.

Furthermore, in Section 3.2.3, page 3-18, of the Draft EIS it is indicates the Project will comply with applicable rules, regulations, and requirements - including the CMP - concerning cultural resources and practices. The CMP states, on page 7-7, that "Native Hawaiian traditional and customary practicies shall not be restricted, except where safety, resource managment, cultural appropriateness, and legal compliance considerations may require reasonable restrictions." Therefore, the Project would not restrict the collection of water, ice, and snow from Maunakea for healing, ritual, and other ceremonies. The following discussion has been added to Section 3.2.3 of the Final EIS:

"Collection of Water from Lake Waiau

"Water from Lake Waiau is collected by some cultural practitioners for use in healing and ritual practices. The Project would not affect that practice, nor would it affect the quality of the water in Lake Waiau (see Section 3.7.3 for further discussion of water impacts). There will be no adverse effect associated with the Project on this cultural practice.

"Piko Deposition

"Historically, piko deposition on Maunakea has been associated primarily with the Lake Waiau area of the summit region. The Project would not affect cultural practices at or near Lake Waiau. Some ethnographic studies also indicate that piko deposition may be occurring in other areas of the summit region. The area occupied by the observatory would not be available for future deposition of piko. In addition, individuals may be unwilling to deposit piko in the immediate vicinity of the TMT Observatory due to the new elements introduced in the area as a result of the Project. This would not result in a substantial impact on the cultural practices of the community or State. The vast majority of the MKSR as well as the Mauna Kea Ice Age NAR, including Lake Waiau, would remain unaffected by the Project. Substantial undisturbed areas are present within the summit region that could continue be used for piko deposition."

**36**

Hazardous materials are discussed in Section 3.8 of the Draft EIS and water resources and wastewater are discussed in Section 3.7. As discussed in response to the previous comment, the Project will install a zero-discharge waste system at the TMT Observatory. The Project would also comply with regulations regarding the management and disposal of hazardous materials. Therefore, no waste, hazardous material, wastewater, or general debris, will be discharged that could impact groundwater.

**37**

The lack of potential Project impacts to Lake Waiau is discussed in response to previous comments.

**38**

The lack of potential Project impacts to water, snow, and ice are discussed in responses to comment above. Cumulative impacts including those related to hazardous materials, are discussed in Section 3.16 of the Draft EIS. In Section 3.16.2, page 3-171, it is stated that "It has been shown that the past disposal practices of mirror washing wastewater have not had a significant impact on water quality. On page 3-182, it is stated that "A small number of mercury spills have occurred since observatory operation began; the best available information regarding such occurrences suggests that none of the spills reached the outside environment."

Telescope ("CFHT") (Exhibit F-62), The William M. Keck Observatory I and II ("WMKO") (Exhibit F-61), The NASA Infrared Telescope Facility ("IRTF") (Exhibit F-60), and The United Kingdom Infrared Telescope ("UKIRT").

There have been 3 Mercury spills reported at the William M Keck Telescope. August 10, 1995, September 15, 1995, and November 6, 1995. There have been 7 recorded spills from other facilities over the years.

The Hazardous materials listed below were found to be stored and used at the Observatories/Telescope Facilities they include but are not limited to, the following:
Hydrochloric-Acid (Note: not listed in JCMT Exhibit F-66)
Potassium Hydroxide
Hydraulic, Motor, and Lubricating Oils
Pesticides
Insecticides
Calcium Carbonate
Sulfuric Acid
Diesel, Jet Fuel, and Unleaded Gasoline
Ethylene Glycol
Kerosene
Methyl Ethel Keytone
Toluene
Paints, Thinners and Solvents
Rust Treatments and Inhibitors
Carbon Disulfide
Elemental Mercury (Note: used or stored in amounts beyond that contained in a household thermometer.

Carbon disulfide is currently listed in WMKO MSDS.

Five Telescopes indicated that they stored and used elemental mercury in the amount beyond that stored in a thermometer.

**6. Numerous Trail systems.**

39 The TME DEIS did not adequately address the cumulative impact on the trail systems of the Mauna Kea, still used today.

**7. Snow, ice and water as kinolau—bodily forms of the deities**

40 The TMT DEIS did not adequately address the cumulative impacts on the bodily forms of deities (water, ice, snow etc.) with sewage, and or toxic spills.



**39**

Trails are discussed in Section 3.2.1, page 3-15 and 3-16, of the Draft EIS. A discussion to cumulative impacts to the trail system have been added to Section 3.16.2 in the Final EIS as follows:
"As discussed in Section 3.2.1, traditional accounts suggest that some ancient trails were present in the summit region. In some instances in other areas of Hawai'i island, Hawaiian trails have been preserved and are archaeological features. It is unknown if the current trails in the summit region follow the same route as the ancient trails. In general, over the years the trails have been improved to accommodate visitors to the region, including realignment of certain trails (Table 3-20). In some cases, roads have also been built that intersect or replace short sections of trails. These activities may have impacted the ancient trails; alternatively the ancient trails followed different routes and have been impacted by natural erosive processes. In either case, there is no remaining physical evidence of ancient Hawaiian trails in the region."

**40**

Cumulative impacts are discussed in Section 3.16 of the Draft EIS. Impacts to the environment related to sewage are discussed in Section 3.16.2 on page 3-171 and in Section 3.16.4 on page 3-184.
Toxic spills are discussed in Section 3.16.2 on pages 3-171 and 3-172 and in Section 3.16.4 on pages 3-184 and 3-185.
Through compliance with applicable rules and regulations, water, ice, and snow will not be impacted by sewage or toxic spills.

**8. Wekiu Bug and other rare, threatened and endangered species**

41 The TMT did not adequately address the cumulative Impacts on the rare, threatened and endangered species of Mauna Kea. As stated previously Mauna Kea represents life, peace and Aloha. The life forms of Mauna Kea are to be protected. The Wekiu bug mitigation measures offered in the TMT DEIS (i.e. destroying habitat, and creating artificial habitat, hoping the bugs will survive) is untested and not based in science. It is equivalent to the Center for Disease Control providing untested vaccines, so that if the vaccine does not work and people die, they will know it does not work.

**9. Cultural and Socio-economic impacts**

The TMT DEIS does not adequately evaluate the social impacts that disproportionately impact Native Hawaiian health, safety and welfare.

42 There are over 93 Astronomical Observatories and Observatory complexes around the world in which to do world class astronomy. Mauna Kea is already considered a world premier site for astronomy work, and houses the largest and most advanced observatories in the world. However, **TMT must consider that Mauna Kea represents the only place on earth where the special and unique Native Hawaiian ritual and ceremonies are conducted.** TMT must consider the impacts to the Native Hawaiian Communities cultural and religious practices.

43 The TMT must also consider the socio-economic impacts this project will have on the Hawaiian Community. Health reports establish that there are approximately 6000 pure blooded Hawaiian people left in the world today, and their projected survival is only to 2044. Health statistic also indicate approximately 54% of native Hawaiian people (those with 50% or more blood), make less than $9000 dollars per year.

**Mitigating Impacts to the Environment—not a ballot question**

44 We wish the recorded to reflect, that giving scholarships (or establishing a pipeline program) do not mitigate the impacts on the landscape, environmental and cultural resources of Mauna Kea. NEPA is about protecting the environment. Giving to underprivileged communities is a good thing, but the gifts should not have strings attached. We were shocked to see young adults and children at the EIS hearings (in the news paper) wearing buttons, tee-shirts and holding signs that read, "YES TO THE EIS". The environmental review process is for establishing impact to the environment; collecting and recording comments--it is **not a ballot question.** You should support the children, not use to further your own political agenda—this is not pono.



41

Cumulative impacts to biologic resources, including the Wekiu bug and other species, is discussed in Section 3.16 of the Draft EIS.
Section 3.4.3 of the Draft EIS discussed potential impacts to biological resources. On page 3-41 it is stated that "Although the [Access Way] Option 2 or 3 impact is evaluated to be less than significant, to comply with the CMP (Management Action FLU-6), the Project would prepare and implement a Habitat Restoration Plan to compensate for the loss of Type 3 Wekiu bug habitat...". CMP Management Action FLU-6 states "Incorporate habitat mitigation plans into project planning process."
Based on comments received during the Draft EIS public review period and the issues associated with the feasibility and effectiveness of any habitat restoration approach, the planned mitigation measure for the loss of sensitive habitat has been modified. The Project will no longer prepare or implement a Habitat Restoration Plan as outlined in the Draft EIS. As detailed in Section 3.4.3 of the Final EIS, the Project is in comliance with Management Action FLU-6 through (a) Project planning to avoid impacts, (b) monitoring of arthropod activity in the region of the Access Way's disturbance of cinder cone habitat prior to, during, and for two years following the construction of that portion of the Access Way, and (c) working with OMKM on the development and implementation of a habitat restoration study.

42

Section 3.2.3 of the Draft EIS discusses potential Project impacts to cultural resources, including cultural practices. This has been discussed in detail in response to previous comments. Additional discussion has been added to Section 3.2.3 of the Final EIS, as discussed above, including the following:
"Pilgrimage, Prayer, Shrine Construction and Offerings
"The summit region, which includes the Mauna Kea Summit Region Historic District and Kukahau`ula, is a sacred area in Hawaiian culture and serves as a site for individual and group ceremonial and spiritual practices. These practices include prayer, shrine erection and the placement of offerings. The area to be occupied by the TMT Observatory structure would not be available for future cultural practices of this nature. In addition, for some individuals, the introduction of new elements associated with the Project in the area of the northern plateau would adversely affect the setting in which such practices could take place.
"Data collected during a series of archaeological surveys indicate that modern shrine construction occurs primarily in areas outside of the Astronomy Precinct. Approximately 90 percent of the over 300 find spots that have been interpreted to be modern shrines occur in areas away from the vicinity of the Astronomy Precinct. A modern shrine is present near the end of the 4-wheel drive road in Area E and this shrine would be displaced by the TMT Observatory. Repeated archaeological inventory surveys in the area indicate that the shrine was erected in the early 2000s (Section 3.3.1); interviews and research conducted has not revealed who constructed this modern shrine. The CRMP states that Kahu Ku Mauna, in consultation with other Native Hawaiian organizations, will develop protocols that will consider which kinds of features and locations are appropriate, and address the issue of whether a review process should be instituted, consistent with CMP Management Action CR-7. Based on the research conducted to date, the shrine is not eligible for consideration as a historic property because it is less than 50 years old. Dismantling Relocating the one new shrine is considered an adverse but limited impact.
"Although the Project may decrease the desirability of the northern plateau area for shrine construction, this is not anticipated to result in a substantial effect on shrine construction within the MKSR. The majority of the areas within the MKSR currently used for shrine construction would not be affected by the Project. To some individuals, the Project could represent a decrease in the suitability of the northern plateau area for spiritual observances and offerings. However, this would not result in a substantial adverse impact on the cultural practices of the community or State. The majority of the areas with the MKSR where observances and rituals are believed to occur would not be affected by the Project. Further, while the introduced elements associated with existing observatories may have had an effect on the perceived quality of the observances conducted, or may have caused some practitioners to conduct their observances further away from the vicinity of the observatories, there is no evidence suggesting that the presence of the existing observatories has prevented or substantially impacted those practices. Similarly, the Project is not anticipated to result in substantial additional adverse effects on those practices."

In Aloha we remain,

DATED: July 7, 2009

TMT Draft EIS Comments,
Submitted via electronic mail and U.S. Postal Service Certified-Return Receipt,
Post marked July 7, 2009

Kealoha Pisciotta, President
Mauna Kea Anaina Hou
P.O. Box 5864
Hilo, Hawai`i 96720
Tel: 808.968.7660

Clarence Kukauakahi Ching
64-823 Mamalahoa Hwy
Kamuela, Hawai`i 96743
Tel: 808.769.3828

Paul K. Neves, Ali`i Aimoku
The Royal Order of Kamehameha I, Moku O Mamalahoa, Heiau Mamalahoa
Helu `Elua
381 Nahale-a Avenue
Hilo, Hawai`i 96720
Tel: 808. 935.9656

**43**

Potential socioeconomic impacts of the Project are discussed in Section 3.9 of the Draft EIS. Job opportunities will be available for the local Hawaiian community and a Workforce Pipeline Program will be implemented to ensure that today's keiki have the education and training to fill these job opportunities. These jobs will have annual salaries well in excess of $9,000 a year.

**44**

The EIS does not indicate that the Workforce Pipeline Program is a direct mitigation measure for potential Project impacts on natural or cultural resources. Rather, the Project will develop the program because it will help prepare local students for job opportunities generated by the Project and other high technology opportunities, and increase the Project's benefit to the island community.